A Study on the Behavioural Changes that Indicate Turnover of Software Engineers in the Sri Lankan IT Industry

Athukoralalage Kalani Pradeepa Athukorala

179100T

Degree of Master of Business Administration in Information Technology

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

June 2021

A Study on the Behavioural Changes that Indicate Turnover of Software Engineers in the Sri Lankan IT Industry

Athukoralalage Kalani Pradeepa Athukorala

179100T

The dissertation was submitted to the Department of Computer Science and Engineering of the University of Moratuwa in partial fulfilment of the requirement for the Degree of Master of Business Administration in Information Technology.

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

June 2021

DECLARATION

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

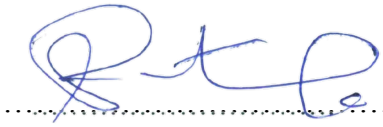
Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my thesis/dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

05-06-2021

A. K. P. Athukorala

Signature of the candidate Date

The above candidate has carried out research for the Masters thesis under my supervision.



05-06-2021

Dr. Surangika Ranathunga Date

Signature of the Supervisor

COPYRIGHT STATEMENT

A. K. P. Athukorala

05-06-2021

ABSTRACT

Employee turnover is increasingly becoming a trending problem in most industries, which has made recruiting and retaining talented professionals is a challenging task today. Software engineer turnover rate is also of no exception and noted to be competitively higher, especially due to rising demand for software engineers within the software industry. Sri Lankan IT industry is a fast-growing major industry in Sri Lanka; thereby, demand for software engineers is also relatively high and is impacting largely on the problem of software engineer turnover. Recruiting and grooming an employee is a costly process, and employers are interested to identify turnover intention in advance to mitigate the problems arising with employee turnover. Usually, employee turnover is the result of series of dissatisfactory experiences. Attitudes can be visible through behaviour, and employees' dissatisfaction and demotivation towards work can be visible through daily behaviour. Therefore, behavioural changes can be used to identify employees' turnover intentions. This research was conducted as a quantitative study to identify the behavioural indicators that cause software engineers' turnover in Sri Lankan IT industry. The main objective of this research is to provide an insight to employers in Sri Lanka who deal with software engineers to identify employee turnover intention using behavioural changes and providing highly impacted behaviours to take necessary actions to retain employees or to mitigate the problems that arising with sudden turnover of software engineers in their companies. Data was gathered using an online survey distributed among software engineers in Sri Lanka. It was identified that attendance, absenteeism, task negligence, and organizational commitment have a connection with software engineers' turnover, while social media usage and software engineers' turnover has no relationship. Among these indicators', absenteeism has the highest impact; and organizational commitment, attendance and task negligence have lower impacts in the sequential order. Interestingly, organizational commitment has a negative impact on software engineer turnover, while the other three factors have an impact on software engineers' turnover.

ACKNOWLEDGEMENT

I would like to express my appreciation to everybody who provided me with a strong support to complete my research study on "Behavioural Changes that Indicate Turnover of Software Engineers in the Sri Lankan IT Industry".

I would like to thank the supervisor of this research study, Dr. Surangika Ranathunga, Senior Lecturer of the Department of Computer Science and Engineering, University of Moratuwa, for assisting me from the beginning and providing continuous support to complete this study successfully. Further, I wish to express my gratitude to all the lecturers of the Department of Computer Science and Engineering, University of Moratuwa, who supported me throughout the study.

Moreover, I would like to convey my obligations to all the software engineering professionals who supported me by completing the online survey. Their valuable responses guided me to complete the data analysis properly and to achieve the research objectives.

Further, I would like to thank my MBA batch mates and my office colleagues for providing valuable ideas to improve my research study and helping me to collect enough data from software engineers.

A very special thank note goes to my family who always encourages me with my studies by providing unconditional support.

Finally, I would like to convey my gratitude to every other person who helped me in many ways to complete my research study successfully.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

IT – Information Technology

SE – Software Engineer

HR – Human Resource

US – United States

OCB – Organizational Citizenship Behaviour

ICTA – Information Communication Technology Agency

QWL – Quality of Work Life

MCQ – Multiple Choice Question

1 INTRODUCTION

1.1 Background

Employees are the most valuable asset to any organization, as the success of the business depends highly on their employees' skills and commitment. Businesses are always willing to hire skilful and loyal employees to their organization (Gabčanová, 2011). Employers hire qualified employees or individuals with basic qualifications who can be trained to meet the skill gaps. Companies spend a considerable amount of time on this process, as they consider it as an investment to identify and hire skilful and suitable employees. However, employees may leave their jobs for various reasons such as job dissatisfaction, higher remuneration from competitive companies, and fewer opportunities for advancements and promotions (Grose, 2015). Despite companies undertaking a rigorous process of recruitment and training, the whole process needs to be repeated to find a replacement and the cost involvement is also high. Moreover, high employee turnover rates could cause several detrimental impacts on an organization such as poor job attitudes, high recruitment and training costs, operational disruptions, and diminishing of human and social capital.

High employee turnover has its direct impact on company productivity. Since employees are replaced frequently, a company with a high attrition rate may have more inexperienced employees. Even if companies hire skilled and talented employees, those employees will need some time to adjust to the new company environment, to understand the company's policies and goals and to fit into their job roles in the company. This will reduce the productivity of both the employee and the company (Frost, 2016). The existing employees may have to work extra hours to cover up the gaps created by the newly hired employees, who have not yet fitted into their job roles. If the company's attrition rate is high, employees' morale to work would also go down. Lower productivity and lower quality of work may cause a disruption of daily operations of the company, because of inexperienced employees who did not complete training. For an example, consider an IT Product Company which needs to deliver a project to a client on a previously agreed date. If a critical resource of the project leaves the company unexpectedly, now it may not be able to

change the deadlines; the company may need to continue with existing project plans and deliver the product to the customer. This may affect the quality of the outcome of the project and would lead to reduction of customer satisfaction. Moreover, the company will have to assign existing employees to train new employees, which will divert skilled workers from revenue-generating activities, and this may adversely affect company's performance and profitability.

Employee's intention to leave the company and job dissatisfaction are highly correlated. It is mainly identified that fairness of rewards, skill obsolescence, and perceived workload directly affect job satisfaction (Harden, Boakye, & Ryan, 2016). Other than that, level of experience, age, and gender also influence turnover intentions. Usually, resignation is not a quick decision made by the employee, which is take overnight. It may be an end result of a series of incidents and experiences that were faced by the employee. At many instances, co-workers could notice behavioural changes that emerge with employee's turnover decision such as lateness and absenteeism.

1.1.1 Motivation

Employee turnover rate differs industry to industry due to various reasons such as technological advancement and high/low job opportunities within the industry. As per the statistics of the Bureau of Labour Statistics in the US, the average rates of employee turnover within US technology organizations in Quarter 1, 2017 are shown in Table 1-1 (Wortley, 2018). As shown in this table, software industry has the highest employee turnover rate amongst technology driven industries.

Table 1-1: Average employee turnover rates among U.S. technology companies

Industry	Average Turnover Rate (%)
Software	22.4
Medical Devices	17.3
Hardware	15.8
Semiconductors	5.2

Source: (Wortley, 2018)

According to the analysis of e-days (2018), government employees have a low rate of turnover due to job security and other facilities such as pension plans. Employment could differ based on the industry or the profession. There are several categories defined on workforce based on demographic and social characteristics such as salaries, work time, work nature and service/product type. Career structure, competitive pressure, work environment, interest, values and expectation vary with different industries (Kochan, Whyte, & Hannan, 2017). Therefore, employee behaviour might depend on the industry. However, the technology sector has a higher turnover rate because of its rising opportunities and technological development. Therefore, identifying probable employee turnover in advance will provide benefits to the IT organizations to take appropriate proactive and reactive measures.

It was identified that employees' behaviour and motivational factors play a major role in increasing the organization's productivity (SE edu, 2016). Behavioural management theories also explain on achieving success through managing employees with different attitudes and behaviours. Some researchers have already attempted to figure out the connection between employee behaviours and employee turnover intention in different aspects. It was proven that turnover intention and behaviour are highly correlated during research conducted to identify turnover intention and the related behavioural effects for retaining federal employees (Cho & Lewis, 2011). Therefore, behavioural changes can be used to identify employees' decisions in advance (Jans, Frazer-Jans, & Louviere, 2001). An investigation was carried out in the Irish hospitality sector on high employee turnover rate. During this study, wages, work-life balance and the lack of motivation were the main causes identified, and a direct relation was found between the above mentioned factors and the behaviours of employees (Jagun, 2015). Another two independent studies carried out in construction industry in China and Philippine also discovered that emotional exhaustion is caused by psychological contract breach, and this in turn enables predicting employees' turnover intentions and actual turnover (Chih, et al., 2016). But when analyzing in the context of Sri Lanka, it is difficult to find any sources

regarding the behavioural changes of the employees, especially with relating to the software engineers in the country.

Since the connection between behaviour and employee turnover has been highlighted during many studies carried out in different industries, it would be beneficial to identify behavioural indicators of software engineers' turnover due to the high turnover rate among software engineers.

1.1.2 Research Scope

Due to diversified conditions in differing industries, there could be several reasons for employee turnover in different industries. The attitudes of employees could be divergent, depending on the industry, by nature of work, workplace and employment pattern (Matsuki & Nakamura, 2019). As the behaviour of employees is different within industries, the reasons for employee turnover cannot be generalised, and there should be a separate and detailed study if one needs to identify specific factors affecting the employee turnover of a specific industry.

IT industry is one of the fast-growing industries for the last two decades in Sri Lanka. As many industries started using IT for process improvements and advancement of their businesses (IT Industry Outlook 2018, 2017), demand for IT services and competition within the industry have increased drastically. As per the LinkedIn data analysis, it was proven that the highest turnover rate is arising from the software industry (Petrone, 2018). High demand for the software professionals and rising compensation cause most of the software engineers to change their employers, frequently. Therefore, software engineers were selected as the target group for the study on the behavioural indicators to identify their turnover intensions. The fourth largest export earning contributor in Sri Lanka is ICT industry (Sri Lanka Export Development Board, 2021) and software engineer turnover problem is applicable to the Sri Lankan context too. Therefore, some research was conducted to identify general reasons for IT staff turnover (Jinadasa & Wickramasinghe, 2005). However, it was difficult to find any evidence of such study carried out in Sri Lanka, which focused to identify the behavioural indicators of software engineers' turnover.

Therefore, this research study facilitates only to identify the behavioural indicators of software engineer turnover in the Sri Lankan context.

1.2 Problem Statement

Retaining talented employees in the organization has become one of the top ten HR challenges today (Atlas Staffing Inc, 2018). Employers are interested to identify employee turnover in advance to mitigate the connected problems that could occur due to unexpected employee turnover. According to Reisenwitz (2020), the software engineers record the highest turnover when compared to other industry sectors. Also, it is evident that employee behaviour is a helpful indicator in identifying turnover intention because, turnover intention and employee behaviour are highly correlated (Cho & Lewis, 2011). However, it is difficult to find studies conducted to identify behavioural indicators of turnover, especially focusing on IT industry. Moreover, there is no evidence to be found about the resources regarding the behavioural changes and software engineer turnover in Sri Lanka discussed in any study. Therefore, this research will focus and attempt to answer the question on:

How could the management identify software engineers' intention to resign in-advance using their behavioural changes?

1.2.1 Objectives

- Identify behavioural changes that lead to software engineers' turnover
- Identify the level of impact of each behavioural indicator which was identified in the above objective on software engineers' turnover intention
- Provide the software development companies/management insight on the behavioural changes that would help them in identifying software engineers' turnover in advance

1.2.2 Significance

It has been identified that the software industry has the highest turnover rate (Wortley, 2018). Therefore, identifying software engineers' turnover in advance is definitely beneficial to the employers. Since most of the software companies have a team based working environment, employees work closely in teams giving the best opportunity for peers to easily notice an employee's behavioural changes. As turnover intention and behaviour are highly correlated (Cho & Lewis, 2011), if management pays extra attention to their employee's behaviour, the changes in an employee's behaviour could be noticed easily and at an earlier stage.

This research plans to identify the behavioural changes that lead to software engineers' turnover specifically to the IT industry, as this industry is considered to have a higher demand for professionals and the turnover rate is found to be high. Most of the time, employee turnover is not a sudden decision and it is an end result of a series of experiences. It generally accepted that prevention is better than rectification, and management can take necessary proactive actions and plan accordingly, if they know the techniques to notice such behavioural changes in an employee in advance. Since there is no research conducted to identify the behavioural indicators of software engineers' turnover in the Sri Lankan context, this research would provide many useful insights to mitigate the problems arising with the employee turnover.

2 LITERATURE REVIEW

The study on the behavioural indicators of employees' turnover intention is an interesting subject in the context of software industry. Since employee turnover has become a major problem within the software industry, the interest to identify turnover intention in advance has been increased. When employers face the problem of turnover, they focused on reducing or mitigating the impact of the employee turnover. This has led the study on identifying the employee turnover intention in advance to become an interesting focus area among employers. Since human factor is involved in identifying the signs of turnover intention, the study has also focused on previous research done on the subject. This chapter mainly focuses on discussing existing work done by previous studies in identifying the behavioural indicators on employee turnover.

The employee turnover can happen due to many reasons and the root cause for most of the reasons is employee dissatisfaction. There is a direct relationship between dissatisfaction and behaviour, and they are highly correlated (Rosse & Saturay, 2004). This means, dissatisfaction can be indicated through the daily behaviour of employees. This section will review diverse literature associated to find the connectivity of human behaviour and attitude in relation to dissatisfaction and behavioural indicators of dissatisfaction.

2.1 Employee Turnover

People stayed at one job for their entire carrer in early days. Usually employees switch the employer several times in their careers and its not required to provide job security by employer (Doyle, 2019). Therefore, employee turnover is a common situation for every organization. However, retaining talented employees in the organization has become one of the top ten HR challenges today (Atlas Staffing Inc, 2018). Employee turnover is a crucial factor to be considered in human resource management. When an employee quits their position in the organization, it tends to reduce the job satisfaction of the other employees and negatively impacts their organizational behaviour as well. Further, it could reduce the company's opportunity

to attract new employees to the position, if the employee turnover is high; on the other hand, the company would expect further turnover in the future as well. In addition, the employee engagement would also reduce with a reduction in employee morale. In the organizations' point of view it would increase the work load, training costs and management frustration could occur (Thomas, 2015).

The employee turnover can be identified as two types; voluntary and involuntary turnover (Zhang Y. , 2016). Voluntary turnover is explained as the employee's individual decision to resign, whereas involuntary turnover is explained as the decision made by the organization to dismiss the employee. Personal factors, organization and work factors, social and economic factors could influence the employee turnover (Zhang Y. , 2016). Under the personal factors, employees' age, gender, education level, marital status, work experience, personal ability and responsibility were recognized as the influencing factors. When referring to the organization and work factors, it is identified that organizational culture, benefits, salary, employee relationships, work attitude and employee involvement were the main factors. Moreover, the social and economic factors were identified as country's economic factors, health care facilities and education, etc.

Mamun and Hasan (2017) also examined a broader area under the employee turnover to identify key factors affecting the employee turnover. The identified key factors affecting employee turnover were the managerial factors, working environment, rewards, promotion, external career opportunities, rewards and other benefits and influence from co-workers. When analysing the above findings, the main reasons for employee turnover are common to what were discussed by Zhang (2016) and Mamun and Hasan (2017), in which the main reasons were identified as salary, benefits, career opportunities, organizational culture and co-worker influence.

2.2 Employee turnover in IT industry

Technology sector indicated the highest employee turnover rate in 2017, and amongst them software industry has the highest turnover rate (Petrone, 2018). Software engineering is a demanding job which is dynamically transforming with the

emerging new technologies. IT is involved in many current trends such as artificial intelligence (AI), game development, cloud computing, business intelligence and user experience handling, block chain, which continues to increase the demand of IT employees (Newman, 2018). Therefore, employees in IT industry more often show a strong propensity of leaving their current company and joining another lucrative competitive company. Moreover, satisfying IT professionals seems to be difficult for many companies, as IT professionals easily find a new job with the increasing demand from companies for IT professionals. Other than that, job roles in IT industry are categorized as one of the most stressful jobs (White S. K., 2016). When considering the impact of job satisfaction, organizational commitment and job stress towards the IT professionals' intention to leave, it proved that job stress negatively affects job satisfaction and it directly affects turnover intention of IT professionals in Turkish context (Calisir, Gumussoy, & Iskin, 2011). Due to the high demand and high stress in the IT profession, it is natural to have different patterns of turnover among IT employees.

The turnover intention among government IT employees was studied by Kim (2012) relating to human resource management and its impact to the employee turnover intentions. According to the study findings, it can be identified that the factors of promotion opportunities, pay and rewards, training opportunities, family friendly policies and supervisory communication were influencing the employee turnover intentions. The impact on IT industry turnover of Internal Labour Market (ILM) Strategies was evaluated by Ang and Slaughter (2004) considering the factors of human resource rules, practices and policies which include the training opportunities, career ladder, salary, recruiting and promotion strategies using range of IT related companies. The results indicate that the companies which maintain better human resource policies and procedures covering the above given factors have lower employee turnover. Even though the research done by Kim (2012) was limited to government IT employees, the findings of research was quiet similar to the findings of the research done by Ang and Slaughter (2004), where career opportunities, rewards, salary, promotion, etc. affect employee turnover in IT industry. Apart from these factors, the study of Calisir, Gumussoy and Iskin (2011) identified job stress,

job satisfaction and organizational commitment also influence in turnover among IT professionals.

2.2.1 Software Engineers turnover

Software engineers are one of the highest demanded subset of IT professionals. As per Bureau of Labour Statistics in US, opportunities for a software developer are predicted to increase 24% from 2006 to 2026 which is a higher rate compared to the average growth rate of other industries (BLS, 2018). Therefore, software engineers have multiple opportunities to change their employer based on the rising demand. It is proven that employee turnover gives many negative impacts on business processes including software development. A research presented in the 13th Conference on Global Software Engineering - ICGSE 18, compared in-house off-shoring and offshore outsourcing and explored on the employee retention and turnover in the context of global software development. The impact of high turnover rate in software industry was also highlighted here. Further, it explained more on different patterns of employee categories in software industry, such that in-house off-shoring has higher turnover rate compared to offshore outsourcing (Bass, Beecham, Razzak, & Noll, 2018). Therefore, software engineers' turnover has high impacts to the industry with rising demand for software engineers. According to the study of Reisenwitz (2020), the software engineers' turnover is the highest among all other sectors and it was found that compensation, career growth opportunities, type of work, company culture and location and commute have been regarded as the main reasons for turnover of software engineers. These reasons also align with the common reasons of employee turnover in previous discussions. According to the findings of the studies above, it is clear that software engineers have greater demand in the labour market triggering the highest turnover rates.

2.3 Employee Behavior and Attitude

Employees are the backbone of the company as most of the companies rely on employees to produce or deliver their goods or services to fulfil the customer

requirements. Richard Branson (world famous British businessman) stated that if a company takes care of their employees, the employees will take care of the business (Mistry, 2017). Therefore, there should be a strong mutual relationship between employees and organization. Every action of every employee may affect the business goals. Employees have to be kept content and in return, the employee will serve more to the company's growth that enable the company to remain strong in an industry (Hyacinth, 2018). Employee behaviour can be characterised as the manner in which how employees react to specific situations and circumstances in the organisation (McKinney, 2018).

Attitudes can positively or negatively affect an individual's behaviour. The employees' attitudes can impact on the other employees around them as well. According to Lumen (2021), attitudes of the employees can impact on the behaviour of the employees, where positive attitudes can improve a productive working behaviour of the employees and vice versa. Employees with positive attitudes lift the spirit of co-workers and negative attitudes can lower their spirits. Therefore, attitudes affect both employee's performance and their co-workers' performance together. Understanding different types of attitudes and probable implications of those attitudes are beneficial in predicting individuals' attitudes that may impact their behaviour. Schmitz (2012) also stated that the employee behaviour is correlated with the employee attitudes where the employees having positive attitudes have positive working behaviours. Not like Lumen (2021), Schmitz's (2012) stated that the employee attitudes depend on their personality and the factors of certain job characteristics, organizational justice, psychological contract, work relationships and stress determine the employee work attitude in an organization. Therefore, this study argues that positive attitudes created by above identified factors could impact positively on employee behaviours within an organization. Moreover, the employees' attitude can be identified by analysing the employee behaviour.

Some employers check the cultural fit of an employee when hiring, because a strong culture is made of like-minded people who are holding similar values and believes. Therefore, the way employees behave and the employees' attitude towards the work impact on the organization and its goals. Negative minded people are not interested

on achieving goals and they will decelerate the organizational growth. Also, people with similar attitudes can maintain better communication and interaction with management. Therefore, employers are always interested in building a strong relationship between the organization and employees. The association of organization culture and the employee attitudes were evaluated by Hoogervorst, Flier and Koopman (2004). Employees are part of the corporate culture of the organization along with the structures and systems. The importance of implicit communication is highlighted in the study to build a better image about the organization in the employees' mind and attitude. Further, the study states that it is important to maintain quality implicit communication which is embedded in the organization culture to build better organizational behaviour in the employees (Hoogervorst, Flier, & Koopman, 2004).

