

PERCEIVED EMPLOYMENT-RELATED HEALTH RISKS FOR MID-CAREER EMPLOYEES IN SRI LANKAN IT- OPERATION SECTOR

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ABSTRACT

There are currently over 10,000 middle-aged IT workers in Sri Lanka, many of whom face increasing health problems as the country's IT sector grows rapidly since the 1990s'. This profession necessitates a lot of effort and stress on both a mental and physical level. They now require a better working environment in order to continue their operations, and research is being carried out to find them one. This is because the workplace serves as a person's second home.

This research study focuses to determine the factors that influence employment-related health risk for mid-career employees in the Sri Lankan IT operation sector. The primary research goals were obtained by conducting a comprehensive review of the literature and interviews with top-level IT operation professionals in Sri Lanka. As a result of that, research could identify five main factors namely career model, Work life balance, occupational environment, work stress and working hours. Five hypotheses were derived from the conceptual model, each based on a different variable identified in the study. An online survey was sent to professionals in the mid-career IT operation sector in order to collect data for testing hypotheses developed to prove if there are associations between the identified variables and work-related health risks. Research evaluation was done using statistical analysis. Research findings reveal that all the factors have positive relationship with employment-related health-risk, such that work stress, career model and occupational environment have comparatively higher influence, whereas working hours and work life balance have the lower influence.

Keywords: Career model, Work life balance, Occupational environment, Work stress, Working hours

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LIST OF ABBREVIATIONS

SLASSCOM	- Sri Lanka Association of Software and Services Companies
IT	- Information Technology
ICTA	- Information and Communication Technology Agency
ICT	- Information and Communication Technology
ITIL	- Information Technology Infrastructure Library
ISMS	- Information Security Management System
SSW	- Safety System of Work
CEO	- Chief Executive Officer
WLB	- Work Life Balance
IV	- Independent Variable
DV	- Dependent Variable

1. INTRODUCTION

1.1 Background

One of the world's fastest-growing industries right now is information technology. Not only in the world, but also in Sri Lanka, more than 300 IT companies are functioning as product and services-based companies, providing over 80,000 employment opportunities which is increasing day by day (SLASSCOM, 2020). With the rapid growth in IT workforce, it's mandatory to have a look on employment related issues as it may be more complex compared to the past years.

The IT industry consists of job categories such as Software development, quality assurance, project management, IT operations, Business Analysis and so on. Each category plays a vital role in order to deliver a success project to the end-user. Most of the IT professionals are dealing with customers from the beginning of the project until it is delivered to the customer. But IT operation employees may closely engage with customers even after the project delivery. Therefore, IT operation professionals represent their company many times compared to other IT professional categories. Therefore, having the strongest IT operation workforce may lead to creating and maintaining a good company image around the world.

Since Sri Lankan IT industry has established many decades back, it has collaboration of human resources who belongs to several age categories. People who join with IT industry as an undergraduate or just after completing their first degree without prior work-experience are considered as fresher. As same as employees who are having experience from 3 to 12 years in IT industry are considered as mid-career employees. Since workers are also aging, the most experienced workers are in the middle-aged category, and they need extra care in the workplace. Because this profession requires a lot of effort and has stress both mentally and physically. As a company, if it's failed to answer mid-career employee's difficulties, they might choose early retirement or looking for another employer to provide their skills at the later stage of their employment. Retaining mid-career employees is more useful from the company perspective as well. Because they have plenty of work-experience as well as they are strong enough to work efficiently and productively as most of mid-career employees are not yet exceed end-of their younger age.

Employees may expect a more suitable workplace to continue their work, so the research is being conducted to get them a better workplace and as it is a person's second home. In order to ensure the most suitable workspace, the quantitative researcher will proceed with identifying employment-related factors which may impact on health-risk of mid-career employees in the Sri Lankan IT operation sector. By identifying those factors, the researcher would be able to make recommendations in order to prevent such employment-related health-risk for mid-career employees in the Sri Lankan IT operation sector.

1.2 Motivation

When analyzing the survey information which was conducted by the Information and Communication Technology Agency of Sri Lanka (ICTA) in 2019, approximately 40% of Information and Communication Technology (ICT) workforce has 3-12 years of work-experience in the IT sector which means that they are currently in their mid-career stage. It implies that impact on mid-career employees will make a significant influence on the entire ICT workforce. Since the IT operation workforce acquire nearly 12% of the entire ICT workforce, and they engage more in customer-oriented IT related activities, the researcher has a motivation to conduct research that is beneficial for the IT-operation sector.

In order to perform well in a competitive marketplace, an organization should have enough technical competencies as well as a healthy workforce which leads towards success in the organization. Therefore, having a healthy workforce both physically and mentally would be an added advantage specially for the IT industry. Because IT sector employees may not work by sticking to a time-frame. They might work overnights, over weekends in order to perform duties in their job role. Due to these kinds of factors, IT professionals might not have enough time to pay attention to their personal health. Implicitly unhealthy habits may be added to their lifestyle because of their occupation. Therefore, it's important to identify employment-related health-risk which may arise in the IT sector. Specially IT operation employees have late-night shifts according to their job role, and they are responsible for quick customer responses. Such responsibilities lead to health complications specially for IT operation sector professionals.

There was ample research literature on the work-life balance of IT workers. But only a few researchers studied employment-related health-risk in the IT industry. After considering all these factors, the quantitative researcher decided to carry out research to identify employment-

related factors that impact on health-risks of mid-career employees in the Sri Lankan IT operation sector.

1.3 Research Scope

The scope of this research is to identify factors that influence employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector. Once the key factors are identified, the impact of each factor on the mid-career employee's health-risks will be determined. Finally, Researcher provides recommendations based on the findings from the analysis.

The factors affecting the mid-career employee's health-risks were identified over the literature review as well as by conducting interviews with senior professionals in the IT operation sector such as managers, team leads, Tech Leads and Architecture. Independent and dependent variables are identified and keep an eye on the relationship between those two variable types. Data for the study were gathered via an online survey while the sample size calculation was done using the sampling technique. Collected data were analyzed using the tool SPSS and analyzed data were used to determine the reliability of the questionnaire. It was useful in establishing the association between the factors.

This study's focus is solely on Sri Lankan IT operations who are having 3-12 years of work-experience which is called the mid-career stage. Therefore, target population and sample sizes are defined from the 3-12 years of experienced IT workforce. The survey responses were collected from the above-mentioned group of respondents.

1.4 Problem Statement

IT operations are liable for observing IT servers and systems, resolving help-desk escalations, regulating updates and the installation, etc. Apart from that, they provide various types of IT support, such as network administration, device management, and so on. It's possible that a weak IT operational personnel will harm the quality of IT services and other business activities within a corporation. Meanwhile, the corporation can strengthen its business operations in order to respond to shifting the client needs thanks to robust IT systems.

In order to have a strong IT operation sector, its employees should have a healthy condition in physical as well as mental. If the company has a weak IT operation workforce, they won't gain above noted achievement in terms of the company well-being. One of the main reasons to not have a healthy workforce is that they might have experienced some employment-related health-risks while working in IT operations.

This research study intends to identify the perceived employment-related factors that influence health-risk of mid-career employees in the Sri Lankan IT Operation sector. The study will further demonstrate the impact of each factor towards health-risks of mid-career employees in IT operation.

1.5 Research Objectives

This research study basically focuses to achieve the following objectives

- Identify perceived employment-related factors that impact on health-risks of mid-career employees in the Sri Lankan IT operation sector.
- Assess the level of impact of the factors on health-risks of mid-career employees in the Sri Lankan IT operation sector.
- Provide recommendations to prevent employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

1.6 Research Significance

The intention of this research is to identify employment-related health risks for mid-career employees in the IT operation sector which leads to taking the necessary action in order to build a blissful and healthy workforce as well as deliver maximum customer satisfaction as IT operation workforce are responsible for the quick response to their customer.

Finally, it shows how to overcome employment-related health risks in order to keep a minimum employee-turnover rate while maintaining a healthy workforce in the organization. Other than that, we can understand which factors stimulate employment-related health-risk in mid-career employees in the IT operation sector. Human resource policymakers will benefit from this research outcome when they prepare or amending employee rules in the IT operation sector.

1.7 Conclusion

This chapter explains the research background, motivation to do the research, the research scope and the problems trying to clarify which leads to identifying factors influencing employment-related health-risk for mid-career employees in the Sri Lankan IT operation sector. At the end of this chapter, it describes research objectives and significance of the research.

2. LITERATURE REVIEW

2.1 Chapter Introduction

The researcher has studied a wide range of literature sources for this chapter. Such as research publications & journals, subject matter books, online references to collect information with regard to employment-related health risks of mid-career employees in the Sri Lankan IT operation sector. Particularly, the factors that influence employment-related health risks of mid-career employees in the Sri Lankan IT operation sector have been analyzed. Furthermore, the statistical analysis approach has been considered in order to analyze the survey data and then to propose reliable and powerful recommendations.

2.2 IT operation Sector in IT Industry

IT operations are handled by the Information Technology department. Particularly, IT operations consist of a set of processes to follow and services to maintain that are provided by a combination of software/hardware. IT operations are an important function defined out of the four functions stated in the IT Infrastructure Library (ITIL). ITIL is the framework for IT service management that includes best practices to follow in terms of IT Operations, Application management and the service desk areas. As a critical function of the IT organization, IT operations are run by selected capable professionals as a separate working group within the IT department. The IT department's typical hierarchy can be viewed as an IT operations manager and a group of IT operators. Operations manager leads the IT operators group (IT operations, n.d).

The IT operations team is responsible for carrying out ITIL procedures such as Incident management, Problem management, Access management, IT operations control, facility management, and technical management. Moreover, Incident management goal is to restore the impacted service with minimal or no impact as quickly as possible. All the incidents go through the life cycle of the incident. Incidents refer to an unplanned interruption or the quality degradation of an IT service. Problem management comprises the assessment of incident reports and the analysis of data generated by other IT service management processes to detect any major challenges or trends. Allowing authorized users access to certain services while

blocking unauthorized ones is known as access management. Basically, information security management system's policies are used to prevent access (ISMS). Identity management and rights management are other terms for access management. The purpose of IT operations is to keep the track of and administer a company's IT services and the infrastructure. The control of IT operations includes everyday regular duties relating to the operation of applications and infrastructure components. The routine maintenance, the task scheduling, and output management are just a few examples of these kinds of activities (Brush, n.d).

2.3 Mid-career Employment

According to Kokemuller (2018), when someone is in their mid-career stage of their career, they have gone past the entrance level but aren't quite finished. According to him, someone in the mid-career stage of their career is someone who has worked in their field for at least 10 years.

16 percent of American workers said they had trouble managing work and family obligations in the 2010 National Health Interview Survey. More people in their 30s and 40s agreed with these findings. As an example, 19% of non-Hispanic black workers expressed difficulty juggling their personal and professional lives, compared to 16% of non-Hispanic white workers and 15% of Hispanic workers (Jamu, 2019). According to Akram (2014), in Bangladesh, 79.52 percent of wounded (occupational injuries) employees were aged 40–59.

In the study conducted by Kutty (2018), 80 percent of the people who took part reported having some sort of health issue. Considering their young age, 78% of them have heart problems, 50% have chronic headaches and sleeplessness, and 31% have high blood pressure. Personal relationships are also damaged. At least 62% of people say their families are stressful, 28% are divorced, and 22% are getting divorced soon.

Steenland et al. (2003), as cited in Concha-Barrientos et al. (n.d), stated that 6–18% of people in the United States of America aged 24–64 years are at increased risk of ischemic heart disease from noise, work stress, rotating shifts, and secondhand smoke. According to De Silva, Lombardo, Lipscomb, Grad and Østbye (2013), a total of 1058 women workers enrolled in the experiment. The average age was 27.8 years, and 15.5% of those surveyed said they had musculoskeletal difficulties, with lower back pain being the most common complaint. The

majority of workplace injuries (68.3 percent) were puncture wounds, with over 5% reporting a working injury in the previous year.

2.4 Health-risk

Employees in the IT industry are more likely to suffer from a wide range of health issues due to the constant physical and emotional stress of their jobs. The stress can cause, maintain, or worsen disease in three ways. The stress-related health problems include the acid reflux, the alcoholism, asthma, diabetes, the fatigue, tension headaches, hypertension, insomnia, the irritable bowel syndrome, the psychoneurosis, the sexual dysfunction, and various skin conditions include psoriasis, the lichen planus, urticaria, pruritus, and the neurodermatitis. We are living in an era where the IT business is exploding. There are goals in every profession, and employees experience stress when they are set impossible goals or are unable to comply with a certain scenario (Padma et al., 2015).

People who work in an office environment for long hours, weekends, or even their whole working lives may be at the risk for physical and mental disorders. Among IT professionals, the wrist, arm, shoulder, neck, and back muscle-skeletal concerns appear to be the most prominent health concern. Other illnesses include atherosclerosis, which affects the heart and lungs, as well as mental health difficulties (“Health Concerns of IT Professionals”, n.d).

Most health difficulties, such as back discomfort and low back pain, are caused by poor posture, according to the study ("Health Problems in IT Professionals -Causes and Prevention", 2021). As a result of the distance maintained with a computer device, the eye strain, dark spots, redness, the computer vision syndrome, and dry eye disorders might occur as well. According to Aveline and Kumar (2018), employees who work long work hours are more likely to be suffering from diseases and health problems like depression, stress, and back problems. Among IT professionals, Tejaswi (n.d.) outlined some of the most prevalent health issues, including lower back discomfort, the carpal tunnel syndrome, anxiety and stress, and cardiovascular diseases. Other issues included sleeplessness, headaches, and neck pain.

Employees who spend the majority of their time in front of computers face numerous occupational health risks, including, but not limited to, physical impairments, obesity, cardiovascular issues, depression, and other mental health concerns (Health Issues and the stress Faced by Employees in IT Industry, n.d.).

2.5 Employment-related factors that affect health-risks of mid-career employees in Sri Lankan IT operation sector

2.5.1 Career Model

Depending on how jobs are designed, they can either help or hinder workers' health and safety. When safety difficulties occur due to the poor task design, it might be difficult to control the risk. As a result, workers may be exposed to the danger for no good reason. Much can go wrong when the company prioritizes work delivery over health and safety. Everyone in a workplace is at the risk if senior management does not make a commitment to health and safety. Some work schedules violate safety ethics. People who are concerned about their well-being and safety are often concerned about the effects of work stress. The schedule may be designed to either reduce the amount of time employees are exposed to the job's inherent dangers or to reduce the amount of time they are exposed to the hostile environment. Accidents, lost time at work, wasted materials, and mental illness and sadness can all be the result of inadequate or nonexistent workplace monitoring. All the aforementioned go against the aims of implementing health and safety practices in the workplace. As a result, strong supervision should always be ensured while doing new duties, when a new duty is assigned to a less experienced employee, and when the risk connected with the job is substantial. A job well done to make everyone pleased, and this might involve monetary rewards as well.

Workers who feel tricked, abused, or mistreated by their superiors suffer from physical and emotional stress, which can lead to melancholy and suicidal thoughts. This will have an impact on the well-being of the employees. Every job can be done safely, and that is true. However, a job's Safety System of Work (SSW) should be addressed when making plans. The job may not be delivered safely if SSW is not taken into account at the planning stages. Without a routine inspection/monitoring/audit plan in place, the organization has no means of knowing where it stands on health and safety issues. At this point, no one is bothered about health and safety issues, therefore there will be no way to compare performance (Edet, 2019).

Work should be effectively delegated to the staff, as proposed by Pravallika (2017), to avoid overburdening them with work, which could lead to stress. The author goes on to explain that elements including job analysis, rational and positive thinking, meditation and relaxation, as

well as clear career routes and role clarity, can all help minimize stress. Job analysis can help you focus on the most critical aspects of your job, so you can do them well. It aids you in getting to the heart of the matter by removing unnecessary clutter and distractions. To properly define employee roles, it means that employees must have a good awareness of their responsibilities. They must be aware of the company's expectations and confident that they can live up to them. When employees are unsure of their work roles or think they will fail, they are more likely to experience stress (Pravallika, 2017).

Employees in the IT/BPO sector are negatively affected by long working hours, an excessive amount of work, travel time, project deadlines, and unconventional work schedules such as alternate shifts and weekend work (Kutty, 2018). Other research by (Kutty,2018) have shown that call center CEOs suffer from profound inferiority complexes as a result of circumstances such as working at night and not fully employing their technical abilities.

The firms are unwilling to offer a safe working environment for their employees because of political pressure. Workers who choose to work in hazardous conditions and are exploited are almost certainly doing so due to financial incentives (Occupational safety and health, 2011).

According to De Silva, Lombardo, Lipscomb, Grad, and Østbye (2013), manufacturing employees are especially vulnerable to musculoskeletal problems because of the physical demands and repetitive nature of their employment.

A variety of occupational activities can lead to awkward postures, such as turning the neck to examine a report while typing for an extended period of time, for example (awkward neck posture). Workers run the danger of being injured if they execute their jobs in an inconvenient position with body segments that aren't their normal forms. If you're in an awkward position, your hands and arms are likely to be operating overhead, or you're in a fixed position (Akbarov et al., n.d).

Flexible hours, according to Gudep (2019), have the potential to improve organizational members' mental health while also helping to reduce stress. Workers' attitudes and views about the value of workplace safety are critical preconditions. A multi-level approach is needed, including managers and supervisors, while interventions aimed solely at modifying the "work safety milieu," such as worker training or the introduction of new protective equipment, may be insufficient or less successful (Gobba et al., 2017).

According to Kogi (2002), authorities should provide the guidance to employees on risk management and make procedures and tools easier to use. According to Asumeng, Asamani, Afful and Agyemang (2015) there are ways to deal with the problems that come with working in shifts, having a heavy workload, and working long hours. Suggestions include putting in

place management rules and processes to deal with issues like working hours and the shift design, involving employees in the process of developing shift schedules, and setting limits on how many hours employees can work each day and how much overtime they can earn.

2.5.2 Work Life Balance

An important part of achieving work–life balance is prioritizing different aspects of life, such as health, pleasure, leisure, family responsibilities, or spiritual growth. It's a critical issue for those who have health issues or limitations of their own (Pravallika, 2017).

