RETAINING REMOTE WORKERS: FACTORS THAT AFFECT VIRTUAL AND HYBRID WORKERS' JOB RETENTION

BY

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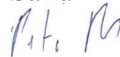
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ABSTRACT

Many organizations were not prepared for their workforce to work remotely before the COVID-19 pandemic, but despite the challenges, most people have adapted to this new way of working "remotely." It is expected that this work trend is here to stay, with many organizations considering whether to allow workers to work fully remotely – also known as "virtually" – or to allow some flexibility for workers to choose whether to work a few days remotely – also known as a "hybrid" work mode. The objective of this study is to use factors from Herzberg's motivation-hygiene theory, Deci's self-determination theory, and life-course fit theory to better understand their effects on virtual and hybrid workers' job retention. The research questions are as follows: 1) Is there a relationship between pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and need for relatedness and job retention for virtual and hybrid workers? 2) Is the relationship of each factor with job retention moderated by job level (operational/specialist workers vs. managerial workers) and virtual intensity (virtual workers vs. hybrid workers)? Using the structural equation model (SEM), the results indicate that none of the motivator-hygiene factors – pay, promotion, supervision, and fringe benefits – significantly contribute to virtual and hybrid workers' job retention. On the other hand, there is a significant relationship between life-course fit and job retention, which signifies that work/life interruption and family arrangements have a significant impact on virtual and hybrid workers' job retention. There are also significant relationships between both intrinsic and extrinsic

motivation and job retention for virtual and hybrid workers, hence, to retain virtual and hybrid workers, organizations and managers must keep workers motivated both intrinsically and extrinsically. The interaction effect of "job level" as a moderating variable shows that the relationship between pay, promotion, fringe benefits, extrinsic motivation, and need for relatedness and job retention is more negative for managerial-level workers than for operational/specialist-level workers; and only life-course fit is more positively related to managers and above. The interaction effect of "virtual intensity" as a moderating variable shows that the relationship between pay and supervision and job retention is more positive for virtual workers than for hybrid workers, whereas the relationship between fringe benefits, life-course fit, and extrinsic motivation and job retention is more negative for virtual workers than for hybrid workers.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Millions of people around the world had to work remotely during the coronavirus pandemic (COVID-19) of 2019–2021. Many went through significant adjustments to adapt to this new way of working outside of their organization's location; most worked from home and had to adopt new skills, technology, and work practices. Colleagues worked and collaborated without meeting face-to-face, work and life schedules blurred, and it was difficult to tell if employees had too much or too little work on their hands. But despite these challenges, most people adapted to the new way of working virtually.

The concept of virtual work is not new, but with the help of the internet, meeting tools, and email, people can now effectively work anywhere in the world without having to meet face-to-face. Employers are more open to allow flexible schedules for their teams working remotely, and work expectations have changed. More people are selected for jobs because of their talent and expertise, regardless of where they are based. With better technology and faster internet, groups of people in the tens or even hundreds can instantly meet, discuss, and share documents online. Many organizations have realized the benefits of working virtually for employees, such as the elimination of commuting time, fewer distractions from work colleagues or supervisors, and more time for family, friends, or themselves.

Although many organizations were not prepared for their workforce to work remotely before the pandemic, it is expected that this work trend is here to stay. Global Workplace Analytics estimated that by the end of 2021 around 25–30% of the U.S. workforce will work from home multiple days per week (Global Workplace Analytics, 2020). Many organizations have decided to allow workers to work remotely, while others that still prefer workers to work some days onsite have decided to allow more flexibility for employees to work remotely a few days per week – also called a "hybrid" work mode. For these organizations, virtual and hybrid work settings are new

phenomena that are still in experimental stages without much information on the short- and long-term effects on workers' morale, working behavior, productivity, and job retention. It is therefore important to examine and learn more about the factors that have an influence on virtual and hybrid workers' job retention. In these new work settings, many questions arise: What factors are important for virtual and hybrid workers to stay satisfied and remain on the job? What factors will keep virtual and hybrid workers motivated? Does family interruption or having family members or children at home affect workers' attitudes toward working from home?

This study revisits the theories of work motivation, job satisfaction, and life-course fit to examine their application to job retention in virtual and hybrid work settings. The goal of this study is to determine what factors affect virtual and hybrid workers and whether factors related to life-course fit, such as work/life interruption and family arrangements, affect the job retention of virtual and hybrid workers. Although "work motivation" and "job satisfaction" are relatively mature fields of study, new forms of virtual and hybrid work have introduced new opportunities and challenges to organizations and managers looking to satisfy, motivate, and retain workers who work remotely, outside of the traditional workplace.

This study aims to use motivation-hygiene theory, self-determination theory (SDT), and the life-course fit approach to better understand what factors affect virtual and hybrid workers' job retention. The first theory, Frederick Herzberg's motivation-hygiene theory, also known as two-factor theory, posits that people are motivated by two types of factors: "hygiene" factors such as pay, supervision, and fringe benefits, which are not the source of satisfaction, but if handled properly, can lower workers' dissatisfaction at work; and "motivators" such as promotion, recognition, and achievement, which lead to satisfaction and make workers more productive and committed to their work. The second theory is Edward Deci's SDT. Based on SDT, this study aims to determine whether virtual and hybrid workers are intrinsically or extrinsically motivated while also examining whether their need for relatedness, one of SDT's basic psychological needs, affects their job retention. According to SDT's basic psychological needs theory, all three needs – autonomy, competence, and relatedness – are essential for a person's psychological wellbeing-being and optimal functioning, and that if any one of them is thwarted, there will be

distinct functional costs. Finally, the study evaluates whether virtual and hybrid workers' job retention is affected by life-course fit, which includes the questions of whether family/parenting responsibilities interfere with work, whether family arrangements are well-managed, and whether work interrupts personal life and vice versa. Finally, the study aims to examine whether job level and virtual intensity – the amount of time spent working remotely – affect job retention for virtual and hybrid workers.

1.2 Research Gaps

The relationships between pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and the need for relatedness and virtual and hybrid workers' job retention have not been explored. The related job satisfaction and work motivation theories have many broad implications for different workplaces, social settings, and organization types, but the links between all of these factors and job retention in virtual work settings remain unexplored. Employees juggle their work and personal life demands; however, those who are working virtually tend to feel a stronger impact of these demands affecting one domain over the other much more than those who work in traditional work settings. This is especially intense for those who work from home and/or have additional family responsibilities or challenges, such as having little children to take care of; experience spillover of either work or family issues; or live with too many family members in close proximity, which affects their work concentration. Being able to effectively integrate and fulfill the demands of both work and personal life is therefore an important factor that can affect job retention. This study therefore examines whether pay, promotion, supervision, fringe benefits, life-course fit, intrinsic and extrinsic motivations, and the need for relatedness influence job retention of virtual and hybrid workers. Based on the review of related literature, two gaps have been identified:

Research Gap 1: There have been studies of how Herzberg's motivator and hygiene factors influence traditional workers, but there are limited empirical studies of how motivator and hygiene factors – pay, promotion, supervision, and fringe benefits – affect job retention for virtual and hybrid workers. Likewise, the dynamics of SDT

have also been studied in many areas, including families, classrooms, teams, and organizations, but the relationships between intrinsic motivation and extrinsic motivation and job retention in the context of virtual and hybrid work settings have not been explored. Based on SDT's basic psychological needs theory, the need for relatedness comprises feelings of respect, understanding, and connectedness, which derive from high-quality interpersonal relationships. However, working remotely significantly lessens the quality of interpersonal relationships between workers and their supervisors/coworkers. Therefore, it is yet to be determined whether the need for relatedness affects virtual and hybrid workers' job retention. Lastly, most theories on job satisfaction and work motivation have not included factors related to personal life, work/life interruption, and family arrangements. This study aims to examine whether these life-course fit factors affect job retention for virtual and hybrid workers.

Research Gap 2: There are limited empirical studies of how pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and the need for relatedness influence job retention for operational/specialist-level vs. managerial-level workers in virtual and hybrid work settings and for virtual vs. hybrid workers. There are several studies related to pay, promotion, supervision, and fringe benefits for blue-collar workers vs. white-collar workers in normal work settings (Blood and Hulin, 1967; Locke, 1973, Kovach, 1987, Toode, Routasalo, & Suominen, 2011; Hyun & Oh, 2011); however, there are none on virtual or hybrid workers.