The relationship between the perceived human resource practices, engagement and employee behaviour was studied by Alfes, Shantz, Truss and Soane (2013). According to the study, it is evident that the employee behaviour is largely dependent on their relationships with the line managers. The study done by Jiang and Shen (2020) further evaluated the manager-employee relationship by extending their study on relationship management in terms of transparent internal communication and the impact to the employee behaviour. Even Alfes, Shantz, Truss and Soane (2013) highlighted the importance of good relationship with employee and line managers. Jiang and Shen (2020) studied on the ways of achieving good relationship between employees and management. Jiang and Shen (2020) stated that the transparency in internal communication was dependent on the leadership who are the immediate supervisors of the employees. The combination between transparent internal communication and work engagement has influenced the employee behaviour with an influence of leadership (Jiang & Shen, 2020). Hence, it is important to have good human resource practices along with good communication to maintain a better relationship between employee and management. The impact of strong internal communication with positive emotional culture on supportive behaviour of the employees was examined by Men and Yue (2019). The study of Men and Yue (2019) and Jiang and Shen (2020) were quite similar and both of them highlighted the

importance of good communication between employee and management to build up the good relationship between employee and managers. But Men and Yue (2019) further studied on the influence of employer's empathy towards employee to improve employee's supportive behaviour. According to the findings of the study, it was revealed that the supportive behaviour of the employees can be achieved by positive emotional culture and responsive leadership communication. Most of the studies highlighted the importance of maintaining effective communication along with good relationship between manager and employee by maintaining good organization culture which allows building good impression about the company in employees' mind. Therefore, organizational culture, management practices have great impact on employee attitude and behaviour.

When analysing the above literature findings, it is identified that employee attitude results on their behaviour. Negative attitudes can be seen through behaviour and negative attitudes of one individual may affect the whole team. Even management theories defined the importance of studying employee behaviour to maintain a good relationship between employees and management. If the organization understands the employees, management can make the best out of their employees and it also helps the organization's goal settings and strategic decisions as well (Waschek, 2017). Organizational culture, human resource practices and communication also have great impact on employees' attitudes which will reflect in their behaviour. As employee attitudes and behaviour are highly correlated, it can be concluded that employee attitudes can be identified by analysing the employee behaviour.

2.3.1 Dissatisfaction and Behavior

Dissatisfaction can be perceived as a negative attitude. Job dissatisfaction can occur in different stages in the job of the employees which could be varying from one employee to another. However, the impacts of dissatisfaction are always negative, where if one employee is dissatisfied with the company it could spread through divisions and impact employee morale (Johnson, 2018). Further, this impacts on the attitudes of the employees and also reflects on negative working behaviours.

Dissatisfied employees would not engage in the organizational operations with proper commitment levels and would not effectively cooperate with other employees to achieve desired goals. Therefore, it can be argued that employee dissatisfaction impacts employee behaviour in a negative way.

2.3.2 Dissatisfaction and Employee Turnover

Employee turnover could happen due to various reasons such as lack of career advancement opportunities, lack of challenging work and rather considered a routine job, unsatisfied with organizational leadership and senior management, unsatisfied with the working environment, inadequate compensation and other benefits, inadequate rewards and recognition for employee contribution (Booz, 2018). Therefore, most of the employee turnover reasons are based on dissatisfaction of the current situation. Job satisfaction can affect the employees' level of commitment towards the organisation, performance level and job turnover rate. Satisfied employees extend excellent consumer service may be well beyond the expectations, would have excellent work records, and would also actively try to achieve excellence in all work areas in their jobs. On the other hand, dissatisfied employees show lack of job involvement and commitment and an extensive range of negative outcomes or results. Discontented employees may indicate psychological disengagement, physical disengagement or even show signs of anger and retribution for presumed wrongs (Essays, 2018). Therefore, the dissatisfaction may show up signals in the employees' daily work at the office and it can result in negative work behaviour.

According to Albatta and Som (2013), the employee turnover can be impacted by employee dissatisfaction. As per the study done in the hospitality industry in Malaysia, the employee dissatisfaction could occur by poor organizational justice, work stress, demographic factors and job dissatisfaction. Moreover, the study argued that employee dissatisfaction can impact the employee psychologically and they could try to find another job in the industry (Albattat & Som, 2013). Another study done by Monte (2011) based on the hospitality industry in Brazil and examines the reasons for employee turnover. According to the study it was revealed that the job satisfaction is impacted by psychological factors and that could impact on employee

turnover. Albatta and Som (2013) discussed that employee dissatisfaction occurs due to poor organizational justice, work stress and demographic factors, whereas Monte (2011) argued employee dissatisfaction is based on psychological factors and it influence on their turnover. Both Albatta and Som (2013) and Monte (2011) identified that dissatisfaction can influence on employee turnover decision, even though these studies were done in different contexts in hospitality industry. When studying on IT industry labour turnover, it was revealed that employee dissatisfaction is one of the major causes for employee turnover in Sri Lankan IT industry (Jinadasa & Wickramasinghe, 2005).Therefore, it can be concluded as employee dissatisfaction is a common factor that impact on employee turnover in most of the industries including IT industry.

2.4 Behavioural Indicators of Employee Turnover

Nature of employment could differ based on the industry (Kochan, Whyte, & Hannan, 2017). Work life also evolved in many aspects such as structure, content and process of work. Work in today's world is regarded as more collaborative and team-based, requires more social skills, increasingly dependent on technological competencies, more cognitively complex, more time pressured and relatively stressful, more mobile although less dependent on geography (Heerwagen, Kelly, & Kampschroer, 2016). Here, it was identified that increasing pressure in organization and information communication breakthrough were the key drivers of changing nature of the work (Heerwagen, Kelly, & Kampschroer, 2016). Therefore, employee behaviour might change due to nature of job such as career demand and opportunities, stress level and organizational culture. Similar behaviours were apparent among industries, but still the true impact of each behaviour may vary based on the industry or the working conditions (Jans, Frazer-Jans, & Louviere, 2001). As explained in previous chapters software engineers also have some specific features such as higher demand and higher stress. Therefore, the degree of impact in behavioural indicators in IT industry might change comparing to other industries.

An observable behaviour which indicates the current mind set of an individual is known as a behavioural indicator. Such behavioural indicators need to be monitored carefully and interpreted accurately. If behavioural indicators are used appropriately, it could provide valuable information on different aspects such as identifying skills, turnover intention etc. (Profiles Asia Pacific Inc., 2018). As discussed in the previous chapters, there can be behavioural indicators seen among dissatisfied employees. Rampton (2017) wrote an article to INC.com on signs of employee turnover in the near future and that article was written based on a research conducted using voluntary employees. This article explained 25 signs of employees that indicate possible turnover in the near future as shown in Table 2-1.

Table 2-1: Twenty five Signs of your employee is about to quit

	Sign of turnover intention	**Description**
1	Very low level/poor commitment to long-term projects	Employees who had already decided to resign no longer showed commitment to their work and refused to accept long term responsibilities.
2	More active on LinkedIn	When an employee wanted to leave the current employer, they were more active on LinkedIn and updated their profiles, with the idea to find new connections to move on. They had frequently visited job search sites and other companies' vacancy pages. This fact was also confirmed by career consultants.
3	Contributes less during meetings	Managers could identify a considerable decrement of employees' input during a meeting. Employees who were about to leave contribute to essential matters only. This was a stronger indicator reasoning out the employee's family matter or a personal

		concern.
4	Wants to attend conferences or workshops	Sometimes employees prefer only to attend workshops or conferences, rather than accepting serious responsibilities to spend the day with less work.
5	Is absent a lot	Managers could see continuous day offs by an employee without valid reasons. Managers could also identify that the employee frequently getting late and trying to leave work as early as possible.
6	Behave more reserved, quiet and have less interactions	When an employee had decided to resign, they start to behave more reserved, be quiet and have less interactions during company activities or in meetings.
7	Spends more time on personal calls	Immediate leads could observe that employee started using the mobile phone without any family emergency or spent time conversing with another employer.
8	Passed over for a promotion or raise recently	The employees who felt discouraged, irritated, and feel lesser recognition become motivated to find another job where they would feel more appreciated.
9	Is less interested in possible career advancements	The employees, who showed less interest in the career advancement and the opportunities provided by the organization, had also decided to leave the company.
10	Has stagnated in his or her position	The employee, who had stagnated in the same job role for long time without any rotation, had the stronger intention to leave

		the company. It is said that the probability to leave the company increases by 1 per cent for each extra 10 months an employee remains stagnated in a job role.
11	Has undergone a bigger life change	Bigger changes in life could change the employee's previous decisions. Life changes could include marriage, divorce, a new born, sudden sickness of a close relative, or a new house. Any of these changes could impact on the employee's choice to stay in the company or to resign. For instance, having a new born may force someone to find a new job with higher salary and benefits; the need for taking care of a loved one could make an employee to find a job he can do from home.
12	Dropped productivity	Reduction in the employee's productive, reliable, and punctual behaviour, all of sudden may cause employee turnover.
13	Work friends are jumping ship	It is said that if an employee resigns from the company, there is a high possibility of his/her subordinates also resigning because some employees consider work life relationships to be more important than the salary.
14	Does not show any interest in pleasing the supervisor	If there appears to be lack of interest in a subordinate in pleasing their supervisor unlike earlier, that could imply they have lost interest towards the employer. As an example, if an employee previously worked late hours or did some extra work at home to meet deadlines, if he is not doing them

		anymore, that could be an indication of the intention to leave.
15	Has a conflict with another employee	Relationships built in office are important. Therefore, if it is noticed that relationship between two employees is getting worse, there is a high probability one of those employees would find another place to work sooner.
16	Avoids social interactions	If an employee suddenly became an anti-social person, it indicates possible turnover intention of that employee.
17	Delegates assignments to others	If an employee suddenly starts delegating his/her work to others, but not as an authorized manager it is another indicator of his less willingness to take up a commitment and the employee's turnover intention in the near future.
18	Is not suggesting innovative ideas	When employees prefer to be an important member of the organization, they share new helpful ideas or innovative approaches. If such an employee suddenly stops that behaviour it means that the employee is no longer thinking about the progress of the organization.
19	Is taking longer breaks from working	Although, intervals are vital during a work day, if a manager notices that an employee has created the habit of taking more frequent and/or longer breaks, it indicates the employee is showing less interest on the work and may be planning to leave.

20	Makes on time arrivals and sharp time departures	If an employee who arrived to work early, worked till late, or volunteered for extra projects, is now coming on time and leaving at sharp times or shows up back-to-back late arrivals, it is a warning sign.
21	Has started complaining	If an employee, who was previously happy and contented, has suddenly started complaining about various things on the employer, company's policies, or management's decisions, it is an indicator that the employee is dissatisfied and disengaged. A disengaged employee would probably be looking for new opportunities and importantly may also be creating discontent with the peers.
22	Has just qualified through a degree, obtained a license, or a certification	At times, an employee might obtain a new qualification to improve his skills and knowledge to demonstrate more ability to do the job role at the present organization. However, it could also be an indicator showing the employee is trying to make himself more lucrative for potential employers. Appreciation and recognition of the achievement of such employees would prevent negative consequences.
23	Has become secretive	If any employee has started showing up secretive behavior at office that may be an indication of the intention to leave. As an example, if an employee blocks his/her computer screen, covering papers that could be because the employee is reading job sites

		by distancing from others.
24	Has started ignoring phone calls and emails	As stated by Lynn Taylor (national workplace expert) in the book "Tame Your Terrible Office Tyrant: How to Manage Childish Boss Behavior and Thrive in Your Job", if the employee is planning to resign the organization in the near future, they communicate less often with others.
25	You have got a bad feeling	"Trusting your gut" works well at many times. If you have got an inner thought that certain things are not going well with an employee, that could be because that employee has got the intention to leave the organization and your guessing might be right.

Source: (Rampton, 2017)

According to the presented findings in Table 2-1, there are various behavioural changes that visualize the employees' turnover intention. Less commitment to work, less collaboration, frequent breaks during the work, activities in social media are some of the major noticeable indicators among co-workers. The relationship of employees' turnover intention and their behavioural indicators was studied in Chinese context by Bu, Mckeen and Shen (2011). This study stated that employee's turnover intention could be predicted from their behaviour which can be observable by their management. Similar to the findings mentioned in Rampton (Rampton, 2017), the study of Bu, Mckeen and Shen (2011) also highlighted that task negligence and loyal boosterism are antecedents of employee turnover. Similarly during the study conducted by Nagadevara, Srinivasan and Valk (2008) using employees in software industry in Indian context also revealed that absenteeism and lateness can be observable as the signs of turnover intention. The identified

behavioural indicators in both the study of Bu, Mckeen and Shen (2011) and the study of Nagadevara, Srinivasan and Valk (2008) are included in the list mentioned in Rampton's (2017) article. Therefore, it can be concluded that the turnover intention among employees can be clearly visible through their daily activities.

2.4.1 Attendance and Absenteeism

Work hours for employees are different among several professions based on the nature of the work. There can be different types of work schedules and 12 types of work schedules (Spacey, 2018) are available as mentioned below.

- Standard Business (during the standard business hours of a firm such as 9 to 5)
- Part Time
- Unpredictable Schedules
- Flexitime
- Alternate Work Schedule
- Compressed Workweek
- Shift Work
- Rotating Shifts
- Split Shifts
- On call
- Overtime
- No schedule

However, in most of the instances, an employee's work start time and leaving time has a pattern based on their work schedule. When employees are dissatisfied, the motivation to report to work may drop, which will end up in lateness of employees or taking frequent leaves.

Berry, Lelchook and Clark (2011) did a meta-analysis to understand the connections among absenteeism, lateness, and employee turnover. This study was focused on

voluntary employees and their withdrawal behaviours. Withdrawal behaviours can be defined as the tendency to avoid either unfamiliar persons, locations, or situations. Researchers used multiple sources for data gathering such as annual conference programs and considered the related unpublished data from those conferences. Basically, this research attempted to identify the relationship of absenteeism, lateness, and turnover as shown in Figure 2-1 and Figure 2-2. This meta-analysis indicated small-to-moderate mean correlations between the withdrawal behaviours and the results suggested that absenteeism can be predicted through lateness and in turn potential employee turnover can be predicted through absenteeism (Berry, Lelchook, & Clark, 2011).

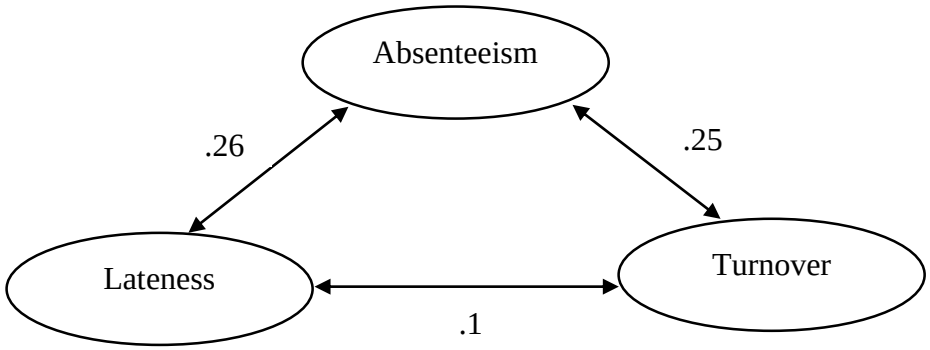


Figure 2-1: Spillover Model for interrelationship of lateness, absenteeism and turnover

Source: (Berry, Lelchook, & Clark, 2011)

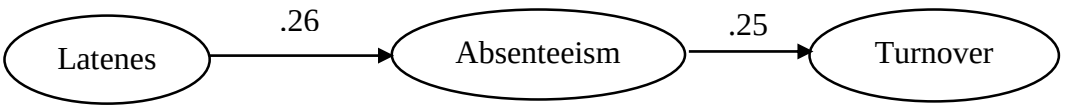


Figure 2-2: Progression of withdrawal models for interrelationship of lateness, absenteeism and turnover

Source: (Berry, Lelchook, & Clark, 2011)

Berry, Lelchook and Clark (2011) also attempted to identify the relationships between withdrawals behaviours across the industries. The researchers pointed out that the difference between organizations and industries may affect the withdrawal behaviour such as blue-collar jobs tended more to lateness and absenteeism whereas

white-collar jobs have less lateness behaviour because of the flexibility of those jobs. This team used the North American Industry Classification System to classify the jobs of sample using industries and they considered four categories namely, manufacturing, healthcare, finance and insurance, and other. The analysis results indicated that there is a higher correlation for absenteeism–turnover relationship in manufacturing and financial industries. However, this could differ due to some external factors such as unemployment rate and job risks.

Lateness and absenteeism are commonly used behavioural indicators for research. There are some other researchers who have studied about the interconnection of lateness and absenteeism for employee turnover. A meta-analysis was conducted to explain the interconnection among counterproductive work behaviour (CWB) and withdrawal by Carpenter and Berry (2016). The CWB is the employee behaviour that does not align with the interests of an organization. These counterproductive work behaviours could harm the organizations and people connected with the organizations comprising of employees, clients, customers, or patients. The actions which indicate that the person is physical and psychologically disengaged with the organization are known as withdrawal behaviours. This research team adopted some framework for their analysis and the comparison of CWB and withdrawal behaviour is shown in Table 2-2. As shown in the Table 2-2, CWB and withdrawal have similarities in first three dimensions.

Table 2-2: Comparison of CWB and withdrawal

Framework of Conceptual Similarities and Differences Between Counterproductive Work Behavior (CWB) and Withdrawal		
Dimension/Factors	CWB	Withdrawal
Dimensions on which CWB and withdrawal are similar **Active and Passive**	CWB reflects *both active and passive* behaviors, as CWB includes the perpetrator's action (theft) or withholding of action (withholding information)	Withdrawal reflects *both active and passive* behaviors, as employees may arrive late or withhold effort or attention from their job

Attempted and Completed	CWB reflects *both attempted and completed behaviors*; for example, CWB includes an employee attempting to harm someone and whether the attempt is successful	Withdrawal includes *both attempts and completed* behaviors. Employees can attempt to avoid their work duties or they can succeed in being absent
Perpetrator	CWB is enacted by organizational members	Withdrawal is enacted by organizational members
Dimensions on which CWB and withdrawal are different Verbal and Physical	CWB includes *both physical and verbal* behaviors, Interpersonal CWB reflects gossip and verbal harassment, as examples	Withdrawal includes *only physical* behaviors, such as daydreaming, staying home or being late
Intentionality	CWB includes behaviors *intended to harm*, as the behaviors are defined as purposeful and voluntary behaviors.	Withdrawal is not regarded as *intended to harm*. For example, lateness, absence, and daydreaming may reflect an *intent to avoid* the organization
Target	CWB can be directed towards the organization or towards other individuals (e.g., employees, clients)	Withdrawal can be directed towards the organization but is not defined as having an individual target.

Source: (Carpenter & Berry, 2016)

Carpenter and Berry (2016) conducted keyword search from published and unpublished articles of conference proceedings for the Academy of Management and Society for Industrial and Organizational Psychology conference papers from 2007 to 2013. These were the search terms used in keyword search: devian-*, counterproductive-*, abuse, dysfunctional work behaviour, aggression, antisocial, bullying, alcohol/drug use, harm doing, workplace victimization, property destruction, incivility, absence, lateness/tardiness, social undermining, retaliation, sabotage, withdrawal, attendance and turnover. The team also focused on the measurement basis that can be used to measure CWB and withdrawal. Some of the

similar sense items related to both CWB and withdrawal were listed in the below Table 2-3. The listed behaviours contain behaviours related to absenteeism, attendance, task negligence, etc. and those behaviours can be easily observed by watching employees' daily activities.

Table 2-3: Examples of Content-Overlapping between CWB and Withdrawal Items

Examples of Content-Overlapping Counterproductive Work Behavior (CWB) and Withdrawal Items	
Example CWB Items	**Example Withdraw Items**
Called in sick when not ill	I might call in sick occasionally because I don't feel like working on my job
Called in sick when you were not[a]	Sometimes when I just don't feel like working I will call in sick
Come in late to work without permission	Came to work late without permission
Spent too much time fantasizing or daydreaming instead of working	Daydreaming
Intentionally worked slowed	I have lost motivation for my assigned job, I might work more slowly or make errors
Intentionally worked slower than you could have worked	Sometimes when I don't feel like working I will work slowly or make errors
Purposely worked slowly when things needed to get done	Left work early without permission
Left work early without permission	Left work earlier than you were allowed to[e]
Put little effort into your work	Now and then there are workdays where I just don't put much effort into my work
Spent time on personal matters while at work	Put less effort into job than should have
Worked on a personal matter instead of work for your employer	Spent work time on personal matters
Taken an additional or longer break than is acceptable at your workplace	Taken a longer break than you were allowed to take
Took an extended coffee or lunch break	Taken longer lunch or rest break than allowed
Taken property from work without permission	Taken supplies or equipment without permission

Source: (Carpenter & Berry, 2016)

The meta-analysis results evidenced that there is a positive relationship between CWB and work behaviour. Carpenter and Berry (2016) also could find that CWB

was moderately correlated to lateness and turnover intentions. Both Berry, Lelchook and Clark (2011) and Carpenter and Berry (2016) did a meta-analysis and Berry, Lelchook and Clark (2011) proved the relationships among absenteeism, lateness, and employee turnover, while Carpenter and Berry (2016) identified the relationship between turnover intension in analysing CWB and work behaviour. Here, lateness can be categorised as a behaviour related to attendance. Moreover Berry, Lelchook and Clark (2011) extended their study and identified that flexibility of the job determines the absenteeism in different industries and lateness and absenteeism can be varied due to external factors such as unemployment and job risk. Further, Carpenter and Berry (2016) suggested that supervisors and managers can easily observe the CWB among their employees including lateness and absenteeism which may cause to turnover in near future.