A good workplace emphasizes work-life balance. Keeping a work-life balance reduces stress and keeps employees from being burned out. One of the most common health issues in the workplace is chronic stress. hypertension, intestinal difficulties, chronic aches and pains, and cardiac problems are just a few of the possible physical harmful impacts. Chronic stress has indeed been linked to a higher risk of depression, anxiety, and insomnia, which all has negative consequences on psychological health. Over time, being under a lot of pressure can lead to burnout. Employees who put in a lot of overtime risk being burned out. Burnout can lead to weariness, mood fluctuations, irritation, and a decline in work effectiveness (Koll, 2008, as cited in Jamu, 2019).

There is tension in the workplace when work-life balance is lacking, and this has a detrimental influence on job satisfaction, organizational commitment, work performance, and health. Work-life balance benefits people's physical and emotional wellbeing. Having a work-life balance benefits an organization's health and safety performance (Bhakar, Gulati, Mathur & Pathak ,2016).

Unsatisfactory working balance and conflicts between work and personal life can lead to lower job satisfaction, tension, and burnout (Henry, 2009, as cited in Jamu, 2019). In addition, one's personal life may be adversely affected, leaving them unable to participate in worthwhile pursuits. In the worst case situation, this could lead to depression and other mental health issues (Sturges, 2012, as cited in Jamu, 2019). Employees must be able to control and structure their schedules flexibly to prevent these unfavorable effects, which are linked to restricted resources (Henry, 2009, as cited in Jamu, 2019).

According to Kutty (2018), extended work hours are a major factor in the poor work-life balance experienced by many IT professionals. Their emotional and physical health suffers as a result of having so little time to devote to themselves or their family. He goes on to say that having an unbalanced work-life balance affects one's health as well as their ability to spend time with their family.

According to Thompson et al. (1999) as cited in Olupona (n.d), an encouraging work-family culture has been linked to better employee health and well-being. It also adds that a supportive work-family culture is linked to employee health and well-being as well as productivity inside the firm. High levels of friction between the workplace and the home and community have a number of negative effects on an individual's health and well-being (Olupona, n.d).

Work-family conflict has been linked to psychological health and job happiness (Sharma, et al., 2016, as cited in Hossain, Rahman & Hossen, 2019). Work-life balance (WLB) refers to the preservation of a healthy balance between work and family obligations in order to minimize role conflicts (De Cieri, et al., 2005, as cited in Hossain, Rahman & Hossen, 2019). People with a good WLB are less stressed and more content with their lives in general than people with a bad WLB (Hossain, Rahman & Hossen, 2019).

Putting in too much time and effort at work can lead to health problems (such as somatic complaints) or family conflicts (such as those with one's partner), which can have a negative impact on one's ability to do their job. If you put in too little time and effort at work, you'll have troubles and may even lose your job, which may have an impact on other areas of your life (e.g., stress, depression, family concerns, less self-actualization). Employers may save money while also maintaining a happier, more productive workforce by establishing work environments that prioritize work-life balance (Jamu, 2019).

According to Olupona (n.d.), women who work in the paid workforce may suffer from poor mental and physical health due to the strains of juggling work, family, and community responsibilities, but they tend to have better long-term health than women who do not engage in the paid workforce.

2.5.3 Occupational Environment

According to Jamu (2019), Flexibility in the workplace has been shown to reduce stress, improve job satisfaction, and encourage individuals to continue their healthy habits. Flexible working hours and the option to work from home should be offered by employers to create a more flexible working environment that appeals to workers of all generations.

Lack of fairness and justice in the workplace, as well as greater biases and partiality, poor work welfare plans and a lack of job equipment and resources, were cited by Edet (2019) as important occupational variables that affect worker health and safety. When a company fails to offer adequate work equipment or materials that could promote health and safety at the workplace. There is a possibility that workers will be exposed to subpar equipment, such as non-health and safety-friendly equipment or products that are extremely hazardous. This will do nothing to improve worker health and safety (Edet, 2019).

Rapid workplace assessments of the target groups were carried out, according to Kawakami (2005), to ensure that the working environment is good enough to carry out work without any job-related health risks. According to Pope et al. (n.d) as cited in Windt et al. (2000), When the impact of the workplace environment was assessed, it was discovered that working in hot, chilly, damp, or noisy settings was more likely to result in shoulder pain; this implies that the workplace environment has an effect on the health of employees. According to Pravallika (2017), in order to maintain a healthy workplace, good relationships among the employees must be maintained.

According to Chandran et al. (2012), as cited in Narahari (2017), workplace conditions and health among employees of IT-enabled services were examined in depth by Studies have shown that among software developers, musculoskeletal disorders, vision abnormalities, and psychosocial disorders are the most common health issues. Programs incorporating ergonomics, health education, and staff training are needed in the software sector to avoid and overcome morbidity and psychosocial disorders. According to Narahari (2017), it's impossible to escape stress, and it's a common problem in organizations. Within and within businesses, stress levels and the resulting repercussions vary according to the nature and kind of work practices. Organizations need to start treating their employees with respect and appreciating their contributions, instead of treating them like objects to be managed. Retention of highly talented workers necessitates employee recognition, participation, and training that is ongoing.

Companies have a responsibility to ensure staff follow stress relaxation strategies to avoid burnout and retain good health.

The employer bears the primary duty for a safe workplace by designing the work environment and production technologies to minimize safety and health concerns. Workers should be adequately trained so that they are aware of the potential health impacts of solvent exposure, as well as the symptoms of exposure and the precautions taken to reduce health hazards. In addition, it's critical to keep an eye on the workplace to ensure that safety precautions are working (Elgstrand & Petersson, 2009).

Carter (2010), as cited in Akram (2014), on the other hand, lacks a complete knowledge of the benefits of providing a workplace that complies with equitable occupational health and safety requirements.

It is critical to motivate employees to get involved in the company's social and environmental efforts. Employee involvement and participation should be used to establish green suggestion schemes and problem-solving circles (like quality circles). Employees can participate in environmental initiatives in a variety of ways, such as by suggesting green programs or by joining problem-solving circles that include environmental specialists. Environmentally friendly workplaces are also beneficial for ensuring the health and safety of workers (Bhakar, Gulati, Mathur & Pathak, 2016).

Ergonomic dangers occur when a worker's body is put under stress due to the type of work, body positions, and working environment. They're the most difficult to recognize because the strain on your body or the harm these dangers cause isn't always obvious. The next day or days after short-term exposure may result in painful muscles, while long-term exposure might cause major long-term diseases. Incorrectly fitted workstations and chairs, lifting a lot, bad posture, uncomfortable movements, and needing to use a lot of force are all ergonomic hazards (Asumeng, Asamani, Afful and Agyemang, 2015).

Tawaih (2016) as cited in Fuller (n.d), who argues that workplaces with a strong safety climate and the resulting perceptions and behaviors of their employees might create a poor safety climate when high pressure or stress are introduced into the workplace. According to research conducted by De Silva, Lombardo, Lipscomb, Grad, and Østbye (2013), the working environment must be routinely inspected by the appropriate parties to ensure that it does not negatively affect the health of the employees.

According to Akbarov et al. (n.d.), working in extreme temperatures can lead to several dangers, such as heat exhaustion, sunburn/skin damage, skin cancer risk, cold exposure, and

hypothermia. As a result, keeping the workplace at a comfortable temperature helps reduce health hazards for employees.

2.5.4 Work Stress

Computers have grown ubiquitous in modern life, with applications in nearly every facet of daily living. As a result, software professionals now face a new type of occupational health problem. A key rationale for picking software employees above others is because these workers are under a lot more stress (Pravallika, 2017).

According to Windt et al. (2000), working in a workplace where there is low social support and a lack of personal skills to deal with organizational variables can cause stress at work. Lack of social support, according to Edet (2019), can also lead to work stress among employees. When employees believe that management does not care about their well-being, it can have a detrimental impact on their work. It will also have an effect on how well they comply with health and safety regulations. In addition, Edet (2019) highlighted that essential health and safety information cannot be transmitted if adequate communication channels are not set up. The target audience will be unable to get information regarding incidents, worker safety complaints, emergency circumstances, and management decisions, which could lead to increased levels of stress among employees.

According to Brooy (2013), working in a high-stress environment can lead to psychological erosion, which poses a health and safety risk to employees and, as a result, reduces productivity. Chandraiah and Rao (2011) as cited in Narahari (2017) in their article, they conclude that employee satisfaction and psychological wellbeing are related but not significant. Job satisfaction, on the other hand, was positively and strongly linked to coping behavior. Occupational stress has a detrimental and statistically significant impact on one's mental health. Coping behavior can be explained by the fact that job satisfaction and mental health improve with time. And as the level of stress rises, so does the quality of one's mental health.

Over time, the impacts of extended working hours and monotonous, demanding labor can have negative repercussions on one's mental and physical well-being (De Silva, Lombardo, Lipscomb, Grad & Østbye, 2013). Tawaih (2016) as cited in Fuller (n.d), who says that even in workplaces with a generally positive safety climate and the resulting beliefs and behaviors of the workers, a poor safety climate can arise when unfavorable work circumstances of high

pressure or stress are added. Olupona (n.d.) claims that when a worker is under a lot of stress, it affects his or her performance and health. Employees become increasingly anxious, depressed, and unable to focus on their work because of their worries. As a result, they produce shoddy work or fail to meet deadlines. This will have a negative impact on production.

According to Asumeng, Asamani, Afful, and Agyemang (2015), many ways have been used to deal with work-life problems that are caused by stress. For example, time logs are used to keep track of how much time has passed, work-life balance programs are implemented, work activities are separated from home time, time is properly managed, vacation days are protected, and appropriate habits are in place, and so on.

2.5.5 Working Hours

It is possible to define a person's working hours as the amount of time they spend to engage in either paid or unpaid work. When compared to 35- to 40-hour work week, working 55 hours or more per week increase your risk of stroke by 35% and of dying from the heart disease by 17%, according to the BBC (2021, May 17). It goes on to say that over three-quarters of the people who died as a result of working long hours were middle-aged or older men.

Working long hours have been associated with a risk of heart disease, high cholesterol, on-the-job injuries, and muscle strain. This is because of poor working conditions that contribute to these disorders (Spurgeon, 2003, as cited in Akram, 2014).

Additionally, Burke and Cooper (2008), as cited in Kutty (2018), found that working long hours was linked to bad lifestyle choices like smoking, coffee and alcohol consumption, inactivity, and a poor diet. This unhealthy way of living increases the risk of coronary heart disease and lowers overall health from a young age. Akbarov et al. (n.d) noted that initiatives to promote healthy living were used as a prevention approach for hazards associated with shift work, excessive workload, and working hours. It suggests that working hours have a direct impact on an employee's health.

Flexible work schedules allow employees to decide how many hours they want to work each week and how long they want to work each day. One way to make the arrangement more adaptable is to include things like variable start and finish times or work hour accounts. With the flextime, employees can pick and choose when they want to start and end their workday. They simply need to be present during the predetermined core hours and to adhere to the

contractual work hours. Working time accounts require the agreed-upon amount of hours to be worked without specific daily working time requirements. Telework is defined as work done partially or entirely from home or while traveling. Employees who are able to work flexible hours have the freedom to balance their personal and professional life. As a result, family responsibilities can be better met, and free time can be utilized more effectively (Microcensus, 2010 as cited in Jamu, 2019).

Work schedules that don't follow the traditional nine-to-five schedule (such as rotating weekends and nights) have a negative impact on family life, health, and lifestyle for IT/BPO sector personnel (Kutty, 2018). According to Brooy (2013), working long hours on a regular basis has negative implications, as illustrated in the figure 1.

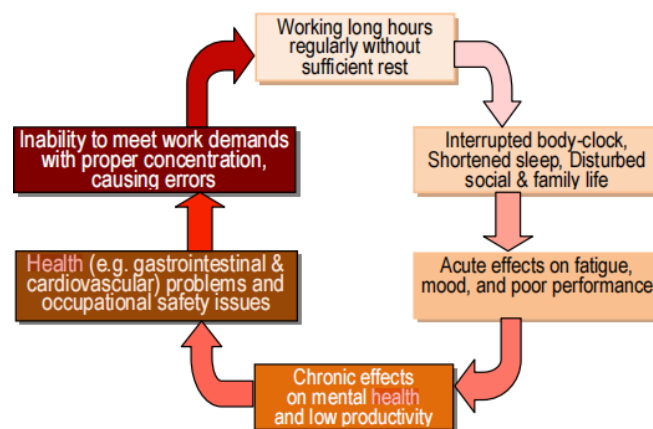


Figure 1: Consequences of Working Long Hours on a Regular Basis. (Source: Brooy, 2013)

Being workaholics on a regular basis may have a negative effect on their capacity, sending them into a downward spiral of bad performance. Depression can also be brought on by the stress and the frustration of not being able to fulfill work duties, damaged relationships and community ties, and problems with health and wellbeing. Working long hours do not equate to being a valuable member of the workforce. As a result, you will not be more productive or produce higher-quality work. Instead, strive to maintain a work-life balance that is both healthy and productive (Brooy, 2013).

According to Malik and Khalid (2008), as cited in Brooy (2013), Work-life balance is becoming increasingly strained as working long hours become the norm. As per Concha-Barrientos et al. (n.d.), high demands, restricted discretion, shift work (especially nightshift),

the effort-reward imbalance, high demands, a poor psychosocial office environment, social isolation, physical inactivity, or workplace violence all increase the risk of stress-related cardiovascular disease among blue-collar workers. It emphasizes the fact that working hours have a direct impact on an employee's health. According to Nurminen and Karjalainen (2001), cited in Concha-Barrientos et al. (n.d.), combined occupational risk factors of rotating shifts, loudness, and contact to engine emissions and cigarette smoke contributes for 16.9% of Finland's cases of ischemic heart disease (18.9% of men's cases and 9.1% of women's cases). According to Gobba et al. (2017), longer work hours were linked to an increase in accidents. Further Akbarov et al. (n.d.) stated that more repetitions equate to the higher danger can be expected. In other words, as the number of hours worked increases, the danger level increases as well.

The Factories Act of 1948 in India has several laws dealing to the health and safety of workers. As employers compete with one another for talent, they are increasingly focused on providing improved working conditions for their workers than their counterparts. There are several factors that can improve the quality of one's job, including flexibility in working hours, low-risk workplace conditions, and protection from noises, pollution, poisons, and gases (Bhakar, Gulati, Mathur & Pathak, 2016). It means that flexi-hours of work can ensure the health of the worker. Because working at odd hours is an option and is expected, there are health hazards (Greubel, 2016 as cited in Bhakar et al, 2016). To add insult to injury, it has been shown that putting in excessive time and effort at work can have negative consequences for one's well-being (e.g., somatic complaints).

Employer-friendly flexible work schedules have been shown to help employees in a variety of ways on the economic, environmental, social, psychological, and health fronts (Ciarniene, & Vienazindiene, 2018 as cited in Occupational safety and health, 2011). According to De Silva, Lombardo, Lipscomb, Grad and Østbye (2013), having control over the timing of employment or the choice of child care promotes individual well-being, while a lack of control has been associated with poor mental and physical health.

When fathers work long hours, it has an effect on both their own and their families' well-being, according to Brooy's (2013) research. They looked at how long people work and how it affects their health and happiness, as well as how they relate to their spouses and children. Working hours have been found to have a negative impact on the health of female employees, which supports the previous finding. The mental and physical health of female employees who worked lengthy shifts was severely impacted (Brooy, 2013).

2.6 Literature summary related to the health-risks of mid-career employees in IT operation

Table 1 summarizes the study's findings on the following factors.

Table 1: Summary of the Factors

Reference	Career Model	Work Life Balance	Occupational Environment	Work Stress	Working Hours	Health Risk
Edet (2019)	x		x	x		
Kawakami (2005)			x			
Kogi (2021)	x					
Concha-Barrientos et al (n.d)					x	
Gobba et al (2017)	x				x	
Windt et al (2000)			x	x		
Akbarov et al (n.d)	x		x		x	
Asumeng , Asamani, Afful and Agyemang (2015)	x		x	x	x	
Akram (2014)					x	
Bhakar, Gulati,Mathur and Pathak (2016)		x		x	x	
Jamu (2019)		x	x		x	
Accupational safety and health (2011)			x			
Gudep (2019)	x				x	
De Silva, Lombardo, Lipscomb, Grad and Østbye (2013)	x		x	x	x	
Olupona (n.d)		x		x	x	
Brooy (2013)				x	x	
Kutty (2018)	x	x			x	

Hossain, Rahman and Hossen (2019)		x				
Elgstrand & Petersson (2009)			x			
Fuller (n.d)			x	x	x	
Narahari (2017)			x	x		
Pravallika (2017)	x	x	x	x		
Nurhasanah, Kalimin and Syaifuddin (2019)		x				
Padma et al (2015)						x
"Health Concerns Of IT Professionals" (n.d)						x
"Health Problems in IT Professionals" (2021)						x
Aveline and Kumar (2018)						x
Tejaswi (n.d.)						x

2.7 Conclusion

This chapter presents the results of the researcher's examination into the perceived health risks of employment in the Sri Lankan IT operation sector, which was conducted by looking at previous works of literature. According to the findings of this study, employees' jobs kept their health at risk. In addition, the researcher was able to determine the employment-related aspects that influence the health-risk of middle-aged employees in the Sri Lankan IT operation sector. As a result of the study's findings, the researcher has found several literature sources on the health risks of employment throughout a wide range of industries, but only a limited number of previous studies focused on the IT industry. Employment factors that may affect the health risks of mid-career IT operation professionals are not being researched in the context of Sri Lanka. Because of this, the study sought to determine "perceived employment related health risks for mid-career employees in the Sri Lankan IT operation sector". Therefore, the researcher identifies those research gaps and gets an idea about what needs to be done within this study.

3. RESEARCH METHODOLOGY

3.1. Chapter Introduction

The study's goal is to discover how middle-career workers in Sri Lanka's IT operations sector view employment-related elements that influence their health risks. Therefore, this chapter initially describes the research approach of the study. The quantitative approach is used to determine the primary objective by manipulating the gathered responses via a survey which is collected from the mid-career IT operation sector employees in Sri Lanka. Then it describes the data collection methods, information about the population, how the sample is decided using sampling techniques and which the research instrument was used. Then it describes how the conceptual framework and the hypothesis were implemented by deriving independent variables and the dependent variable with the support of the literature review and interviews. After that, the pilot study which was conducted to validate the reliability of the study is discussed. This chapter ends with the explanation of data analysis methods.