1.3 Research Objectives and Research Questions

The objectives of this study are as follows: 1) to test the relationships between pay, promotion, supervision, fringe benefits, intrinsic motivation, extrinsic motivation, need for relatedness, and life-course fit and job retention for virtual workers and hybrid workers; and 2) to examine how the relationships of these factors with job retention varies for workers with different job levels (operational/specialist workers vs. managerial workers) and how the relationships of these factors with job retention varies for different virtual intensity levels (virtual workers vs. hybrid workers). The research questions are as follows:

RQ1: Is there a relationship between pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and need for relatedness and job retention for virtual and hybrid workers?

RQ2: Is the relationship of each factor with job retention moderated by job level (operational/specialist workers vs. managerial workers) and virtual intensity (virtual workers vs. hybrid workers)?

1.4 Scope of the Study

The aim of this study is to investigate the factors contributing to job retention for virtual and hybrid workers. These factors include pay, promotion, supervision, fringe benefits, intrinsic motivation, extrinsic motivation, need for relatedness, and life-course fit. The study also examines whether job level and virtual intensity moderate the influence on workers' job retention.

The scope of this study is to understand the different dimensions of job retention of virtual and hybrid workers in the work contexts in Thailand. This study was conducted using a quantitative approach to determine what factors best predict job retention of virtual and hybrid workers.

1.5 Structure of the Study

This study is organized as follows: Chapter one provides the introduction, research objectives, research gaps, and research questions. Chapter two presents a review of literature and key theories related to virtual work, work motivation, job satisfaction, and job retention; the factors that affect job retention; the hypothesis development; and this study's conceptual framework. Chapter three explains the research methodology, the sample size, the operational definitions, and the measurement of each variable. Chapter four explains the results and discusses each hypothesis tested. Chapter five concludes the study and introduces the theoretical and practical contributions, limitations, and directions for future study on the topic of virtual and hybrid work.

CHAPTER 2
REVIEW OF LITERATURE

To develop a comprehensive understanding of virtual and hybrid work, theories on work motivation, job satisfaction, life-course fit, and job retention are reviewed and discussed below.

2.1 Virtual Work

2.1.1 Definition of Virtual Work and Virtual Intensity

The advancement of information technology and communication tools has made the distribution of work much easier, faster, and more efficient (Hertel et al, 2005) and enabled more workers to work away from their traditional workplace or, in other words, work remotely or virtually. Virtual work is a popular current topic; however, the word "virtual" has not been clearly defined in different institutional contexts (Chudoba et al., 2005). In many relevant studies, the terms *virtual work, remote work, telework,* and *telecommuting* are used interchangeably. Wiesenfeld, Raghuram, and Garud (2001) identify "virtual work" as an important and growing phenomenon in which workers "work from home, 'on the road', or otherwise outside of traditional centralized offices."

In relation to virtual work, there are differences in virtual intensity, also known as "virtuality," or the amount of time spent working remotely. As shown in Table 1, high virtual intensity means that the worker works primarily remotely off-site, while medium virtual intensity means that the worker works in "hybrid" work settings and works at the workplace only one to three days a week, and finally, low virtual intensity refers to traditional onsite workers.

Table 1: Levels of Virtual Intensity

Levels of Virtual Intensity	Definition	Types of Workers
High virtual intensity	Works primarily remotely off-site	Virtual worker
Medium virtual intensity	Works 1 to 3 days a week at the workplace	Hybrid worker
Low virtual intensity	Works onsite at the workplace	Traditional worker

There are also different forms of virtual work, each determined by the number of employees involved and the degree of interaction among coworkers (Hertel et al., 2005). Teleworking (telecommuting) is the primary form of virtual work, where work can be accomplished partially or completely anywhere using information and telecommunication services (Bailey & Kurland, 2002). When teleworkers work together and under the same manager, a "virtual group" is created. However, if a group interacts virtually to achieve common goals, then it is called a "virtual team" (Lipnack & Stamps 1997). Members of virtual teams often work in different locations and use technology to communicate and coordinate their efforts and inputs (Peters & Manz, 2007). Gassmann and Von Zedtwitz (2003) define a virtual team as a "group of people who interact through interdependent tasks guided by common purpose and work linked by information, communication, and transport technologies." Leenders et al. (2003) see virtual teams as individuals, although geographically separated and regularly temporally distributed, working together on a specific project within and beyond the organization. Powell et al. (2004) provides the most accepted definition of virtual teams: "groups of geographically, organizationally and/or time dispersed workers brought together by information technologies to accomplish one or more organization tasks." Finally, the largest entity of virtual work is a "virtual community," where people

come together and participate in activities or work via the internet and operate under common purposes, roles, and norms (Wellman, 1997). Virtual communities are quite different from the other types of virtual work groups, as they do not operate within a conventional organizational structure and are normally originated by community members (Hertel, Niedner, & Herrmann, 2003; Moon & Sproull, 2000) or by scientific collaborations (Finholt, 2002).

2.1.2 From Teleworking to Virtual Work

Nilles (1975) first coined the term "telecommuting" almost half a century ago, and various organizations have adopted the practice of "telecommuting" or "telework" since. Telework is considered an early form of virtual work and is defined as working outside of the traditional workplace by using telecommunication or computer-based technologies (Nilles, 1994; Olson & Primps, 1984). Several factors have contributed to the growth of telework in recent decades, especially advances in technology (Baruch & Nicholson, 1997), the need to decrease costs and increased pressure for space (Neufeld & Fang, 2005; Jackson & Van der Wielen, 1998; Baruch & Nicholson, 1997), increased awareness of sustainability and mobility (Salomon & Salomon, 1984; Pérez et al., 2003), higher concern for better work–family balance (Shamir & Salomon, 1985), and employees' own preferences for telework (Manoochehri & Pinkerton, 2003; Mokhtarian, Bagley, & Salomon, 1998; Hill, Miller, Weiner, & Colihan, 1998; Chapman, Sheeney, Heywood, Dooley, & Collins, 1995).

Telework has transformed traditional ways of working by allowing employees to work without the physical constraints imposed by traditional work settings, where supervisors and coworkers exercise disciplinary force on workers' conduct (Sewell, 2012). Teleworking allows employees to exercise more autonomy (Bailey & Kurland, 2002), as supervisors and coworkers no longer work in proximity (Halford, 2005; Sewell, 2012), and dissolves the hierarchical construct between superiors and subordinates (Kurland & Cooper, 2002; Wicks, 2002; Wiesenfeld, Raghuram, & Garud, 2001; Fairweather, 1999), paving the way for new forms of supervisory relationships. Some examples include new forms of performance monitoring (Valsecchi, 2006), reliance on customers to report problems (Valsecchi, 2006), the use of a looser "coaching-based" supervisory approach with the support of

electronic monitoring devices (Dambrin, 2004), and supervisors' adoption of a more facilitative and less directive approach (Lautsch, Kossek, & Eaton, 2009).

Although technologies have enabled working arrangements to change qualitatively, many studies have argued that the employment relationship between managers and employees has not altered significantly, observing that the nature of managerial control remains the same and that managers utilize technology to remotely manage and direct employees just like in normal workplaces (Dimitrova, 2003; Lee, McDermid, Williams, Buck, & Leiba-O'Sullivan, 2002; Webster & Robins 1986; Brocklehurst, 2001). Sewell and Taskin (2015) state that the factors influencing managers' level of scrutiny – such as the nature of the work, the level of discretion needed for the employee to do the work, etc. – still matter and are no different from traditional working environments. Therefore, the main differences between working onsite and remotely are the spatial and temporal aspects; that is, working virtually physically separates workers from managers and their peers (Sewell, 2012; Wilson et al, 2008), which has been observed to affect employees' own perceptions of space and time, blurring the boundaries that separate work from other aspects of life (Roy, 1959; Thompson, 1962, 1967; Kallinikos, 2003; Kaufman-Scarborough, 2006; Wilson et al, 2008; Tsatsou, 2009; Lee & Sawyer, 2010).