Employee absenteeism and employee turnover were also examined by Cohen and Golan (2007) in the context of female nursing care facility. In this study, it was evaluated that the factors of employee attitude, prior absenteeism, demographic variables were analysed in terms of their impact on the employee turnover, employee work attitude covered job satisfaction, work commitments and health facilities. The findings indicate that prior absenteeism resulted in late absenteeism. In addition, job dissatisfaction predicts the absenteeism which is under work attitudes. Further, the study reveals that organizational commitment impacts on employee turnover intentions. Even this research was limited to the context of female nurses and focused on some other factors influencing employee turnover. This study also identified the relationship of absenteeism and turnover similar to the findings obtained by the meta-analysis of Berry, Lelchook and Clark (2011) and Carpenter and Berry (2016).

Another study done by Alibon, Fogarty, Machin and Patrick (2008) examines the employee absenteeism and turnover intentions in healthcare sector in Australia. The factors of organizational climate, psychological reactions and job satisfaction were studied in terms of absenteeism. According to the results, it was identified that the job satisfaction and quality of work acted as mediators for the relationship between the organizational climate, clarity in role and turnover intentions. In addition, it was

found out that the employee absenteeism, turnover intentions and employees' psychological reactions were interrelated (Albion, Fogarty, Machin, & Patrick, 2008). Here, it was noted that the level of work stress also resulted in high rate of absenteeism in Australian healthcare sector. The studies of Cohen and Golan (2007) and Alibon, Fogarty, Machin and Patrick (2008) were conducted on healthcare industry and Golan (2007) analysed employees attitude, job satisfaction and turnover, while Alibon, Fogarty, Machin and Patrick (2008) studied on organizational climate, psychological reactions and job satisfaction in terms of absenteeism. Both studies identified that absenteeism has an impact on employee turnover and work stress, job dissatisfaction, and work environment also has an impact on employee turnover in healthcare industry.

Nagadevara, Srinivasan and Valk (2008) was studied the relationships of withdrawal behaviours such as job content, lateness and absenteeism, tenure and demographics on employee turnover in Indian software industry using the employees in large software organizations in India. Based on the analysis, it was found out that job content, lateness and absenteeism, demographics and experience in the current tenure are strong indicators of turnover. Similar to the finding of healthcare industry as mentioned above, this study proved that absenteeism and lateness also impact on the employee turnover in software industry. This study also suggested to HR managers to monitor their employee behaviours to mitigate the impact of employee turnover.

As per the studies mentioned in above paragraphs, it is clear that lateness and absenteeism are common indicators of employee turnover intention regardless of the industry or the profession. Therefore, researchers suggest managers to monitor their employees' attendance and absenteeism pattern to get a better understanding about their attitudes which will be resulting in future turnover.

2.4.2 Task Negligence

Every employee has a set of tasks and responsibilities assigned based on their job role. Work engagement describes how much the employee is attentive to their work. Work engagement is defined as a positive behaviour of an employee which indicates

the commitment and the loyalty towards the employer. Together with work engagement, credibility or the quality of work will add more value to the business of the employer (Brook, 2019). When employee gets dissatisfied, the motivation towards the work may get reduced and it may affect the quality of work or increase task negligence as the employee attends to the work for the sake of doing. It is very important to notice disengaged behaviours of employees and take necessary actions to recover as individual's disengagement may negatively affect on the performance of whole team (Forbes Human Resources Council, 2018). Forbes Human Resources Council presented 12 signs that indicate employee is disengaged as shown in Table 2-4. These signs are commonly noticeable behaviours among employees. Once these signs are observed among the employees, it is suggested that managers to have immediate actions such as having one to one discussion and adjust workload of employees to reverse employee disengagement.

Table 2-4: Twelve signs of employee's work disengagement

	Sign of Disengagement	**Description**
1	Withdrawal	Disengaged employees withdraw and refrain engaging in any unnecessary discussions or actions. They tend to work only the least amount required and their productivity remains very poor.
2	Poor Communication	Disengaged employees participate less actively in team or one-on-one meetings. Rather, they like to meet individually to discuss the things that possible to share during the team meetings.
3	Breaks from Routine	When an employee who used to be an actively speaking member in meetings is less participative, or who used to meet the deadlines always is failing to meet deadlines, managers should pay attention. These are signs of employee disengagement.
4	Silence	One important indicator of employee disconnection is not speaking during group calls, meetings, etc.

5	An Apathetic Approach	Disengaged employees tend to show less interest in work and work only up to required minimum level. For example, they do not show interest in engaging healthy debate, do not present or defend their ideas, and do not want to be accountable.
6	Absenteeism	Disengaged employees tend to find a way to take a break from work, by saying some unnecessary reasons and they take frequent leaves
7	Complacency	A two way communication is required between managers and employees to discuss about employee performance, expectations and overall attitude, and the employee need to be given an opportunity to speak out, before an employee is fully disengaged
8	A Decline In Work Quality; Missed Deadlines	The quality of work of disengaged employees reduce drastically and they may not achieve the goals and given target deadlines.
9	Exhaustion, Cynicism, Inefficiency	Disengagement could be the end result from long-existed burnout that has now caused exhaustion, cynicism and inefficiency. It could be that these employees did not have any means to protect their well-being.
10	Lack of Participation	Disengaged employee shows up lack of concern in participating.
11	Nay saying	Another important indicator is that a disengaged employee turns to be disenchanted with the company and reflect this behaviour by frequently nay saying any new concepts and openings related to growth of thebusiness.
12	Rudeness	Disengaged employees becoming rude with office colleges or clients can be a very important indicator of disengagement.

Source: (Forbes Human Resources Council, 2018)

Recruting and retaining skilful professionals were one of the biggest challenges in China due to high turnover rates among knowledgeable employees. Bu, Mckeen, & Shen (2011) conducted a study to understand the relationship between turnover

decision and behavioural indicators and this was conducted as a case study, using Chinese young professionals. This research was conducted focusing on three main categories of behavioural indicators related to employee turnover as mentioned below.

- In-role task negligence as an indicator of turnover intention
- Extra-role behaviours as an indicator of turnover intention
- Self-centred voice behaviour as an indicator of turnover intention

Research used EVLN and OCB (organizational citizenship behaviour) framework as a measurement scale. EVLN, framework of four-category is defined as Exit, Voice, Loyalty and Neglect. Each of them represent different behavioural categories: exit refers to resigning or thinking about resigning, voice refers to initiating discussions with supervisors about some problem to correct them find solutions, loyalty refers to the act of patiently waiting for situations to change and improve, and lastly neglect refers to negligence at work by reducing true amount of work effort (Bu, Mckeen, & Shen, 2011). The other framework on OCB incorporates four dimensions: interpersonal helping, loyal boosterium, personal industry, and individual initiative. These dimensions refer to the employee's helpfulness to his peers at work when a helping hand is needed, the employee's willingness to perform beyond expectations and beyond the call of duty in his job roles, the employee's willingness or act of promoting the organization within others and the employee's initiative in suggesting tips for improving his and peer group members' performance, respectively.

In this study, the control variables were the employees' age, gender, marital status, number of service years in the organization and type of alternative employment. Other information was collected using likert scale. EVLN and OCB frameworks were used to verify the consistency of the primary dimensions relating to workplace behaviours among Chinese employees' behaviour in work. As per the factor analysis results of EVLN scale, turnover intention, task negligence and self-centred voice had acceptable Cronbach's alphas. Also, interpersonal helping, loyal boosterism and personal industry had good reliability based on the factor analysis results of OCB scale. Hypothesis testing was conducted relating to six behavioural variables: task

negligence, personal industry, interpersonal helping, loyal boosterism, organization-centred voice, and self-centred voice. Based on the results from hypothesis testing, it was indicated that turnover intention was positively correlated to self-centred voice and task negligence, whereas negatively related to loyal boosterism and personal industry. It was also identified that turnover intention was not correlated to either organization-centred voice or interpersonal helping. Further, this study suggested managers in building up good employee relationships which enable them to easily notice indicators of employee turnover intention in advance. This would provide employers an opportunity to take actions early and prevent losing talented employees.

Both studies of Forbes Human Resources Council (2018) and Bu, Mckeen and Shen (2011) highlighted that employee's disengagement to the work can be seen through their behaviour; and task negligence and employee turnover intention have a positive relationship. As both research studies suggested, when an employer notices task negligence in an employee, necessary actions should be taken to immediately reengage the employee to the work. Therefore, improving work engagement reduces the task negligence which helps to retain employees. Further, providing flexibility to employees with the intention of allowing them to plan and achieve goals is known as employee empowerment. Employee empowerment has many benefits as the feeling of empowerment increases the motivation and job satisfaction of employees (Lee, Willis, & Tian, 2018). Bhatnagar (2012) studied to analyse the impact of management innovation and its effect on employee empowerment with work engagement and turnover intentions. The impact of employee psychological empowerment on innovation and work engagement was studied. The research was carried out covering the employees in the heavy engineering, pharmaceutical, IT, electronics and aeronauts industries. According to the findings of the study, it was evident that work engagement acts as a mediator between psychological empowerment of the employees and innovation, and there is a significant relationship among the work engagement, employee empowerment, innovation and turnover intentions (Bhatnagar, 2012). Providing rewards and training opportunities along with empowerment improve the work engagement and reduce turnover

(Babakus, Yavas, & Karatepe, 2017). Moreover, good employee co-worker relationship and employee management relationship could improve the employee work engagement and hence the employee turnover intention may reduce (Gupta & Shaheen, 2017).

As per the findings described in above paragraphs, employee disengagement or task negligence can be visualized in employee behaviour. Employee disengagement can be considered as a predicator of employee turnover intention. Therefore, management should pay attention to identify task negligence and take necessary actions to engage employee back to work by empowering employees by giving rewards, trainings, etc. to retain talented employees.

2.4.3 Organizational Commitment

Employees and the organization have a tightly coupled relationship, as employees work to achieve organizational goals. In return, the company must provide appreciation and other benefits to the employees to keep them satisfied and motivated. Organisational commitment refers to the bond employees experience with their organisation (Werf, 2020). Moreover, when employees are committed to work, they feel more connected with the organization which may motivate to accomplish the company goals. Thereafter, the employees start to contribute more and more towards the growth of the company. Therefore, organizational commitment of employee is very important for the growth of the company. Employers can do many things to improve the organizational commitment of employees such as setting clear goals, creating stronger teamwork culture, encouraging innovation, offering incentives, giving collective feedback, improving quality of the work life and being transparent and encouraging open communication (Wainwright, 2019). Especially, when a company has a strong team culture, employees work and collaboratively work as a team which will help the development of the organization.

Quality of work life (QWL) is one of the key factors that improve the job satisfaction of employees. Though the QWL has many definitions, all those definitions basically describe on the ways which an organisation can make sure the well-beings of

employees rather focusing on work-related aspects. QWL impacts on many things which will affect the employees' turnover intention such as satisfaction, motivation and appreciation. There was a research conducted by Mosadeghrad (2013) to measure QWL of employees who worked in Iran hospitals. As part of that study, the researcher attempted to identify the interrelationship between employees' QWL and their turnover. Since Iran being a country that has a unique culture due to its distinctive racial, historical and religious characteristics, the research highlighted that the culture of uncertainty avoidance and high power distance leads to mechanistic and hierarchical structures, centralized decision-making, dependency on superiors, and a preference for strictly laid down comprehensible rules and regulations for every situation existed in their society (Mosadeghrad, 2013). The research model along with the quality related attributes are shown in Figure 2-3. Here QWL was measured with several attributes such as communication, motivation and job stress and security. It tried to find the impact of QWL on job satisfaction and organizational commitment along with socio cultural factors and other demographic variables.

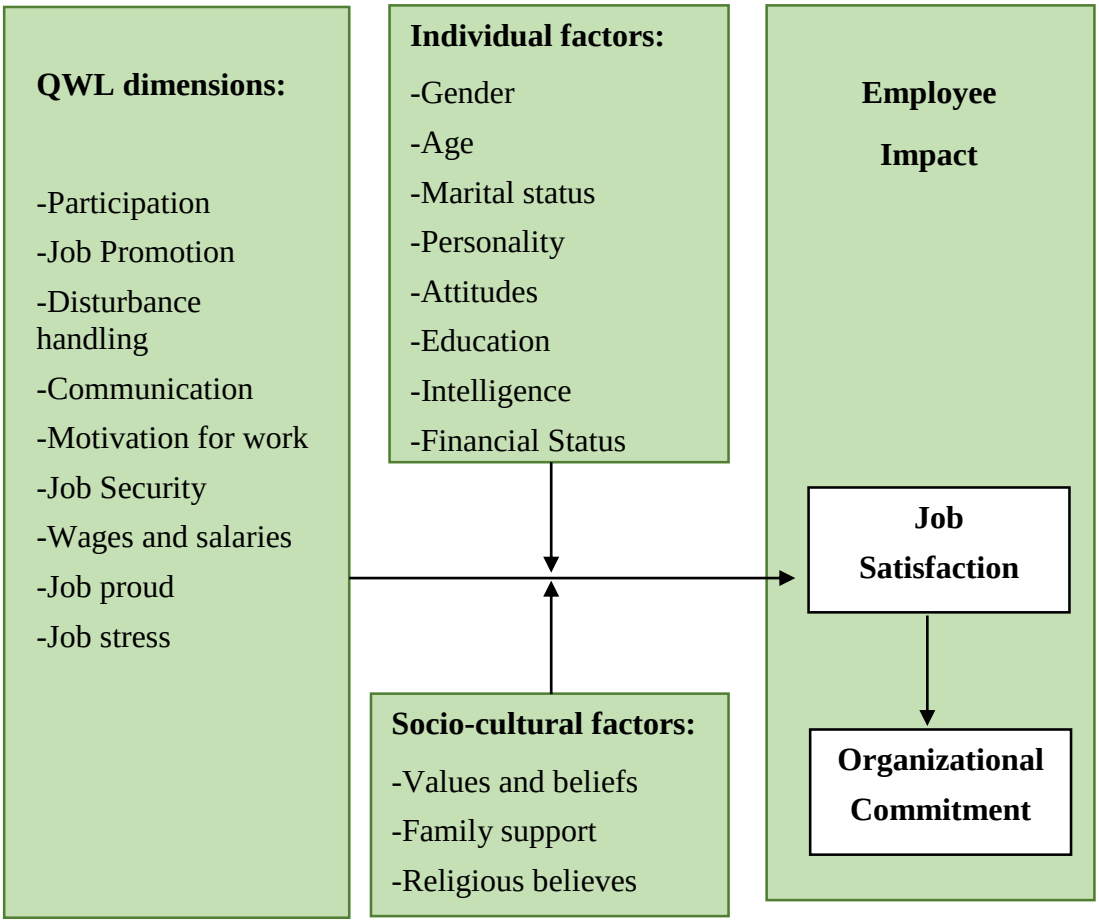


Figure 2-3: Hypothesized relationship between QWL and turnover intention

Source: (Mosadeghrad, 2013)

Dissatisfaction with job security and career prospects, poor relationship with managers, and the belief that their salaries and benefits were not adequate or fair were the core reasons for employees' low QWL (Mosadeghrad, 2013). Therefore, the researcher stated that employees who had low QWL had several other reasons to leave the organization as soon as they get an alternative job opportunity. Apart from that, this research also proved the importance of developing and communicating corporate vision based on their culture to improve employee motivation and QWL. Even though this research focused on the correlation between QWL and employee turnover intention, it was also highlighted that the cultural influence and employee relationship indirectly cause the employees' motivation and behavioural changes and turnover intention. Apart from the cultural aspect of the research context, it was identified that there is an inverse relationship between QWL and turnover intention.

Therefore, the research suggests managers to take suitable actions to improve the QWL and consequently reduce the employee turnover (Mosadeghrad, 2013).

Job embeddedness is the degree of compatibility between employees and their current job and it refers to all forces that impact employee retention. It can be differentiated from turnover, in that it focused on the aspects that keep employees on the job, rather than the psychological process one goes through when leaving. Cho and Son (2012) studied on job embeddedness, job satisfaction and commitment to work in identifying employee turnover among IT workers in small and medium scale construction fields. When measuring, it was considered that job embeddedness was explained as the factor where the inner/outer job performance and the outcome which was affected by the composition of the overall network within which the individual employee fits in (Cho & Son, 2012). The variables considered throughout the study are shown in the Table 2-5.

Table 2-5: Operational Definition of Variables

Concept	Factor	Operational Definition
Job embeddedness	fit	as the degree perceived as to how compatible the employees feel to the job, he/she is performing and the company he/she belongs to
	links	how connected he/she is other people, teams or organizations
	sacrifice	as the perceived cost of physical or psychological convince sacrificed when leaving the current job
Work Satisfaction	Career satisfaction	the satisfaction about individual value coming from the career role expected by the members of the organization and other fields
	Job satisfaction	the emotional attitude about the job given about an individual value and need satisfaction
Turnover Intention		the action of leaving the organization by his/her will

Source: (Cho & Son, 2012)

Here organizational commitment was also considered related with work commitment and job satisfaction. Hypothesis analysis result proved that higher work commitment had lower turnover rate. This means, work commitment, organisational commitment

and job satisfaction have negative relationship on turnover intention. Moreover, career satisfaction, sacrifice and job satisfaction have important impacts in turnover intention. Even though both studies of Cho and Son (2012) and Mosadeghrad (2013) proved that there is a negative relationship between organizational commitment and turnover intension, Mosadeghrad (2013) proved it in relation to quality of work life while Cho and Son (2012) discussed in relation to job embeddedness, job satisfaction and work commitment. Here, both quality of work life and job embeddedness result in job satisfaction which can lower the turnover rate. Additionally, Mosadeghrad (2013) discussed about the industry and culture related factors in relation to the research area which was not covered in the study of Cho and Son (2012).

The study done by Aydogdu and Asikgil (2011) also examined the relationship among the factors of job satisfaction, organizational commitment and turnover intentions. This study was highlighted among the studies of Cho and Son (2012) and Mosadeghrad (2013) because this research studied on the connection with organizational commitment and turnover intention in relation to employee's withdrawal behaviour. According to this study, organizational commitment generally impacts on the employees themselves, on the organization and on the society. When the employees' organizational commitment is at a higher level, it negatively impacts on employee withdrawal behaviour. In addition, it increases the employees' positive and constructive actions and behaviours apart from their usual responsibilities. This behaviour is known as employee citizenship behaviours. Under the concept of organizational commitment, the study indicates certain factors impact on organizational commitment such as personal factors, role related factors, work experience and cultural factors. The findings of the study revealed that the organizational commitment was impacted by job satisfaction. Further, the study proved that organizational commitment and employee turnover intentions have a negative relationship.

The connection between organizational commitment and job satisfaction and turnover intention is a very popular research area; and there are lots of research conducted focusing different aspects of this topic. Joo and Park (2010) focused about different aspects than what the studies mentioned in previous paragraphs through

studying about job satisfaction, organizational commitment and employee turnover intentions in terms of goal orientation, organizational learning and developmental feedback. This study covered the Fortune500 companies in Korea. According to the findings, the factors of organizational learning culture and performance goal orientation were influencing the employee job satisfaction. When referring to the organizational commitment, it was found that organizational learning culture, developmental feedback and learning goal orientation act as indicators of organizational commitment, and when organizational commitment improved it reduced the turnover intention. Finally, the authors concluded that the factors of organizational commitment, job satisfaction and organizational learning culture act as the predictors of employee turnover intentions.

Most of the studies tried to find out the association between organizational commitment, job satisfaction and turnover intention. The studies presented in previous paragraphs were conducted in different industries and in different contexts. They identified that organizational commitment is based on job satisfaction. If employees are content with their jobs, they are committed to the work and they have lower intention to change the employer. Further, some researchers identified that demographic factors specially age and job embeddedness also impact on organizational commitment. According to the above findings, it can be argued that the organizational commitment can be achieved by clearly defined goals, culture of the organization and management styles in the organization.

It is evident that lack of commitment may occur due to job dissatisfaction which will end up in employee turnover. The next problem is how to identify and tackle this problem. The following 6 observable behaviours were presented by Quantum Performance Inc. (2016).

1. Don’t speak up to address important issues even employees know about the facts, especially during meetings
2. Not being accountable for the responsibilities and present excuses
3. Not being able to discuss and take decisions and have endless debates
4. Initiatives to improve organizational performance progressing

5. Spending time for informal conversations
6. Unreasonable complaints

The above mentioned points are some of the informal ways of understanding lack of employee commitment. Quantum Performance Inc. (2016) suggested management to use following questions to measure the current status of employee commitment.

- Does he/she effectively contribute in addressing and resolving difficult problems in the organization?
- Does he/she take ownership for solving problems, rather than making easy excuses or without pointing fingers to others when things go wrong?
- Does he/she take risks and challenges the status quo?
- Does he/she have confidence and trust on the leaders and management of the organization?
- Does he/she feel as they can be honest with their leaders, including expressing negative and contentious issues?
- Does he/she feels connected with, and empowered by, their leaders?
- Does he/she communicates honestly and directly, without fear of retribution?
- Does he/she have built trust on each other and work together effectively across departments?
- Does he/she come to work every day with the strong instinct to make a critical change in the future of the business?
- Does he/she feel enthusiastic about their work experience?

Further Quantum Performance Inc. (2016) explained the importance of having good relationship between management and employees to discuss on their lack of commitment and the real causes behind it. Further, Quantum Performance Inc. (2016) highlighted the importance of taking necessary actions once management identifies the lack of commitment in order to prevent employee turnover in near future.