3.2 Research Approach

According to (HU & CHAN, 2017) John Creswell has discussed the designs of the research, such as Qualitative, Quantitative, and mixed approaches. Out of those research designs, the researcher chooses a quantitative research approach to conduct the research. In quantitative research, data will be collected via the survey from a predetermined sample in order to achieve the objectives of the research. Other than that quantitative approach is used as it supports to perform a descriptive analysis of the research study. The Likert scale is used as the rating scale of the survey, in order to track the perception of responses.

After defining research problems and research objectives, the literature review has been performed with the intention of gathering data for already defined goals and objectives. For a descriptive analytical approach to acquire an overview of prior research and find out what has been examined and not yet addressed in this field, a review of literature was used. Interviews were held to determine the feasibility in the Sri Lankan context and confirm the

identified factors. With the support of the literature review and interview findings, independent variables were identified. Perceived employment-related health-risk for mid-career employees in the Sri Lankan IT operation sector, has been labeled as the dependent variable in this research. Then hypotheses were formulated to identify the relationships among variables.

Next, the researcher designed a questionnaire with the intention of gathering relationship information between variables. Then the researcher distributed this questionnaire among some software Professionals who worked in IT operations, to perform a pilot study. Pilot study is a small-scale study conducted before any large-scale quantitative research in order to evaluate the potential for a future, full-scale project. This pilot study helps to figure out the reliability of the questions.

After the reliability analysis, all the questions were refined. Then finalized survey questions were shared to the relevant parties through online sources such as Internet, WhatsApp, online group conversations, social media and so on. After receiving sufficient responses, data analysis was performed, and it was concluded with rejecting and accepting hypotheses according to the analysis. Recommendations were proposed at the final stage with the support of statistical analysis results. The following Figure 2, describes the research methodology of the study.

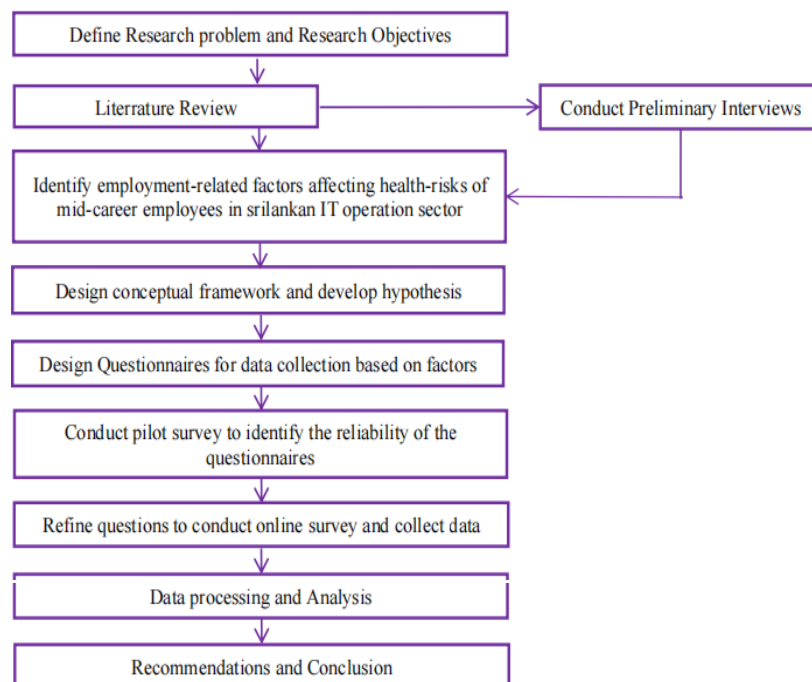


Figure 2: Research Methodology

3.3 Data Collection Methods

At the beginning of the research, it is mandatory to recognize the objectives of the study, the type of data that needs to be collected, the target group of people, and the method or the tools of data collection before starting the process. For quantitative research, data collection is based on a survey questionnaire. Data collection becomes a vital role in quantitative research. Because collected data should be capable enough to find answers for the problems which are addressed in the research.

Primary data and secondary data are considered as the basic data types in research. Primary data are identified as first-hand data collected by a survey while secondary data are based on previous research work.

3.3.1 Primary Data

Hox & Boeijs (2005) stated that primary data are collected to reach out for a specific research problem, by utilizing the most suitable methodology to identify the issue. Therefore, close ended questionnaires that cover all the variables were used as the primary data in this research. Apart from the survey, few interviews were organized with the experienced IT operation professionals. Interview questions were listed in the Appendix B. The final outcome of the research study is strictly based on the responses given through the questionnaire and interviews.

3.3.2 Secondary Data

According to the Muhammad & Kabir (2016a), data gathered from any form of already verified and published source can be considered as the secondary data. Anyone can easily access secondary data as it's too published publicly. As well as the researcher need to focus more on the time period and applicability of the requirement, because data can be outdated. Articles, industry reports, journals, newspapers, websites and books were referred as secondary data sources to gain background knowledge on what are the perceived employment-related health-risk for mid-career employees in the Sri Lankan IT operation sector. Those reliable, validated and already analyzed data sources can be used for the study.

3.4 Sample Design

As (Muhammad & Kabir, 2016b) mentioned, estimating the population and test the predefined hypothesis are the main purpose of sampling in the research. Further they mentioned that the population and the sample are the primary factors that the researcher should be focused on when performing quantitative research.

In this section, the population of the study, how the sample size is derived using a sampling technique, the sample of the study and research instruments are discussed.

3.4.1 Population

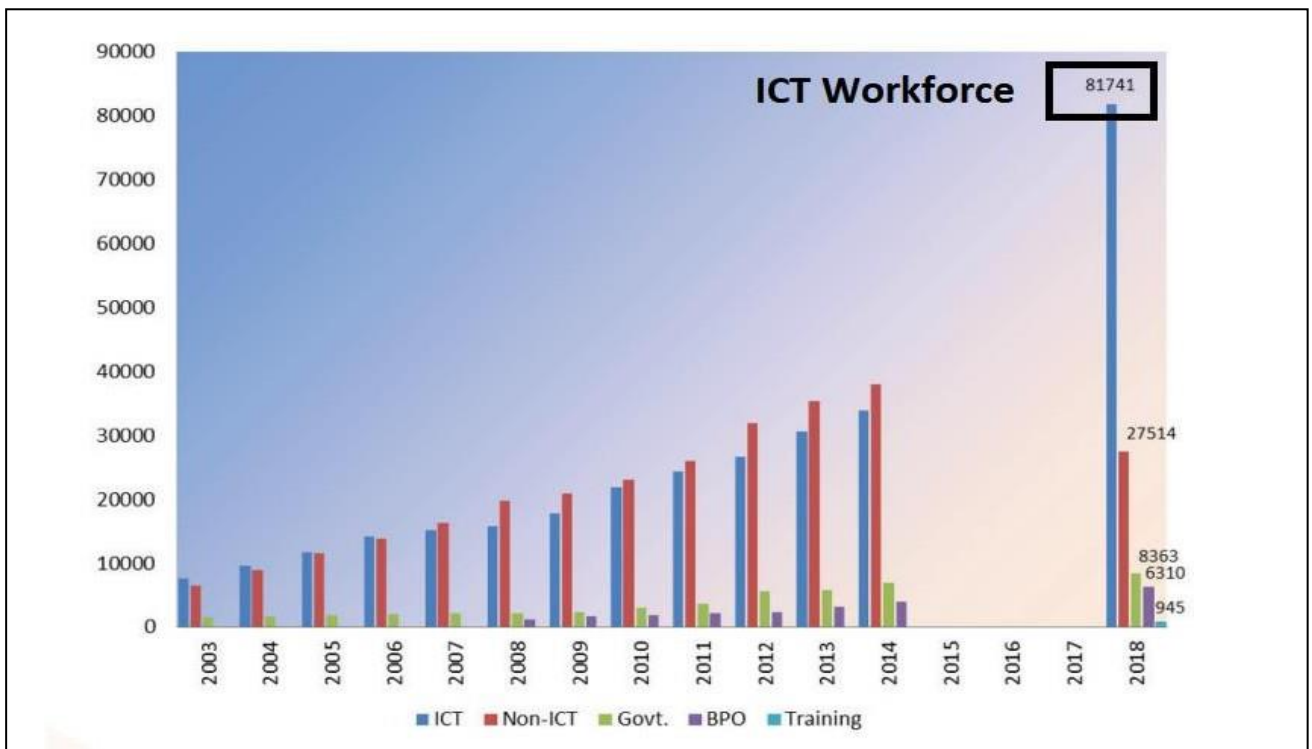


Figure 3: ICT Workforce (Source: National IT-BPM Workforce Survey, 2019)

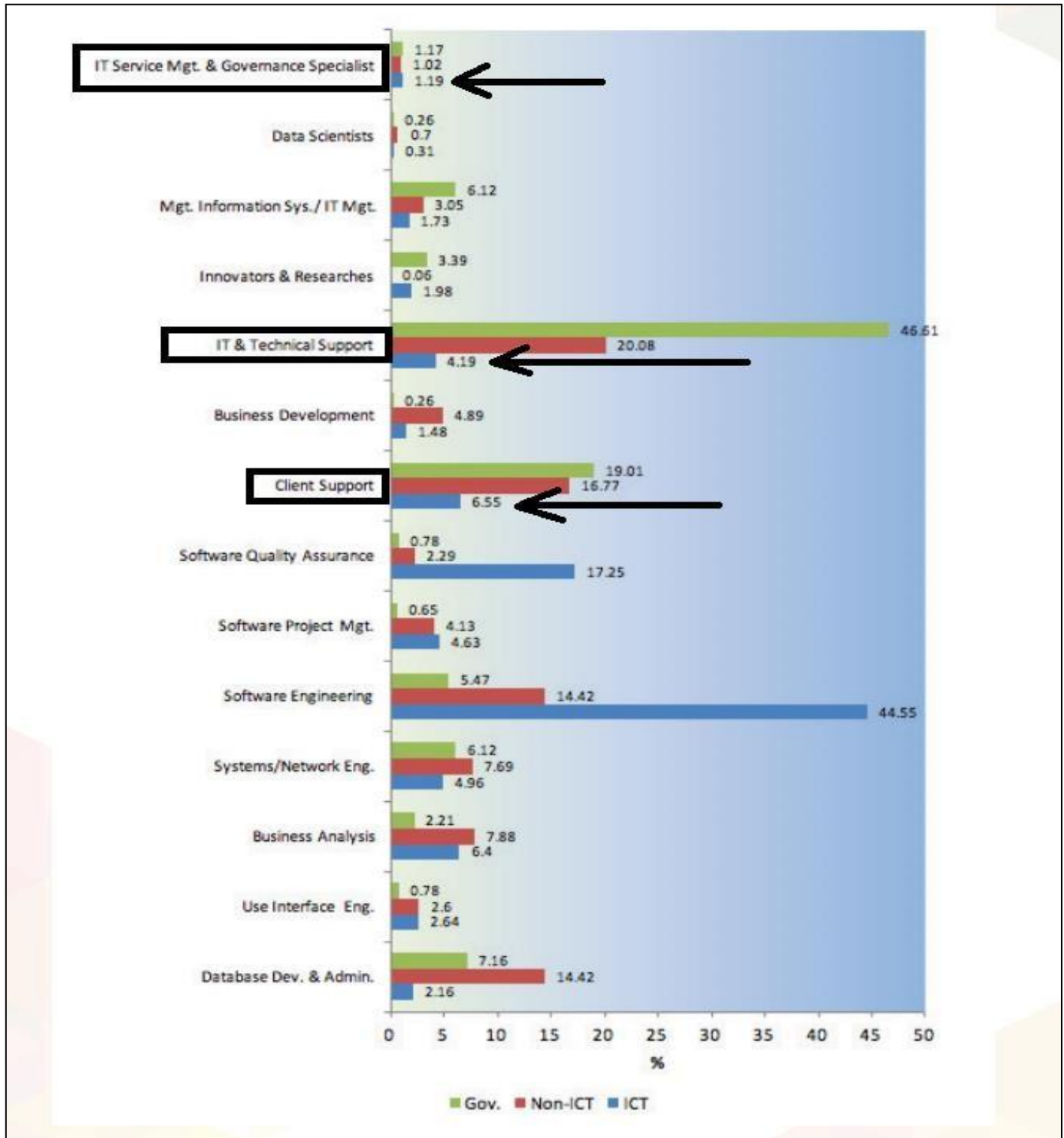


Figure 4: IT Operation Workforce (Source: National IT-BPM Workforce Survey, 2019)

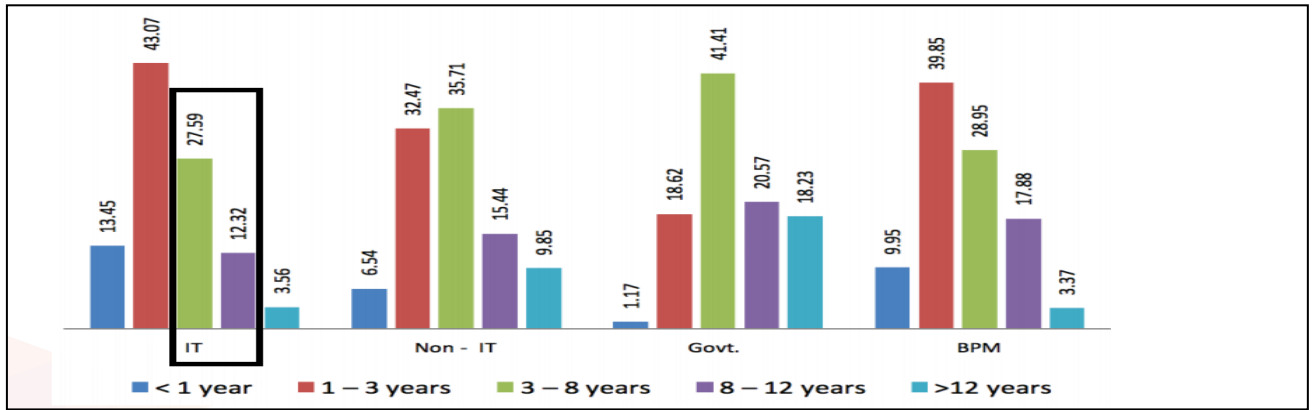


Figure 5: Mid-career IT Workforce (Source: National IT-BPM Workforce Survey, 2019)

In order to gather accurate information, the quantitative researcher keenly focuses on identifying the population of the research. Because, the sample size can have a significant impact on the validity of the findings (Asiamah, Mensah, & Oteng-Abayie, 2017). Generally, this population shares one or more similar characteristics.

As shown in figure 3, Sri Lankan ICT workforce is counted as 81741 according to the National ICT WorkForce Survey 2019 by Information and Communication Technology Agency of Sri Lanka (ICTA). The ICT workforce consists of software engineers, the software quality assurance engineers, the client support, project management, Business analysts, etc. Among all the professional categories, “IT Service Management and Governance Specialist”, “IT and Technical Support” and the “client Support” were categorized into the IT operation sector which is the focus in this research.

Out of this entire ICT workforce, IT operations secured 11.93% positions (According to Figure 4) as a collaboration of 1.19% from “IT service Management and the governance specialist”, 4.19% from “IT and Technical Support” and 6.55% from the “client Support” sections. Therefore, the approximate IT operation workforce is 9752 which was 11.93% of the ICT workforce. Based on the literature review findings and information gathered from interviews, the researcher made an assumption to consider mid-career employment as the workforce who works for 3-12 years in the IT operation sector. As shown in the figure 5, 39.91% from the ICT workforce is identified as mid-career employees. It is a combination of 27.59% from 3-8 years work-experience workforce and 12.32% from 8-12 years work-experience workforce. The researcher assumed that the same 39.91% mid-career workforce proportion is applicable for IT operation workforce as it was considered for the whole ICT workforce. Hence the mid-career IT operation sector occupied 39.91% positions in the entire

IT operation workforce which was 9752. Therefore, the target population of the study is 3892 which is 39.91% of the IT operation workforce in Sri Lanka.

3.4.2 Sample Size

The process of selecting the most suitable subset of the population that is able to represent the entire population is called sampling. In other words, the sample can be introduced as the representation of the population which can be used to generalize the findings from the research. The quantitative researcher should have the strong sample, and it should have the same characteristic which can represent the entire population, if not, it will depict totally irrelevant results (Asiamah et al., 2017). Mid-career employees in the Sri Lankan IT operation sector were selected as a sample of our study.

The sample size is decided according to the most relevant sampling method, which is used to collect data from the conveniently available units (Zikmund, Babin, Carr, & Griffin, 2012). As Danial (1999) explains, the formula represented in the figure 6, can be used to calculate the sample size of a finite population.

$$n = N \cdot X / (X + N - 1),$$

where,

$$X = Z^2 \cdot p \cdot (1-p) / MOE^2,$$

Figure 6: Calculation of Sample size. (Source: Danial, 1999)

Z - z score (for the 95% confidence level, z value is 1.96)

MOE - Margin Of Error (for the 95 percent confidence level, MOE is 0.05)

N - Size of the population

P - Proportion of the total samples that are missing (assumed to be 0.5 since this would provide the maximum sample size)

In accordance with the previously indicated sample size calculation formula, a sample size of 350 is calculated with 95 percent confidence level using values of 1.96 z score and 0.05 margin

of the error. Further 0.5 sample proportion and 3892 population size were used for the calculation.

3.4.3 Research Instruments

As Trigueros & Juan (2018) mentioned, Survey is the most popular method to collect data for the purpose of data analysis. Therefore, the quantitative researcher has conducted the survey questionnaire among the mid-career IT operation professionals as the main research instrument.

Several interviews were conducted before creating a pilot study. Due to the current pandemic situation, interviews were conducted over the Internet and the telephone. The survey questionnaire was made available online by creating it using Google forms. Initially the survey was conducted with 30 Likert scale (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree) questions and 8 demographic questions. This was distributed among most experienced and senior professionals in order to get the most reliable responses. Once the main questionnaire was finalized after the reliability analysis of the questionnaire, it was shared among the mid-career IT operation professionals in order to collect the data for the survey.

3.5 Conceptual Design

The independent variables for the conceptual model were derived from the findings of the literature review and the interview results, as outlined below.