2.1.3 Virtual and Hybrid Workers

In the last decade (2012–2022), there was a rise in the number of studies on the topic of virtual work, remote work, and telework, especially in three main areas: 1) efficiency of virtual groups and teams (Hitka et al., 2019; Lee, 2014; Bhat, Pande, & Ahuja, 2017; Großer & Baumöl, 2017; Daim et al., 2012; Stacho, Stachova, & Vicen, 2017; Pangil & Chan, 2014; Barhite, 2017; Cogliser et al., 2012; Avolio et al., 2014); 2) virtual or e-leadership (Stacho et al., 2019; Ramage, 2017; Arnfalk et al., 2016; Kuscu & Arslan, 2016; Merkevičius et al., 2015; Lilian, 2014; Hoch & Kozlowski, 2014; Szewc, 2014; Salter et al., 2010); and 3) features of telework (Raghuram, et al., 2019; Brandt, England, & Ward, 2011). Most of these studies emphasize the challenges of telework, mainly on communication, mutual trust, and leadership aspects (Baert et al., 2020; Brynjolfsson et al., 2020; Taylor, 2018; Ospina, 2016; Cogliser et al., 2012; Diam et al., 2012).

Daim et al. (2012) and Barhite (2017) posit that communication quality is essential for employees' psycho-emotional wellbeing and suggest that a lack of quality and nonverbal communication can result in employee anxiety, confusion, and miscommunication. Several studies have also pointed out the challenges of building trust among virtual team members (Belzunegui-Eraso & Erro-Garcés, 2020; Daim et al., 2012). Those who work virtually do not meet with their colleagues face-to-face as often as traditional workers, resulting in a lower level of trust and making it more difficult for managers to effectively manage virtual teams. Therefore, building trust within virtual teams is considered an important task (Mogale & Sutherland, 2010).

As more organizations consider incremental changes so that some workers can work remotely during a portion of the week, this hybrid model introduces a new work context that might balance the efficiencies gained by remote work with the benefits of social interactions at the workplace. In the literature reviewed, there is no exact definition for "hybrid" work and no defined threshold for the number of days a worker works remotely away from the office to be considered a virtual or hybrid worker. Nevertheless, there are two elements that define the difference between traditional and virtual workers: the psychological threshold – the minimum amount of stimulation needed to cause a psychological response or reaction – difference due to the number of days working remotely and the spatial relations with coworkers and the organization. Some researchers have posited that the psychological threshold of a worker starts to differ if the worker works remotely for 50% of the week, or about 2.5 days (Konradt et al., 2003; Gajendran & Harrison, 2007). Spatial relations derive from what workers perceive to be their primary workplace, whether it is the office, their home, a coffee shop, on the road, etc. For this study, we have therefore identified workers who work remotely and meet their team members at the workplace at least once a week and up to two to three days a week as hybrid workers, while virtual workers are those who work remotely out of the traditional workplace and meet their team members once a month or less.

2.1.4 Motivation and Autonomy in Virtual Work

One of the most distinctive factors that separates virtual workers from traditional workers is autonomy. Deci and Ryan (1985, 2000) define autonomy as feeling independent and in control of one's life and reason that if a person feels autonomous, they will be more intrinsically motivated (Gagné & Deci, 2005; Ryan & Deci, 2006). Many recent studies in the realm of software development and remote education have addressed the importance and challenges of autonomy as one of the essential motivators for virtual teams. Noll, Razzak, and Beecham (2017) conducted an empirical study of motivation and autonomy by interviewing software development teams with members distributed across several countries in Europe and North America and rating their motivation levels on a 5-point ordinal scale both before and after the introduction of Scrum – an agile development framework that emphasizes "self-organization" and autonomy. The motivation levels and qualitative analysis from the report indicated that autonomy is one of the important job aspects affecting motivation, alongside competence in the job and relatedness to the work and other team members. However, autonomy alone was not a sufficient condition for motivation among experienced team members, and some team members who had less experience in their specific roles were feeling less motivated by the substantial autonomy and more motivated by relatedness and support from other members. The study also concluded that autonomy is not a motivator by itself and must be accompanied by sufficient competence, and for more experienced and competent individuals, a lack of autonomy is demotivating.

Orsini and Rodrigues (2020) argue that the role of team leaders is crucial in motivating educators when working remotely and offer three recommendations for team leaders: 1) support autonomy by allowing team members to make decisions and voice their ideas/concerns and by ensuring that they take ownership of their tasks without too much micromanagement and surveillance; 2) support educators to feel effective working remotely by providing clear work structure and guidance; and 3) establish ways to increase relatedness and communication with team members while working remotely, as educators might feel unmotivated due to the lack of nonverbal support and the feeling of being left out. Previous research has also indicated that if leaders are needs-supportive, educators will feel that their work efforts

are valued and will feel more motivated to work autonomously, resulting in improved performance and higher wellbeing and work satisfaction levels (Orsini et al, 2020; Gagné, Deci, & Ryan, 2018). These studies came to the same conclusion that autonomy is not a motivator by itself, and it must be supported by competence and relatedness.

2.1.5 Advantages and Disadvantages of Virtual Work

Hertel et al. (2005) elucidate the advantages and disadvantages of virtual work for three different levels: individual, organizational, and societal (Beer, Spector, Lawrence, Mills, & Walton, 1985). The advantage at the individual level is that virtual workers have more flexibility, more control of their own time, more motivation to work, and a higher sense of empowerment than traditional workers. However, they might feel isolated and experience very minimal interpersonal contact with their colleagues, leading to a higher possibility of misunderstandings among the team members, resulting in escalation of conflicts and ambiguity of roles and responsibilities. The advantages at the organizational level include the ability to hire team members based on their experience and expertise rather than their local availability, to have virtual team members work "around the clock" as they are located in different time zones, to respond to market demands quickly and with flexibility, and to reduce expenses on travel and office space. The challenges at the organizational level include difficulties in supervising team members and managing their productivity during work time, costs to upgrade technologies and tools, and the challenge of developing appropriate training programs. In terms of the societal level, having workers who can work virtually can help develop jobs in regions with less developed infrastructure and a low employment rate and can allow for the integration of people with disabilities, low mobility, or additional family responsibilities. Finally, virtual work can help improve the environment by reducing air pollution caused by commuting traffic. The challenges at the societal level are increasing mental and lifestyle problems due to people isolating themselves from the rest of society.

2.2 Work Motivation

Many thinkers have offered definitions of motivation over the years, but most are based on the nature of human behavior as opposed to the motivation of workers in the workplace. Although there are many studies related to work motivation, the exact definition of work motivation has been sidestepped in many literature reviews (Atkinson, 1964, Kleinginna & Kleinginna, 1981; Erez, Kleinbeck, & Thierry, 2001; Korman, 1974; Locke & Latham, 1990). However, many researchers have discussed and conceptualized the term "motivation." Whiseand and Rush (1988) explain that motivation is an individual's willingness to do something and is conditioned by the actions that will satisfy needs. Fuller et al. (2008) state that motivation is an individual's "intensity, direction and persistence of efforts to attain a specific objective".

Since work motivation differs from general human motivation, as it deals with the realm of work, careers, and people management in the workplace, Pinder (1984) offers the following definition based on previous work by Jones (1955), Vroom (1964), and Locke, Shaw, Saari, and Latham (1981): "work motivation is a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behavior and to determine its form, direction, intensity, and duration" (Pinder, 1984 & 2015). The implications of this definition are both specific to work-related behavior and general enough to address basic issues surrounding the origins of human behavior (Pinder, 2008). Pinder (2008) further explains that the concept of "force" is similar to the definition provided by Vroom (1964), which states that motivation levels can be either strong or weak, vary from person to person, and vary depending on the time and situation. "Energetic forces" implies the variety of needs, drives, instincts, and external factors related to human behaviors, without ascribing primary importance to any one source, and suggests that the concepts of motivation are often used interchangeably with the concepts of effort. However, Pinder points out that "effort" is the consequence and primary indicator of motivation but not identical to it. The word "direction" in the definition refers to the specific goals at which the energy is directed (Katerberg & Blau, 1983), and "duration" implies that goal attainment and persistence are possible behaviors resulting from work motivation (consistent with Murray, 1938; Locke and Latham, 1990).