2.4.4 Social Media Usage

Social media is a powerful platform used by most people in the society. Social media has both good and bad impacts on people. Nowadays, social media is also used as a means of talent acquisition. However, different employers have different viewpoints on using social media at work. Some employers do not allow using social media at the workplace. O'Donnell (2015) suggested that social media usage can be used to reduce employee turnover and in identifying the employee dissatisfaction through social media. As she expressed in her LinkedIn article, when employer allows using social media, employer can see the employees who admire it and who do not. Some employees do not like sharing the employment details with their colleagues and friends, because they are not comfortable in their employment status. It could be a red flag that they are potentially unhappy in their job and that need to be addressed by the employer (O'Donnell, 2015).

Other than revealing the current employer in social media, employees may use their freedom to express ideas in social media reflecting their true attitudes towards the employer. Therefore, sometimes social media usage of an employee also has a negative and positive impact on the organization. Analysing or knowing the employees' behaviour in social media can provide some indicators for managers to identify the employees' dissatisfaction on job and turnover intention (Ivens, Schaarschmidt, & Höber, 2017). Ivens, Schaarschmidt and Höber (2017) conducted a research to identify the impact of employees' company related dissatisfactory posts and their turnover intention. When employees publish negative factors about the company, it will affect the reputation of the company. Some companies have the policies to take disciplinary actions on such behaviours of the employees. While this being the fact, employees publish or share their dissatisfaction about the job in social media. The data collected by distributing the questionnaire and by conducting interviews using snowball technique through social media such as Twitter and Facebook assisted developing the research by considering the following factors shown in the below Figure 2-4.

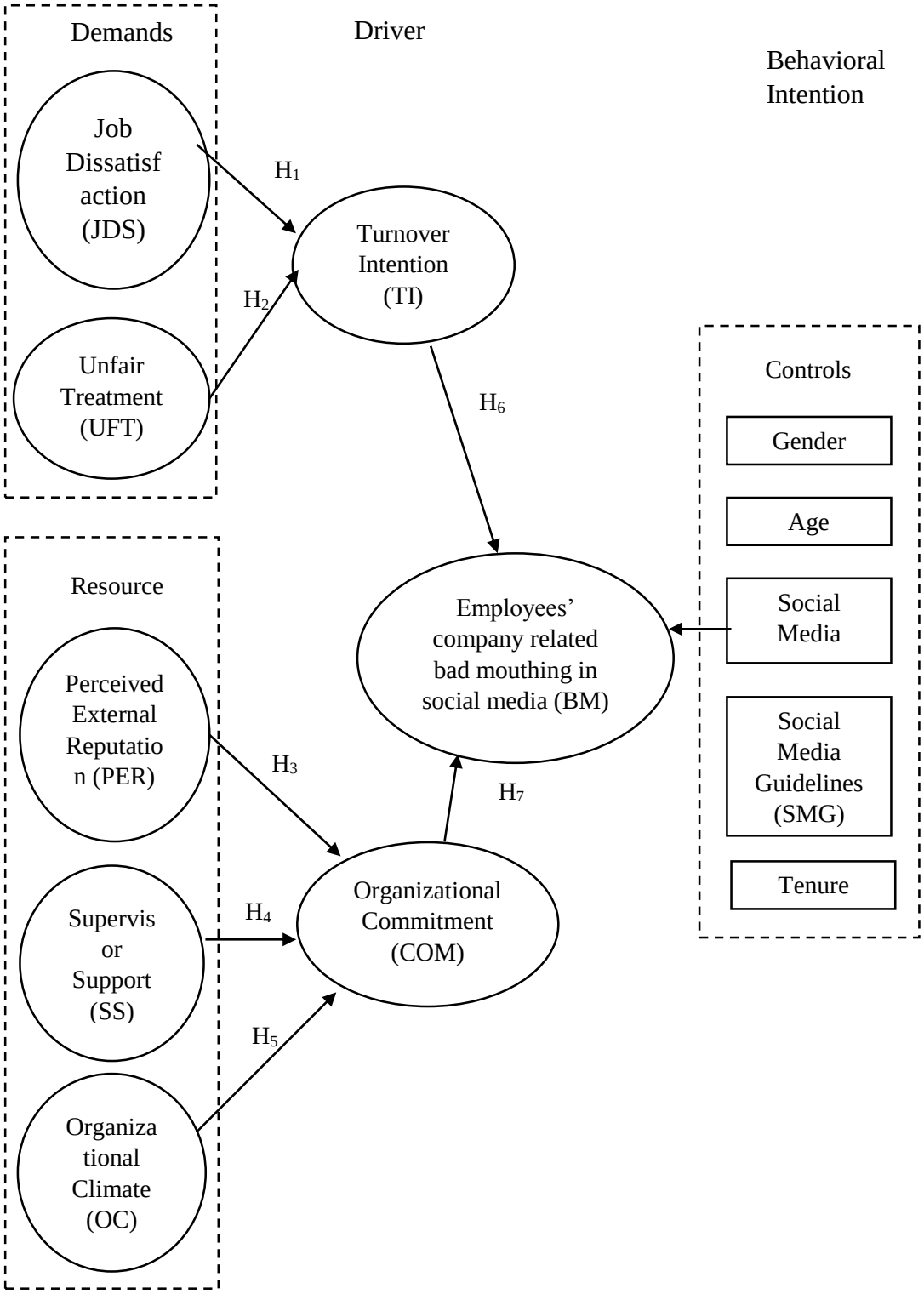


Figure 2-4: Factors effect on employee turnover with social media

Source: (Ivens, Schaarschmidt, & Höber, 2017)

Here researchers wanted to identify the impact of employees' negative feedback in social media, on employees' turnover intention along with organizational commitment and other demographic variables. The results of this research suggested that management needs to think of avoiding or mitigating the dissatisfaction among the employees. The employees who publish negative factors about the company will reflect their intention to leave the company and it will negatively affect the company reputation (Ivens, Schaarschmidt, & Höber, 2017).

According to Zhang, Ma, Xu and Xu (2019) social media is used by the employees for both work related and for social matters. Team studied about the relationship between the social media usage and employee turnover along with impact of social media usage on job satisfaction. As per the analysis of the study, the work or social related social media usage positively impact on the organizational engagements influencing the organizational commitment of the employees. Further, the social media usage improves the employees' job satisfaction; hence it reduces the employee turnover intentions. Unlike O'Donnell (2015) and Ivens, Schaarschmidt and Höber (2017), the study of Zhang, Ma, Xu and Xu (2019) highlighted the positive side of social media usage in terms of improving the job satisfaction.

The study conducted by Moqbel, Bartelt, Topuz and Gehrt (2020) examined the usage of enterprise social media on improving the work perceptions and diminishing the turnover intentions in an IT company. According to the study, the enterprise social media usage reduced the level of stress among the employees and hence improved the workplace integration. Further, the turnover intention was negatively impacted by the enterprise social media usage. Moreover, it was revealed that the social media usage reduces the work exhaustion and reduces the employees' turnover intentions by analysing the use of social media after work hours for work purposes in the context of supply chain management employees (Moqbel, Bartelt, Topuz, & Gehrt , 2020). Similar to the study of Zhang, Ma, Xu and Xu (2019), study of Moqbel, Bartelt, Topuz and Gehrt (2020) also highlighted the positive influence of social media usage in terms of improving the job satisfaction and reducing the turnover intention. The significant finding of this research is that the usage of

corporate social media accounts to get the benefits of social media in a professional manner.

According to the findings mentioned above, social media usage in workplace has both positive and negative impacts. The study of Zhang, Ma, Xu and Xu (2019), study of Moqbel, Bartelt, Topuz and Gehrt (2020) mainly highlighted the positive impacts of social media usage in terms of improving the job satisfaction. But still employers can identify the dissatisfaction of employee by monitoring the activities or usage in social media (O'Donnell, 2015) intention (Ivens, Schaarschmidt, & Höber, 2017). Therefore, social media usage can be considered as a predicator of employee turnover. According to the above findings, it is evident that social media is a common platform to express the feelings of the employees where they can share their negative and positive experiences. The positive experience will impact positively on company reputation and negative experience may damage to the company reputation. Moreover, not revealing current employer in social media can be considered as an employee's negative attitude towards the employer. Further, management can use social media to identify the job satisfaction level of the employees to identify turnover intensions of the employees. Management can also improve the employees' level of satisfaction by allowing enterprise social media to reduce stress level and it will reduce the employees' turnover intention.

3 RESEARCH METHODOLOGY

This chapter mainly focuses on building up the conceptual framework for the research study. Based on the variables identified through the literature review, they are grouped into two, dependent and independent variables. The hypothesis is built up based on the main variables identified through the literature survey. Key findings which led to identify the key independent variables and the dependent variables are presented in a separate table. Moreover, the research design is presented to obtain a clear idea about the research philosophy, research strategy, data collection methods, time horizon of the study, data sampling, calculation of the population and data analysis techniques. Following Figure 3-1 describes the whole process that was used to conduct this study.

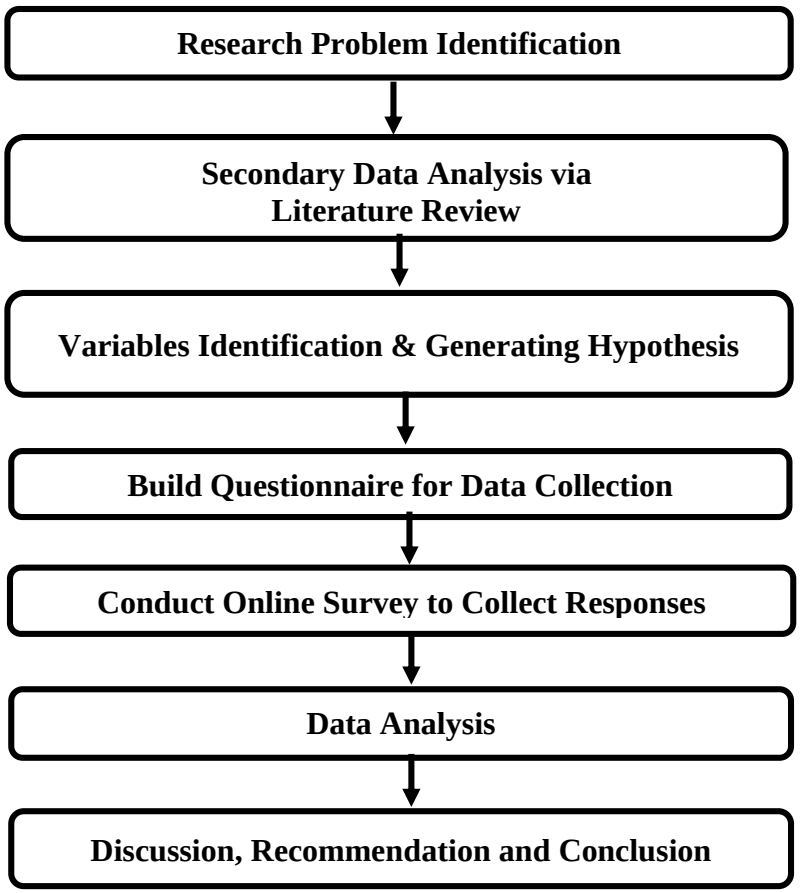


Figure 3-1: Research Methodology

3.1 Prefigured Factors

The initial analysis through the literature review revealed a set of factors, which can provide a clue about the turnover intention of software engineers in near future. These factors can be categorized as absenteeism, attendance, task negligence, organizational commitment and social media usage pattern.

3.1.1 Dependent Variables

Software engineers' turnover is the dependant variable of this research which responds to the identified independent variables. As the final goal of this research, a set of factors has been identified that influence the dependent variable. Those factors will help the management in identifying software engineers' turnover in advance and take necessary actions to mitigate the impact of unexpected employee turnover.

3.1.2 Independent Variables

The independent factors for the research have been initially revealed through reviewing the literature and through other observations. These factors will affect the results of the dependant variable. The independent variables identified are absenteeism, attendance, task negligence, organizational commitment and social media usage as shown in Table 3-1.

Table 3-1: Independent Factors

Independent factors
Attendance (Berry, Lelchook, & Clark, 2011); (Carpenter & Berry, 2016); (Nagadevara, Srinivasan, & Valk, 2008)
Absenteeism (Berry, Lelchook, & Clark, 2011); (Carpenter & Berry, 2016); (Cohen & Golan, 2007); (Albion, Fogarty, Machin, & Patrick, 2008)
Task Negligence (Bu, Mckeen, & Shen, 2011); (Bhatnagar, 2012); (Babakus, Yavas, & Karatepe, 2017); (Gupta & Shaheen, 2017)

Organizational Commitment (Mosadeghrad, 2013); (Cho & Son, 2012); (Aydogdu & Asikgil, 2011); (Joo & Park , 2010);
Social Media Usage (O'Donnell, 2015); (Ivens, Schaarschmidt, & Höber, 2017); (Zhang, Ma, Xu, & Xu, 2019); (Moqbel, Bartelt, Topuz, & Gehrt , 2020)

Even though it seems the meanings of attendance and absenteeism are quite similar, this study considered attendance and absenteeism as two different variables to identify the relationship with software engineers' turnover. When considering the literatures, lateness has been considered as a separate variable along with absenteeism (Berry, Lelchook, & Clark, 2011). Some research studies highlighted the relationship of lateness and absenteeism with related to employee turnover among other withdrawal behaviours (Nagadevara, Srinivasan, & Valk, 2008). Here the software engineers' way of reporting to work has been considered under the attendance variable to cover the anomalies related to attendance including lateness. Software engineers have different work schedules based on the company policy. But when employees are dissatisfied, it can be visible through their behaviours such as being tardy, trying to leave early by giving false reasons or leaving early without permission (Carpenter & Berry, 2016). This research attempts to figure out if change in attendance pattern has any relationship/impact on software engineers' turnover.

Being away from the work has considered as absenteeism. (Valle, 2019). Every employee is entitled for a certain number of leave days, although the entitlement for leave can be different based on the nature of the profession. Sometimes employees try to avoid coming to work when they don't have any motivation to work by taking unplanned leaves or take sick leave with false reasoning (Carpenter & Berry, 2016). Therefore, the utilization of leaves, for some extent, can be used as an indicator to assess the employee loyalty towards the work. This research attempts to figure out if absenteeism has any impact on turnover intention of software engineers.

Task negligence is defined as employee's failure to perform assigned duty or tasks (Deeley, 2018) and this shows how much the employee is deviated from work. This

is considered as a negative behaviour which shows employee dissatisfaction. This can be depicted in many behavioural ways such as slowness in work, attending to personal matters while working, taking additional long breaks, disinclining to accept long term responsibilities, etc. While fulfilling the assigned task is the responsibility of every employee, demotivated employee may not pay attention to complete the work as expected, especially who is with the intention to leave the company. This research analyses the changes in these factors to identify the turnover intention of software engineers.

Loyal employees have good impression about the company and they will help for well-being of the company. As an example, employees who have good impression about the company are willing to join the extra events organized by the company which is not under their job description. Willingness/ unwillingness to put that extra effort for the organization is also an indicator about turnover intention of software engineers.

Usually people post or share their personal thoughts on different topics through their social media accounts. Therefore, their attitudes towards the company, job satisfaction or dissatisfaction may come out through their social media postings. Also, employees may try to search for new job opportunities through their social media accounts. Therefore, the social media usage can be studied to get insights on turnover intention of software engineers.

This research attempts to identify the relationship/correlation between the above mentioned independent factors and turnover intention of software engineers.

3.2 Conceptual Research Framework

The conceptual research framework discusses the interrelationships among the above identified behavioural factors and the turnover intention of software engineers. Here, turnover intention of software engineers is considered as the dependent variable about which this research attempts to provide a solution. Absenteeism, attendance, organizational commitment, task negligence and social media usage pattern are

independent variables which are considered as the probable factors that might affect turnover intention of software engineers are shown in Figure *3-2*.

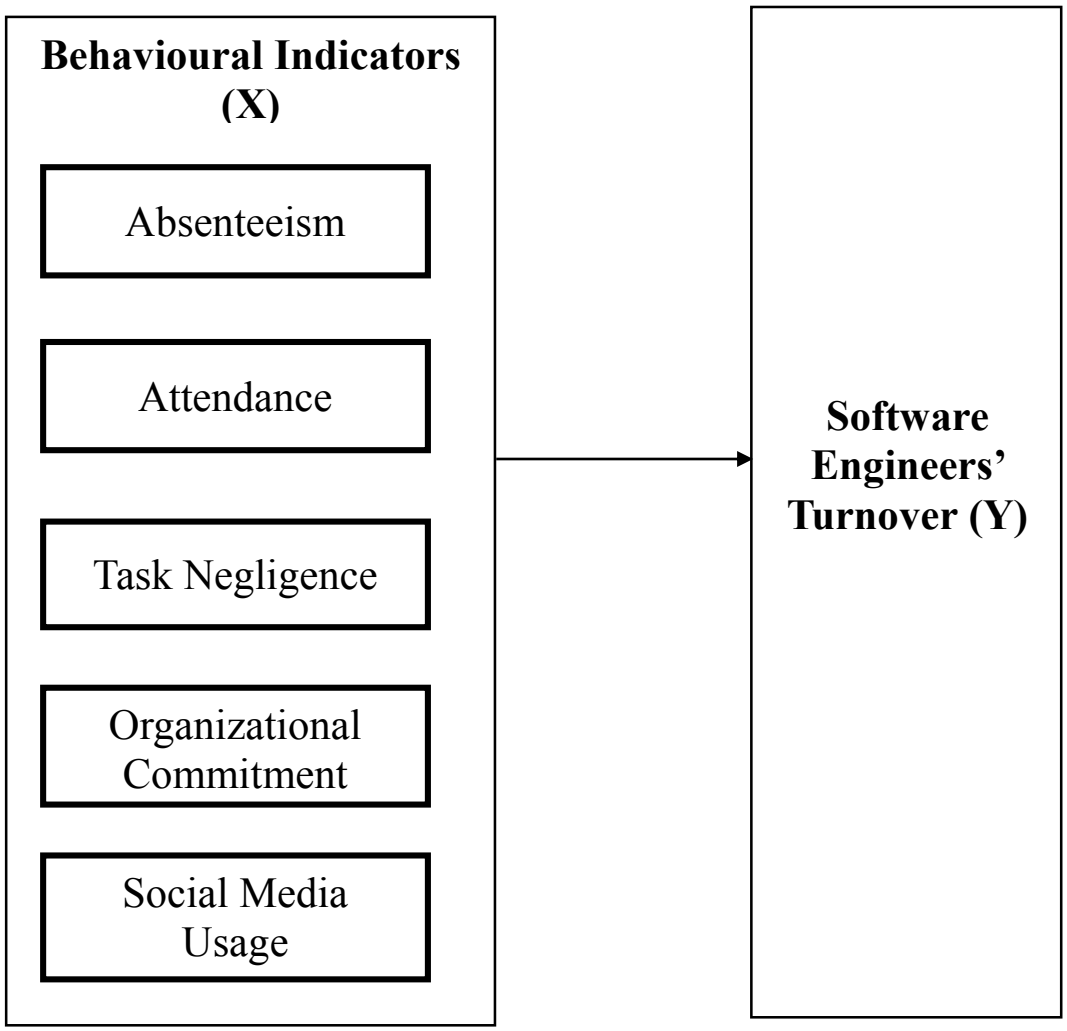


Figure 3-2: Conceptual Framework

3.3 Hypothesis Development

Several hypotheses are drawn with the objective of finding out whether the relationships drawn in the above conceptual research framework are exactly holding right or not in the research context. It is expected that solutions can be found by testing the drawn hypotheses to understand the relationships between the dependent and independent variables.

It is defined as;

H_0: Null Hypothesis

H_A: Alternate Hypothesis

Hypothesis 1

$H1_0$: There is no relationship between Software engineers' attendance and turnover

$H1_A$: There is a relationship between Software engineers' attendance and turnover

Hypothesis 2

$H2_0$: There is no relationship between Software engineers' absenteeism and turnover

$H2_A$: There is a relationship between Software engineers' absenteeism and turnover

Hypothesis 3

$H3_0$: There is no relationship between Software engineers' task negligence and turnover

$H3_A$: There is a relationship between Software engineers' task negligence and turnover

Hypothesis 4

$H4_0$: There is no relationship between Software engineers' organizational commitment and turnover

$H4_A$: There is a relationship between Software engineers' organizational commitment and turnover

Hypothesis 5

$H5_0$: There is no relationship between Software engineers' social media usage and turnover

$H5_A$: There is a relationship between Software engineers' social media usage and turnover

3.4 Data Collection

Mainly there are two methods to conduct a research as quantitative or qualitative. Quantitative research is focused to collect measurable numerical data which can be used to obtain objective and conclusive results (Gelo, Braakmann, & Benetka, 2008). Qualitative research is focused to collect non-measurable data using real-life inquiry to gain an insight about the population (Gelo, Braakmann, & Benetka, 2008). Usually, qualitative studies are used to define a problem or to develop an approach to a problem when researchers do not have a clear idea about the expected outcome of the research (Forumplus, 2019). However, when it is required to obtain a general conclusion about the problem and predict the outcome, quantitative approach will give a fast, structured, scientific and less unbiased results. Since this research is focused to find the relationship of identified factors in literature review, this research was done using quantitative approach to collect data.

Data collection methods are of two types, which are primary data collection methods and secondary data collection methods. In primary data collection method, data is gathered from the selected set of sample respondents through interviews, survey questionnaires, field observations and experiments. For this research, online surveys were used to gather primary data. The secondary data collection method includes data gathered based on the literature. Literature is developed based on the findings in the previous studies, journal articles, books and other reliable data sources which were done by reputed international scholars and researchers.