3.5.1 Conducting a Pilot Study

In the Sri Lankan software operation sector, a pilot study was undertaken to identify employment related factors that affect the health risk of mid-career employees in the Sri Lankan IT operation sector. In order to full-fill this purpose, 10 senior IT operation professionals from Sri Lankan IT companies were interviewed. The information was gathered in four different

perspectives namely basic understanding of the occupational environment, existing career models, general view of employment related health risk and factors impact for the employment-related health risk. Senior Systems Engineers, Leads and Managers were interviewed from the following organizations shown in table 2.

Table 2: Software companies used for the pilot study

#	Company Name
1	CMS (Pvt) Ltd.
2	LSEG (Pvt) Ltd.
3	Pearson Lanka (Pvt) Ltd.
4	Sysco Labs (Pvt) Ltd.
5	Wiley (Pvt) Ltd.
6	ISM APAC (Pvt) Ltd.

3.5.2 Conceptual Model

After finalizing the literature review and interview results, the researcher has finalized five independent variables for this study. Those variables are the career model, work- life balance, the occupational environment, work stress and working hours. The research has one dependent variable to describe the purpose of the study. The figure 7 illustrates the conceptual model developed using identified independent and dependent variables.

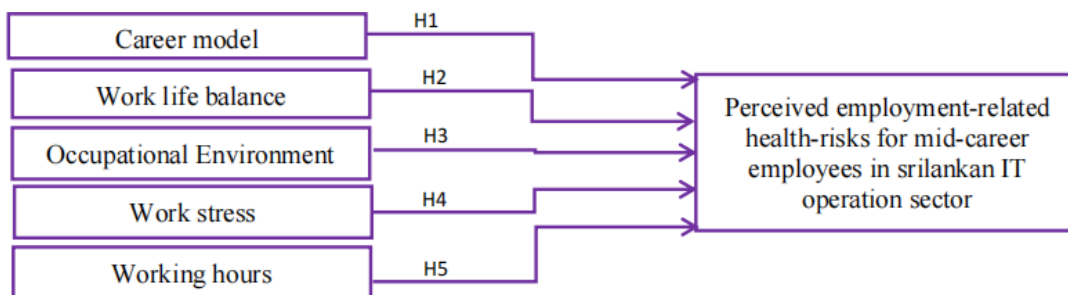


Figure 7: Conceptual Model

3.6 Hypothesis Development

The hypothesis is a statement which denotes the relationship between dependent and independent variables (Creswell, 1994). The basic two types of hypotheses are described below.

Null hypothesis - indicates the two variables do not have any relationship. The null hypothesis is denoted by H₀.

The alternative hypothesis - denoted by H₁, builds contradictory to H₀ about the association of variables.

Based on the conceptual framework on Figure 7, the following hypotheses are derived. These will be validated based on the data gathered from the sample.

Hypothesis 1 - Career Model

H₁₁: Career model has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H₁₀: Career model does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Hypothesis 2 - Work Life Balance

H₂₁: Work life balance has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H₂₀: Work life balance does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Hypothesis 3 - Occupational Environment

H₃₁: Occupational Environment has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H3₀: Occupational Environment does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Hypothesis 4 - Work Stress

H4₁: Work stress has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H4₀: Work stress does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Hypothesis 5 - Working Hours

H5₁: Working hours have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H5₀: Working hours do not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

3.7 Pilot Study

After doing the literature review, several interviews were conducted to finalize independent and dependent variables. Once it is finalized, an initial questionnaire is prepared, and it is reviewed by a senior IT operation manager who has 10 years of experience in the IT operation industry. Based on his feedback, the questionnaire got improved by rewording some questions and changing the answer type for some questions. The initial questionnaire had a few questions with Yes/No answer type, but they got updated into 5 point Likert scale questions. The updated questionnaire was shared among 25 known mid-career IT operation sector professionals who are working in multiple organizations and at different levels in their job roles in order to obtain highly reliable responses. These 25 responses were taken for the pilot study.

3.7.1 Reliability Analysis

The reliability refers to the consistency. It measures how reliable the responses of a questionnaire will indicate the stability of the tools. Cronbach's alpha is employed to gauge a questionnaire's internal consistency and the stability (Bujang, Omar, & Baharum, 2018). If a particular question gets an alpha value which is greater than 0.7, then the question can be considered as a reliable question according to Cronbach's alpha reliability test requirements. (Taber, 2017).

3.8 Questionnaire

The questionnaire was designed by focusing on employment-related health risks for mid-career employees in the Sri Lankan IT operation sector which is listed in the Appendix C. In total, there are 38 questions in the survey, some of which are open-ended and others which use a Likert scale for the response. The scores for the responses are listed below. The table 3 shows the assigned scores for each Likert scale response.

Table 3: Scores for responses

Responses	Score
Strongly Agree	1
Agree	2
Neutral	3
Disagree	4
Strongly Disagree	5

Following is the summary of the questionnaire which is published as google form among 400+ respondents. Table 4 discusses the summary of the questionnaire.

Table 4: The summary of the questionnaire

Quiz No.	Question	career model	Work life Balance	Occupational environment	Work Stress	Working hour	Health-risk
1	Organizational senior management have positive attitude on employee health and safety when finalizing employees' job role	x					
2	The work condition distinctly create stress in my mind	x					
3	Organization pay attention on employee health and safety when job role and responsibilities are granted	x					
4	When regular job supervision is not provided while carrying out a new task, or when a new task is assigned in a less experienced area, or when the risk involved in the job is high, I experience stress.	x					
5	I experience that my work duties and responsibilities create conflict with my healthy habits.	x					
6	I believe that not to work in holidays makes me stress-free		x				
7	I experience mental relaxation when I can balance work life and personal life parallel.		x				
8	I believe that if I could complete my duties at workplace and family as expected, I can utilize remaining time for my personal health		x				
9	I don't have pressure on my professional work when I can give enough time for my family after work.		x				
10	The organization does not encourage employees not to take their entitled leave as it directly impacts employees' freedom of mind.		x				

11	I believe that work environment should provide enough hygienic to thwart sudden health problems			x			
12	I believe that the organization should provide emphasis on stress problems and sets their organizational structure according to it			x			
13	I have experienced physical pain such as back-pain, shoulder-pain, etc. due to the usage of office equipment like chairs, table, display screen...etc.			x			
14	I have experienced mental depression while working with my colleague when interpersonal conflict between employees is considerably high in the organization			x			
15	Freely providing healthy food at office premises would help me to carry on healthy dietary pattern			x			
16	I noticed that people do smoking when they need relaxation from the work which cannot complete within given time frame				x		
17	I feel anxiety issues or stress due to the absence of any motivational factors.				x		
18	I experience depression when it makes me feel that I am overloaded in work at workspace				x		
19	I feel exhausted to do any other work after reaching home as I fed up with office work				x		
20	I spend sleepless nights with office work when milestone are not achieved within target period.				x		
21	I believe that I have enough time to work out since I normally finish work during office working hours					x	
22	I don't experience on continuous sleepless nights since our company don't have strict overtime schedule					x	
23	I don't have any uncomfortable experience such as headache, tiredness since we have adequate breaks during working hours					x	
24	I don't experience frequent late night work which may leads to have regular poor sleep,					x	

	since our management carefully arrange roster						
25	I experience worse in my illness when I have to complete remaining working hours which is impacted due to my sick leave					x	
26	I believe that working for more than regular time period will cause having vision problems						x
27	I experience tiredness when I have to work without any break in-order to achieve unrealistic target						x
28	I experience belly fat as a result of sitting for a long period of time to continue office work						x
29	I assume that I am getting used to a poor dietary patterns because of my shift based work allocation						x
30	I noticed that cigarette smoking tendency getting higher when employees feel stress because of their workload						x

3.9 Data Analysis

SPSS tool has been used for data analysis and responses which are collected via Google form have been exported to Excel sheet to make it available for SPSS. The Pearson Correlation technique is used to calculate correlations between variables of the study.

3.10 Conclusion

This chapter more elaborates how the techniques have been used for the research. Further it describes the population and sample sizes of the research, hypotheses used, research instruments and finally the data analysis approach. Furthermore, this describes an overview of the questionnaire and Cronbach's alpha technique is used by the researcher to assess the questionnaire's reliability.

4. DATA ANALYSIS

4.1 Chapter Introduction

The process of analyzing the collected data via online questionnaires, is elaborated throughout this chapter. Initially, reliability analysis is done in order to get an idea about the reliability of the questions against each independent variable and dependent variable. Then, Descriptive Analysis was done with the demographic data and Inferential Statistics analysis was used to make generalizations for the population based on the data collected from the sample. The correlation between each variable is primarily examined and the final outcome is discussed in this chapter.

4.2 Data Collection

Data collection was done with an online survey questionnaire with Voluntary Response Sampling technique by reaching out to the potential survey respondents. An online questionnaire was distributed among the mid-career IT operation sector workers to gather data for the study. List of software companies utilized for the final survey is shown in Appendix A. The sample size was calculated as 350 for the population 3892 with 95% confidence level. The questionnaire was created as google form and distributed among IT operation groups, and social media users who belong to the sample category. The data collection was conducted around a one-month period of time. The survey questionnaire included questions with 5-point Likert scale response categories such as "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree".

4.3 Data Analysis Tools and Techniques

This research study employs inferential and descriptive statistics facts analysis techniques and Expert Judgment was used to interpret some of the results obtained with these analyses. The statistical analyses were done using the IBM SPSS tool. The descriptive statistics were used to visualize the distribution of the sample. The inferential analysis was done covering Comparison, Correlation and Regression analyses. In order to measure the correlation between independent and dependent variables, Pearson Correlation techniques were used.

4.4 Data Preparation and Transformation

Out of the 356 responses received for the survey questionnaire, there were 8 responses which do not belong to the mid-career age group. The mid-career age category is considered as employees who have 3 to 12 years of experience in the IT operation sector. Therefore, those 8 responses were not considered for the inferential analysis carried out within this study since the ultimate objective of the inferential analysis is to identify the correlation between each independent variable and the dependent variable. The data transformation process is performed to feed the survey responses into the statistical data analysis software which is IBM SPSS. The survey questionnaire consists of questions with five point Likert scale answer types with the options as strongly agree, agree, neutral, disagree and strongly disagree. These options were transferred into numeric as 1, 2, 3, 4, and 5 corresponding to the data transformation.

4.5 Descriptive analysis of Demographic data

The behavior and characteristics of the sample selected in this study are shown with the analyses done with the collected demographic data.

4.5.1 Sample data categorization based on the Years of experience in IT operation sector

The sample data set is classified based on the industry experience in the IT operation sector. The figure 8 shows the data of respondents against the year of experience. The majority of the participants has 8 to 12 years of experience in the industry and this statistic is somewhat evident to prove that the majority of mid-career employees have 8 to 12 years of experience. According to table 5, 62.07% of respondents have 8 to 12 years of experience in the IT operation sector.

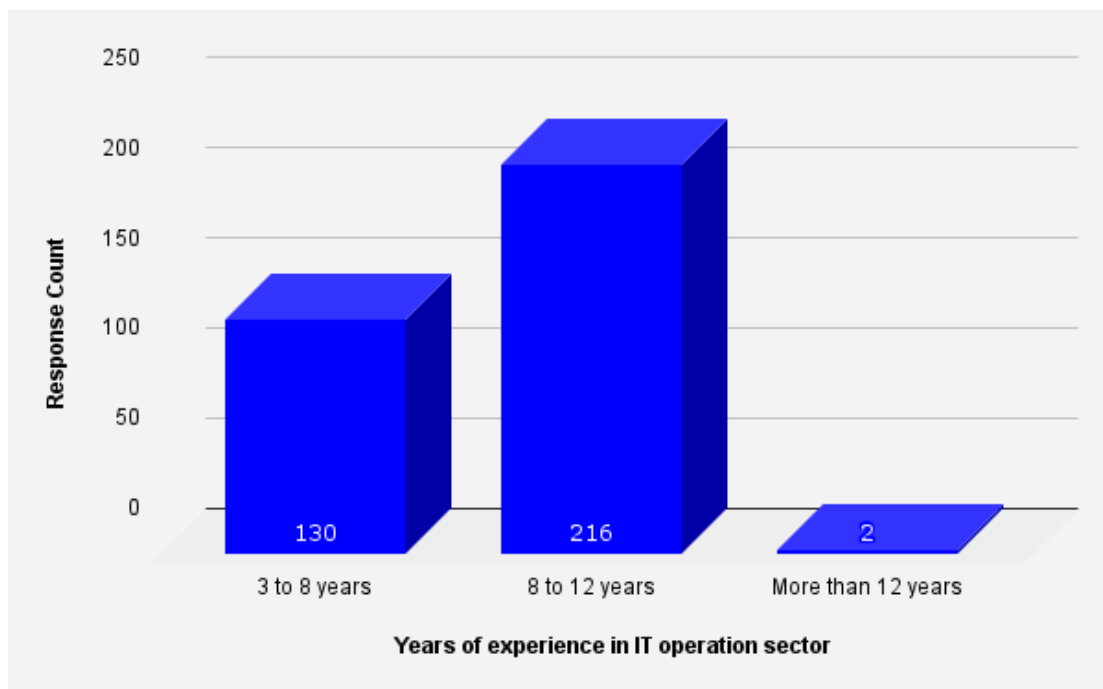


Figure 8: Years of experience in IT Operation sector

Table 5: Classification of sample by years of experience

Experience	Number of respondents	Percentage
3 to 8 Years	130	37%
8 to 12 Years	216	62.07%
More than 12 Years	2	0.57%

4.5.2 Sample data categorization based on the Job category

This classification observed the sample data, based on different job categories of the IT operation sector who have responded to this survey. As shown in the figure 9, Job roles were identified as System administration, the application support, network operations, IT desktop support and data center operations. All of them are from software development companies. According to table 6, It shows that 47.13% of respondents are in the Application support section.

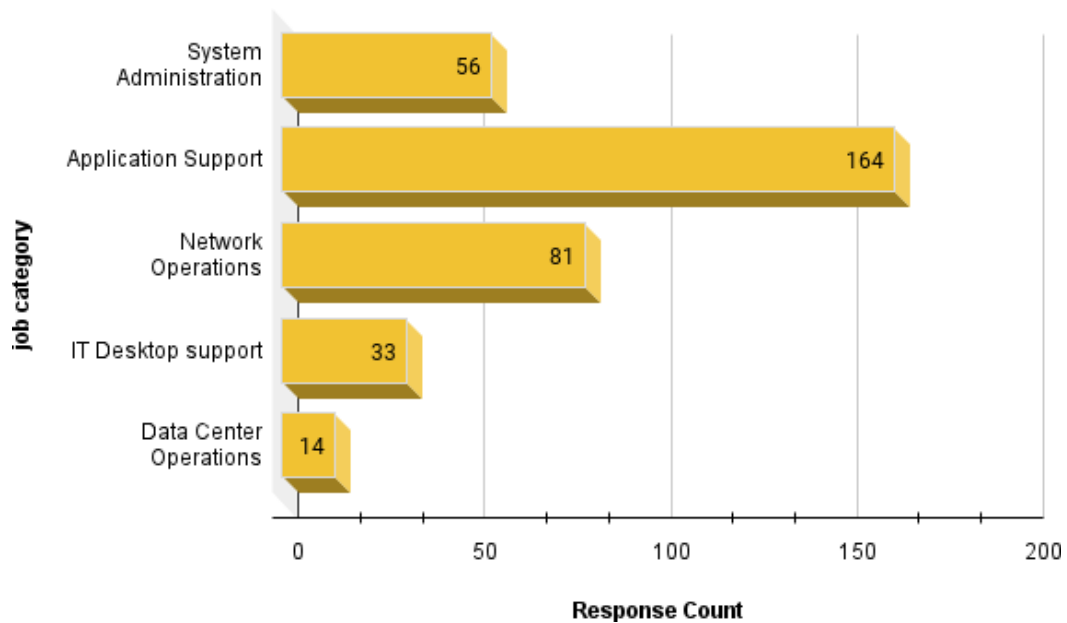


Figure 9: Job category

Table 6: Classification of sample by job category

Job Category	Number of respondents	Percentage
System Administration	56	16.09%
Application Support	164	47.13%
Network Operations	81	23.28%
IT Desktop support	33	9.48%
Data Center Operations	14	4.02%

4.5.3 Sample data categorization based on the Organization category

Organization categories are the most important data when analyzing the health risk in the IT operation sector as shown in figure 10. Therefore, the sample data set is classified based on the organization category and the size of the organization. In this section, the organization category data are presented. The table 7 shows the distribution of the organization category of survey respondents.

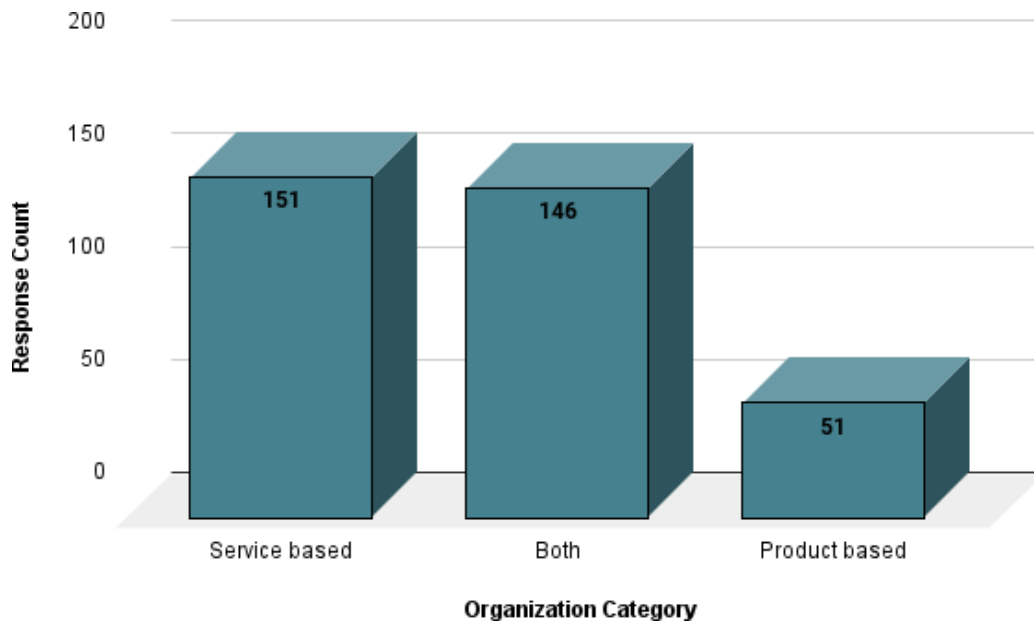


Figure 10: Organization category

Table 7: Classification of sample by Organization category

Organization Category	Number of respondents	Percentage
Product based	51	14.66%
Service based	151	43.39%
Both	146	41.95%

4.5.4 Sample data categorization based on the size of the organization

The table 8 and the figure 11 depict the organization size of each respondent. The majority of the employees are working in high scale organizations whereas 1.72% of the respondents work in a workstation which has less than hundred employees.