It is essential to address the distinction between work motivation and job performance because managers often assume subordinates have poor performance because they lack motivation. However, the problem of subordinates underperforming might stem from several external factors, such as the restrictive practices of their supervisors and limiting company policies (Hall, 1994); goals set by the individual, the group, or other people (Mitchell & O'Reilly, 1983); or even characteristics of the work environment, such as noise level, temperature, lighting, and air quality (Baron, 1994). These common assumptions by managers are a type of "fundamental attribution error" (Ross, 1977), where people have the tendency to attribute cause and effect to internal factors, such as motivation or ability, instead of external, contextual factors. Poor performance can also be subjective and arbitrary, depending very much on the eye of the beholder (Mitchell & O'Reilly, 1983), and therefore how, when, and by whom the performance is measured is of utmost importance.

These studies on work motivation have laid a solid foundation for the two main theories that are the focus of this study: Frederick Herzberg's motivator-hygiene theory and Edward Deci and Richard Ryan's self-determination theory (SDT).

2.3 Job Satisfaction

Many researchers have addressed the concept of job satisfaction; Locke (1976) provides one of the most well-accepted definitions: "a positive emotional state of feeling resulting from jobs, thus fulfilling individuals' value towards their jobs." Organ and Konovsky (1989) further propose that job satisfaction comprises two components: an affective component (emotional state) and a cognitive component (appraisal). The affective component is the immediate or "in-the-moment" feeling toward job-related factors and the job overall, while the cognitive component is tied to expectations and comparison of standards and involves evaluating the current situation and determining whether a particular facet of a job meets expectations.

Schneider and Snyder (1975) argue that the evaluation and perception of affective or cognitive job satisfaction can happen either while an individual is working or once the work is completed, which is when the positive emotional state arrives. Sempane et al. (2002) further explain that job satisfaction only arises when an

individual evaluates their jobs against what they think is important and will feel positively toward their job if it aligns with their values.

There are two well-known theories that use satisfaction as a basis: Abraham Maslow's hierarchy of needs theory and Frederick Herzberg's motivation and hygiene factors theory. One of the most famous theoretical approaches to general satisfaction and motivation is Maslow's (1943, 1954, 1968) hierarchy of needs, in which there are five categories of needs that an individual needs to satisfy before moving up the hierarchy, starting from basic physiological (such as water, food, clothing, and shelter) and safety needs and moving to higher-order needs such as love or belonging, self-esteem, and finally, self-actualization at the top of the hierarchy.

Herzberg focuses more on employee satisfaction and theorizes that job satisfaction has two dimensions: 1) hygiene factors (also called dissatisfiers), which include factors such as pay, fringe benefits, work conditions, coworkers, and supervision that can cause dissatisfaction and do not contribute to employees' satisfaction, and 2) motivating factors (also called satisfiers) such as growth, promotion, recognition, and the work itself, which contribute to employee satisfaction and motivation. Criticized on methodological grounds, many researchers have replicated Herzberg's study using different methodologies, resulting in different outcomes. Nevertheless, Herzberg's theory demonstrates that several factors affect and influence job satisfaction and provides a theoretical foundation for further studies of job satisfaction.

2.4 Similarities and Differences between Job Satisfaction and Work Motivation

Job satisfaction and work motivation are important factors in the study of organizational behavior, and many studies have shown positive relationships between these two factors. However, there is a misunderstanding that job satisfaction equals motivation, or vice versa. For this study, though, the factors related to job satisfaction and work motivation were used as independent variables to examine job retention in virtual and hybrid workers; therefore, it is important to clearly differentiate between job satisfaction and work motivation.

Kian et al. (2014) explains that the distinction between job satisfaction and work motivation has become ambiguous because the two concepts have similar inputs, high correlations, and complementing roles, and most motivation theories are also based on the idea of job satisfaction. Many studies have examined shared factors between job satisfaction and motivation (Kian et al., 2014), such as power (Hoole & Vermeulen, 2003); promotion (Hoole & Vermeulen, 2003; Moynihan & Pandey, 2007); financial rewards (Thomson, 2003); and job security (Davy et al, 1997; Ritter & Anker, 2002).

However, job satisfaction and work motivation are very different. Hersey and Blanchard (1988) explain that motivation and satisfaction differ in terms of return and performance. Moreover, Whiseand and Rush (1988) explain that motivation is what a person aims at receiving for doing a task or activity and satisfying needs, while job satisfaction is a positive emotional state resulting from the job itself (Locke, 1976). Carr (2005) explains the differences in simpler terms, stating that motivation originates from future expectations, while satisfaction originates from past events. To further clarify, Kian et al. (2014) suggest that "motivation is influenced by the current interpretation or forward-looking perceptions about the relations between performance and return; whereas satisfaction involves how people feel about the returns and rewards they have received for their current past performance." To this end, Kian et al. (2014) explains that job satisfaction and motivation require separate treatments so that factors and variables under these two can be more distinguishable.

2.5 Theoretical Review

People, by nature, tend to behave and assess other individuals based on their set of beliefs, and this is no different in work and organizational settings (McGregor, 1960; Urwick, 1967), where decisions or actions by managers originate from human assumptions and behaviors (McGregor, 1960). In an attempt to understand what contributes to workforce productivity and how to keep employees motivated, numerous theories have been developed on the subject; some have merit and are insightful, while others have been refuted as less useful.

It is therefore essential to recognize the major theories and research on job satisfaction and work motivation that have stood the test of time and are still in reference in recent literature to better understand the development and application of these findings to practical work and new organizational settings. Some of the theories included in this study are Abraham Maslow's hierarchy of needs, Douglas McGregor's Theory X and Theory Y, Frederick Herzberg and colleagues' motivation-hygiene theory, Richard Hackman and Gregory Oldham's job enrichment theory, Jean Stacy Adams's equity theory, Victor Vroom's expectancy theory, Edward Lawler's expectancy model, and finally, Edward Deci's SDT (intrinsic and extrinsic motivation).

2.5.1 Maslow's Hierarchy of Needs

One of the most famous theoretical approaches to work motivation is Maslow's (1943, 1954, 1968) hierarchical theory of human motivation. According to Maslow's theory, there are five categories of human needs in the hierarchy, starting from rudimentary needs and moving to higher-order needs: physiological, safety, love or social, esteem, and self-actualization. Physiological needs, such as the need for food, clothing, shelter, water, and air, are the most fundamental for human survival. These needs must be met before moving on to higher-level needs. After the physiological needs are met, a person will feel the need for safety and security. This includes the desire for both physical safety and economic security. Next is social (or love) needs, which include social interaction, belongingness, companionship, etc. The next needs are esteem needs, referring to two sets of desires: "self-esteem," which includes achievement, self-confidence, adequacy, mastery, and independence and "esteem received from others," such as recognition, praise, prestige, and reputation. The last and highest need is self-actualization, for which Maslow himself gives different interpretations (Maslow 1943, 1954, 1968). The most widely accepted view is that self-actualization is the fulfillment of one's potential and becoming all that one can be.

Although one of the most well-known human motivation theories, Maslow's hierarchy of needs is also the most oversimplified and misrepresented (Pinder, 2008), with many scholars interpreting the hierarchy to mean that a person's behavior reflects one state of need at a time and that a person would be obsessed with acquiring or satisfying that need until it is fulfilled before moving up to the next set of

needs. However, Maslow (1954) explains that most behaviors are multi-motivated and overdetermined, and that in determining behaviors, there is relative deprivation or satisfaction of needs and the relative influence of several needs at the same time. Maslow also recognizes that there are variations in the hierarchy, called reversals, where people place the order of needs differently, such as when some people place esteem ahead of love – seeking the glory and attention of other people rather than affection. Maslow points out that the hierarchy was never intended to be universal and invariant. Many of the more recent studies of Maslow's theory have reached negative conclusions with varying and contradicting results (Huizinga, 1970; Wahba & Bridwell, 1976; and for a summary of methodological issues related to the theory, see Wicker, Brown, Wiehe, Hagen, & Reed, 1993).