Data in conducting this research was gathered by conducting online surveys which was shared among the software engineers using direct contact, email or social media. Since this research was conducted using quantitative approach, it collected quantitative data anonymously without any physical contact. As this research focused on software engineers in Sri Lankan context, the survey was done among the

software engineers in Sri Lanka to gather information on their experience when leaving their organizations. The collected quantifiable data was analysed to identify the correlation between each factor along with the turnover intention.

3.5 Questions for online survey

Online survey is the main data collection method used for this research study. The questionnaire was designed to extract the opinion/experience of participants and used to identify the relationship between independent and dependent variables. Several questions were added to cover each independent variable in different dimensions. Appendix A contains the list of questions made of open-ended and closed questions. An open ended question is a question which can have a Boolean answer or a static answer. Open ended questions help the researcher to get more information by using small number of questions. Close ended question provides several options where participant can select an answer based on their preference. Usually, this may contain simple direct answers such as multiple choice answers or a simple information answer. The multiple choice answers have values assigned to each using five points Likert scale which can be used to get quantitative results from the analysis. The five points Likert scale is designed as following.

(1)- Never

(2)- Rarely

(3)- Sometimes

(4)- Often

(5)- Always

3.6 Population and Sampling

Software engineers in Sri Lanka are the target population of the survey conducted for this research. Information of statistics in the software industry extracted from the reports published by the authorized bodies were also used for this research.

The sample was identified by considering the software engineers population in Sri Lanka. Figure 3-3 presented the growth of ICT workforce in Sri Lanka. As per the ICT workforce survey in 2013, the annual growth rate of ICT workforce is 14.4% (ICTA, 2014). Therefore, it is estimated that current ICT workforce is 185 724 in 2020.

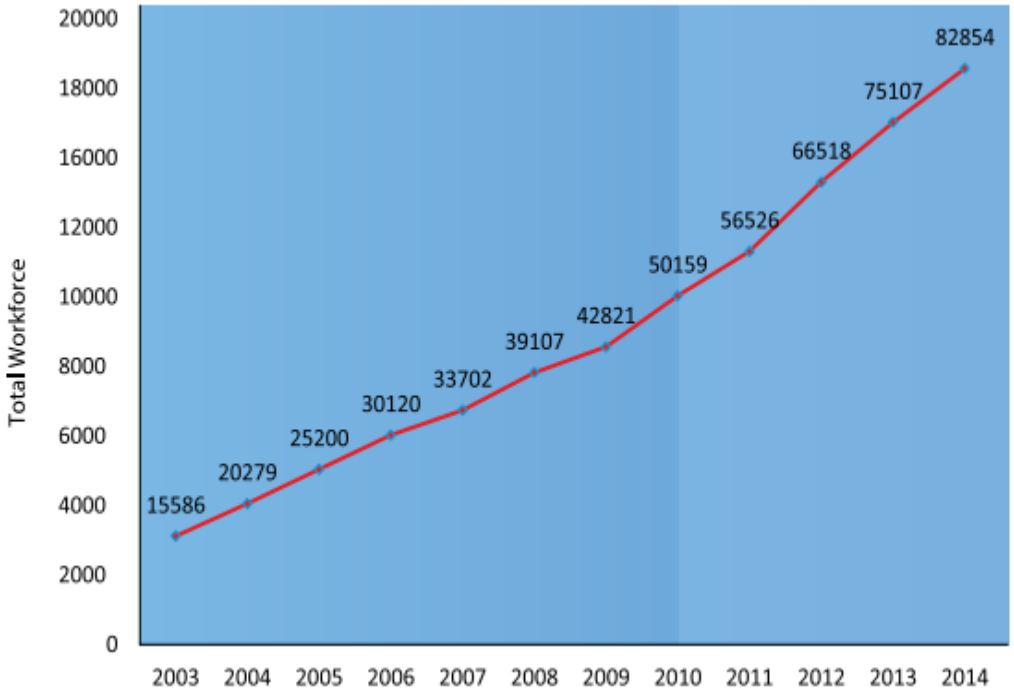


Figure 3-3: Growth of ICT workforce

Source: (ICTA, 2014)

The distribution of ICT workforce based on their job category is shown in Figure 3-4. As per the ICTA report, 21% of ICT workforce belongs to programmers or software engineer job category. Therefore, it is calculated that there are 39 002 software engineer population in Sri Lanka. Based on these statistics, it was decided to collect at least 380 responses with the confidence interval of 5% and confidence level of 95%.

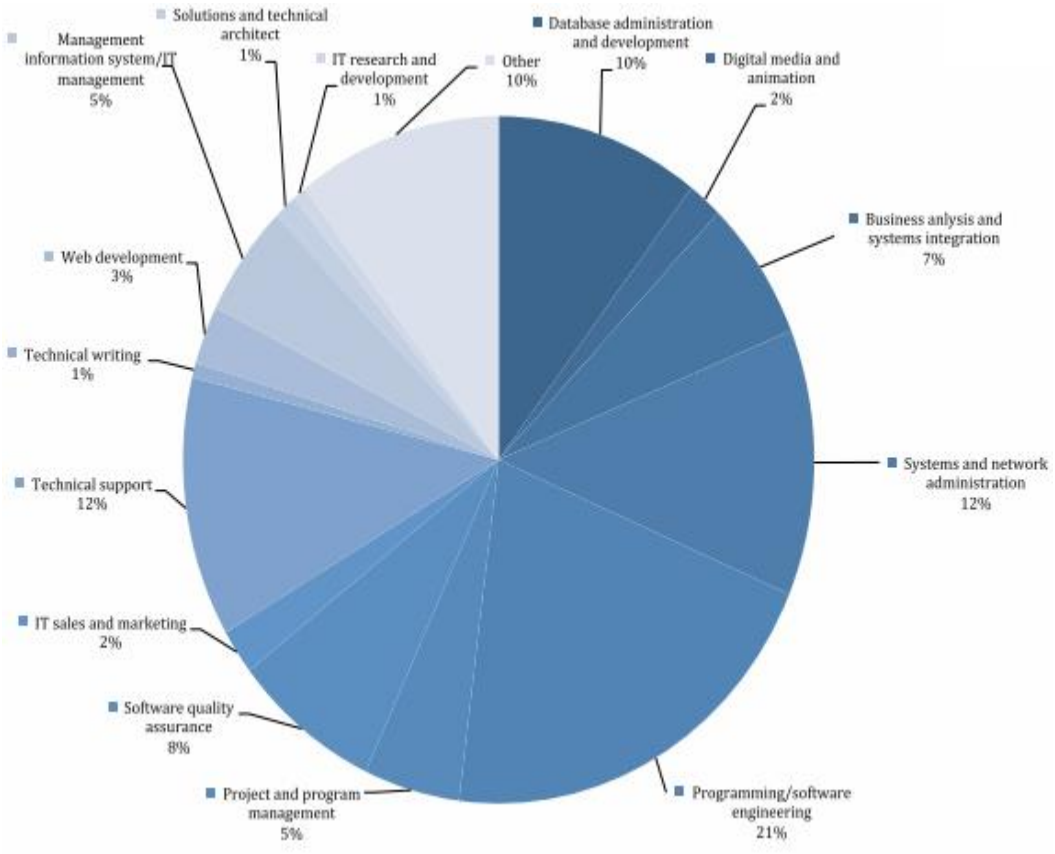


Figure 3-4: Profile of ICT workforce by job categories

Source: (ICTA, 2014)

3.7 Data Analysis

In this research, a quantitative analysis was used based on online survey for data gathering and in identifying the behavioural indicators of software engineer turnover. The online questionnaire was distributed through Google form and their responses were taken for the analysis. The responses were extracted, cleansed and coded before analysing. This is further discussed in the next chapter.

Data analysis is an important milestone in a research where all the gathered data for the research is analysed in different ways. As mentioned earlier, the data collected from the online survey was converted into quantitative data and analysed using SPSS 21 (Statistical Package for Social Sciences) software. In addition, MS office Excel software was also used in analysing data. First, it demonstrated the descriptive statistics of the independent variables of attendance, absenteeism, organizational

commitment, task negligence and social media usage. The same was carried out to the dependent variable of turnover intention of the software engineers. This was derived from the 5 points Likert scale table with the mean and standard deviation values for the variables. This information was demonstrated using graphical format such as pie charts and excel tables.

Based on the research topic of identifying behavioural changes that indicate software engineers' turnover, reliability test was carried out to give a basic idea about the independent and dependent variables. The rationale for the reliability test is to prove the consistency of the questionnaire. Next, correlation analysis was carried out to identify the amount of interrelationship between the identified variables in the literature review. This enabled in proving whether the hypothesis developed was acceptable or non-acceptable. In the next step, regression analysis was carried out to identify the impact of each and every independent variable on the dependent variable. This provided results to identify the impact of independent variables on the dependent variable. Finally, the results obtained from the data analysis will be discussed in the final chapters.

4 DATA ANALYSIS

This chapter consists of the results of the analysis that has been conducted to investigate the behavioural changes that indicate the turnover of software engineers in the Sri Lankan context. This analysis used reliability and validity tests, regression analysis and correlation analysis to identify the relationship between dependent and independent variables. Further, the demographic factors and the descriptive statistics were analyzed to get an idea about the nature of the sample.

4.1 Descriptive Statistics Analysis

The sample was collected from software engineers in Sri Lanka. There were several demographic questions added to get an idea about the nature of the respondents in this survey. This chapter presents some key details of the results obtained during the descriptive statistics analysis and more details of results are included in Appendix C. There are six demographic questions contained in the questionnaire namely age, gender, designation, years of experience, no. of employers changed, and working time. Also, this chapter contains the frequency analysis results of independent and dependent variables.

The sample contained respondents in the age range between 20 to 55 years. Age distribution among the total of 380 respondents is shown in Figure 4-1 and detailed statistics is shown in Table C-1 in Appendix C. It reflects that most of the respondents represent the age category of 26-35 which was 68.7% of the total respondents. The least number of responses were obtained from the age category of 46-55 which is 0.5% of the total respondents.

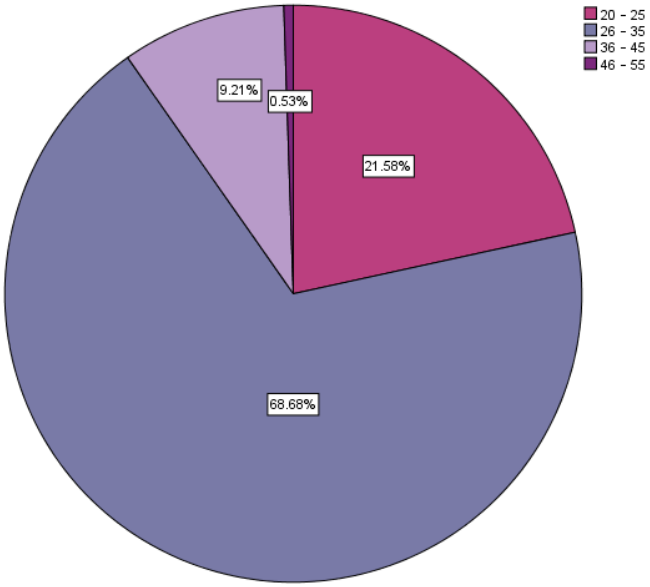


Figure 4-1: Age Distribution

Source: Online Published Survey Summary, 2021

The gender distribution of the sample is shown in Figure 4-2 and detailed statistical results in Table C-2 in Appendix C. 201 respondents out of 380 were male when analyzing the gender of the respondents. That means most of the respondents were male and as a percentage, it was 52.9%. There were only 179 out of 380 respondents who were female and it represented 41.7% of the sample.

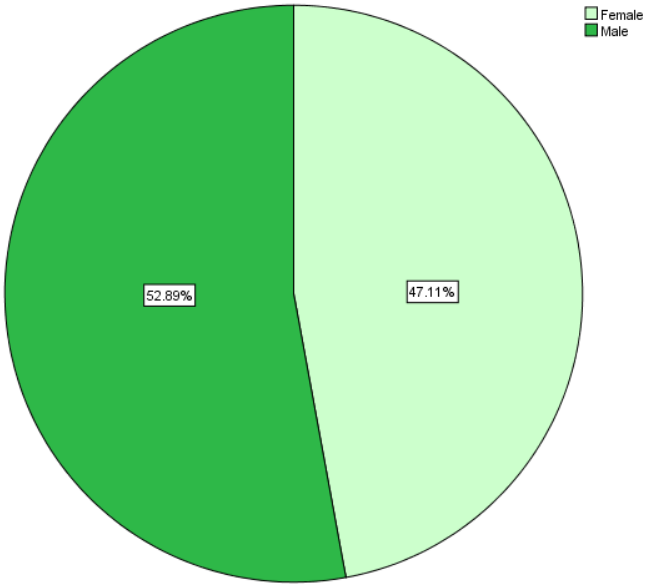


Figure 4-2: Gender Distribution

Source: Online Published Survey Summary, 2021

The survey respondents had listed different designations of software engineer's career ladder. As illustrated in Figure *4-3* and the statistics in Table *C-3* in Appendix C, it reflected that most of the respondents had the designation of Software Engineer which represented 41.8% of the total respondents. The second large contribution was from the respondents who had the designation of Senior Software Engineer which represented 33.9% of the total respondents. Also, some responses were reported from the senior levels of software engineers and none of the senior levels exceeded 10% of the total responses.

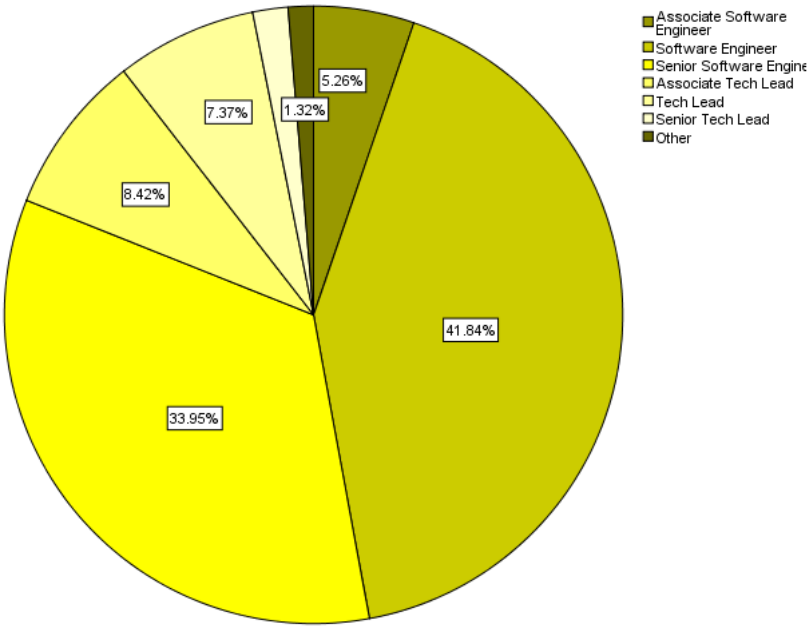


Figure 4-3: Designation Distribution

Source: Online Published Survey Summary, 2021

Figure 4-4 and Table C-4 in Appendix C demonstrate the number of years of experience of the software engineers in the software industry. It was found that 166 out of the 380 respondents in the data collection had experience ranging from 4 – 5 years. This reflected 43.7% as a percentage. 29.2% of the respondents were having experience of 1 – 3 years and it was the second largest portion of the years of experience. The minimum participants were from the group of more than 10 years' experience that reflected as 1.8% as a percentage.

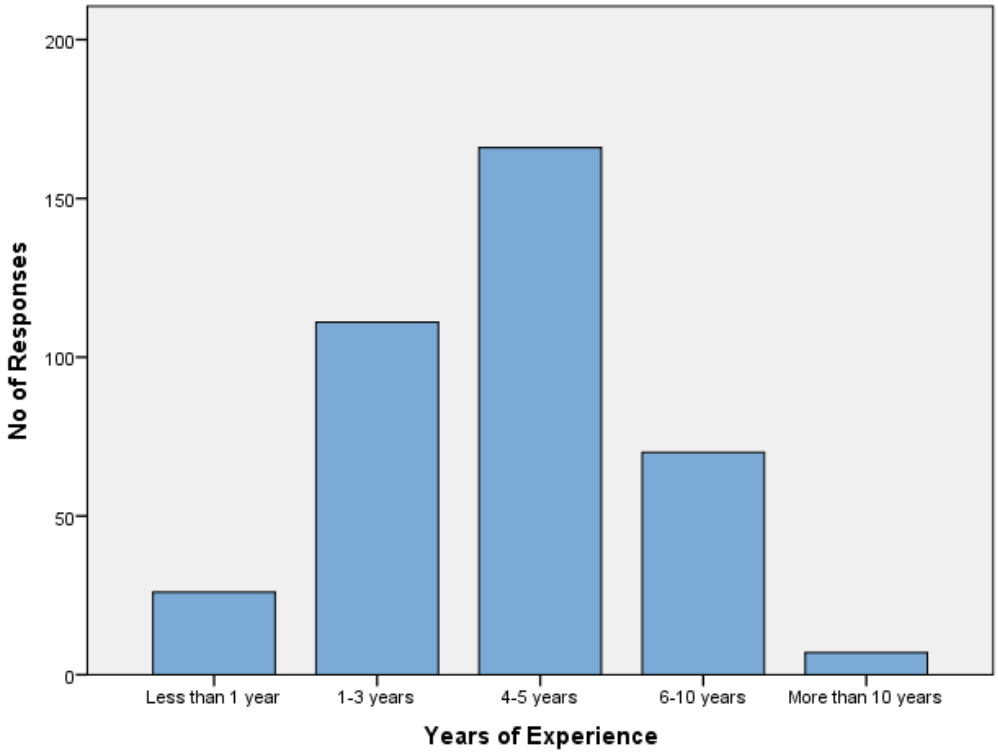


Figure 4-4: Years of Experience Distribution

Source: Online Published Survey Summary, 2021

The distribution of the number of employers in the career life of the respondents in the sample of data was analysed and it is demonstrated in Figure 4-5 and Table C-5 in Appendix C. Most of the respondents, i.e. 139 out of 380 respondents, changed 2-5 employers. This reflected as 36.6% as a percentage. 33.9% of the respondents changed at least 1 employer in their career life. There were 17 respondents out of 380 who changed 6-10 employers and it represented the lowest portion of the sample.

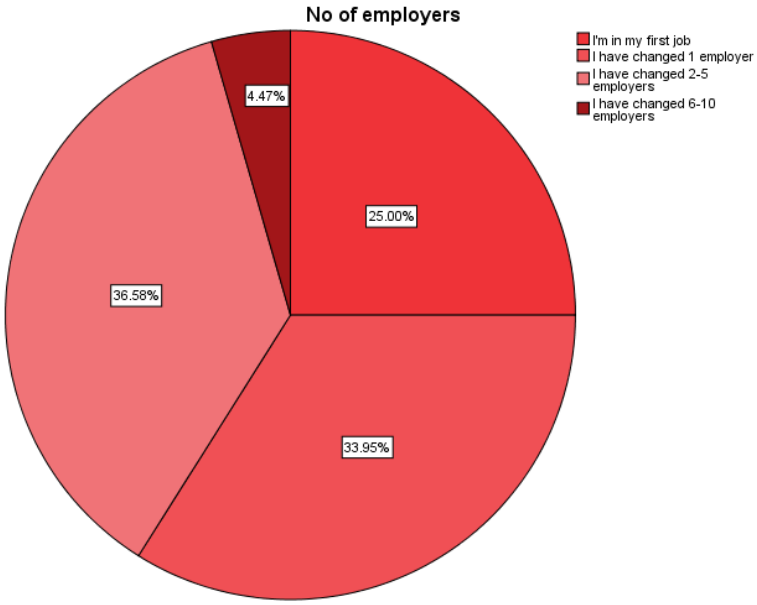


Figure 4-5: No of Changed Employers Distribution

Source: Online Published Survey Summary, 2021

The below data in Figure 4-6 and Table C-6 in Appendix C demonstrates the level of satisfaction with the current employer of the respondents. It was evident that 167 out of the 380 workers who responded to the data collection were very satisfied with the current employer. This was reflected as 43.9% as a percentage. The minimum respondents were from the group of completely satisfied about the current employer that reflected as 7.9% as a percentage.

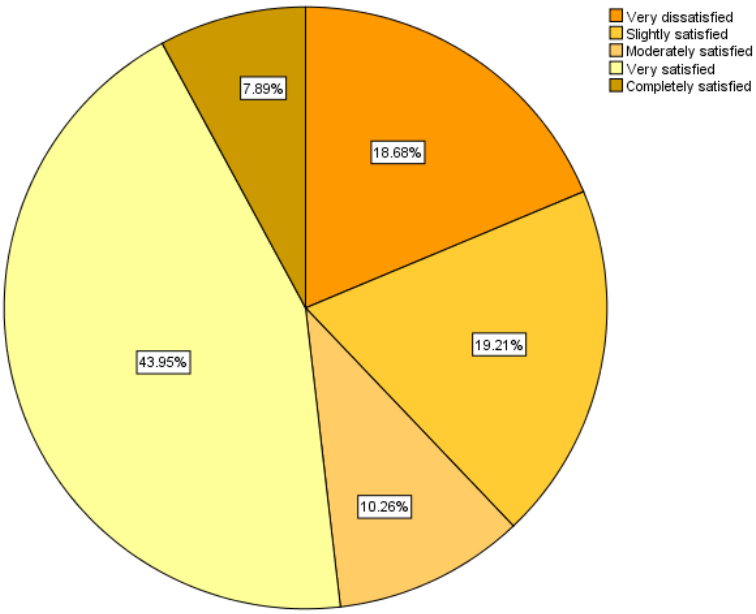


Figure 4-6: Current Level of Satisfaction Distribution

Source: Online Published Survey Summary, 2021

As illustrated in Figure 4-7 and Table C-7 in Appendix C, it was identified that 189 out of the 380 respondents in the data collection was having flexible hours as their working times. This was reflected as 49.7% as a percentage. The second large contribution is from the respondents who work from 9 AM – 6 PM which is 27.4% of the total respondents. Also, 17.9% of the respondents work between 8 AM – 5 PM which contained 68 out of 380 respondents.