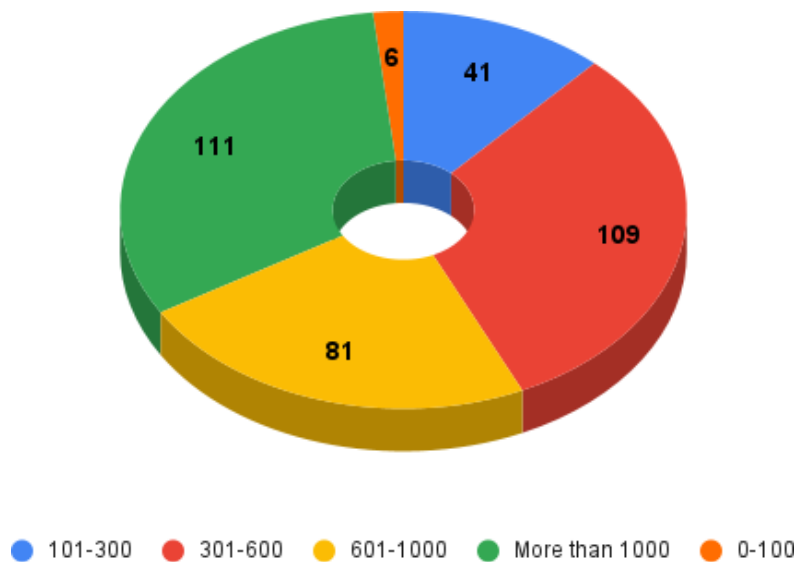


Figure 11: Size of the Organization

Table 8: Classification of sample by Organization size

Organization Size (Employee Count)	Number of respondents	Percentage
0-100	6	1.72%
101-300	41	11.78%
301-600	109	31.32%
601-1000	81	23.28%
More than 1000	111	31.90%

4.5.5 Sample data categorization based on the age category

The table 9 and the figure 12 explain how the age of the respondents was distributed. From 348 responses, the majority of the mid-career IT operation professionals belong to the age group of 30-35 year that is 47.13 %. The minority responses belong to the under 25 years age category, which is 1.15 %. Consecutive respondents whose age is between 25-30 years, 35- 40 years and above 40 years deputized in the sample by 14.66%, 30.17 % and 6.9%.

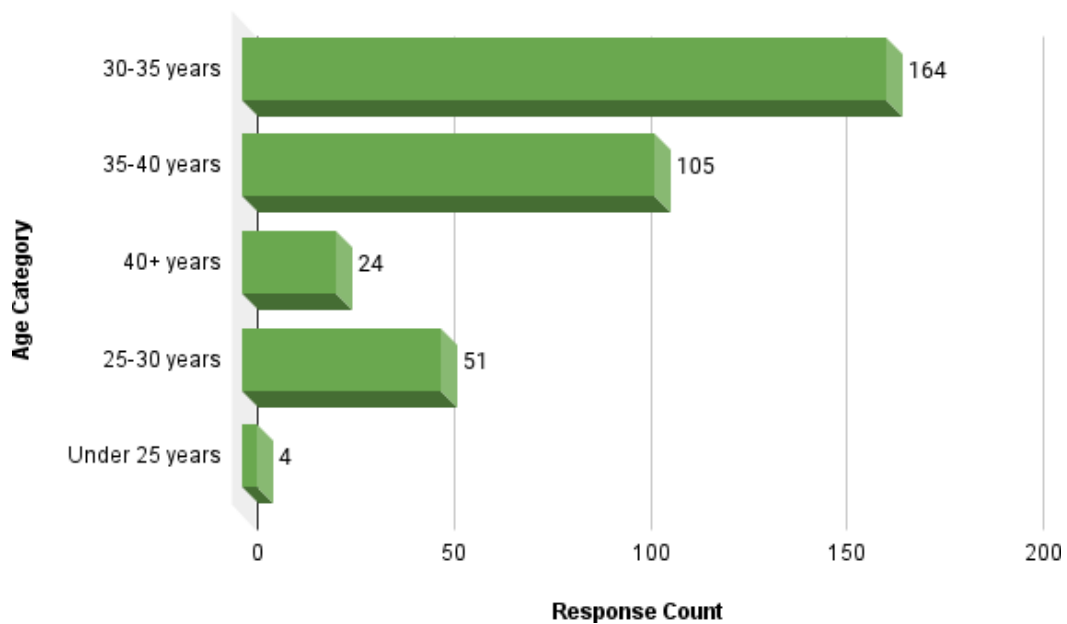


Figure 12: Age Category of the respondent

Table 9: Classification of sample by age category

Age Category	Number of respondents	Percentage
Under 25 Years	4	1.15%
25-30 Years	51	14.66%
30-35 Years	164	47.13%
35-40 Years	105	30.17%
40+ Years	24	6.90%

4.5.6 Sample data categorization based on the gender

As the gender composition shown in the figure 13 and the table 10, the majority was gentlemen. From 348 total response count, 78.4% was attributed to the male IT operation professionals and the remaining 21.6% belonged to the female IT operation professionals. This statistical analysis was able to prove that male employees were dominant over the Sri Lankan IT operation industry.

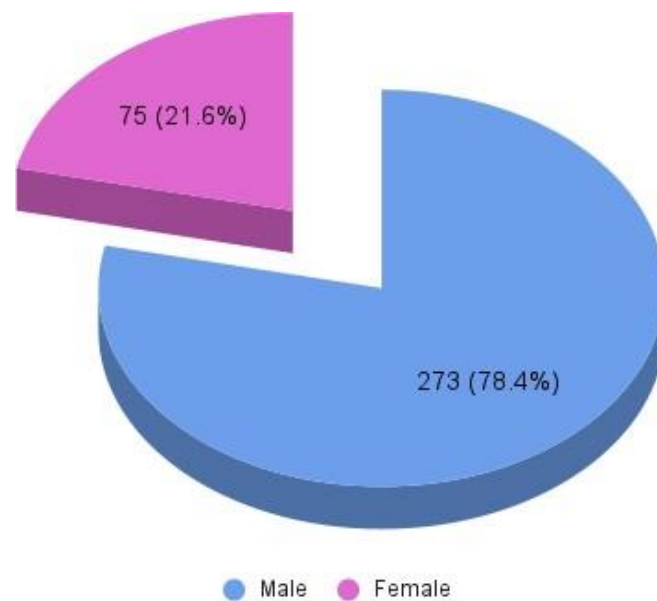


Figure 13: Respondent based on gender

Table 10: Classification of sample by gender

Gender	Number of respondents	Percentage
Male	273	78.45%
Female	75	21.55%

4.5.7 Sample data categorization based on the civil status

As per the Figure 14 and the table 11 information regarding the marital status of the responses, It clearly shows that the majority of the mid-career IT operation professionals are “Married”. As a percentage, it is 75.29% of the sample size. Other than that few respondents belong to the “Divorced” status. It is 4.02% of the sample. The single respondent count is 72 out of 348 and as a percentage, it is 20.69% of the sample size.

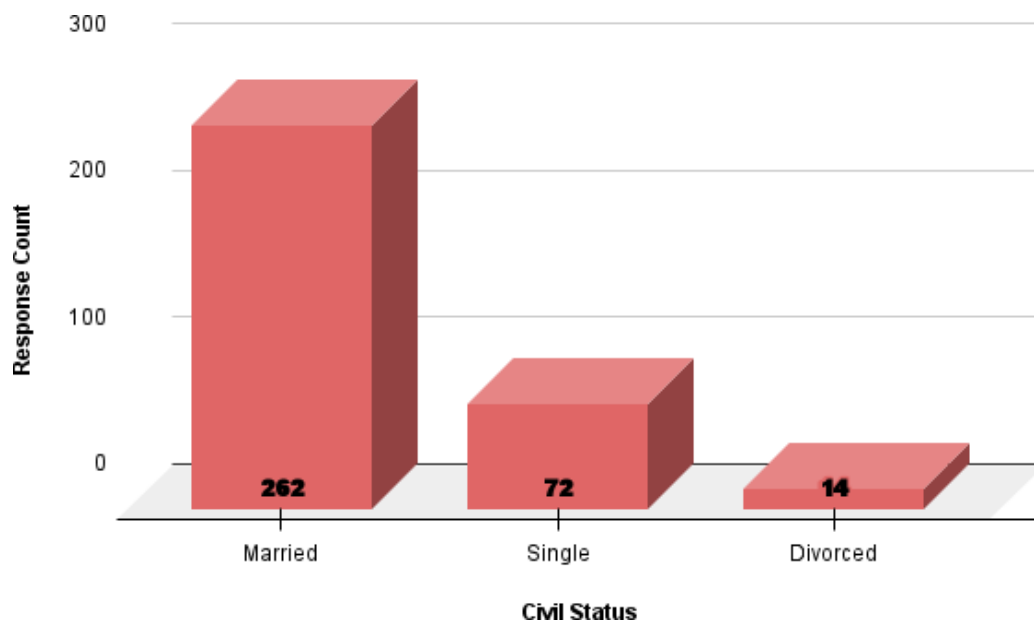


Figure 14: Civil Status

Table 11: Classification of sample by civil status

Civil Status	Number of respondents	Percentage
Married	262	75.29%
Single	72	20.69%
Divorced	14	4.02%

4.5.8 Sample data categorization based on the current position

The current job-position distribution is shown in both figure 15 and table 12. 191 responders are playing the “Lead/ Consultant / Architect” role. As a percentage, it is 54.89% of the sample size. The minimum response count was received for the junior, and it is 0.57% of the sample size. Consecutive current job positions are “Senior”, “Manager” and “Other” job positions are deputized in the sample by 31.9%, 12.07% and 0.57%.

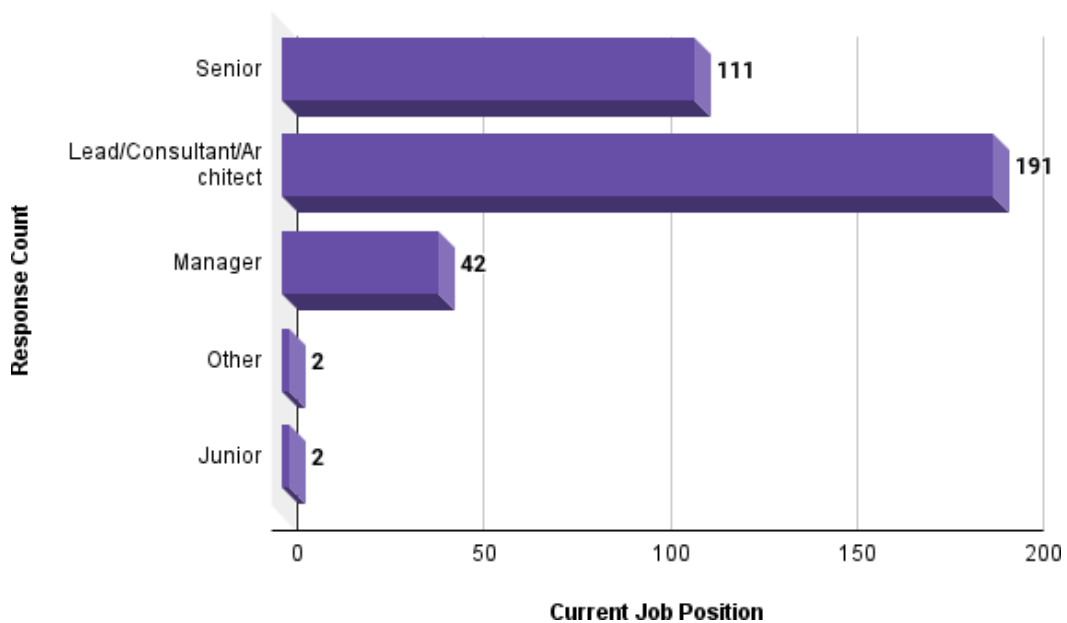


Figure 15: Current job position

Table 12: Classification of sample by Current job position

Current Job Possition	Number of respondents	Percentage
Junior	2	0.57%
Senior	111	31.90%
Lead/Consultant/Architech	191	54.89%
Manager	42	12.07%
Other	2	0.57%

4.5.9 Frequency analysis of Likert-scale values of the online survey

The frequency analysis is a descriptive statistical method that shows the frequency of each response given by the respondents. The following analysis presents the employment related health risk on which the study is focused on.

4.5.1.1 Career Model

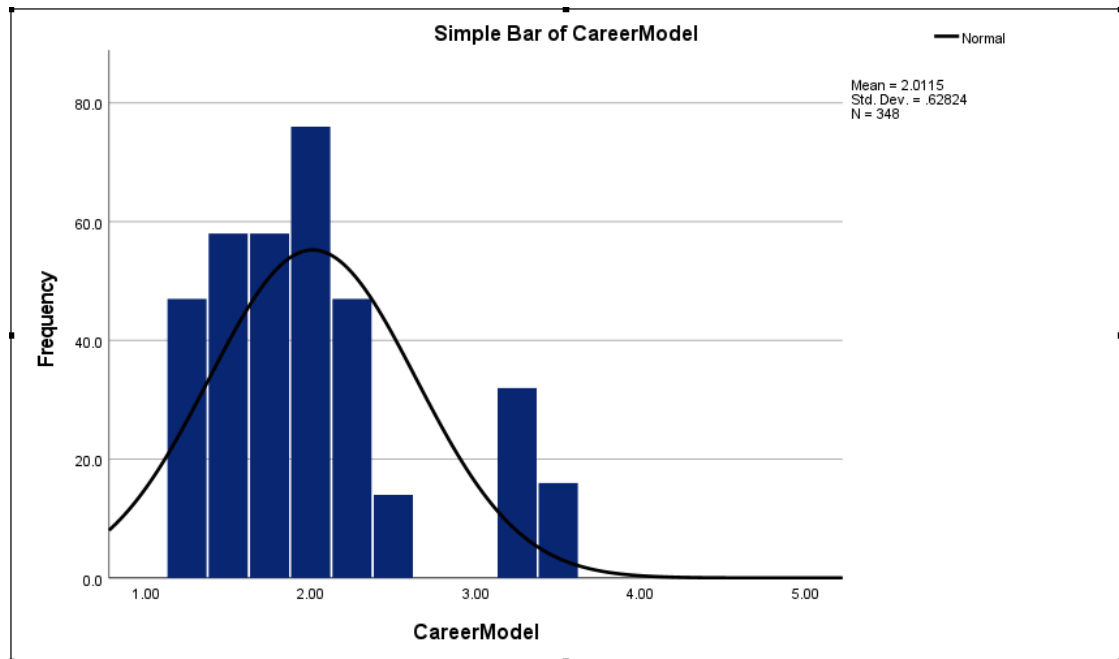


Figure 16: Histogram of the data in Independent Variable "Career Model"

The figure 16 demonstrates the variation of 5-point likert responses to the career model. According to that most of the respondents selected 1 and 2 since the career model makes a significant impact on employment related health risk.

4.5.1.2 Work Life Balance

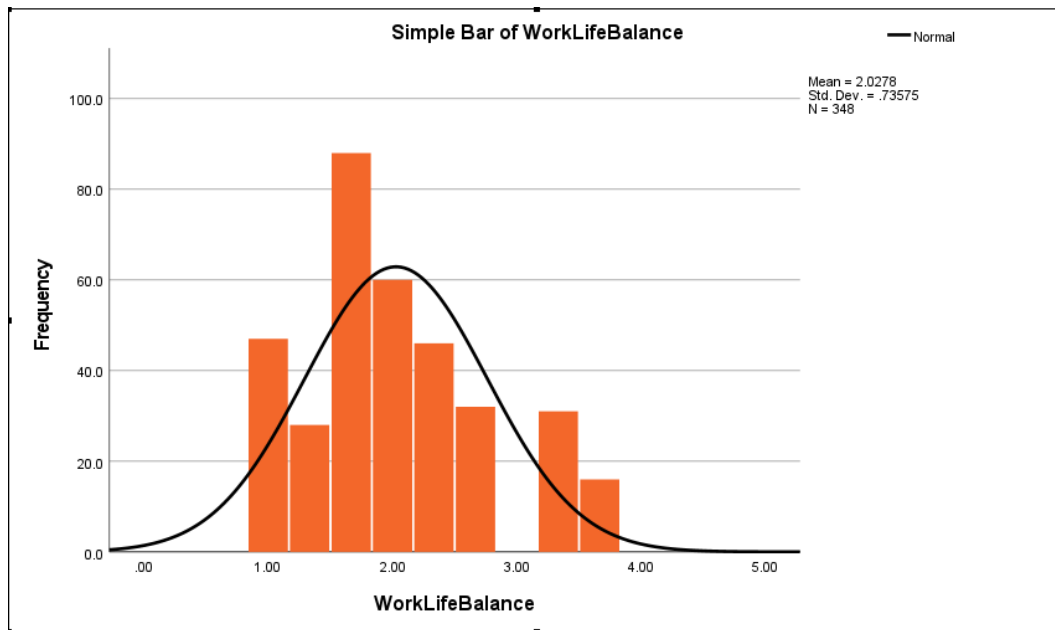


Figure 17: Histogram of the data in Independent Variable "Work Life Balance"

The responses received for the questions related to the work-life balance are normally distributed as it is depicted in the systematic histogram shown in the figure 17.