Nevertheless, Maslow's hierarchy of needs is important to this study as it lays the foundation for understanding job satisfaction and work motivation. Different people have different levels of needs. The most basic human survival needs include food and water, shelter, and clothing, all of which can be addressed through the money made by working. Once these basic physiological needs are addressed, people will move on to the next level of needs, including better working conditions, good relationships with managers and peers, better status in the organization and society, etc. Maslow's theory helps explain the fundamental reasons workers work and what satisfies them or keeps them motivated. However, is this theory fully applicable to the work domain, and do all workers strive to fulfill higher needs of belonging, esteem, and finally, self-actualization?

As people rank the importance of needs differently, there is a high possibility that operational and unskilled workers will be satisfied if they can earn enough to fulfill their basic needs and might not strive for esteem or self-actualization through their work. On the other hand, for those professionals who crave external esteem such as recognition, attention, prestige, and reputation, earning money just to fulfill their basic needs will not keep them satisfied. It is also questionable whether a person can achieve self-actualization at work. Many people choose to work virtually or scale down their workloads to have more work–life balance and only consider work a means to provide enough money to allow them to focus on something else they value more, such as family, friends, health, hobbies, side projects, etc. Therefore, some might

not seek to fulfill their higher-order needs – social, esteem, and self-actualization – through work. If this is the case, it is important to further explore how organizations can keep these workers motivated and satisfied at work.

2.5.2 McGregor's Theory X and Theory Y

McGregor (1957) provides an insightful observation concerning behavioral science in relation to work. He believes in the application of social science to make organizations more effective and introduces two theories of employee motivation: Theory X and Theory Y. McGregor's assumption for Theory X states that people are normally passive and at times resistant to the organization's needs, especially without active intervention by managers. According to Theory X, the average employee is by nature indolent, lacks ambition, is self-centered, and works only for money and extrinsic rewards to buy material goods and services to satisfy their basic needs. If managers believe that workers are inherently as described by Theory X, they will use strategies and strict policies that often result in the very behaviors that reinforce those beliefs. McGregor recognizes that it is often the managers themselves who influence employees to behave according to Theory X, resulting in employees' low interest in work, resentment, tardiness, and absenteeism. McGregor therefore concludes that another theory is needed to provide a more accurate assumption of behavior in the workplace and therefore introduces Theory Y.

Theory Y views people's behavior as a consequence of the way they are treated in the workplace and says that employees are not passive by nature but possess the potential to develop and assume responsibility so that they can achieve their own goals as well as the goals of the organization. This theory emphasizes self-direction and self-control, assuming that people have the motivation and readiness to work toward organizational goals and that it is management's responsibility to make it possible for workers to recognize and develop these characteristics for themselves (McGregor, 1957). Many organizations still use Theory X views when they establish organizational policies and procedures to control and manage employees; however, many organizations are also adapting to be more supportive of employees based on Theory Y.

2.5.3 Herzberg's Motivation-Hygiene Theory

A few years after McGregor introduced Theory X and Theory Y, Frederick Herzberg and colleagues (Herzberg, Mausner, & Snyderman, 1959) published a book that was the basis for what later came to be known as motivation-hygiene theory (also called the two-factor theory). Herzberg and his colleagues believe that job characteristics are important factors that facilitate satisfaction of the growth needs for self-esteem and self-satisfaction. Additionally, they posit that the opposite of job dissatisfaction is not job satisfaction but rather no dissatisfaction, while the opposite of job satisfaction is not dissatisfaction but rather no job satisfaction. This means that an employee can enjoy some aspects of the job while being unsatisfied with others, so job satisfaction and job dissatisfaction are independent of one another.

To test this concept, Herzberg and his colleagues conducted semi-structured interviews, where both researchers and the interviewee influence the direction of the interview, to gather data from a sample of 203 engineers and accountants, asking them about the aspects of their jobs they would classify as "exceptionally good" or "exceptionally bad." From the interviews, a pattern emerged in which a set of factors appeared more frequently in stories of positive job experiences: reports of achievement (in 41% of the instances of positive job experiences); recognition (33%); challenging, varied, or interesting work (26%); responsibility (23%); and advancement (20%). These factors were labeled as "motivators" by Herzberg and colleagues. When the researchers looked at the factors that appeared in instances of job dissatisfaction, they also detected a certain pattern, in which participants partially blame company policy and administration for job dissatisfaction (31%), describe unhappy relationships with supervisors (20%), and describe poor interpersonal relationships with peers (15%). These second set of factors were called "hygiene factors," based on the psychiatry concept of mental health where mental hygiene is necessary but not sufficient for mental enhancement; thus, the elimination of these hygiene factors (dissatisfaction) can lead to a better workplace and work environment but not necessarily enhance employee performance or motivation. Therefore, to motivate employees, managers should focus on encouraging motivators such as achievement, promotion, recognition, and responsibility.

The role of pay also appeared almost equally in both satisfaction and dissatisfaction stories, but because it was more related to stories of long-term negative experiences than long-term positive ones, the researchers categorized pay under hygiene factors. Herzberg later elaborated that the primary function of any organization is to ensure that workers enjoy a meaningful existence (Herzberg, 1966). Herzberg argues that attention should therefore be focused on enriching the job itself (the "content" factor) through recognition, responsibility, achievement, and opportunities for advancement. Other "contextual" factors, such as working conditions, employee benefits, organization rules and policies, supervision, and pay, are "hygiene" factors that should be attended to only to minimize job dissatisfaction. If the job is enriched, people will become motivated to perform effectively.

Many researchers warn against applying Herzberg's job enrichment theory universally to all types of jobs. Blood and Hulin (1967) were the first to argue that job satisfaction is negatively correlated with being a blue-collar worker in an urban setting but is positively correlated with being a white-collar or blue-collar worker in a rural area. Hackman and Oldham (1976) formulate a subsequent theory of job enrichment, stating that people who have high growth needs perform better and are more satisfied with their jobs than those who have low growth needs. Hackman and Oldham take into account individual differences among workers in their theory, arguing that these growth needs are psychological and threefold: 1) experienced meaningfulness – the need for job experience to align with one's values, which increases if the job provides skill variety, task identity, and task significance; 2) responsibility – the need to feel accountable for one's work, which is experienced if the job allows for autonomy; and 3) knowledge of results – the need to know how well one has done with feedback provided directly and immediately for best results.

Throughout the years, many researchers have performed studies using the Herzberg critical-incident method or similar methods and demonstrated that motivation-hygiene duality exists regardless of the type of group, for example, scientists, engineers, nurses, housekeeping, women in high-level positions, and food service workers (Behling et al., 1968). However, there have been a variety of critics throughout the years who have attacked aspects of Herzberg's theory, from the research methodology (e.g., Ewen, Smith, & Hulin, 1966; Vroom, 1964) to inconsistency in the

use of terms (King, 1970; and see Bockman, 1971, for a review of Herzberg's theory controversy), with many scholars claiming that Herzberg's theory has finally died (Judge, Parker, Colbert, Heller & Ilies, 2002; Korman, 1971; Dunnette, Campbell, & Hakel, 1967).

Nevertheless, the motivation-hygiene and job enrichment theories are crucial to the understanding of job satisfaction and work motivation. Herzberg's theory will be used as a basis to determine what factors – both motivator and hygiene – affect job retention in virtual and hybrid workers and whether the factors vary for different virtual intensities and those at different job levels.

2.5.4 Motivation Theories Related to Monetary Rewards

The late 19th and early 20th centuries saw the rise of large industrial organizations, leading to scientific research on building an effective workforce and what motivates workers to perform. One of the earliest studies on rewards for work performance was Frederick Winslow Taylor's (1911) "scientific management," that explains that both employees and employers can get more "surplus" (such as money) if employees are paid more for attaining a goal/task efficiently and effectively. The more rewards employees receive, the more they are satisfied, work hard, and perform well, which in turn is also good for the employers. Taylor also posits that workers are motivated by money; therefore, if they do not achieve enough in a day, they do not deserve to be paid as much as others who are more productive. Taylor's scientific management was considered one of the earliest explanations of the notion that work performance leads to rewards – mostly money and bonuses – and ultimately affects work satisfaction (Lawler and Porter, 1967).