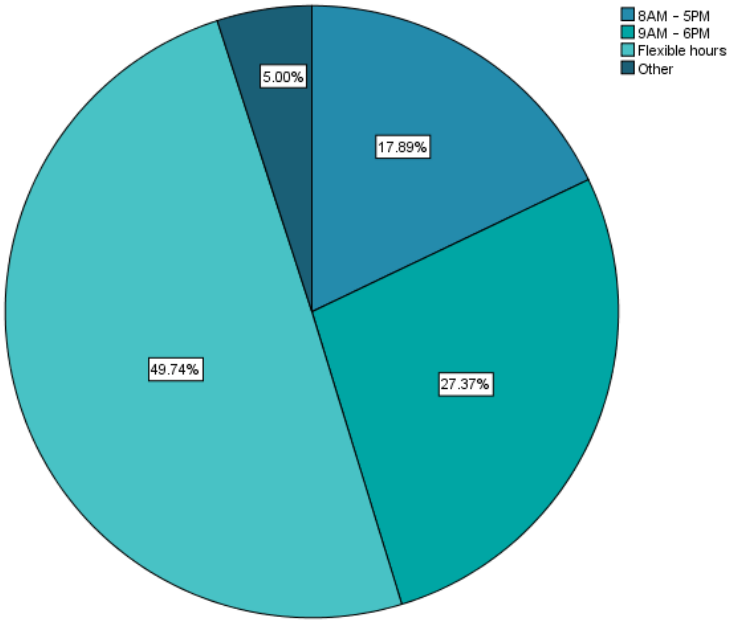


Figure 4-7: Working Time Distribution

Source: Online Published Survey Summary, 2021

The descriptive statistics results of the responses obtained for the questions covered under independent and dependant variables are described hereunder. To capture the software engineers' behaviour in the present study, a five-point Likert scale was used with a range from never (valued as a "1") to always (valued as a "5").Both independent and dependent variables mentioned in the conceptual framework are covered here by considering the mean value, standard deviation, and frequency distribution.

Table C-8 to Table C-11 of Appendix C presents the summary of descriptive analysis obtained for the independent variable attendance. 49.7% of the respondents stated that they go to the office on time very often or always. When it was inquired on the individuals' attendance related to lateness and employee's mood, 46.9% responded as they are not being late and 42.1% responded as they tend to be late. 48.9% responded as they never or rarely try to leave early while 43.2% stated that they always or very often try to do so. When considering the answers for individual questions, answers were distributed equally among agreeing and disagreeing to the changes in attendance patterns. All three questions get mean values closer to 3 as

3.11, 2.93 and, 2.93. As these mean values are very close to 3 on a scale of 1 to 5, these mean values represent mostly a neutral stance for the questions of attendance by the respondents.

The frequency analysis results of three dimensions which come under the independent variable absenteeism are presented in Table C-12 to Table C-15 in Appendix C. As per the frequency analysis results, 51.3% responded as they rarely or never call in sick without being sick. But 38.9% responded as they very often or always tend to call in sick without being sick. 52.9% responded as they rarely or never take unplanned leaves, while 43.2% agreed that they very often or always take unplanned leaves. Similarly, 50.5% responded as they do not tend to utilize 50% of sick leaves without fair reason, while 39.2% tend to utilize sick leaves without fair reason. All three questions have mean values closer to 3 as 2.82, 2.78 and 2.77. According to these mean values, it can be argued that the respondents had not agreed nor disagreed with the statements regarding absenteeism since the value is close to the mean value of 3 based on the 5 points Likert scale.

Table C-16 to Table C-23 in Appendix C presents the summary of descriptive analysis obtained for the independent variable task negligence. Here, seven questions were asked to obtain the details of task negligence. The idea of working intentionally slow was asked as the first question and 38.2% responded as they rarely or never worked slowly even they were demotivated. But 44% of them responded as they very often or always intentionally work slowly. When it comes to attending personal things at work, more than 50% of the respondents stated they do rarely or never. 43.9% responded as they do not attempt to be out of sight of their managers, while 39.7% agreed they attempt to do so. According to the analysis results, 44% stated that they rarely or never take additional breaks while working and 39.5% stated that they tend to do so. Moreover, 47.3% of respondents rarely or never ready to accept long term projects, and 40% very often or always wish to accept long term goals. When presenting the ideas, 46% mentioned that they rarely or never presented their ideas, while 42.1% refrained to present their ideas. As per the above data, none of the questions is aligned to one end of answers, and answers are distributed equally among agreeing and disagreeing to the questions of task negligence. Among the

seven questions, all mean values for the task negligence variable are very close to 3 on a scale of 1-5, and these mean values represent mostly a neutral stance for the questions of the task negligence by the respondents.

The frequency analysis results of five dimensions which come under the independent variable organizational commitment are presented in Table C-24 to Table C-29 in Appendix C. Performing the duty beyond expectation was questioned and 46.6% responded as they vary often or always ready to perform beyond the expectation. When considering the active participation in organizational events, 38.9% responded as rarely or never participate, while 52.7% responded as very often or always they actively participate. 44.2% of respondents stated that they rarely or never give suggestions to improve organizational services and 47.9% stated as they very often or always ready to give suggestions. When considering on defending organization, 37.9% responded as they very often or always defend the organization when others criticize. The question on whether they recommend the current organization to others, 26.2% responded as they do not recommend and 54.8% stated that they very often or always recommend their organization to others.

Table C-30 to Table C-34 in Appendix C presents the summary of descriptive analysis obtained for the independent variable social media usage. Among the 4 dimensions of questions, the first question was about the usage of social media at work. Here, 69% confirmed as they use social media very often or always which indicates that the majority use social media at work very frequently. With regard to adding office colleges to their personal social media account, respondents had a very balance idea because the value obtained for agreeing, disagreeing, and neutral answers were very close to 33%. The responses obtained on posting about job dissatisfaction showed that 46.3% post such very often or always, while 32.9% stated as sometimes they tend to post their dissatisfaction. Also, 81% of respondents stated that they tend to find new job opportunities via social media. The questions on the usage of social media at work and searching for new job opportunities via social media have got mean values closer to 4 which indicates that respondents mostly agreed with those questions.

The frequency analysis results of five dimensions which come under the dependent variable software engineer turnover are presented in Table C-35 to Table C-40 in Appendix C. Here, over 60% of responded stated as they get enough training opportunities. When considering the level of satisfaction with the compensation package, 32.9% stated that they are not satisfied and 23.4% stated as sometimes they get a satisfactory package. When questioning on the opportunities for career growth, 49.5% stated that they usually get opportunities to enhance their career, while 20.7% stated as they rarely or never get such opportunities. With regard to getting promotional opportunities fairly, 42.6% responded as very often or always get and 43.4% stated as sometimes they get promotional opportunities fairly. When considering the rewards, 29% rarely or never get rewards and 44.7% very often or always get rewards. When considering the answers for individual questions, most of the answers were distributed equally between agreeing and disagreeing with the questions.

4.2 Reliability Test

Reliability tests measure the consistency and validity of the collected data. It was ensured that the questions were given under each independent variable supported each other and unbiased. Therefore, this test was used to measure the quality of the research and its measures.

The reliability test was conducted for the collected sample of 380 respondents. The reliability statistics calculated for both independent and dependent variables under 27 items are shown in Table *4-1* and Table *4-2*. All variables except social media usage got Cronbach's Alpha Coefficient values above 0.7 and passed the reliability test. According to the reliability statistics for the social media usage variable, it had not achieved an acceptable level of reliability. However, Cronbach's Alpha Coefficient of social media usage was 0.639 and it is in between the 0.6 to 0.7 range. Even Cronbach's Alpha Coefficient value above 0.7 is considered as valid, sometimes researchers consider the values ranging from 0.6 to 0.7 also as acceptable (Ursachi, Horodnic, & Zait, 2015). Hence, social media usage variable can be considered for further analysis.

Table 4-1: Reliability Test for independent variables

Variable	No of Items measured	Cronbach's Alpha Coefficient Value
Attendance	3	.820
Absenteeism	3	.967
Task Negligence	7	.758
Organizational Commitment	5	.904
Social Media Usage	4	.639

Source: Online Published Survey Summary, 2021

Table 4-2: Reliability Test for dependent variable

Variable	No of Items measured	Cronbach's Alpha Coefficient Value
Software Engineer Turnover	5	.729

Source: Online Published Survey Summary, 2021

4.3 Correlation Analysis

Correlation analysis is a statistical analysis method used to measure the association among two variables (Senthilnathan, 2019). To quantify the strength of the relationship between variables, the correlation coefficient is used as a statistical measure. The correlation coefficient value range is between -1.00 to 1.00; and -1.00 means a strong negative correlation, while 1.00 means a strong positive correlation. There is no connection between the two variables when the correlation value is equal to 0.00.

The statistics generated with Pearson Correlation Matrix was used to test the five hypotheses to identify the association between the dependent variables and independent variables. Standard averaging had been used for each independent and dependent variable to analyze the significance, by using Pearson Correlation Matrix.

Hypothesis 1

The correlation analysis results for attendance and software engineer turnover is illustrated in Table 4-3 and it has a significant positive correlation. Therefore, the null hypothesis ($H1_0$) is rejected and the alternative hypothesis ($H1_A$) is substantiated. Therefore, there is a relationship between Software engineers' attendance and turnover.

Table 4-3: Pearson Correlation - Attendance and Software Engineer Turnover

		Attendance	Software Engineer Turnover
Attendance	Pearson Correlation	1	.511**
	Sig. (2-tailed)		.000
	N	380	380
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Online Published Survey Summary, 2021

Hypothesis 2

There is a significant positive correlation between Absenteeism and Software engineer Turnover as shown in Table 4-4. Therefore, the null hypothesis ($H2_0$) is rejected and the alternative hypothesis ($H2_A$) is substantiated. Hence, there is a relationship between Software engineers' absenteeism and turnover. This means software engineers' absenteeism may indicate their turnover in near future.

Table 4-4: Pearson Correlation - Absenteeism and Software Engineer Turnover

		Absenteeism	Software Engineer Turnover
Absenteeism	Pearson Correlation	1	.542**
	Sig. (2-tailed)		.000
	N	380	380

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

Source: Online Published Survey Summary, 2021

Hypothesis 3

There is a significant positive correlation between Task Negligence and Software engineer Turnover as shown in Table 4-5. Therefore, the null hypothesis ($H3_0$) is rejected and the alternative hypothesis ($H3_A$) is substantiated. Further, a relationship between Software engineers' task negligence and turnover is indicated.

Table 4-5: Pearson Correlation – Task Negligence and Software Engineer Turnover

		Task Negligence	Software Engineer Turnover
Task Negligence	Pearson Correlation	1	.468**
	Sig. (2-tailed)		.000
	N	380	380
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Online Published Survey Summary, 2021

Hypothesis 4

The correlation analysis results for organizational commitment and software engineer turnover is illustrated in Table 4-6 and it has a significant negative correlation. Therefore, the null hypothesis ($H4_0$) is rejected and the alternative hypothesis ($H4_A$) is substantiated. Moreover, there is an inverse relationship between Software engineers' organizational commitment and turnover.

Table 4-6: Pearson Correlation - Organizational Commitment and Software Engineer Turnover

		Organizational Commitment	Software Engineer Turnover
Organizational Commitment	Pearson Correlation	1	-.362**
	Sig. (2-tailed)		.000
	N	380	380
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Online Published Survey Summary, 2021

Hypothesis 5

There is no significant relationship between social media usage and software engineer turnover as shown in Table 4-7. Therefore, the null hypothesis ($H5_0$) is substantiated and the alternative hypothesis ($H5_A$) is rejected. Hence, social media usage has no impact on software engineer turnover.

Table 4-7: Pearson Correlation - Social Media Usage and Software Engineer Turnover

		Social Media Usage	Software Engineer Turnover
Social Media Usage	Pearson Correlation	1	.095
	Sig. (2-tailed)		.064
	N	380	380

Source: Online Published Survey Summary, 2021

As per the above results, Attendance, Absenteeism, Task Negligence and Organizational Commitment have a significant correlation with software engineer turnover except for Social Media Usage.

4.4 Regression Analysis

A statistical process known as Regression analysis is used in identifying the relationship between two variables (Gallo, 2015). Here regression analysis was conducted to determine the level of impact on the dependent variable by the set of independent variables. As the social media usage variable does not have a significant relationship with software engineer turnover, it is not considered for regression analysis.

As shown in Table 4-8, 40.1% of the variation in software engineer turnover was significantly explained by attendance, absenteeism, task negligence and organizational commitment for the developed model.

Table 4-8: Regression Analysis - Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.633[a]	.401	.395	.539
a. Predictors: (Constant), Organizational Commitment, Attendance, Task Negligence, Absenteeism				

Source: Online Published Survey Summary, 2021

According to Table 4-9, F value 62.605 is significant at the 0.000 level in ANOVA table. Since the F value is greater than one and the significance value is lower than 1%, this model is acceptable for further analysis.

Table 4-9: Regression Analysis - ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.871	4	18.218	62.605	.000[b]
	Residual	108.831	374	.291		
	Total	181.702	378			

a. Dependent Variable: Software Engineer Turnover b. Predictors: (Constant), Organizational Commitment, Attendance, Task Negligence, Absenteeism

Source: Online Published Survey Summary, 2021

Table 4-10 demonstrates the multiple regression coefficient values for the independent variables of attendance, absenteeism, task negligence and organizational commitment. Here the Beta values should be greater than 0.1 to achieve significance and all coefficients were significant. According to the statistics, the highest value of 0.603 is achieved by the variable of absenteeism. Further, the lowest impact is from the variable of Task Negligence since it has the lowest significant regression coefficient value of 0.152. Hence, absenteeism has a 60.6% impact on software engineer turnover, while task negligence has the lowest impact of 17.3%.

Table 4-10: Regression Analysis - Coefficients[a]

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.888	.325		2.736	.007
	Attendance	.130	.048	.221	2.695	.007
	Absenteeism	.299	.051	.606	5.884	.000
	Task Negligence	.140	.065	.173	2.161	.031
	Organizational Commitment	.248	.053	.401	4.669	.000
a. Dependent Variable: Software Engineer Turnover						

Source: Online Published Survey Summary, 2021

4.5 Discussion on Results

This data analysis was done based on primary data collected from an online questionnaire. The majority of the respondents were male software engineers with 4

to 5 years of experience. Most of the participants had the facility to work flexible hours and most of them had changed their employers at least 2 to 5 times.

All the independent variables (attendance, absenteeism, task negligence, organizational commitment, and social media usage) and dependent variable have achieved the reliability test by having above 0.6 values for Cronbach's Alpha Coefficient. Hence, these variables are qualified for further analysis. According to the Pearson Correlation Coefficients obtained, attendance, absenteeism, task negligence and organizational commitment showed a significant correlation with software engineer turnover. Attendance is positively correlated to software engineer turnover indicating that software engineers' work reporting, lateness, or any other changes in attendance have a relationship with their turnover. Absenteeism also has a positive significant correlation with software engineer turnover. Even if employees are entitled to leaves, they tend to have more leaves when they are demotivated. That means employees' absenteeism related behaviour has a relationship with their turnover decisions. Task negligence has a positive significant relationship with software engineers' turnover, indicating that if software engineers do not fulfill the assigned task on a timely manner or do not focus on their duty, it may indicate their turnover intention. As per the correlation analysis results, organizational commitment has a significant negative correlation with software engineers' turnover. It indicates that organizational commitment has an inverse relationship with software engineer turnover where higher organizational commitment lowers the software engineers' turnover. Even social media usage had an acceptable level of reliability and it did not have a significant relationship with software engineer turnover. Therefore, it is concluded that there is no relationship between social media usage and software engineer turnover.

Also, the regression model analysis carried out showed that attendance, absenteeism, task negligence and organizational commitment have a significant impact on software engineers' turnover. Regression model was developed for all independent variables except for social media usage. As the social media usage did not have a significant correlation, it was not used for the regression model. Software engineers' turnover was significantly explained by attendance, absenteeism, task negligence and

organizational commitment. That means 40.1% of the variation was significantly explained by the independent variables included in the conceptual research framework. Moreover, it was identified that the absenteeism variable had the highest significant impact on the software engineers' turnover based on the regression analysis results.

According to the research findings of the present study, software engineers' turnover can be influenced by attendance, absenteeism, task negligence and organizational commitment. In contrast, it seems that the research findings of the present study are consistent with the previous research. Most of the earlier studies have found attendance, absenteeism, task negligence have a direct relationship with employee turnover while organizational commitment has an inverse relationship with employee turnover.

5 RECOMMENDATIONS AND CONCLUSION

This chapter consists of the conclusion and recommendations obtained from the current study on identifying behavioural indicators that lead to software engineers' turnover in Sri Lanka. Further, this covers the limitations of the research along with the difficulties faced during the study. Also, this provides an insight for future researchers to expand their studies using this research.

5.1 Research Findings

This study focused on the behavioural changes that impact software engineer turnover in Sri Lanka. According to the correlation analysis, it was clear that all the independent variables have significant relationships with the dependent variable, except social media usage. This means attendance, absenteeism, task negligence and organizational commitment can be considered as behavioural indicators of software engineers' turnover. Further, it was revealed that the highest significant relationship exists between absenteeism and software engineer turnover. On the other hand, it was found out that there is no significant relationship between social media usage and software engineers' turnover. According to the multiple regression analysis, it was revealed that attendance, absenteeism, task negligence and organizational commitment have significant positive impacts on software engineers' turnover. Absenteeism has the highest impact on software engineers' turnover. Organizational commitment and attendance were identified as the variables with next level of impact and task negligence had the lowest significant positive impact on the employee turnover.

The main objective of this research study is to identify behavioural indicators that lead to software engineers' turnover. Through this study, it was able to find out the main behavioural changes that could lead to software engineers' turnover which are attendance, absenteeism, organizational commitment and task negligence. Further, it was found out that software engineers' turnover is impacted by absenteeism, organizational commitment, attendance and task negligence in the given order.

5.2 Research Limitations

This study has certain limitations and they can be identified as below. This research study specifically refers to the employee turnover intentions relating to the software engineers in the Sri Lankan context. Therefore, this research is limited to the software engineer profession and to the Sri Lankan context. Even if the software engineer career path could vary based on the company or the country, typically it starts with junior software developer and goes up to the technical architect and sometimes extend to managerial level as well (Mayhew, 2019).The growth of this career ladder is mainly based on experience and competency level. This study did not consider the different levels of the software engineering career and collected the responses from software engineers by considering as one group. Hence, this study did not consider any deviation of behaviours based on their experience or maturity. Employee turnover is a common problem in every industry (Atlas Staffing Inc, 2018). However, this study is specific to the ICT industry in Sri Lanka, and this is a limitation where there are several other industries to look at regarding the behavioural indicators for employee turnover.

This research is focused on software engineers' behavioural changes. Behaviour can be varying from person to person based on their personality types (Schmitz, 2012). However, this study collected quantitative data using multiple choice questions with 5 points Likert scale. Since this is a quantitative analysis, it may have some limitations while capturing employee's behaviour rather than qualitative analysis, because usually interviewers have more opportunities to discuss with respondents and capture details by asking several questions.

As this research has focused on behavioural indicators of software engineers' turnover, only the behavioural changes which arise with job dissatisfaction were considered. But there can be many other reasons that are aligned with software engineers' turnover such as succession plans, changing career paths and personal reasons. Therefore, it is very important to analyse the behaviours of employees carefully to identify the turnover intention by understanding the true desires of

employees. If not, it will lead the management to wrong interpretations and wrong decision making.

5.3 Concluding Remarks

As software engineers' turnover is identified as a rising problem in the IT industry, identifying their turnover intention in advance is important to the management. In most cases, employee turnover may cause several issues and it is an expense to the organization until it finds a suitable replacement. This study identified the behavioural factors indicating software engineers' turnover in the Sri Lankan context. As per the findings of this research, software engineers' dissatisfaction and turnover intention were visible through their behavioural changes. Therefore, it is very important to be aware of software engineers' behaviour and attitude.

The following recommendations are made to reduce the software engineer turnover based on the findings of the research.

I. Study the absenteeism patterns of employees

As per the analysis results, the variable of absenteeism had the highest impact on the employee turnover of the software engineers in Sri Lanka. Therefore, absenteeism is a behavioural pattern that needs to be reviewed by employers. Here, absenteeism is regarded as the leaves obtained by employees. According to the findings, software engineers with turnover intentions tend to get sick leaves even if they are not sick. Therefore, this can be observed as a sign of turnover intension of the employee. Moreover, when a software engineer is repetitively obtaining leaves, the manager can discuss with the employee to check whether there are any fair reasons behind the leaves or is it because the employee is demotivated or dissatisfied with the job. By studying this behaviour, the employer would be able to find a solution to the turnover problem by addressing their issues. Therefore, this research highly suggests employers to pay attention to software engineers' absenteeism.