4.5.1.3 Occupational Environment

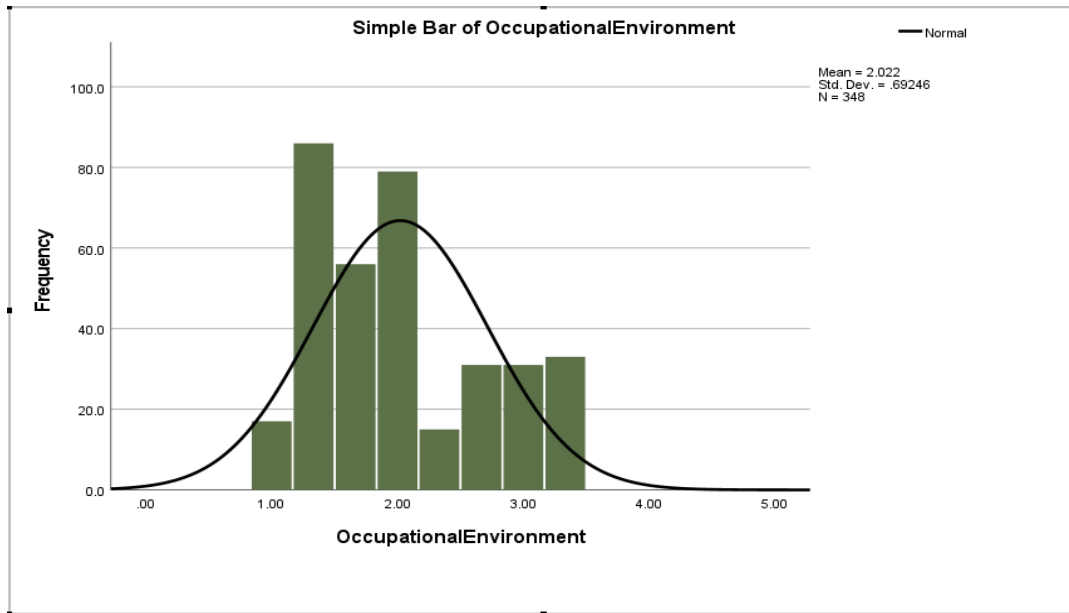


Figure 18: Histogram of the data in Independent Variable "Occupational Environment"

The responses received for the questions related to Occupation Environment are normally distributed as it is depicted in the systematic histogram shown in the figure 18.

4.5.1.4 Work Stress

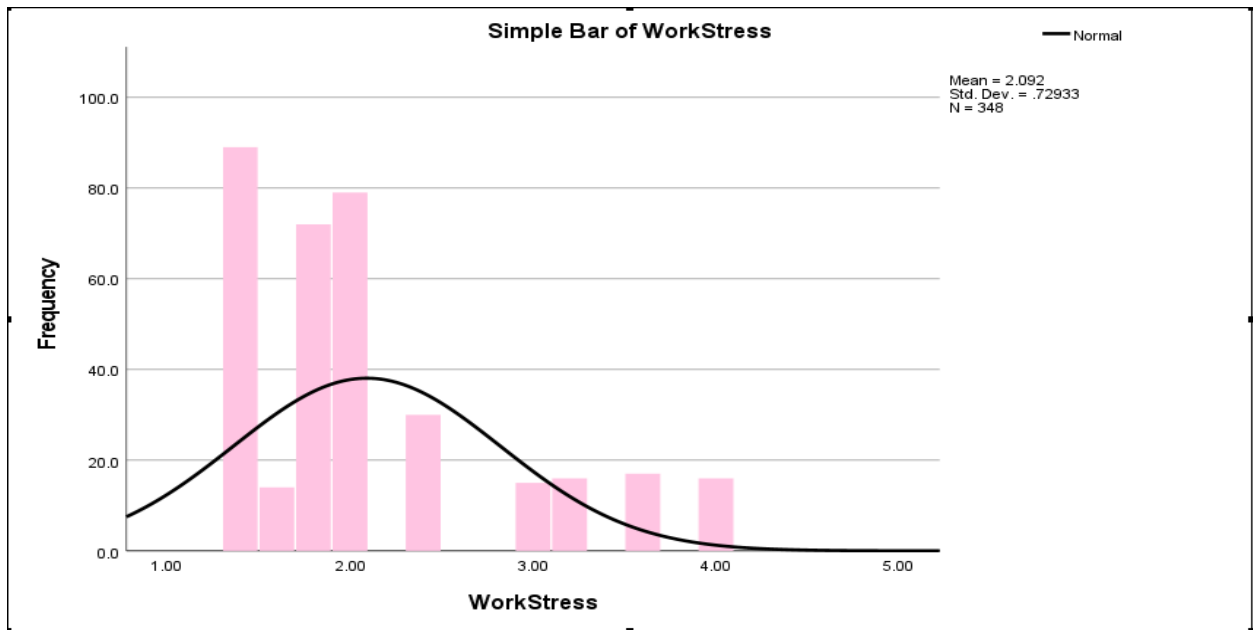


Figure 19: Histogram of the data in Independent Variable "Work Stress"

The figure 19 depicts the 5-point Likert distribution of responses to work stress in the IT operation sector. Most of the respondents are given 1 and 2 as their responses.

4.5.1.5 Working Hours

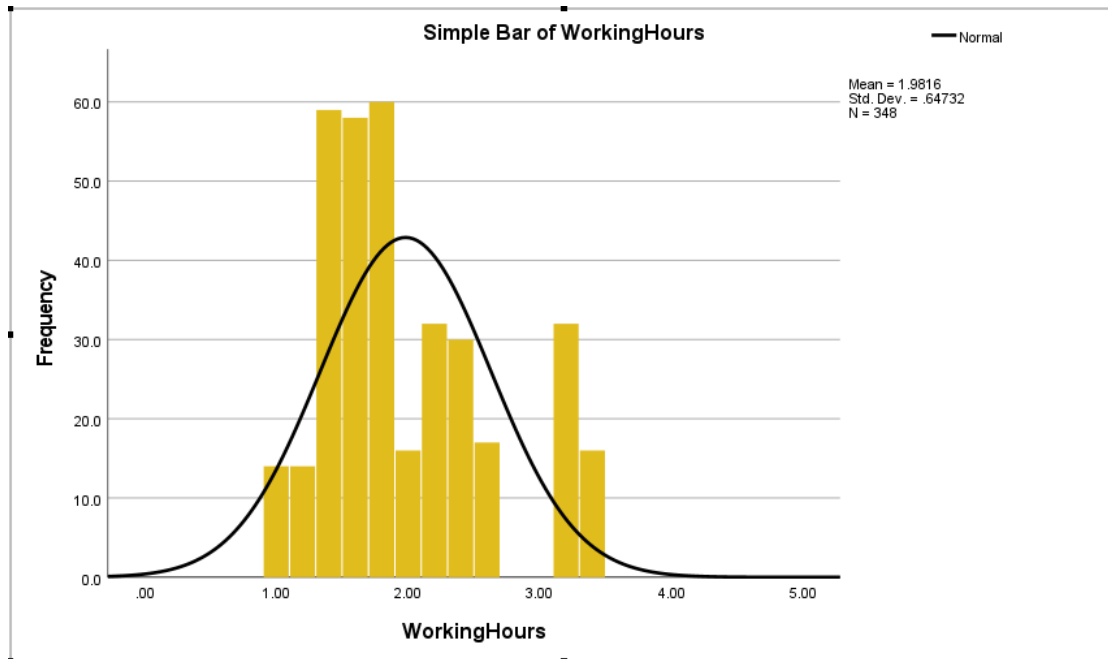


Figure 20: Histogram of the data in Independent Variable "Working Hours"

As shown in figure 20, the majority of the respondents have given the answers to the questions related to "working hours" independent variable as 1 and 2.

4.5.1.6 Health Risk

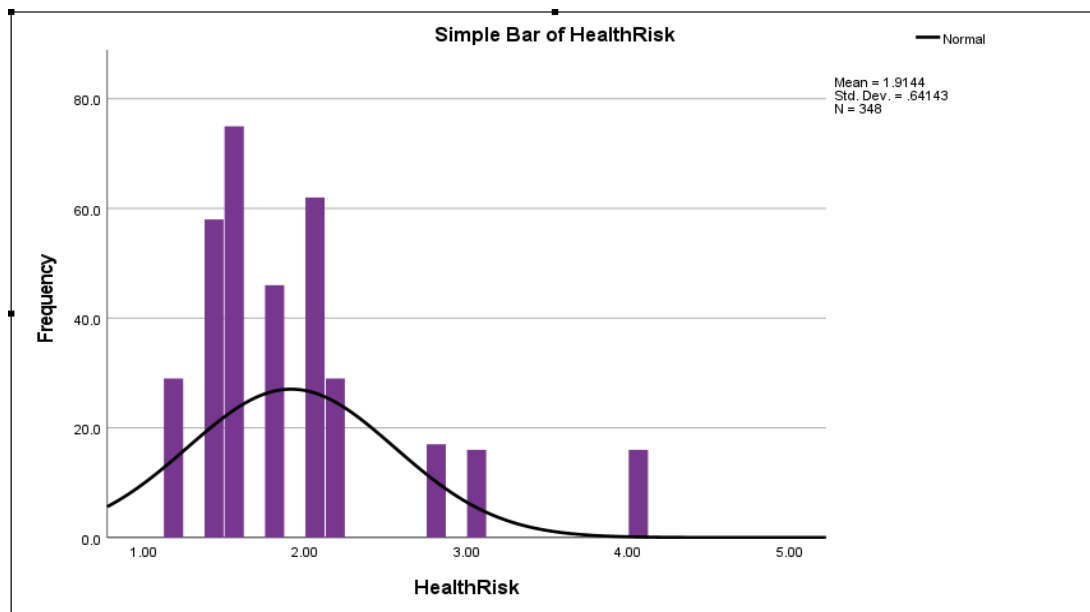


Figure 21: Histogram of the data in dependent Variable "Health Risk"

The histogram presented in the figure 21 is also positively skewed. The majority of the respondents have answered the questions related to this dependent variable as 1 and 2.

4.6 Reliability Analysis

To ensure the validity of the questionnaire used for data collection, a reliability analysis was performed. According to Cronbach's alpha reliability test standards, when the alpha value is 0.7 or higher, indicates an acceptable internal consistency of the questionnaire (Taber, 2017). The following are the results of the reliability of the questionnaire for each independent variable.

4.6.1 Estimation of the independent variable's Cronbach's alpha coefficient– Career Model

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.740	.706	4

Figure 22: Cronbach's alpha - career model

The independent variable "career model" has 5 questions in the questionnaire of the pilot study. 4 out of 5 questionnaires were selected. The figure 22 shows a reliability coefficient value of 0.740, which is higher than 0.7 and indicates that the questions' internal reliability is significantly high.

4.6.2 Estimation of the independent variable's Cronbach's alpha coefficient - Work Life Balance

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.741	.749	3

Figure 23: Cronbach's alpha - Work Life Balance

The independent variable 'Work Life Balance' has 5 questions in the questionnaire of the pilot study. Among them, only 3 were selected. The dependability coefficient value is 0.741, which is higher than 0.7, meaning the questions' reliability coefficient is strong and it is shown in the figure 23.

4.6.3 Estimation of the independent variable's Cronbach's alpha coefficient – Occupational Environment

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.692	.676	3

Figure 24: Cronbach's alpha - Occupational environment

The independent variable 'Occupational environment' has 5 questions in the questionnaire of the pilot study. Out of all the questions, only 3 were selected. The reliability coefficient value is 0.692 as in figure 24 which is approximately 0.7 and the internal consistency of the questions is considerably high.

4.6.4 Estimation of the independent variable's Cronbach's alpha coefficient – Work Stress

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.870	.872	5

Figure 25: Cronbach's alpha - Work Stress

The independent variable 'Work Stress' has 5 questions in the questionnaire of the pilot study. The reliability coefficient value is 0.870 as in figure 25 and the internal consistency of the questions is highly reliable.

4.6.5 Estimation of the independent variable's Cronbach's alpha coefficient – Working Hour

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.712	.738	5

Figure 26: Cronbach's alpha - Working Hours

The independent variable 'Working Hours' has 5 questions in the questionnaire of the pilot study. The dependability coefficient value is 0.712, which is comparatively higher than 0.7, meaning the questions' reliability coefficient is strong as shown in the figure 26.

4.6.6 Estimation of the dependent variable's Cronbach's alpha coefficient – Health Risk

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.771	.789	5

Figure 27: Cronbach's alpha - Health Risk

The dependent variable 'Health Risk' has 5 questions in the questionnaire of the pilot study. According to the figure 27, the reliability coefficient value is 0.771, which is above 0.7, indicating that the questions' reliability value is serviceable.

4.7 Inferential Analysis

After the Descriptive Analysis done for each independent and dependent variables, an Inferential Analysis was conducted by measuring the statistical relationship between variables. In addition to that, the hypotheses which were built and discussed under the chapter 3 were tested through a correlation analysis. A regression analysis was conducted in order to build a model to represent the relationship between variables, throughout the analyses done within this study.

4.7.1 The analysis of the correlation for the Entire Sample

Table 13: Correlations Summary

		Correlations					
		CareerModel	WorkLifeBalance	OccupationalEnvironment	WorkStress	WorkingHours	HealthRisk
CareerModel	Pearson Correlation	1	.387**	.723**	.701**	.328**	.715**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001
	N	348	348	348	348	348	348
WorkLifeBalance	Pearson Correlation	.387**	1	.450**	.248**	.754**	.111*
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	.038
	N	348	348	348	348	348	348
OccupationalEnvironment	Pearson Correlation	.723**	.450**	1	.837**	.489**	.689**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001
	N	348	348	348	348	348	348
WorkStress	Pearson Correlation	.701**	.248**	.837**	1	.285**	.898**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001
	N	348	348	348	348	348	348
WorkingHours	Pearson Correlation	.328**	.754**	.489**	.285**	1	.211**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001
	N	348	348	348	348	348	348
HealthRisk	Pearson Correlation	.715**	.111*	.689**	.898**	.211**	1
	Sig. (2-tailed)	<.001	.038	<.001	<.001	<.001	
	N	348	348	348	348	348	348

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

The table 13 shows a summary of the correlations between variables. The correlation was calculated based on the Pearson Bivariate correlation analysis. Since all the variables have positive value for their correlation, it implies that all the independent factors are related to the dependent factor positively.

As shown in table 13, Pearson correlation that each of the IV1, IV3 and IV4 are having with DV is between +0.5 and +1. The values are 0.715, 0.689 and 0.898. Therefore, these three IVs, “Career Model”, “Occupational Environment” and " Work stress” have a strong positive correlation with the Health Risk of mid-career IT operational sector employees. Further, Pearson correlation that each IV2 and IV5 are having with DV are between + 0.29 and +0.10. The values are 0.111 and 0.211. Therefore, “Work-Life Balance” and “Working Hours” have a low positive correlation with the Health Risk of mid-career IT operational sectoremployees.

4.7.2 Hypotheses Testing

As it was discussed during the Chapter 3: Research Methodology, mainly five hypotheses were defined and related to the 5 IVs discussed throughout this study. Those hypotheses were validated based on the correlation analysis discussed under the topic 4.7.1. the analysis of the correlation for the entire sample.

Hypothesis 1 - Career Model

H₁: Career model has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H₀: Career model does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Table 14: The outcome of a correlation analysis for the variable Career Model

		CareerModel	HealthRisk
CareerModel	Pearson Correlation	1	.715**
	Sig. (2-tailed)		<.001
	N	348	348
HealthRisk	Pearson Correlation	.715**	1
	Sig. (2-tailed)	<.001	
	N	348	348

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

As shown in the table 14, the significance level between the career model and the health risk is less than 0.001 which is less than 0.01 and the correlation between the career model and the health risk is 0.715, which is a high correlation. As a result, the null hypothesis is rejected, while the alternative results can be generalized. Hence, it is revealed that the career model influences the employment-related health risk.

Hypothesis 2 - Work Life Balance

H21: Work life balance has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H20: Work life balance does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Table 15: The outcome of a correlation analysis for the variable Work Life Balance

		HealthRisk	WorkLifeBalance
HealthRisk	Pearson Correlation	1	.111 [*]
	Sig. (2-tailed)		.038
	N	348	348
WorkLifeBalance	Pearson Correlation	.111 [*]	1
	Sig. (2-tailed)	.038	
	N	348	348

*. Correlation is significant at the 0.05 level (2-tailed).

The table 15 shows that the correlation among work-life balance and employment-related health risk is 0.111 which is a positive weak correlation. Furthermore, the significant level is 0.038, which is less than 0.05. As a result, the null hypothesis should be rejected, and an alternate hypothesis can be acknowledged. Finally, it is stated that the work-Life Balance affects employment-related health risk.

Hypothesis 3 - Occupational Environment

H31: Occupational Environment has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H30: Occupational Environment does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Table 16: The outcome of a correlation analysis for the variable Occupational Environment

		HealthRisk	Occupational Environment
HealthRisk	Pearson Correlation	1	.689**
	Sig. (2-tailed)		<.001
	N	348	348
OccupationalEnvironment	Pearson Correlation	.689**	1
	Sig. (2-tailed)	<.001	
	N	348	348

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

As shown in the table 16, the significance level between the occupational environment and health risk is less than 0.001 which is less than 0.01 and the correlation between the occupational environment and the health risk is 0.689, which is a high correlation. As a result, while the assumption is violated, the alternative hypothesis is proposed. As a result, it is demonstrated that the occupational environment has an influence on the occupational-related health risk.

Hypothesis 4 - Work stress

H41: Work stress has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H40: Work stress does not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Table 17: The outcome of a correlation analysis for the variable Work Stress

		HealthRisk	WorkStress
HealthRisk	Pearson Correlation	1	.898**
	Sig. (2-tailed)		<.001
	N	348	348
WorkStress	Pearson Correlation	.898**	1
	Sig. (2-tailed)	<.001	
	N	348	348

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

As shown in table 17, the significance level between work stress and the health risk is less than 0.001 which is less than 0.01 and the correlation between the work stress and the health risk is 0.898, which is a very high positive correlation. As a result, the rejection of the null hypothesis and acceptance of alternative hypotheses can happen. Hence, it is shown that stress has an effect on the risk of employment-related health problems.

Hypothesis 5 - Working hours

H51: Working hours have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

H50: Working hours do not have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

Table 18: The outcome of a correlation analysis for the variable Working hours

		HealthRisk	WorkingHours
HealthRisk	Pearson Correlation	1	.211**
	Sig. (2-tailed)		<.001
	N	348	348
WorkingHours	Pearson Correlation	.211**	1
	Sig. (2-tailed)	<.001	
	N	348	348

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

As shown in the table 18, the significance level between Working Hours and health risk is less than 0.001 which is less than 0.01 and the correlation between the Working Hours and the health risk is 0.211, which is a positive weak correlation. Therefore, the null hypothesis is rejected while the alternative hypothesis is accepted. Hence, it is noted that Working-Hours has the power on the employment-related health risk for mid-career employees in the Sri Lankan IT operation sector.