Another theory of work that primarily concerns money is Jean Stacy Adams's (1963, 1965) equity theory, which states that people measure the ratio of their "outcomes" (denominator) such as money, benefits, and rewards in relation to their "inputs" (numerator) such as their efforts and work contributions and also in comparison with others. According to equity theory, fairness in the workplace is based on the ratio of inputs to outcomes, and unequal ratios lead to personal tension and dissatisfaction. For example, if a coworker of an employee contributes less (less input)

but earns more (more output), the employee will have less motivation and become dissatisfied.

Victor Vroom (1964) proposed the expectancy theory, which, similar to the equity theory, states that employees base their actions on their perceptions and beliefs, but in Vroom's argument, the employee is motivated to perform based on an expectation that the performance will be rewarded with a definite outcome (valence) that satisfies their need. The main arguments of this theory are that one's effort leads to performance, and if that performance meets expectations, one will receive a reward (increased pay, bonuses, promotion, recognitions, etc.); valence is the value one places on the reward or outcome.

Edward Lawler (1971) was interested in the influence of money on workers' performance. Based on Maslow's (1943) hierarchy of needs theory and Vroom's (1964) expectancy theory, Lawler argues that pay is an important instrument in satisfying an employee's needs, especially the needs for autonomy and security and, to a lesser extent, the needs for affiliation and self-actualization. Lawler explains that when rewards are tied to performance, a positive relationship between satisfaction and performance will exist, but if good performers and poor performers are paid the same amount, there will be a negative relationship between job satisfaction and performance. To an extent, all employees are still motivated by money. However, today, with more autonomy and flexibility, workers have the potential to have a high level of motivation as long as they are compensated fairly. Some workers might be willing to sacrifice monetary gains and choose to work remotely or virtually in return for more autonomy, flexibility, or personal time, while others might prefer to work in traditional work settings to receive higher visibility from management and a better opportunity to rise through the ranks faster and/or earn more.

2.5.5 Deci and Ryan's Self-Determination Theory

Contrary to both expectancy theory and equity theory, Edward Deci (1971, 1975) viewed money and rewards as demotivating factors. Deci introduced self-determination theory (SDT) and has collaborated with many academics, most notably psychologist Richard Ryan, to continue developing and reassessing SDT and its implications. This study examines SDT in the context of the virtual work domain, hence

the importance of a thorough review of the theory, arguments for and against it, and its implications in virtual and hybrid work settings.

Deci (1971, 1975) argues that extrinsic incentives (such as bonuses, money, rewards, etc.) reduce intrinsic motivation and that giving excessive extrinsic rewards to employees for performing well on activities that they would have done anyway because of their intrinsic appeal will decrease both motivation and satisfaction because people need to feel that they have chosen their action freely to feel satisfied and motivated. Working for external rewards, such as money, implies that the work is not done for personal interest, whereas working without external rewards, such as completing work during free time, allows workers to judge themselves to be in control and therefore intrinsically motivated. This conclusion was drawn after an experiment where two groups of students were asked to solve puzzles. The first group was paid each time they completed a puzzle, while the other group was not paid at all. Both groups were then tasked with completing another set of puzzles without being paid. Once the time was up, the students were left in the room for a while longer. Those who were paid earlier stopped working on the puzzle and drifted off to do something else while waiting in the room, whereas some of those who were not paid from the beginning continued working on the puzzle as they were intrinsically motivated to complete it.

Many researchers have criticized Deci's inferences about intrinsic and extrinsic motivation. Bandura (1977) argues that Deci's experiment and reasoning are flawed in at least four ways. First, it is almost impossible to find situations with no external inducement – if there are no monetary rewards, there are still situational or social expectations of others that can be influential. Second, withdrawing monetary reward abruptly after rewarding consistently acts as a punishment, affecting performance. Third, if incentives are used to make people perform repeated tasks, they will eventually get tired of them. Finally, performance or behavior depends on how the incentives are presented, for example, whether the incentives are used coercively ("you will not get the money until you do this"), to express appreciation ("because you have done that, we will give you this"), or to provide evaluative reactions ("this is what this work is worth to us"). Eisenberger and Cameron's (1996) meta-analysis of studies also questions Deci's theory, explaining that the withdrawal of the rewards leads to a perceived decline in self-determination and that participants should be angry at the

individual withdrawing the reward instead. Locke and Latham (1990) argue that Deci's intrinsic motivation, defined by the amount of time students spend working on a task during their free time, is not applicable to work because work includes other influential factors such as pay, deadlines, and imposed standards.

SDT continues to evolve and adapt, with Deci and Ryan along with collaborating researchers applying the theory to many practical situations, such as education, healthcare, sports, and work organizations. The theory conceptualizes three psychological needs that contribute to personal growth and wellbeing: 1) competence – the need to produce desired outcomes and experience mastery; 2) relatedness – the need to feel connected to others; and 3) autonomy – the need to feel ownership of one's behavior (Deci & Ryan, 2000). Later research on SDT has shown that autonomy and competence needs are important in maintaining intrinsic motivation (Deci & Ryan, 1994); whereas relatedness needs are not as clear but are beginning to gain attention as one of the focuses of current self-determination research (Ryan & Deci, 2017).

Ryan and Deci (2019) further clarify elements of SDT and explain the development of SDT throughout the years, resulting in six mini-theories of SDT:

1. Cognitive evaluation theory (CET): Developed to address variations in intrinsic motivation, it argues that any factors in the social environment or extrinsic rewards that negatively affect the sense of autonomy (feeling loss of control) will also undermine intrinsic motivation, while, on the other hand, autonomy support and positive feedback enhance intrinsic motivation.

2. Organismic integration theory (OIT): This theory is based on the different forms of extrinsic motivation under both the controlled and autonomous spectrums. Under the controlled side of extrinsic motivation is "external regulation," where an employee can be motivated by external pressures, rewards, or coercion. Although very powerful, it is difficult to sustain this form of motivation as it has poor maintenance and transfer qualities (Ryan & Deci, 2000). The second form of controlled extrinsic motivation is "introjected regulation," where behaviors are determined by internal controlling pressures, which are often fragile when faced with setbacks or ego

blows (Ryan & Deci, 2019). On the autonomous side are "identified regulations" and "integrated regulations." Identified regulations refer to an employee being motivated to engage in the work because the person identifies with, believes in, and endorses the worth and value of the activity (Ryan & Deci, 2019). When employees assimilate and integrate their identities with the value of the work, they wholeheartedly engage without inner barriers or conflicts, hence the term "integrated regulations." (Deci, Olafsen, & Ryan, 2017). Finally, OIT asserts that people can "internalize" extrinsic motivation and move toward being more autonomous in their behavior if they feel the value and importance of an activity and go through a process of individual transformation from external regulation to self-regulation (Ryan & Deci, 2000).

3. Basic psychological needs theory (BPNT): The third mini-theory concerns the nature of human wellness and healthy self-development based on the satisfaction of three fundamental psychological needs: autonomy, competence, and relatedness. The theory posits that the satisfaction of these basic psychological needs fosters psychological wellness. However, the thwarting of these needs leads to illbeing. In severe or chronic cases, it can contribute to forms of psychopathology (Vansteenkiste & Ryan, 2013).

4. Causality orientations theory (COT): This theory accounts for individual differences or "surface traits" that lead people to experience their surroundings or interpret events in a social context in a certain way and behave accordingly (Gagné & Deci, 2005; Reeve, Jang & Jang, 2018; Vansteenkiste, Niemiec, & Soenens, 2010). There are three causality orientations: autonomy, control, and impersonal (Ryan & Deci, 2017). Individuals who are predominantly autonomous will orient toward environments that offer options and possibilities for choice in accordance with their personality, while those who have a more controlled orientation will focus more on external rewards (extrinsic motivation) and feel more pressure to

satisfy others (introjected motivation). Finally, people with a predominant impersonal orientation will feel unmotivated, as they feel that they cannot influence their environment or obtain desired outcomes.