II. Take actions to improve organizational commitment

As per the findings of this research, organizational commitment and software engineers' turnover have an inverse relationship. This means when employees have higher organizational commitment, the risk of turnover is getting lower. Therefore, employers should take necessary actions to build up the organizational commitment to make their company a great place to work and employees should feel it. This could bring good results for both employer and employee. When employers facilitate the employee to work better, it will improve the software engineers' motivation and they will work hard to achieve the goals. This will improve the company revenue as well as this will create a good image of the company in the industry. The company gets indirect advertising as your employees will recommend your company to others.

III. Study the anomalies in employees' attendance

As per the analysis results, attendance also has an impact on software engineers' turnover up to some extent. Other than analysing absenteeism or the leave pattern, both lateness and leaving early from work need to be taken into consideration under attendance anomalies. Even if the company offers flexible working hours, employers could notice software engineers' demotivation to work by monitoring the attendance pattern. Therefore, it is highly suggested to managers to observe the software engineers' attendance pattern and take necessary actions to take back the employee to the right track.

IV. Take actions on task negligence

Even though the task negligence obtained a lower value in regression analysis, it could also impact software engineers' turnover. When an employer notices any deviation of work from software engineers' behaviour, it is important to discuss with the particular individual and take necessary actions to engage employees back in work. Also, identifying the actual reason for task negligence and finding solutions for it is very essential. This will indirectly help to improve organizational commitment as well. Here, the manager's empathy towards the software engineers is very important to collaborate with employees to identify the exact reason and take necessary precautions. Further, management can take action to offer employees a flexible working environment to reduce stress. On the other hand, the employer can

reward software engineers for achieving goals in their duty to encourage and engage more in work.

V. Build strong teamwork culture

As this research identified the impact of behavioural changes on software engineers' turnover, it is highly recommending the importance of paying attention to software engineers' behavioural changes. In a team working culture the employees get the opportunity to work collaboratively, sharing their ideas and driving into the successful achievement of goals effectively with better motivation. As software engineers usually work in teams, it is very important to build up a good team bond among the team. When the team has good team culture and good team bond, it is easy to figure out the changes of behaviour in each individual. Therefore, building strong team culture will help to notice and identify the behavioural changes of software engineers.

VI. Transparency and open communication

Transparent and open communication is very important in the workplace and there are lots of benefits in it (Merrell, 2019). Good and effective communication will improve the relationship between employers and employees. Open communication will help both employers and employees to discuss the problems directly and it will motivate employees to discuss their issues with their leaders. Therefore, transparent and open communications will help employers to identify and solve the problems identified by monitoring the software engineers' behavioural changes.

5.4 Recommendations for Future Research

As employee turnover is a major issue for most industries, companies have to face several problems that arise with employee turnover. Therefore, studying and identifying employee turnover intention in advance is always a demanding research area. This research mainly focused on identifying the behavioural changes that lead to software engineers' turnover in the Sri Lankan context. This can be extended to other industries and other professions in the Sri Lankan context too. As employees' attitudes and behaviour varies for many reasons such as stress level, organizational

culture and human resource practices (White & Bryson, 2013), it will be worth studying other industries as well in a similar manner.

Based on the identified behavioural indicators of software engineers' turnover, future research can be conducted to develop a framework to identify the software engineers' turnover intention, using the hypothesis already proved in this research. Future research can be conducted with an equation for a framework using the identified factors and the model can be evaluated using a qualitative research approach, especially interviewing industry experts such as senior leadership and HR managers. Based on the discussions, the proposed model can be evaluated and improved to have more accurate predictions on software engineers' turnover. As an example, this type of framework can rate the risk on turnover in near future as low/medium/high using percentage values for each impacting factor such as attendance, absenteeism, task negligence and organizational commitment. This type of future research can provide a solution to the software engineers' turnover in the IT industry.

6 BIBLIOGRAPHY

Albattat, A. R., & Som, A. (2013). Employee Dissatisfaction and Turnover Crises in the Malaysian Hospitality Industry. *International Journal of Business and Management*, 62-71.

Albion, M. J., Fogarty, G., Machin, M., & Patrick, J. (2008). Predicting absenteeism and turnover intentions in the health professions. *Australian Health Review*, 271-281.

Alfes, K., Shantz, A., Truss, C., & Soane, E. (2013). The link between perceived human resource management practices, engagement and employee behaviour: a moderated mediation model. *The International Journal of Human Resource Management* .

Ang, S., & Slaughter, S. (2004). Turnover of information technology professionals: The effects of internal labor market strategies. *ACM SIGMIS Database*, 11-27.

Atlas Staffing Inc. (2018, May 1). *10 of Today's Common HR Challenges | Atlas Staffing Blog*. Retrieved from Atlas Staffing: https://www.atlasstaffing.net/blog/10-todays-common-human-resource-challenges

Aydogdu, S., & Asikgil, B. (2011). An Empirical Study of the Relationship Among Job Satisfaction, Organizational Commitment and Turnover Intention. *International Review of Management and Marketing*, 43-53.

Babakus, E., Yavas, U., & Karatepe, O. (2017). Work engagement and turnover intentions: Correlates and customer orientation as a moderator. *International Journal of Contemporary Hospitality Management*.

Bass, J. M., Beecham, S., Razzak, M. A., & Noll, J. (2018). Employee Retention and Turnover in Global Software Development: Comparing In-house Offshoring and Offshore Outsourcing. *Proceedings of the 13th Conference on Global Software Engineering - ICGSE 18*.

Berry, C. M., Lelchook, A. M., & Clark, M. A. (2011). A meta-analysis of the interrelationships between employee lateness, absenteeism, and turnover: Implications for models of withdrawal behavior. *Journal of Organizational Behavior*, 678-699. doi:10.1002/job.778

Bhatnagar, J. (2012). Management of innovation: role of psychological empowerment, work engagement and turnover intention in the Indian context. *The International Journal of Human Resource Management*, 928-951.

BLS. (2018, April 13). *Occupational Outlook Handbook:Software Developers*. Retrieved from U.S. Bureau of Labor Statistics:

https://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm

Booz, M. (2018, March 15). *LinkedIn Data Analysis Reveals the Latest Talent Turnover Trends*. Retrieved from LinkedIn: https://business.linkedin.com/talent-solutions/blog/trends-and-research/2018/the-3-industries-with-the-highest-turnover-rates

Brook, J. (2019, December 4). *Why Employee Engagement is Key to Company Success*. Retrieved from Socialchorus: https://socialchorus.com/blog/employee-engagement-key-to-company-success/

Bu, N., Mckeen, C. A., & Shen, W. (2011). Behavioural indicators of turnover intention: the case of young professionals in China. *The International Journal of Human Resource Management*, 3338-3356. doi:10.1080/09585192.2011.561214

Calisir, F., Gumussoy, C. A., & Iskin, I. (2011). Factors affecting intention to quit among IT professionals in Turkey. *Personnel Review*, 514-533. doi:10.1108/00483481111133363

Carpenter, N. C., & Berry, C. M. (2016). Are Counterproductive Work Behavior and Withdrawal Empirically Distinct? A Meta-Analytic Investigation. *Journal of Management*, 834-863. doi:10.1177/0149206314544743

Chih, Y.-Y., Kiazad, K., Zhou, L., Capezio, A., Li, M., & Restubog, S. L. (2016). Investigating Employee Turnover in the Construction Industry: A Psychological Contract Perspective. *Journal of Construction Engineering and Management*. doi:10.1061/(asce)co.1943-7862.0001101

Cho, D.-H., & Son, J.-M. (2012). Job Embeddedness and Turnover Intentions: An Empirical Investigation of Construction IT Industries. *International Journal of Advanced Science and Technology*.

Cho, Y. J., & Lewis, G. B. (2011). Turnover Intention and Turnover Behavior. *Review of Public Personnel Administration*, 4-23. doi:10.1177/0734371x11408701

Cohen, A., & Golan, R. (2007). Predicting absenteeism and turnover intentions by past absenteeism and work attitudes: An empirical examination of female employees in long term nursing care facilities. *Career Development International*.

Comptia. (2017, January). *IT Industry Outlook 2018.* Retrieved from CompTIA Information Technology: https://www.comptia.org/resources/it-industry-trends-analysis

Deeley, K. (2018, May 13). *Negligence Vs. Poor Work Performance*. Retrieved from Invictus: http://invictusgroup.co.za/articles/negligence-vs-poor-work-performance/#:~:text=Negligence%20is%20defined%20as%20an,his%2Fher%20duties%20or%20tasks.

Doyle, A. (2019, November 08). *How Long Should an Employee Stay at a Job?* Retrieved from The Balance Careers: https://www.thebalancecareers.com/how-long-should-an-employee-stay-at-a-job-2059796

Essays, U. (2018, November). *Role of Job Satisfaction on Employee Behavior*. Retrieved from UK Essays: https://www.ukessays.com/essays/management/role-of-job-satisfaction-on-employee-behavior-management-essay.php

Forbes Human Resources Council. (2018, November 30). *12 Signs Your Employee Is Disengaged (And How To Respond)*. Retrieved from Forbes: https://www.forbes.com/sites/forbeshumanresourcescouncil/2018/11/30/12-signs-your-employee-is-disengaging-and-how-to-respond/?sh=649d42fe2928

Forumplus. (2019, July 10). *Reasons to Choose Quantitative over Qualitative Research*. Retrieved from Formplus: https://www.formpl.us/blog/quantitative-qualitative-research

Frost, S. (2016, October 26). *Problems of High Turnover Rates*. Retrieved from Small Business - Chron.com: https://smallbusiness.chron.com/problems-high-turnover-rates-11659.html

Gabčanová, I. (2011). The Employees – The Most Important Asset in The Organizations. *Human Resources Management & Ergonomics*.

Gallo, A. (2015, November 4). *A Refresher on Regression Analysis*. Retrieved from Harvard Business Review: https://hbr.org/2015/11/a-refresher-on-regression-analysis

Gelo, O., Braakmann, D., & Benetka, G. (2008). Quantitative and qualitative Research: Beyond the debate. *Integrative Psychological and behavioural science*, 266-290.

Grose, M. (2015, November 11). *c.a.SHORT*. Retrieved from www.cashort.com: https://www.cashort.com/blog/top-5-reasons-for-high-turnover

Gupta, M., & Shaheen, M. (2017). Impact of work engagement on turnover intention: moderation by psychological capital in India. *Verslas: teorija ir praktika- Business theory and Practice*, 136-143.

Harden, G., Boakye, K. G., & Ryan, S. (2016). Turnover Intention of Technology Professionals: A Social Exchange Theory Perspective. *Journal of Computer Information Systems, 10*.

Heerwagen, J., Kelly, K., & Kampschroer, K. (2016, May 10). *The Changing Nature Of Organizations, Work, And Workplace*. Retrieved from Whole Building Design Guide: https://www.wbdg.org/resources/changing-nature-organizations-work-and-workplace

Hoogervorst, J., Flier, H., & Koopman, P. (2004). Implicit communication in organisations: The impact of culture, structure and management practices on employee behaviour. *Journal of Managerial Psychology*.

Hyacinth, B. (2018, January 30). *Loyal Employees are Assets – Not Liabilities*. Retrieved from Linkedin: https://www.linkedin.com/pulse/loyal-employees-assets-liabilities-brigette-hyacinth/

ICTA. (2014). *National ICT Workforce Survey 2013.* Colombo: Informationa and Communication Technology Agency of Sri Lanka.

IT Industry Outlook 2018. (2017, January). Retrieved from CompTIA Information Technology: https://www.comptia.org/resources/it-industry-trends-analysis

Ivens, S., Schaarschmidt, M., & Höber, B. (2017). Enemy in the house? Antecedents of employees' company-related bad mouthing. *Twenty third Americas Conference on Information Systems, Boston, 2017*.

Jagun, V. (2015). *An Investigation into the High Turnover of Employees within the Irish Hospitality Sector, Identifying What Methods of Retention Should Be Adopted.* National College of Ireland.

Jans, N., Frazer-Jans, J., & Louviere, J. (2001). Employee choice modelling: Predicting employee behaviour under varied employment conditions. *Asia Pacific Journal of Human Resource*, 59-81.

Jiang, H., & Shen, H. (2020). Toward a Relational Theory of Employee Engagement: Understanding Authenticity, Transparency, and Employee Behaviors. *International Journal of Business Communications*.

Jinadasa, L., & Wickramasinghe, V. (2005). IT Industry Labour Turnover: The Reality. *Proceedings of 10th International Conference on Sri Lanka Studies.* Kelaniya: Research Centre for Social Sciences, University of Kelaniya, Sri Lanka,.

Johnson, R. (2018). *Key Reasons for Job Dissatisfaction and Poor Employee Performance*. Retrieved from https://smallbusiness.chron.com: https://smallbusiness.chron.com/key-reasons-job-dissatisfaction-poor-employee-performance-25846.html

Joo, B.-K. (., & Park , S. (2010). Career satisfaction, organizational commitment, and turnover intention: The effects of goal orientation, organizational learning culture and developmental feedback. *Leadership & Organization Development Journal*.

Kim, S. (2012). The Impact of Human Resource Management on State Government IT Employee Turnover Intentions. *Public Personnel Management*.

Kochan, T. A., Whyte, W. F., & Hannan, M. T. (2017, May 23). *The Changing Work Force*. Retrieved from Britannica: https://www.britannica.com/topic/industrial-relations/The-changing-work-force

Lee, A., Willis, S., & Tian, A. W. (2018, March 2). *When Empowering Employees Works, and When It Doesn't*. Retrieved from Harvard Business Review: https://hbr.org/2018/03/when-empowering-employees-works-and-when-it-doesnt

Lumen. (2021). *Drivers of Behavior*. Retrieved from courses.lumenlearning.com: https://courses.lumenlearning.com/boundless-management/chapter/drivers-of-behavior/#:~:text=Attitudes%20can%20positively%20or%20negatively%20affect%20a%20person's%20behavior.,positively%20influence%20those%20around%20them.

Mamun, C. A., & Hasan, M. (2017). Factors affecting employee turnover and sound retention strategies in business organization: A conceptual view. *Problems and Perspectives in Management*, 63-71.

Matsuki, T., & Nakamura, J. (2019). Effect of Employees' Values on Employee Satisfaction in Japanese Retail and Service Industries. *Advances in Human-Computer Interaction*, 1-11.

Mayhew, J. (2019, October 11). *What's the Typical Software Developer Career Path?* Retrieved from woz-u: https://woz-u.com/blog/whats-the-typical-software-developer-career-path/

McKinney, P. (2018, March 9). *Employee Behavior: Definition, Issues & Expectations*. Retrieved from Study.com: https://study.com/academy/lesson/employee-behavior-definition-issues-expectations.html

Men, L. R., & Yue, C. A. (2019). Creating a positive emotional culture: Effect of internal communication and impact on employee supportive behaviors. *Public Relations Review*.

Merrell, J. M. (2019, November 5). *Benefits of Workplace Transparency*. Retrieved from Glassdoor for employers: https://www.glassdoor.com/employers/blog/importance-transparent-workplace/

Mistry, P. (2017, October 8). *Richard Branson: "Clients do not come first. Employees come first."*. Retrieved from The HR Digest:

https://www.thehrdigest.com/richard-branson-clients-do-not-come-first-employees-come-first/

Monte, P. A. (2011). Job dissatisfaction and labour turnover: evidence from Brazil. *The International Journal of Human Resource Management*, 1717-1735.

Moqbel, M., Bartelt, V., Topuz, K., & Gehrt , K. (2020). Enterprise social media: combating turnover in businesses. *Internet Research*.

Mosadeghrad, A. M. (2013). Quality of Working Life: An Antecedent to Employee Turnover Intention. *International Journal of Health Policy and Management*, 43-50. doi:10.15171/ijhpm.2013.07

Nagadevara, V., Srinivasan, V., & Valk, R. (2008). Establishing a Link between Employee Turnover and Withdrawal Behaviours: Application of Data Mining Techniques. *Research and Practice in Human Resource Managemen*, 81-99.

Newman, D. (2018, October 18). *Top 10 Digital Transformation Trends For 2019.* Retrieved from Forbes: https://www.forbes.com/sites/danielnewman/2018/09/11/top-10-digital-transformation-trends-for-2019/#6a739c1f3c30

O'Donnell, J. T. (2015, April 29). *4 Ways To Reduce Employee Turnover With Social Media*. Retrieved from LinkedIn: https://www.linkedin.com/pulse/4-ways-reduce-employee-turnover-social-media-j-t-o-donnell/

Petrone, P. (2018, March 19). *See The Industries With the Highest Turnover (And Why It's So High)*. Retrieved from Linkedin: https://learning.linkedin.com/blog/engaging-your-workforce/see-the-industries-with-the-highest-turnover--and-why-it-s-so-hi

Profiles Asia Pacific Inc. (2018, April 24). *Profiles*. Retrieved from Key Behavioral Indicators for Employees: https://www.profilesasiapacific.com/2018/04/24/key-behavioral-indicators-for-employees/

Quantum Performance Inc. (2016, May 14). *Six Warning Signs You Lack Employee Engagement and Commitment*. Retrieved from Gershon Mader - Quantum Performance: https://quantumperformanceinc.com/six-warning-signs-you-lack-employee-engagement-and-commitment/

Rampton, J. (2017, June 19). *25 Signs Your Employee Is About to Quit, According to Research*. Retrieved from INC.: https://www.inc.com/john-rampton/25-signs-your-employee-is-about-to-quit-according-to-research.html

Reisenwitz, C. (2020). *How to reduce Software Engineering turnover in one hour per week*. Retrieved from cathyreisenwitz: https://dev.to/cathyreisenwitz/how-to-reduce-software-engineering-turnover-in-one-hour-per-week-30c

Rosse, J. G., & Saturay, S. (2004). *Individual Differences in Adaptation to Work Dissatisfaction.*

Schmitz, A. (2012). *Management Principles.*

SE edu. (2016, June 1). *Why Should Managers Study Human Behavior?* Retrieved from Southeastern Oklahoma State University: https://online.se.edu/articles/mba/why-should-managers-study-human-behavior.aspx

Senthilnathan, S. (2019). Usefulness of Correlation Analysis. *SSRN Electronic Journal*.

Spacey, J. (2018, June). *12 Types of Work Schedule*. Retrieved from simplicable: https://simplicable.com/new/work-schedule

Sri Lanka Export Development Board. (2021). *ICT SERVICES OVERVIEW*. Retrieved from www.srilankabusiness.com: https://www.srilankabusiness.com/ict-services/about/#:~:text=of%20the%20country.-,The%20Sri%20Lankan%20ICT%20sector%20serves%20a%20number%20of%20Industry,and%20Leisure%20and%20many%20more.

Thomas, J. (2015). Study on Causes and Effects of Employee Turnover in Construction Industry. *International Journal of Science and Research (IJSR)* , 3041-3044.

Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How Reliable are Measurement Scales? External Factors with Indirect Influence on Reliability Estimators. *Procedia Economics and Finance*, 679-686. doi:10.1016/s2212-5671(15)00123-9

Valle, P. D. (2019, November 4). *Attendance and Absenteeism*. Retrieved from Employment low information network: https://www.elinfonet.com/attendance-and-absenteeism/#:~:text=Employees%20may%20be%20absent%20from,attendance%20or%20other%20unavoidable%20situations.

Wainwright, B. (2019, October 3). *How to increase employee commitment*. Retrieved from Effectory: https://www.effectory.com/knowledge/how-to-increase-employee-commitment/

Waschek, M. (2017, March 1). *The Importance Of Understanding Employee Behavior*. Retrieved from CorpLife: https://www.croplife.com/management/the-importance-of-understanding-employee-behavior/

Werf, R. V. (2020, January 3). *3 Key Types of Organisational Commitment*. Retrieved from Effectory: https://www.effectory.com/knowledge/3-key-

types-of-organisational-committment/#:~:text=Organisational%20commitment%20in%20the%20workplace,the%20goals%20of%20the%20organisation.

White, M., & Bryson, A. (2013). Positive employee attitudes: How much human resource management do you need? *Human Relations*, 385-406. doi:10.1177/0018726712465096

White, S. K. (2016, February 8). *The 8 most stressful jobs in tech.* Retrieved from CIO: https://www.cio.com/article/3030171/careers-staffing/the-8-most-stressful-jobs-in-tech.html

Wortley, A. (2018, January 12). *Employee Turnover Rates: An Industry Comparison*. Retrieved from e-days: https://www.e-days.co.uk/news/employee-turnover-rates-an-industry-comparison

Zhang, X., Ma, L., Xu, B., & Xu, F. (2019). How social media usage affects employees' job satisfaction and turnover intention: An empirical study in China. *Information & Management*.

Zhang, Y. (2016). A Review of Employee Turnover Influence Factor and Countermeasure. *Journal of Human Resource and Sustainability Studies*, 85-91.

Appendix A : Request Letter

Dear participant,

If you are a software engineer, I appreciate your support in following this questionnaire for my MBA research. Please forward and share the questionnaire with the software engineer professionals in Sri Lanka.

This Questionnaire is designed to study the behavioural indicators that reflect the turnover intention of software engineers.

Data gathered from the survey will only be used for the thesis requirement of the MBA in IT, at the University of Moratuwa, Sri Lanka. This survey is stipulated confidential and anonymous. Your responses will not be identified with you personally, and all findings will appear in aggregated forms.