Synopsis of the Hypothesis Test

Table 19 provides a detailed summary of the hypothesis testing and variable correlation analysis.

Table 19; Correlation Analysis Summary

Statement of Hypothesis	(p) Sig. (2-tailed)	Status of the Null Hypothesis	Status of the Alternative Hypothesis	Correlation Strength	Positive or Negative Direction
Career model has an impact on the perceived employment related health risks for mid-career employees in the Sri Lankan IT operation sector.	<0.001 (P<0.01)	Rejected	Accepted	0.715 High	Positive
Work life balance has an impact on the perceived employment related health risks for mid-career employees in the Sri Lankan IT operation sector.	0.038 (P<0.05)	Rejected	Accepted	0.111 Weak	Positive
Occupational Environment has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.	<0.001 (P<0.0 1)	Rejected	Accepted	0.689 High	Positive
Work stress has an impact on the perceived employment related health risks for mid-career employees in the Sri Lankan IT operation sector.	<0.001 (P<0.01)	Rejected	Accepted	0.898 Very High	Positive
Working hours has an impact on the perceived employment related health risks for mid-career employees in the Sri Lankan IT operation sector.	<0.001 (P<0.01)	Rejected	Accepted	0.211 Weak	Positive

4.8 Regression Analysis

When conducting research studies, one of the most widely used statistical methods for data interpretation is linear regression analysis. It is used to figure out how the dependent variable and the independent variables are related. The regression analysis is capable of indicating significant relationships between variable factors, indicating the relative strengths of the relationships, and providing accurate predictions (Sarstedt & Mooi, 2014).

4.8.1 Independent Variable - Career Model

Table 20: Model Summary for career model

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715 ^a	.512	.510	.44879
a. Predictors: (Constant), CareerModel				

The model summary table illustrates the characteristics of the model. In table 20, The correlation between the variables of the study is represented by the 'R' value. The correlation between Career Model and the Health Risk is 0.715 which demonstrates that there is a positive relationship among both IV to DV. If the R value is greater than 0.4, It is considered as a strong relationship. Anyhow, when an independent variable changes, the dependent variable changes in the same direction, as indicated by the R value.

The r-square calculates the total variation in the dependent variable that can be explained by the independent variables. In another word, it gives the coefficient of the determination. This measurement describes how differences in one variable can be described by the difference in another related variable (Bloomenthal, 2020). In the above R square 0.512, indicates that 51.2% of employment related health risk is explained by the career model. Because the R square value is greater than 0.5, it is effective enough already to determine the relationship.

In the multiple regression, adjusted R-square demonstrates the generalization of the results, such as the variation of the sample results from the population. It is necessary to have the least variation between R-square and Adjusted R-square. In this case, its adjusted R square value is nearly equal to R.

Table 21: ANOVA table for career model

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.079	1	73.079	362.834	<.001 ^b
	Residual	69.689	346	.201		
	Total	142.768	347			
a. Dependent Variable: HealthRisk						
b. Predictors: (Constant), CareerModel						

It determines whether the model is significant enough to determine the outcome, according to the table 21: ANOVA table. In most cases, 95 percent confidence interval or 5% level of significance is chosen for the study. As a result, the p-value should be less than 0.05. Furthermore, the F-ratio represents a significant improvement in the prediction of the variable by fitting the model after taking into the account the model's inaccuracy. For the F-ratio to yield the efficient model, a value greater than one is used. The F-ratio for the data in this case is 362.834, and it is significant at less than 0.001, which is less than 0.05. A significant value of less than 0.05 indicates that there is less than 0.005% high probability that an F- ratio of such a value will occur. As a result, the null hypothesis is rejected, and an alternative hypothesis can be considered. As a result, it is possible to conclude that the relationship between Career Model and Health Risk is statistically significant.

Table 22: Coefficients table for career model

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.445	.081		5.507	<.001
	CareerModel	.730	.038	.715	19.048	<.001

a. Dependent Variable: HealthRisk

A coefficient table depicts the strength of a relationship and aids in the hypothesis testing for the study. According to the table 22 Coefficients, the Career Model's B value is 0.730. That means that for every unit increase in the Career Model, an increase in employment-related health risk of 0.730 units can be predicted. One-percentage-point increase in the career model, increases health risk by 0.730 percent. It denotes that these two variables have a positive relationship. The sig. value should be less than the study's tolerable level of significance, which is 0.05. In this case, the sig. value is less than 0.001, which is less than 0.05. As a result, the H_0 is rejected, and the analysis indicates that the career model has a significant positive relationship with health risk.

4.8.2 Independent Variable - Work Life Balance

Table 23: Model Summary for Work life balance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.111 ^a	.012	.010	.63837

a. Predictors: (Constant), WorkLifeBalance

The model summary table depicts the model's characteristics. The 'R' value in table 23 represents the correlation between the dependent and independent variables. The correlation between the work-Life Balance and the health Risk is 0.111, indicating a positive relationship between IV and DV. When an independent variable changes, the dependent variable changes

in the same direction, as indicated by the R value. The above R square 0.012 indicates that the work-Life Balance explains 1.2 percent of employment-related health risk.

Table 24: ANOVA table for Work Life Balance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.769	1	1.769	4.340	.038 ^b
	Residual	140.999	346	.408		
	Total	142.768	347			

a. Dependent Variable: HealthRisk
b. Predictors: (Constant), WorkLifeBalance

It determines whether the model is significant enough to determine the outcome, according to the table 24: ANOVA table. In most cases, 95 percent confidence interval or 5% level of significance is chosen for the study. As a result, the p-value should be less than 0.05. For the F-ratio to yield the efficient model, a value greater than one is used. The F-ratio for the data in this case is 4.340, and it is significant at 0.038, which is less than 0.05. A significant value of less than 0.05 indicates that there is less than 0.005 percent chance that an F- ratio of this value will occur. As a result, the null hypothesis is rejected, and an alternative hypothesis can be considered. As a result, it is possible to conclude that there is a statistically significant link between the work-Life Balance and the health Risk.

Table 25: Coefficients table for Work Life Balance

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.718	.100		17.098	<.001
	WorkLifeBalance	.097	.047	.111	2.083	.038

a. Dependent Variable: HealthRisk

According to the table 25 Coefficients, the work-Life Balance has a B value of 0.097. That means that for every unit increase in the work-Life Balance, an increase in employment-related Health Risk of 0.097 units can be predicted. One-percentage-point increase in the work-Life Balance raises health risks by 9.7 percent. It denotes that these two variables have a positive relationship. The sig. value should be less than the study's tolerable level of significance, which is 0.05. In this case, the sig. value is less than 0.001, which is less than 0.05. As a result, the null hypothesis is rejected, and the analysis indicates that the work-Life Balance has a significant positive relationship with the health risk.

4.8.3 Independent Variable - Occupational Environment

Table 26: Model Summary for occupational environment

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689 ^a	.475	.473	.46557

a. Predictors: (Constant), OccupationalEnvironment

The 'R' value in table 26 represents the correlation between the dependent and independent variables. The correlation between Occupational Environment and Health Risk is 0.689, indicating a positive relationship between IV and DV. The above R square 0.475 indicates that the Occupational Environment explains 47.5 percent of the employment-related health risk. Because the R square value is approximately equal to 0.5, it is effective enough to determine the relationship.

Table 27: ANOVA table for occupational environment

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.772	1	67.772	312.667	<.001 ^b
	Residual	74.997	346	.217		
	Total	142.768	347			

a. Dependent Variable: HealthRisk
b. Predictors: (Constant), OccupationalEnvironment

The table 27 determines whether the model is significant enough to predict the outcome. In most cases, 95 percent of the confidence interval or 5% level of significance is chosen for the study. As a result, the p-value should be less than 0.05. The data's F-ratio is 312.667, and it is significant at less than 0.001, which is less than 0.05. A significant value of less than 0.05 indicates that there is less than 0.001 percent chance that an F- ratio of this value will occur. As a result, it is possible to conclude that the Occupational Environment and Health Risk have a statistically significant relationship. As a result, the null hypothesis is rejected, and an alternative hypothesis can be considered.

Table 28: Coefficients table for occupational environment

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.624	.077		8.089	<.001
	OccupationalEnvironment	.638	.036	.689	17.682	<.001

a. Dependent Variable: HealthRisk

The B value of the Career Model is 0.638, according to the table 28 Coefficients. That means that for every unit increase in the Career Model, an increase in employment-related health risk of 0.638 units can be predicted. With 1% increase in the career model, the health risk rises by 63.8 percent. It denotes that these two variables have a positive relationship. The sig. value should be less than the study's tolerable level of significance, which is 0.05. In this case, the sig. value is less than 0.001, which is less than 0.05. As a result, the null hypothesis is rejected, and the analysis indicates that the career model has a significant positive relationship with the health risk.

4.8.4 Independent Variable - Work Stress

Table 29: Model Summary for Work stress

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.898 ^a	.807	.806	.28226

a. Predictors: (Constant), WorkStress

The 'R' value in table 29 represents the correlation between the dependent and independent variables. The correlation between the work Stress and the health Risk is 0.898, indicating a positive relationship between IV and DV. Work Stress is responsible for 80.7 percent of the employment-related health risk, according to R square 0.807. Because the R square value is greater than 0.5, it is effective enough to determine the relationship.

Table 30: ANOVA table for Work stress

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	115.201	1	115.201	1445.917	<.001 ^b
	Residual	27.567	346	.080		
	Total	142.768	347			

a. Dependent Variable: HealthRisk
b. Predictors: (Constant), WorkStress

According to the table 30: ANOVA table, it determines whether the model is significant enough to determine the outcome. Generally, 95% confidence interval or 5% level of the significance level is chosen for the study. Thus, the p-value should be less than 0.05. As well as, F -ratio represents an improvement in the prediction of the variable by fitting the model after considering the inaccuracy present in the model. A value greater than 1 for F-ratio yields the efficient model. Here F-ratio for the data is 1445.917 and is significant at less than 0.001 value which is less than 0.05. As significant below 0.001 indicates that there is less than 0.001% chance that an F- ratio of this value could happen. Therefore, the null hypothesis is rejected,

and an alternative hypothesis can be accepted. Because of that it can be concluded that there is a statistically significant relationship between the work Stress and the health Risk.

Table 31: Coefficients table for Work stress

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.262	.046		5.686	<.001
	WorkStress	.790	.021	.898	38.025	<.001

a. Dependent Variable: HealthRisk

According to the table 31 Coefficients, the Work Stress's B value is 0.790. That means that for every unit increase in the work Stress, 0.790 units increase in the work-Related Health Risk can be predicted. With 1% increase in the work stress, the health risk increases by 79%. It denotes that these two variables have a positive relationship. The sig. value should be less than the study's tolerable level of significance, which is 0.05. In this case, the sig. value is less than 0.001, which is less than 0.05. As a result, the null hypothesis is rejected, and the analysis indicates that the work stress has a significant positive relationship with the health risk.

4.8.5 Independent Variable - Working Hours

Table 32: Model Summary for Working hours

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.211 ^a	.045	.042	.62785

a. Predictors: (Constant), WorkingHours

The 'R' value in table 32 represents the correlation between the dependent and independent variables. The correlation between Working Hours and Health Risk is 0.211, indicating a positive relationship between IV and DV. Working Hours explain 4.5 percent of the employment-related health risk, according to R square 0.045.

Table 33: ANOVA table for Working Hours

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.378	1	6.378	16.179	<.001 ^b
	Residual	136.391	346	.394		
	Total	142.768	347			

a. Dependent Variable: HealthRisk
b. Predictors: (Constant), WorkingHours

It determines whether the model is significant enough to determine the outcome, according to the table 33: ANOVA table. The F-ratio for the data in this case is 16.179, and it is significant at less than 0.001, which is less than 0.05. A significant value of less than 0.05 indicates that there is less than 0.001 percent chance that an F- ratio of this value will occur. As a result, it is possible to conclude that there is a statistically significant link between Working Hours and Health Risk. As a result, the null hypothesis is rejected, and an alternative hypothesis can be considered.

Table 34: Coefficients table for Working Hours

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.499	.109		13.815	<.001
	WorkingHours	.209	.052	.211	4.022	<.001

a. Dependent Variable: HealthRisk

The Working Hour's B value is 0.209, according to table 34. This means that for every unit increase in Working Hours, 0.209 units increase in the work-Related Health Risk can be predicted. With 1% increase in the career model, the health risk rises by 20.9 percent. It denotes that these two variables have a positive relationship. The sig. value should be less than the study's tolerable level of significance, which is 0.05. In this case, the sig.value is less than

0.001, which is less than 0.05. As a result, the null hypothesis is rejected, and the analysis indicates that the working hours have a significant positive relationship with the health risk.

4.9 Summary

This chapter describes the data analysis procedure of the study. Initially, the reliability analysis was performed to validate the internal consistency and reliability of the questionnaire. The sample data set was then subjected to the descriptive analysis in order to better understand its distribution. Inferential data analysis was performed to understand the behavior of the sample which is used Pearson's correlation analysis and the regression analysis which was performed to test the hypothesis and identify the association between independent and dependent variables.

5. CONCLUSION AND RECOMMENDATION

5.1 Chapter Introduction

In order to examine the research objectives of this research study, appropriate data analysis was conducted as mentioned in the fourth chapter. The researcher could be able to successfully analyses the research objectives and test the hypotheses which were defined throughout the research. Furthermore, the research impact in perceived employment-related health risks and recommendations to reduce such employment related health risks are highlighted in this chapter. Other than that, limitations of the study and propose several suggestions which are useful to address in future studies as an extension of this domain.

5.2 Data Interpretation

Data interpretation and the presentation are explained in the following sections.

5.2.1 Data Dependability

Cronbach's alpha was used to validate the internal consistency of the questionnaire. The set of independent variables and the dependent variable were subjected to a reliability analysis. The study used closed-ended questions with Five - point scale of 1 to 5 (Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree). Cronbach's alpha values were 0.7 or higher for all variables. As a result, it is concluded that the questionnaire was reliable for conducting the research.

5.2.2 Demographic Analysis of Sample Data

The researcher has conducted demographic analysis with the intention of identifying respondents' characteristics. It was able to gather data from 348 software professionals who are working in the IT operation sector. The majority of them have 8-12 years of experience, as a percentage of 62%. It is observed that a minor portion of the mid-career employees have more

than 12 years of experience in the IT operation sector. As a percentage, it was 0.57% of the respondents.

As shown in Section 4.5.2, 47% of the respondents out of 348, are Application Support Engineers, while the rest of the respondents have been categorized as System Administrators, Network operations, IT desktop support and Data center operations Engineers.

According to the demographic data presented in Section 4.5.3, out of 348 respondents, 43 % of workers employed for service-based companies. While the rest of the 14% respondents employed for product-based companies and the remaining 42% provided their services to companies which are categorized as both product and service providing companies.

In this study, the majority of the respondents are working in both 301-600 employed organizations and large-scale organizations where more than 1000 IT professionals are employed. Out of 348 respondents, 2% are employed in organizations that have less than 100 employees.

When it comes to age, the majority of mid-career IT operation sector employees (47 percent out of 348 employees) are between the ages of 30 and 35.

The 35-40 age group has the second-highest percentage of respondents (30% of total respondents), while the under 25 age group has the lowest percentage of respondents (1% of total respondents). 25-30 age group and above 40 age group have considerably lower employment, such as 15% and 7% out of all respondents. This indicates that the majority of the mid-career IT operation sector professionals belong to the 30-40 age category.

As shown in Section 4.5.6, it is notable that most of the respondents are male. As a percentage, 78 % are male and only 22% of the respondents are female. In order to more elaborate respondent's characteristics, Section 4.5.7 evaluates the marital status of respondent. It is stated that, out of 348 respondents, 75% are married while 21 % and 4 % are respectively single and divorced employees.

At the end of the demographic data analysis, the researcher observed that 55% of respondents out of 348, are designated as Lead or Consultant or Architect. Meanwhile, 32% of respondents have senior positions and 12% employed for Managerial job roles. It is noted that a negligible portion of respondents are still designated as Junior and any other job roles.

5.2.3 The relationship between the independent and dependent variables.

The primary goal of this research is to determine the relationship between employment-related health risks and the following factors: Career Model, Work-Life Balance, Occupational Environment, Work Stress, and Working Hours.

5.2.3.1 Hypothesis Testing: Career Model

H1₁: Career model has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

According to the Table 13, the summary of the correlation in chapter 4, the alternative hypothesis was accepted such that, there is a positive connection among the career model and the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector, which has a high correlation with the level of 0.715 and the less than 0.001 significance that is a positive relationship. In terms of the correlation strength of the other variables, this is the second-highest correlation value. This indicates that providing a well-defined employee-oriented career model will help to reduce employment-related health-risk among IT operation sector professionals.

5.2.3.2 Hypothesis Testing: Work Life Balance

H2₁: Work life balance has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

As per the Pearson correlation analysis test results, shown in the figure 29 in the section 4.7.2, reach the conclusion that there is a significantly weak positive relationship between Work-Life Balance and the job-related health risks, which has a weak correlation with the level of 0.111 and the 0.038 significance, which is a positive relationship. Therefore, the alternative hypothesis was accepted such that, work-life balance has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

5.2.3.3 Hypothesis Testing: Occupational Environment

H31: Occupational Environment has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

As per the Bivariate Correlation analysis described in table 13, the summary of the correlation in chapter 4, it is concluded that the Occupational environment is the third-highest correlation which holds a value of 0.689, with the employment related health-risk. Less than 0.001 significance of the relationship interprets that there is a positive relationship always. Since it carries out a high correlation value, employers should pay more attention to their employees' work environment, in order to minimize their employees' work-related health-risk. Providing the user-friendly work environment with well-furnished accessories, facilitating the environment for leisure time activities, catering the latest devices and the equipment which need for their day-today activities and serving healthy foods in the work premises are the most important actions that help to avoid employment related health-risk for mid-career employees in the Sri Lankan IT operation sector.