5. Goal content theory (GCT): People have different goals and aspirations in life, shaped by many factors that affect their daily attitudes and behaviors. This theory resulted from Kasser and Ryan's (1993, 1996) research that posits that there are two sets of goals: those that are focused on "extrinsic aspirations," including gaining wealth and being popular or famous, and those that focus on "intrinsic aspirations," such as personal growth and wellbeing, having good relationships, and giving back to the community.

6. Relationships motivation theory (RMT): According to Deci and Ryan (2014), relatedness is important to high-quality, sustainable relationships and to wellness, though relatedness alone is not enough to ensure high-quality relationships; the satisfaction of autonomy needs is also important. Therefore, not all relationships are of high-quality and satisfy the need for relatedness. Relatedness needs are satisfied only when both people experience autonomy and provide autonomy support to each other. If one partner feels controlled or objectified, both autonomy and relatedness needs will be thwarted, resulting in poor-quality relationships (Deci & Ryan, 2014).

Of all the work motivation theories, Herzberg's motivation-hygiene theory and Deci's SDT are the two major theories of motivation that are still being retested with application to new populations, situations, and conditions. Both theories are comprehensive and essential in the understanding of job satisfaction and work motivation, hence the consideration of both motivation-hygiene theory and SDT as a basis to examine job retention in virtual and hybrid work settings. Herzberg's motivation-hygiene theory provides a comprehensive list of factors related to job satisfaction and work motivation. SDT examines human motivation from a macro perspective and tries to address related issues of motivation from different angles.

Although SDT is a mature, comprehensive theory that has been tested and proven to be consistent and can support other theories in effectively explaining work motivation (Gagné & Deci, 2005), it is not yet a stand-alone theory of work motivation (Latham, 2007).

2.6 Job Retention

During the COVID-19 pandemic in Thailand, many workers were forced to leave their jobs involuntarily, and the kingdom faced the highest unemployment rate since the global financial crisis in 2007–2008, reaching almost 2% in May 2020. However, those who were most affected were informal workers (estimated at the minimum around 20.4 million), those working in blue-collar jobs, and those in sectors directly affected by the prolonged COVID-19 situation, such as construction workers, tour guides, hotel staff, and airline employees. However, many in other sectors kept their jobs and adapted to working virtually, mostly working from home and in hybrid work modes.

Based on the Thai Social Security Office's statistics (2021), there are around 11 million workers in the formal sector insured under Social Security's Section 33 (formally employed with employer), but only around 200,000 workers moved to Section 39 (formerly insured under Section 33 but moved out of the formal employment sector and wishes to continue their insured status) from May 2020, when the pandemic started, to October 2021. This means that the majority of white-collar, mid-level employees were able to retain their jobs during the pandemic. Yet, there were still a number of resignations and movements between jobs during this period. Many factors might contribute to mid-level employees' resignations and job transfers, including organizations being hesitant to hire new graduates with little experience, resulting in mid-level employees having better leverage to get new jobs; the improved situation with more opportunities available leading people who delayed resigning during the pandemic to leave now; and lastly, the reconsideration of the importance of professional and personal goals brought on by the pandemic. It is questionable whether interference from family members or personal life interruptions affect people's work lives when they work remotely to the extent that they would consider leaving their job. This has

led to this study's research question to determine whether factors related to personal life context, or "life-course fit," influence employee retention, especially for virtual and hybrid workers.

2.7 Factors That Affect Job Retention

Adapting Deci's SDT and Herzberg's motivator and hygiene factors, this study will determine which factors affect job retention in virtual and hybrid workers. The factors examined include pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and the need for relatedness.

2.7.1 Pay

Pay is the salary or compensation for work done. This factor includes whether the worker feels that the pay received is reasonable, fair, and competitive when compared to similar job levels, scopes, and industries. Although wealth is an important factor, research has shown that it does not lead to sustainable life satisfaction. For instance, in Inglehart's (1997) study of 43 countries, people from richer countries have levels of life satisfaction that are slightly higher than those from poorer countries. However, the difference in satisfaction level is more significant for those who are at the bottom of the income scale than those with higher income, because they are constantly worried about earning enough for food and maintaining a place to stay, making them less satisfied with life than those who do not have to worry about these basic needs. Many researchers have also posited that hygiene factors contribute more to dissatisfaction in life and that money, although important, does not always contribute to happiness (Kasser, 2002; Kahneman, Diener, & Schwarz, 1999; Myers & Diener, 1995).

A famous study by Princeton University researchers Kahneman and Deaton (2010) found that day-to-day happiness and emotional wellbeing increase with income, but only up to about USD 75,000 per year, at which the happiness level plateaus. The study points out that this is because people at this income level do not have to worry about day-to-day financial problems, leading to certain life satisfaction, although not always happiness. On the other hand, low income exacerbates emotional

pain; often leads to loneliness, sickness, and divorce; and is related to a low evaluation of life and mental health (Kahneman & Deaton, 2010).

These studies lead to the same conclusion: for those who earn less or have financial difficulties, pay is a very important factor that influences general life satisfaction and happiness. Unless a worker feels that the pay matches the amount of work contributed (Vroom's expectancy theory), the worker will always feel somewhat unsatisfied with the employer and/or work and feel that pay causes more dissatisfaction than satisfaction.

2.7.2 Promotion

Promotion is the opportunity for career growth and job advancement provided to employees to keep workers motivated to perform well. This includes enhancement of knowledge and skills as well as growth in responsibility and position. Recent studies of remote work during the COVID-19 pandemic by Brynjolfsson et al. (2020) and Baert et al. (2020) have shown that working remotely or teleworking can diminish opportunities for promotion, with participants in the survey feeling that remote work has some downsides regarding career development, including lower chances for promotion and hindrance of professional development and prospects. This might result from lower interaction between the employee and supervisors, fewer opportunities for rapport building among team members, and fewer supports from the employer regarding personal and professional development. Baert et al. (2020) also state that those with a higher level of education experience slightly higher negative consequences from remote working, especially concerning chances for career development, promotion, and relationships with coworkers.

2.7.3 Supervision

Supervision is the relationship of workers with their superiors and includes the level of mutual respect, trust, rapport, and open communication between the supervisor and employee. Those who work virtually by nature have more autonomy and are normally out of sight of their superiors. Therefore, virtual teams require strong leadership (Lilian, 2014), as it is generally more difficult to lead virtual workers (Arnfak et al., 2016). Supervisors and managers who oversee virtual workers are also

responsible for motivating employees, providing feedback, establishing rules on communication, managing efficient information sharing, and monitoring feelings, attitudes, behaviors, and group/organization activities (Kuscu & Arslan, 2016). Researchers have argued that due to remote interactions, the power dynamics between employees and supervisors are changing (Malakyan, 2020), with remote workers acting as leaders themselves. Digital platforms allow better collaboration and lessen the power and privilege of leaders, and employees are enabled to take the lead, resulting in increased practice of shared leadership (Arnfalk et al., 2016; Nordbäck & Espinosa, 2019). In remote work, this practice of shared leadership can enhance motivation, coordination, and team effectiveness. However, Nordbäck & Espinosa (2019) point out the disadvantages of shared leadership, especially the additional attention needed to ensure effective coordination between leaders and employees. To address this limitation, Wildman and Griffith (2014) propose that a certain leadership structure is needed where the shared leadership practice grows organically while leaving secondary leadership functions, such as performance supervision, to the formal leader.

2.7.4 Fringe Benefits

Fringe benefits are additional benefits given to workers apart from their salaries. Some examples of fringe benefits are health insurance, life insurance, maternity benefits and leave days for mothers (and, in some organizations, fathers), child tuition assistance, housing assistance, a company car, and employee stock options. Some organizations may also offer other types of fringe benefits that fit the company's profile or reflect its values, such as free meals and beverages, recreational areas in the workplace, meditation or yoga classes, etc.