Your participation in the research would be greatly appreciated. If you have any suggestions or would like more clarification about the questions, or how the data will be used, please feel free to contact us using the details provided below.

Thank you very much for your time and help in making this study possible.

Yours Sincerely,

Kalani Athukorala
kalani.17@cse.mrt.ac.lk
MBA in IT Student
Dept. of Computer Science and Engineering,
University of Moratuwa, Sri Lanka.

Appendix B: Questionnaire Definition

Following is the list of questions that used in online survey to collect the data for this research.

Demographic Questions	
Which age group are you belong to?	
20 – 25	
26 – 35	
36 – 45	
46 – 55	
Above 55	
Mention your gender	
Female	
Male	
Other	
Do not want to indicate	
What is your current designation?	
Associate Software Engineer	
Software Engineer	
Senior Software Engineer	
Associate Tech Lead	
Tech Lead	
Senior Tech Lead	
Other	

Working Experience	
How long have you been in the software industry?	
Less than 1 year	
1-3 years	
4-5 years	
6-10 years	
More than 10 years	
How many employers have you changed so far?	
I'm in my first job	
I have changed 2-5 employers	
I have changed 6-10 employers	

I have changed more than 10 employers	
Are you satisfied with your current employer?	
Very dissatisfied (1)	
Slightly satisfied (2)	
Moderately satisfied (3)	
Very satisfied (4)	
Completely satisfied (5)	

Attendance (Get the details of current situation)	
What is your working time?	
8AM – 5PM	
9AM – 6PM	
Flexible hours	
Other	
Do you usually go to office on time/specific time?	
Never (1)	
Rarely (2)	
Sometimes (3)	
Often (4)	
Always (5)	
Do you arrive at work late because you are really not in the mood to work?	
Never (1)	
Rarely (2)	
Sometimes (3)	
Often (4)	
Always (5)	
Do you leave early or try to leave work early without permission or by giving false reasons because you have no motivation to work?	
Never (1)	
Rarely (2)	
Sometimes (3)	
Often (4)	
Always (5)	

	Never (1)	Rarely (2)	Sometimes (3)	Very Often (4)	Always (5)
Absenteeism					
Leaves Do you call in sick occasionally (when you were not actually sick) because you don't feel like working at your job?					
Leaves Do you take unplanned leaves frequently when you don't feel like working?					
Leaves Have you obtained 50% or more of your sick leaves without a fair reason?					
Task Negligence					
Have you worked intentionally slow than you can work after you lost your motivation for your job?					
Have you spend time on personal matters while at work?					
Have you tried to keep out of sight of your supervisor/manager so you can chat with colleagues, take breaks or do other personal errands					
Have you taken an additional or longer break than the acceptable limit at your workplace because you don't have any motivation to work? (Lunch break/tea break)					
Have you frequently visited job websites while you work?					
Are you ready to accept long term projects with more responsibilities?					
Do you refrain from presenting your ideas in planning activities/meetings because you have no motivation to work?					
Organizational Commitment					
Are you ready to perform your duty beyond the expected level?					
Are you actively participating in organizational events?					
Are you actively giving suggestions or feedback on organizational services to improve them?					
Do you defend your organization when outsiders criticize it?					
Do you recommend your organization for your friends/known people to join?					
Social media usage and posting					
How often do you use your personal social media accounts at work?					

Do you add/follow your office colleagues in your social media accounts?					
Have you shared any post related to your office problems or dissatisfaction?					
Do you start search/follow new job opportunities in social media?					
Employee Turnover					
Do you get enough training opportunities from your company?					
Do you receive satisfactory compensation package from your employer?					
Do you have a clear idea about your career growth with your current job role?					
Do you receive promotion opportunities fairly from your employer?					
Do you receive satisfactory rewards for your job?					

Appendix C : Descriptive Statistics

Table C-1: Age Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 – 25	82	21.6	21.6	21.6
	26 – 35	261	68.7	68.7	90.3
	36 – 45	35	9.2	9.2	99.5
	46 – 55	2	.5	.5	100.0
	Total	380	100.0	100.0	

Table C-2: Gender Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	179	47.1	47.1	47.1
	Male	201	52.9	52.9	100.0
	Total	380	100.0	100.0	

Table C-3: Distribution of Designation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Associate Software Engineer	20	5.3	5.3	5.3
	Software Engineer	159	41.8	41.8	47.1

	Senior Software Engineer	129	33.9	33.9	81.1
	Associate Tech Lead	32	8.4	8.4	89.5
	Tech Lead	28	7.4	7.4	96.8
	Senior Tech Lead	7	1.8	1.8	98.7
	Other	5	1.3	1.3	100.0
	Total	380	100.0	100.0	

Table C-4: Years of Experience Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	26	6.8	6.8	6.8
	1-3 years	111	29.2	29.2	36.1
	4-5 years	166	43.7	43.7	79.7
	6-10 years	70	18.4	18.4	98.2
	More than 10 years	7	1.8	1.8	100.0
	Total	380	100.0	100.0	

Table C-5: No of Changed Employers Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I'm in my first job	95	25.0	25.0	25.0
	I have changed 1 employer	129	33.9	33.9	58.9

	I have changed 2-5 employers	139	36.6	36.6	95.5
	I have changed 6-10 employers	17	4.5	4.5	100.0
	Total	380	100.0	100.0	

Table C-6: Current Level of Satisfaction Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very dissatisfied	71	18.7	18.7	18.7
	Slightly satisfied	73	19.2	19.2	37.9
	Moderately satisfied	39	10.3	10.3	48.2
	Very satisfied	167	43.9	43.9	92.1
	Completely satisfied	30	7.9	7.9	100.0
	Total	380	100.0	100.0	

Table C-7: Working Time Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8AM – 5PM	68	17.9	17.9	17.9
	9AM – 6PM	104	27.4	27.4	45.3
	Flexible hours	189	49.7	49.7	95.0
	Other	19	5.0	5.0	100.0
	Total	380	100.0	100.0	

Table C-8: Descriptive analysis for Attendance

Variable Type		**Variable Name**	
Independent		Attendance	
	Do you usually go to office on time?	Do you arrive at work late because you are really not in the mood to work?	Do you leave early or try to leave work early without permission or by giving false reasons because you have no motivation to work?
N Valid	380	380	380
Missing	0	0	0
Mean	3.11	2.93	2.93
Std. Deviation	.974	1.483	1.576

Table C-9: Frequency Analysis for lateness and employee mood

Variable Type		**Variable Name**			
Independent		Attendance			
Question: Do you arrive at work late because you are really not in the mood to work?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	88	23.2	23.2	23.2

	Rarely	90	23.7	23.7	46.8
	Sometimes	42	11.1	11.1	57.9
	Very Often	82	21.6	21.6	79.5
	Always	78	20.5	20.5	100.0
	Total	380	100.0	100.0	

Table C-10: Frequency Analysis for lateness and employee mood

Variable Type		**Variable Name**			
Independent		Attendance			
Question: Do you arrive at work late because you are really not in the mood to work?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	88	23.2	23.2	23.2
	Rarely	90	23.7	23.7	46.8
	Sometimes	42	11.1	11.1	57.9
	Very Often	82	21.6	21.6	79.5
	Always	78	20.5	20.5	100.0
	Total	380	100.0	100.0	

Table C-11: Frequency Analysis for leaving early and motivation to work

Variable Type		**Variable Name**			
Independent		Attendance			
Question: Do you leave early or try to leave work early without permission or by giving false reasons because you have no motivation to work?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	102	26.8	26.8	26.8

	Rarely	84	22.1	22.1	48.9
	Sometimes	30	7.9	7.9	56.8
	Very Often	68	17.9	17.9	74.7
	Always	96	25.3	25.3	100.0
	Total	380	100.0	100.0	

Table C-12: Descriptive analysis for Absenteeism

Variable Type		**Variable Name**		
Independent		Absenteeism		
		Leaves Do you call in sick occasionally (when you were not actually sick) because you don't feel like working at your job?	Leaves Do you take unplanned leaves frequently when you don't feel like working?	Leaves Have you obtained 50% or more of your sick leaves without a fair reason?
N	Valid	380	380	380
	Missing	0	0	0
Mean		2.82	2.78	2.77
Std. Deviation		1.393	1.469	1.489

Table C-13: Frequency Analysis for obtaining sick leaves without being actually sick

Variable Type	**Variable Name**
Independent	Absenteeism
Question: Do you call in sick occasionally (when you were not actually sick) because you don't feel like working at your job?	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	78	20.5	20.5	20.5
	Rarely	117	30.8	30.8	51.3
	Sometimes	37	9.7	9.7	61.1
	Very Often	91	23.9	23.9	85.0
	Always	57	15.0	15.0	100.0
	Total	380	100.0	100.0	

Table C-14: Frequency Analysis for obtaining unplanned leaves

Variable Type	**Variable Name**
Independent	Absenteeism
Question: Do you take unplanned leaves frequently when you don't feel like working?	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	102	26.8	26.8	26.8
	Rarely	99	26.1	26.1	52.9
	Sometimes	15	3.9	3.9	56.8
	Very Often	109	28.7	28.7	85.5
	Always	55	14.5	14.5	100.0
	Total	380	100.0	100.0	

Table C-15: Frequency Analysis for obtaining sick leaves without fair reason

Variable Type	**Variable Name**
Independent	Absenteeism
Question: Have you obtained 50% or more of your sick leaves without a fair reason?	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	108	28.4	28.4	28.4
	Rarely	84	22.1	22.1	50.5
	Sometimes	39	10.3	10.3	60.8
	Very Often	84	22.1	22.1	82.9
	Always	65	17.1	17.1	100.0
	Total	380	100.0	100.0	

Table C-16: Descriptive analysis for Task Negligence

Variable Type	**Variable Name**
Independent	Task Negligence

		Have you worked intentionally slow than you can work after you lost your motivation for your job?	Have you spent time on personal matters while at work?	Have you tried to keep out of sight of your supervisor/ manager so you can chat with colleagues, take breaks or do other personal errands?	Have you taken an additional or longer break than the acceptable limit at your workplace because you don't have any motivation to work?	Have you frequently visited job websites while you work?	Are you ready to accept long term projects with more responsibilities?	Do you refrain from presenting your ideas in planning activities/ meetings because you have no motivation to work?
N	Valid	380	380	380	380	380	380	380
	Missing	0	0	0	0	0	0	0
Mean		2.98	2.84	2.87	2.89	3.22	2.88	2.89
Std. Deviation		1.190	1.408	1.308	1.510	1.250	1.355	1.358

Table C-17: Frequency Analysis for work speed and motivation

Variable Type	**Variable Name**
Independent	Task Negligence
Question: Have you worked intentionally slow than you can work after you lost your motivation for your job?	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	52	13.7	13.7	13.7
	Rarely	93	24.5	24.5	38.2
	Sometimes	68	17.9	17.9	56.1
	Very Often	144	37.9	37.9	93.9
	Always	23	6.1	6.1	100.0
	Total	380	100.0	100.0	

Table C-18: Frequency Analysis for spending time on personal matters while at work

Variable Type	**Variable Name**
Independent	Task Negligence
Question: Have you spent time on personal matters while at work?	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	79	20.8	20.8	20.8
	Rarely	112	29.5	29.5	50.3
	Sometimes	42	11.1	11.1	61.3
	Very Often	85	22.4	22.4	83.7
	Always	62	16.3	16.3	100.0
	Total	380	100.0	100.0	

Table C-19: Frequency Analysis for trying to keep out of sight of supervisor/manager

Variable Type	**Variable Name**
Independent	Task Negligence
Question: Have you tried to keep out of sight of your supervisor/manager so you can chat with colleagues, take breaks or do other personal errands?	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	72	18.9	18.9	18.9
	Rarely	95	25.0	25.0	43.9
	Sometimes	62	16.3	16.3	60.3
	Very Often	111	29.2	29.2	89.5
	Always	40	10.5	10.5	100.0
	Total	380	100.0	100.0	

Table C-20: Frequency Analysis for taking breaks while working

Variable Type	**Variable Name**
Independent	Task Negligence

Question: Have you taken an additional or longer break than the acceptable limit at your workplace because you don't have any motivation to work? (Lunch break/tea break)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	102	26.8	26.8	26.8
	Rarely	68	17.9	17.9	44.7
	Sometimes	60	15.8	15.8	60.5
	Very Often	69	18.2	18.2	78.7
	Always	81	21.3	21.3	100.0
	Total	380	100.0	100.0	

Table C-21: Frequency Analysis for using job websites while working

Variable Type	**Variable Name**
Independent	Task Negligence

Question: Have you frequently visited job websites while you work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	29	7.6	7.6	7.6
	Rarely	123	32.4	32.4	40.0
	Sometimes	15	3.9	3.9	43.9
	Very Often	160	42.1	42.1	86.1
	Always	53	13.9	13.9	100.0
	Total	380	100.0	100.0	

Table C-22: Frequency Analysis for readiness to accept long term responsibilities

Variable Type	**Variable Name**
Independent	Task Negligence

Question: Are you ready to accept long term projects with more responsibilities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	70	18.4	18.4	18.4
	Rarely	110	28.9	28.9	47.4
	Sometimes	48	12.6	12.6	60.0
	Very Often	99	26.1	26.1	86.1
	Always	53	13.9	13.9	100.0
	Total	380	100.0	100.0	

Table C-23: Frequency Analysis for refrain from presenting ideas

Variable Type	**Variable Name**
Independent	Task Negligence

Question: Do you refrain from presenting your ideas in planning activities/meetings because you have no motivation to work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	75	19.7	19.7	19.7
	Rarely	100	26.3	26.3	46.1
	Sometimes	45	11.8	11.8	57.9
	Very Often	112	29.5	29.5	87.4
	Always	48	12.6	12.6	100.0
	Total	380	100.0	100.0	

Table C-24: Descriptive analysis for Organizational Commitment

Variable Type			**Variable Name**		
Independent			Organizational Commitment		
	Are you ready to perform your duty beyond the expected level?	Are you actively participating in organizational events?	Are you actively giving suggestions or feedback on organizational services to improve them?	Do you defend your organization when outsiders criticize it?	Do you recommend your organization for your friends/known people to join?
N Valid	380	380	380	380	380
Missing	0	0	0	0	0
Mean	3.25	3.13	3.05	3.01	3.33
Std. Deviation	1.198	1.361	1.278	1.242	1.494

Table C-25: Frequency Analysis for readiness to perform the duty beyond expectation

Variable Type		**Variable Name**			
Independent		Organizational Commitment			
Question: Are you ready to perform your duty beyond the expected level?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	23	6.1	6.1	6.1
	Rarely	101	26.6	26.6	32.6
	Sometimes	79	20.8	20.8	53.4
	Very Often	111	29.2	29.2	82.6
	Always	66	17.4	17.4	100.0
	Total	380	100.0	100.0	

Table C-26: Frequency Analysis for participation in organizational events

Variable Type		**Variable Name**			
Independent		Organizational Commitment			
Question: Are you actively participating in organizational events?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	62	16.3	16.3	16.3
	Rarely	86	22.6	22.6	38.9
	Sometimes	32	8.4	8.4	47.4
	Very Often	142	37.4	37.4	84.7
	Always	58	15.3	15.3	100.0
	Total	380	100.0	100.0	

Table C-27: Frequency Analysis for providing feedbacks for the growth of organization

Variable Type		**Variable Name**			
Independent		Organizational Commitment			
Question: Are you actively giving suggestions or feedback on organizational services to improve them?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	43	11.3	11.3	11.3
	Rarely	125	32.9	32.9	44.2
	Sometimes	30	7.9	7.9	52.1
	Very Often	135	35.5	35.5	87.6
	Always	47	12.4	12.4	100.0
	Total	380	100.0	100.0	

Table C-28: Frequency Analysis for defending organization

Variable Type		**Variable Name**			
Independent		Organizational Commitment			
Question: Do you defend your organization when outsiders criticize it?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	52	13.7	13.7	13.7
	Rarely	86	22.6	22.6	36.3
	Sometimes	98	25.8	25.8	62.1
	Very Often	95	25.0	25.0	87.1
	Always	49	12.9	12.9	100.0
	Total	380	100.0	100.0	

Table C-29: Frequency Analysis for recommending organization

Variable Type	**Variable Name**
Independent	Organizational Commitment

Question: Do you recommend your organization for your friends/known people to join?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	62	16.3	16.3	16.3
	Rarely	77	20.3	20.3	36.6
	Sometimes	33	8.7	8.7	45.3
	Very Often	90	23.7	23.7	68.9
	Always	118	31.1	31.1	100.0
	Total	380	100.0	100.0	

Table C-30: Descriptive analysis for Social Media Usage

Variable Type	**Variable Name**
Independent	Social Media Usage

		How often do you use your personal social media accounts at work?	Do you add/follow your office colleagues in your social media accounts?	Have you shared any post related to your office problems or dissatisfaction?	Do you start search/follow new job opportunities in social media?
N	Valid	380	380	380	380
	Missing	0	0	0	0
Mean		3.73	3.20	3.31	4.28

Std. Deviation	.981	.919	.920	.995

Table C-31: Frequency Analysis for usage of personal social media account at work

Variable Type		**Variable Name**			
Independent		Social Media Usage			
Question: How often do you use your personal social media accounts at work?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	3	.8	.8	.8
	Rarely	57	15.0	15.0	15.8
	Sometimes	58	15.3	15.3	31.1
	Very Often	183	48.2	48.2	79.2
	Always	79	20.8	20.8	100.0
	Total	380	100.0	100.0	

Table C-32: Frequency Analysis for having office colleagues in personal social media account

Variable Type		**Variable Name**			
Independent		Social Media Usage			
Question: Do you add/follow your office colleagues in your social media accounts?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	3	.8	.8	.8
	Rarely	97	25.5	25.5	26.3
	Sometimes	126	33.2	33.2	59.5
	Very Often	130	34.2	34.2	93.7
	Always	24	6.3	6.3	100.0

	Total	380	100.0	100.0	

Table C-33: Frequency Analysis for sharing post related to job dissatisfaction

Variable Type		**Variable Name**			
Independent		Social Media Usage			
Question: Have you shared any post related to your office problems or dissatisfaction?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	7	1.8	1.8	1.8
	Rarely	72	18.9	18.9	20.8
	Sometimes	125	32.9	32.9	53.7
	Very Often	149	39.2	39.2	92.9
	Always	27	7.1	7.1	100.0
	Total	380	100.0	100.0	

Table C-34: Frequency Analysis for searching new job opportunities in social media

Variable Type		**Variable Name**			
Independent		Social Media Usage			
Question: Do you start search/follow new job opportunities in social media?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	3	.8	.8	.8
	Rarely	32	8.4	8.4	9.2
	Sometimes	35	9.2	9.2	18.4
	Very Often	95	25.0	25.0	43.4
	Always	215	56.6	56.6	100.0
	Total	380	100.0	100.0	

Table C-35: Descriptive analysis for Software Engineer Turnover

Variable Type		**Variable Name**				
Dependent		Software Engineer Turnover				
		Do you get enough training opportunities from your company?	Do you receive satisfactory compensation package from your employer?	Do you have a clear idea about your career growth with your current job role?	Do you receive promotion opportunities fairly from your employer?	Do you receive satisfactory rewards for your job?
N	Valid	380	380	380	380	380
	Missing	0	0	0	0	0
Mean		3.44	3.14	3.31	3.42	3.22
Std. Deviation		.822	1.238	.954	.902	1.031

Table C-36: Frequency Analysis for training opportunities at work place

Variable Type		**Variable Name**			
Dependent		Software Engineer Turnover			
Question: Do you get enough training opportunities from your company?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely	81	21.3	21.3	21.3

	Sometimes	49	12.9	12.9	34.2
	Very Often	250	65.8	65.8	100.0
	Total	380	100.0	100.0	

Table C-37: Frequency Analysis for satisfaction on compensation package

Variable Type	**Variable Name**
Dependent	Software Engineer Turnover

Question: Do you receive satisfactory compensation package from your employer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	44	11.6	11.6	11.6
	Rarely	81	21.3	21.3	32.9
	Sometimes	89	23.4	23.4	56.3
	Very Often	111	29.2	29.2	85.5
	Always	55	14.5	14.5	100.0
	Total	380	100.0	100.0	

Table C-38: Frequency Analysis for career growth

Variable Type	**Variable Name**
Dependent	Software Engineer Turnover

Question: Do you have a clear idea about your career growth with your current job role?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	15	3.9	3.9	3.9
	Rarely	64	16.8	16.8	20.8
	Sometimes	113	29.7	29.7	50.5

	Very Often	165	43.4	43.4	93.9
	Always	23	6.1	6.1	100.0
	Total	380	100.0	100.0	

Table C-39: Frequency Analysis for promotion opportunities

Variable Type		**Variable Name**			
Dependent		Software Engineer Turnover			
Question: Do you receive promotion opportunities fairly from your employer?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2	.5	.5	.5
	Rarely	51	13.4	13.4	13.9
	Sometimes	165	43.4	43.4	57.4
	Very Often	111	29.2	29.2	86.6
	Always	51	13.4	13.4	100.0
	Total	380	100.0	100.0	

Table C-40: Frequency Analysis for rewards in job

Variable Type		**Variable Name**			
Dependent		Software Engineer Turnover			
Question: Do you receive satisfactory rewards for your job?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	12	3.2	3.2	3.2
	Rarely	98	25.8	25.8	28.9
	Sometimes	100	26.3	26.3	55.3
	Very Often	135	35.5	35.5	90.8
	Always	35	9.2	9.2	100.0

Total	380	100.0	100.0	