5.2.3.4 Hypothesis Testing: Work Stress

H41: Work stress has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

According to the Table 13 in chapter 4, the alternative hypothesis, that there is a positive relationship between work stress and perceived employment-related health risks for mid-career employees in the Sri Lankan IT operation sector, was accepted, which has The highest correlation with the level of 0.898 and the less than 0.001 significance, that is a positive relationship. This has the highest correlation value when compared to the correlation strength of the other variables. This indicates that mitigating work stress of the employees would help to minimize the risk of having employment-related health issues. Since work stress is identified as the top most factor which impacts employment-related health-risk, employers need to take immediate and long-term solutions to avoid work stress of their employees.

5.2.3.5 Hypothesis Testing: Working hours

H51: Working hours have an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

As per the Pearson correlation analysis test results, shown in the figure 32 in the section 4.7.2, there seems to be a plus connection between Working hours and perceived employment-related health-risks, which has a weak correlation with the level of 0.211 and the less than 0.001 significance, that is a positive relationship. Therefore, the alternative hypothesis was accepted such that, working hours has an impact on the perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.

5.2.4 Research Outcome of Factor Analysis

As discussed in section 4.8, the correlation analysis was done for the factors which are identified through the literature survey. The researcher was able to conclude that all of them are positively correlated with the employment-related health-risk for mid-career employees in the Sri Lankan IT operation sector.

According to the findings, the factor Work Stress has the strongest positive correlation with the job-related health risks. Hence, the researcher can suggest that providing employees a stress-less work environment, with the keen regular supervision of senior management would help to minimize the employment related health-risk for mid-career employees. Furthermore, Career Model, Occupational Environment, Work-Life Balance and Working Hours also have positive impacts on the employment-related health-risks for mid-career employees in Sri Lanka IT operation sector.

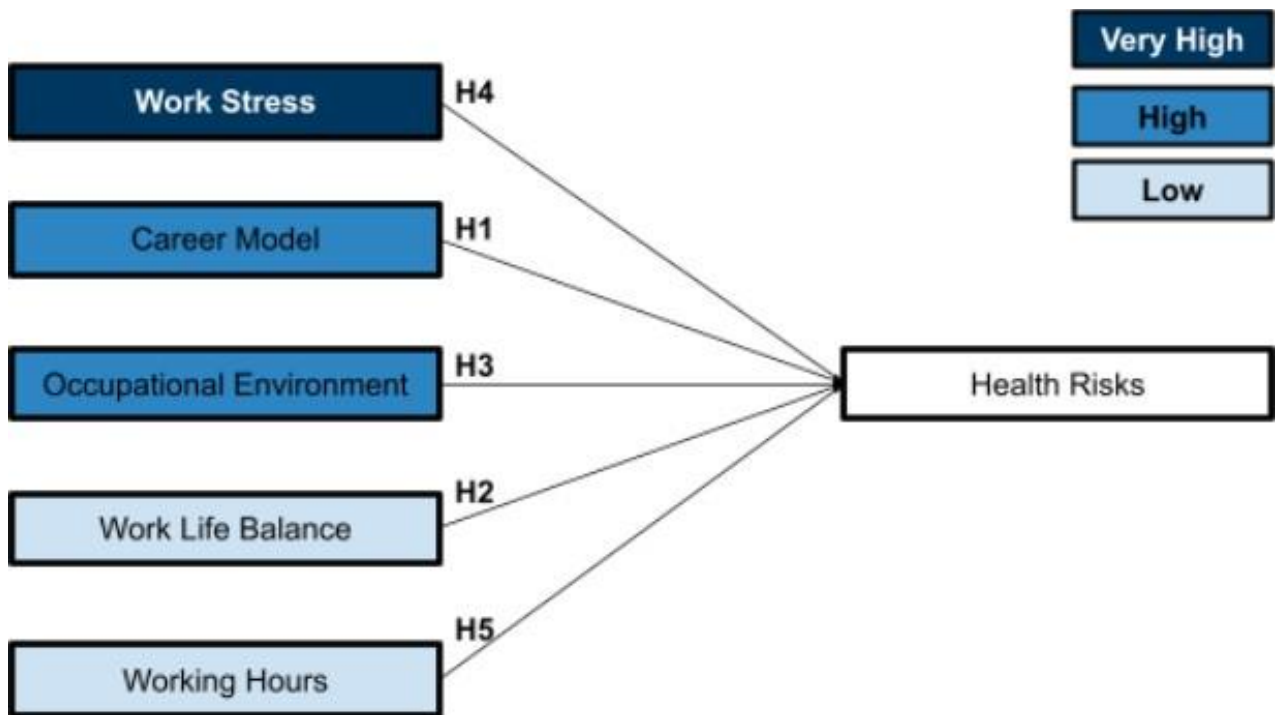


Figure 28: Graphical representation of Correlation strength levels

The figure 28 elaborates more on the correlation strength of each factor along with the dependent variable, employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector. The color contrast from dark to light indicates the correlation strength from highest to lowest. Therefore, the dark blue color represents the very high correlation, the blue color represents the high correlation, and light blue represents a low correlation.

5.3 Attaining Research Objective

Following are the research objectives stated at the Chapter 1 and the details revealed to be related to those objectives are described below.

- **Identify perceived employment-related factors that impact on health-risks of mid-career employees in Sri Lankan IT operation sector**

After referring to several literature sources and conducting interviews with subject- matter experts, the researcher was able to identify perceived employment related factors as “Career Model”, ”Work-Life Balance”, ”Occupational Environment”, “Work Stress” and “Working Hours”.

- **Determine the impact of the factors on the health-risks of mid-career employees in the Sri Lankan IT operation sector**

Based on the research analysis, it is concluded that “Work Stress” has the highest impact on the employment-related health-risk among the mid-career IT operation sector employees. Other than that, “Career Model” and “Occupational Environment” have a considerably high influence on the employment-related health-risk, while “Work-Life Balance” and “Working Hours” presumably be considered as the low impact factors.

- **Provide recommendations to prevent employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.**

The researcher suggests more convenient and productive recommendations after further analyzing research analysis data, which were derived from the SPSS tool. These recommendations are further explained in the following chapter 5.4.

5.4 Recommendations

Data analysis has discovered some of the key highlights which are useful for the organizational management decision-making and operations in the organization. Those key factors are Work Stress, Career Model, Occupational Environment, Working hours and Work-Life Balance in descending order of their correlation strength. Therefore, it is important to pay attention to the tasks related to avoiding Work Stress, as this is the most critical contributor for the employment-related health-risk. Companies can set up an environment to discourage employees who work late-time, while providing a token of appreciation for the people who have done office duties as well as extracurricular activities. Other than that, top management should pay attention to maintain real time estimation. Inaccurate estimations are mainly caused for the unbearable workload for the employees, and then it returns work stress among employees. Therefore, the researcher suggests getting collaborative support from all the relevant parties, before sharing the unrealistic time estimates among stakeholders, as another recommendation to avoid employment-related stress.

Since the Career Model is considered as the second-most strengthened correlation factor with employment-related health risk, it is worth, if the career model can be implemented without any health risk. Therefore, the researcher recommended for the top management and Human

resource department to implement job roles and responsibilities while preserving employee's health and safety. It is also recommended for regular job supervision when performing a new challenge, assigning a new task in a less knowledgeable area, or when the risk involved in the job is significant. It helps to track any mismatches at the beginning level, and it would help employees to carry out their work with confidence, and it leads to making a happy employee. As the upcoming recommendation, the researcher would like to suggest a user-friendly working routine that does not allow employees to work consecutively 3 times on the night shift. Because this could affect not to have proper sleep and this would definitely be a cause for their health risks.

Then the researcher has considered recommendations for the Occupational Environment factor, as it has the third-highest correlation strength. Providing User-friendly work environment with well-furnished accessories, facilitating environment for leisure time activities, catering the latest devices and equipment which need for their day-today activities and serving healthy foods in the work premises are the most important actions that helps to avoid employment related health-risk for mid-career employees in the Sri Lankan IT operation sector. As a persuasion to consume healthy foods and maintain a healthy life-style, management can organize creative events such as choosing the healthiest person of the year and so on. Organizing such events helps to bond the relationship among employees, and it eliminates all the health risk factors in their work environment.

5.5 Limitations of the Study

In this study, the researcher has chosen the most significant employment-related factors to address. But there are many factors that need to be taken into consideration when assessing health risk. And also, the researcher hasn't measured the employment related health risk in this research. Only consider perceived employment related health risks. And also those factors were identified by referring to the literature. But most of the literature used was foreign information and may not have completely matched with Sri Lankan context in practical scenarios.

For the data collection process, employee's workload related information has not been taken into consideration, therefore it is better if employee's workload information is collected.

The questionnaire is mainly focusing on identifying the employee's employment-related health risks. Therefore, the questions are targeting to gather some data specific to a particular company

and their work environment. There is a possibility that the respondents might be reluctant to give their honest opinion concerning their company reputation and the confidentiality which also lead to a bias in the results of this study. And this research only collected data from IT operation sector employees, but this can be extended to other software professionals as well. Because, employment related health risks are common for the rest of the IT professionals as well. Data gathering was done only focusing on Sri Lankan context to narrow down the scope, but this could be extended to the global population as well. Then the outcome of this research might be totally varied.

5.6 Future Work

There are numerous avenues for furthering this research as future work. This study focused on only five health risk factors. However, there are various factors to take into account when analyzing the health risk factors affecting mid-career IT operational professionals. Therefore, future researchers can continue the same research by exploring many other health risk factors. Besides that, this research uses 350 sample sizes to collect the data. Mainly if the sample size can be further increased the accuracy of the data can be further improved. Hence, it would be better if this size can be increased, because it is considered that sample size expansion would help to increase the accuracy of the data. Therefore, this point can be considered for future studies.

The tool used to gather data in this study was a closed ended questionnaire which did not allow the respondents to provide their ideas and feedback in their own words since the questions provided already specified lists of answers to select an option among them. An open-ended questionnaire which gives the respondents to provide their ideas and feedback in their own words will be another way to gather data. This also can be considered as future work to be done.

Since work related health problems are common in the IT industry, it would be better to cover up more areas in the Sri Lankan IT industry rather than limiting it to the IT operation sector. Or else, it will be worthwhile to take the gender and the family background also into consideration when analyzing their responses in future studies in the same research area. Furthermore, there is an issue with measuring employment related health risk since all are taken based on their perception. Hence, it would be better if such a model can be developed to

evaluate employment related health risks. As a future work to be done in the same research area, It would be better if the researcher can conduct interviews with doctors who have more experience on employment related issues with their previous experience.

5.7 Conclusion

The main research question considered in this research study is to identify the perceived employment-related health risks for mid-career employees in the Sri Lankan IT operation sector.

As per the statistical data analyses presented and discussed in above chapters, some factors such as “Work Stress”, “Career Model” and “Occupational Environment” have a strong positive correlation with the employment-related health-risks. The “Work Stress” is considered as the main health-risk factor, as it occupies the highest correlation with employment related health-risk. Anyhow, “Work-Life Balance” and “Working Hours” have a low positive relationship with employment-related health-risks.

Finally, it is possible to conclude that all the above-mentioned factors have an impact on the employment-related health risks for mid-career employees in the Sri Lankan IT operation sector.

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APPENDIX A – Company List

List of software companies utilized for the final survey.

- 1 Sysco Labs (Pvt) Ltd.
- 2 Pearson Lanka (Pvt) Ltd.
- 3 Orange Software Technologies (Pvt) Ltd.
- 4 Virtusa (Pvt) Ltd.
- 5 Millenium Information Technologies (Pvt) Ltd.
- 6 99X Technologies (Pvt) Ltd.
- 7 WSO2 (Pvt) Ltd.
- 8 Digiratina Technology Solutions (Pvt) Ltd.
- 9 Creative Software (Pvt) Ltd.
- 10 Villvay (Pvt) Ltd.
- 11 Axiata Digital Labs (Pvt) Ltd.
- 12 1 Billion Tech (Pvt) Ltd.
- 13 Nable Solutions (Pvt) Ltd.
- 14 Mobitel (Pvt) Ltd.
- 15 Epic Lanka (Pvt) Ltd.
- 16 Mutants International (Pvt) Ltd.
- 17 Auxenta Digital Labs (Pvt) Ltd.
- 18 Cambio Software Engineering (Pvt) Ltd.
- 19 Wiley (Pvt) Ltd.
- 20 GeoEdge (Pvt) Ltd.
- 21 Circles.Life (Pvt) Ltd.
- 22 MyBudget (Pvt) Ltd.
- 23 DirectFN (Pvt) Ltd.
- 24 Simcentric Technologies (Pvt) Ltd.
- 25 Codegen International (Pvt) Ltd.
- 26 Datavail (Pvt) Ltd.
- 27 Evonsys (Pvt) Ltd.
- 28 Holoteq (Pvt) Ltd.
- 29 Exilesoft (Pvt) Ltd.
- 30 Vitalhub Innovations (Pvt) Ltd.
- 31 Omobio (Pvt) Ltd.
- 32 ISM APAC (Pvt) Ltd.
- 33 Swivel Group (Pvt) Ltd.
- 34 BlackSwan Technologies (Pvt) Ltd.
- 35 Cloud Solutions (Pvt) Ltd.
- 36 Synergen Health (Pvt) Ltd.
- 37 Mitra Innovations (Pvt) Ltd.
- 38 Geveo Australasia (Pvt) Ltd.
- 39 Intervest (Pvt) Ltd
40. CMS (pvt) ltd

APPENDIX B - Interview Questions

Interview questions asked from IT Operation sector expertise.

Basic Questions

- What is your designation in the IT operation sector in the IT industry?
- What is the organizational structure of your company?
- Have you experienced any health risks which are associated with your employment?

General View of employment-related health-risks

- Do you think that employee's health can be affected by their employment?
- What is the employment-related factors that can be affected by their health risk?
- What is your perception regarding those factors?
- What do you think about the following factors? How far do they affect to employee's health risk? Can you please brief on each one's impact?
 - Career model
 - Work life balance
 - Occupational environment
 - Work stress
 - Working hours
- Any other ideas?

APPENDIX C – Survey Questionnaire

Survey questionnaire for perceived Employment-Related Health-Risk for Mid-Career Employees in Sri Lankan IT Operation Sector

Perceived Employment-Related Health-Risk for Mid-Career Employees in Sri Lankan IT Operation Sector

I am a postgraduate student of the Department of Computer Science and Engineering, University of Moratuwa. As partial fulfillment of the Master of Business Administration (MBA) in IT program, currently, I am engaged in a research study on;

“Perceived employment-related health-risks for mid-career employees in the Sri Lankan IT operation sector.”

It would be really appreciated if you could spare about 10 minutes of your precious time to complete and submit the below questionnaire. Your complete response will be very important and helpful for me to conduct my research study.

All the information you provide will remain completely anonymous and confidential and will be used solely for academic purposes only.

Thanks in advance for taking the time to assist me in my educational endeavor. I recognize the value of your time and gratefully appreciate your commitment in completing this questionnaire. Please do not hesitate to contact me if you have any concerns regarding this.

I would very much appreciate it if you answer all the questions carefully.

Thank You,

H.M. Samaranyaka | malmi.18@cse.mrt.ac.lk

MBA in IT (2018)

Department of Computer Science & Engineering

University of Moratuwa

Sri Lanka

Demographic Information

1. Years of experience you have in the IT operation sector?
 - Less than 3 years
 - 3 to 8 years
 - 8 to 12 years
 - More than 12 years

2. Select your job category *
 - IT Desktop support
 - System Administration
 - Application Support
 - Network Operations
 - Data Center Operations
 - Other

3. Which category does your organization belong to *
 - Product based
 - Service based
 - Both
 - Other

4. How many employees are there in your organization?
 - 0-100
 - 101-300
 - 301-600
 - 601-1000
 - More than 1000

5. What is your age category?
 - Under 25 years
 - 25-30 years
 - 30-35 years
 - 35-40 years
 - 40+ years

6. What is your Gender?
 - Male
 - Female

7. What is your civil status?
 - Single
 - Married
 - Divorced
 - Widowed

8. Your current position belongs to

- Junior
- Senior
- Lead/Consultant/Architect
- Manager
- Other

Career Model	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9. The work condition distinctly create stress in my mind					
10. Organization pay attention on employee health and safety when job role and responsibilities are granted					
11. I feel stress when regular job supervision is not happened while carrying out a new task or when allocating a new task in less experienced area or when risk involved in the job is high					
12. I experience that my work duties and responsibilities create conflict to my healthy habits					

Work Life Balance	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
13. I believe that if I could complete my duties at workplace and family as expected, I can utilize remaining time for my personal health					
14. I don't have pressure on my professional work when I can give enough time for my family after work					
15. Organization do not encourage employees not to take their entitle leave as it directly impact on employees' freedom of mind					

Occupational Environment	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
16. I believe that the organization should provide emphasis on stress problems and sets their organizational structure according to it					
17. I have experience physical pain such as back-pain, shoulder-pain, etc due to the usage of office equipment like chairs, table, display screen...etc					
18. I have experienced mental depression while working with my colleague when interpersonal conflict between employees is considerably high in the organization					

Work Stress	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
19. I noticed that people do smoking when they need relaxation from the work which cannot complete within given time frame					
20. I feel anxiety problems or stress due to absence of any motivational factors					
21. I experience depression when it makes me feel that I am overloaded in work at workspace					
22. I feel exhausted to do any other work after reaching home as I fed up with office work					
23. I spend sleepless night with office work when milestone are not achieved within target period					

Working Hours	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
24. I believe that I have enough time to work out since I normally finish work during office working hours					
25. I don't experience on continuous sleepless nights since our company don't have strict overtime schedule					
26. I don't have any uncomfortable experience such as headache, tiredness since we have adequate breaks during working hours					
27. I don't experience frequent late night work which may leads to have regular poor sleep, since our management carefully arrange roster					
28. I experience worse in my illness when I have to complete remaining working hours which is impacted due to my sick leave					

Health Risk	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
29. I believe that working for more than regular time period will causes to have vision problems					
30. I experience tiredness when I have to work without any break in-order to achieve unrealistic target					
31. I experience belly fat as a result of sitting for a long period of time to continue office work					
32. I assume that I am getting used to a poor dietary pattern because of my shift-based work allocation					
33. I noticed that cigarette smoking tendency getting higher when employees feel stress because of their workload					