Although fringe benefits are not considered compensation, workers usually view them as substitutes for wages. Fringe benefits are often not taxable unless clearly stated, making it an advantage for companies to offer extraordinary fringe benefits to retain staff and entice talent to work in their companies. Some of the major companies well-known for their fringe benefits are Google's parent company, Alphabet, which offers free bus commute service, fully functional recreational areas in the workplace, free legal advice, onsite medical care, free massages and physical therapy, and free top-quality meals in gourmet cafeterias. Another company well-

known for its fringe benefits is Microsoft, which offers complete health insurance packages, housing and relocation benefits, 20 weeks of paid leave for new mothers and 12 weeks for their spouses, and childcare.

2.7.5 Life-Course Fit

The factors that affect job satisfaction and work motivation that have been described thus far are related to the "attributes" of the worker. However, when working virtually, especially at home, other external factors and complexities of life tend to have a higher influence and effect on the worker's time, concentration, and performance than when working in a normal workplace or in an office. For example, family members, children, friends, neighbors, or even pets can affect a person's quantity or quality of work and the time dedicated to it. Other external factors that can interrupt or interfere with work or cause additional stress include family obligations, unsuitable working space or conditions at home, family sickness, or even educational demands. Therefore, different elements in the worker's life-course were included in this study to determine if other factors apart from the worker's attributes can affect virtual and hybrid workers' job retention.

The concept of life-course fit focuses on relationships with time, place, and life stages as important in the life-development process (Elder, Johnson & Crosnoe, 2003; Settersten, 2003). It posits that lives are lived in a reasonably ordered manner with patterns shaped by age, social structures, historical change (Elder, Johnson, & Crosnoe, 2003), and gender differences (Moen & Spencer, 2006). For example, parents who enjoy their jobs but are unable to meet their demands at home might opt for virtual work or quit the job, whereas a parent with young children who struggles to work from home while taking on additional child-caring tasks might opt to return to work onsite or eventually change jobs. It is, therefore, important to include the life-course fit approach in this study to capture the worker's assessment of their quality of life, or "life-course fit" or "misfit" (Moen, Kelly, & Huang, 2008), while working virtually or in a hybrid mode, and assess its effects on job retention. To assess life-course fit, one must capture the cognitive appraisals of match or mismatch between work and life spillover. Studies show that workers with more work-to-home and home-to-work spillover tend to have higher levels of emotional exhaustion and turnover

intentions (Yavas, Babakus, & Karatepe, 2008). In addition to life-course fit, this study also includes the concept of work–life integration, or how well a person manages their work and life priorities.

The more well-known concept of work–life balance acknowledges the equal importance of both work and personal life (Kalliath & Brough, 2008). It is about setting boundaries that clearly separate work and personal time and having the ability to shift between work and personal life to meet the demands of both domains so that one does not interfere with the other. However, in reality, the demands of one domain over the other can always interfere and affect a person's life. There are several theoretical approaches that link work and family life (Morris & Madsen, 2007; Edwards & Rothbard, 2000; Greenhaus & Powell, 2006; Zedeck, 1992). Some of the different ways people experience the relationship between life and work are as follows:

1. Spillover: when positive or negative behaviors, moods, and emotions transfer from one domain (either work or family) to another domain (Mennino, Rubin, & Brayfield, 2005; Edwards & Rothbard, 2000; Grzywacz, 2000).

2. Compensation: when effort is made to seek positive experience or fulfillment in one domain to offset a negative experience in another (Edwards & Rothbard, 2000).

3. Resource drain: when a limited resource (such as time or attention) is transferred from one domain to another, which can lead to burnout or stress (Frone, 2003; Edwards & Rothbard, 2000).

4. Enrichment: when the experiences from one domain improve the quality of the other domain (Thompson & Bunderson, 2001; Greenhaus & Powell, 2006).

5. Inter-role conflict: when the roles of work and family are conflicted to the extent that both roles are incompatible, usually caused by prolonged conflict of time, strain, and/or behavior (Edwards & Rothbard, 2000).

6. Segmentation: the total separation of work and family (Clark, 2000).

7. Facilitation: when skills, experience, knowledge, and resources gained from one domain support the other domain (Grzywacz et al., 2002).

The goal of work–life integration, unlike work–life balance, is to effectively coordinate efforts and energy to transition between work, life, family, and even obligations to the community (Morris & Madsen, 2007; Clark, 2000). Studies have shown that there are several benefits if an individual can properly coordinate their schedules and responsibilities, such as having more resilience, improved quality of life and satisfaction, and better mental and physical health. However, studies also show that trying too hard to separate work and personal life, also called work–life segmentation, can result in decreased life and job satisfaction, worsening physical and mental health issues, lower productivity, and more work-related errors (such as studies by Dembe, Erickson, Delbos, & Banks, 2005; Heilman & Okimoto, 2008; Peeters, Montgomery, Bakker, & Schaufeli, 2005).

Therefore, the notion of life-course fit extends from the usual factors and measures of traditional work life to include the work–family interface, the adequacy of workers' sense of time and income, and their work-schedule fit assessments (Moen, Kelly, & Huang, 2008). Life-course fit not only analyzes demands, work/life interruptions, and spillover, it also determines if there is a fit, or misfit, of the work/life demands and the resources available. Life-course fit can be applied to workers of all ages and life stages and is based on managing resources and the various needs over the workers' life course, and to have the ability to cope with the situations they face at different times in their lives (Moen, Elder, & Lüscher, 1995).

For this study, the following main components of life-course fit in virtual work, with an added element of work–life integration, were empirically tested:

1. Work/life interruption: Whether work has interrupted or hindered personal time, such as after working hours or during weekends and holidays, leading to work overload, stress, increased anxiety, emotional exhaustion, or even burnout.

2. Enough personal time: Whether the employee has enough time to do something other than work, for example, spending time with family

and friends, pursuing a hobby or personal interests, or just resting and
recuperating.

3. Family arrangements: Whether the employee has additional
   responsibilities outside of work that need time and attention, such as
   children, elders, sick relatives, etc., that can interfere with the
   performance or time needed for work.

2.7.6 Intrinsic Motivation

According to SDT, the four types of motivations or behavioral
regulations that move every worker are intrinsic motivation, identified motivation,
introjected motivation, and extrinsic motivation.

Intrinsic motivation is when one chooses to perform an activity for
one's own interest, pleasure, or satisfaction (Ryan & Deci, 2017). Intrinsic motivation
was first observed in animal behavior studies, as different kinds of animals engaged in
exploratory and curiosity-driven behaviors even in the absence of reinforcements or
rewards (White, 1959). In humans, intrinsic motivation has been defined differently
throughout the years. For example, Skinner (1953) explains that behaviors, overall, are
motivated by rewards and that intrinsic motivations are ones in which the activity itself
is the reward, while Hull (1943) states that physiological drives motivate behavior and
intrinsic-motivated activities provide satisfaction of innate psychological needs. For
Ryan and Deci (2000), to be intrinsically motivated is for a person to be engaged in an
activity or task simply because they find it interesting and enjoyable.

Ryan and Deci (2000) posit that there are two measures that can be
used to examine intrinsic motivation: First, basic experimental research, for example,
experiments that are conducted by asking participants to work on a task with or without
incentives, and once done, leaving the participants in the room with the target task and
observing whether the participants resume working on the task of their own "free
choice" because they are intrinsically motivated. The second measurement approach is
self-reports of interest and pleasure in working on a specific activity (Harackiewicz,
1979) or on the domain in general (Harter, 1981), which is the approach adapted and
used by this study.

2.7.7 Extrinsic Motivation

Apart from examining whether virtual and hybrid workers are "satisfied" with their pay (salary/remuneration), promotion, supervision, and fringe benefits, this study also examines whether they are "motivated" by other external factors. Extrinsic motivation is when the individual is motivated to be engaged in the work because of external factors, such as respect or approval from supervisors or coworkers, avoidance of criticism by others, or other types of rewards or special incentives. Deci's (1975) SDT asserts that extrinsic incentives reduce intrinsic motivation and that excessive extrinsic rewards decrease employee motivation and satisfaction because people need to feel that they are in control of their own decisions to act (or work). Ryan and Deci (2000) postulate that extrinsic motivation is different from intrinsic motivation mainly because it is a construct in which an individual is engaged in an activity to attain an external outcome.

SDT also introduces "identified" motivation and "introjected" motivation as part of the extrinsic motivation continuum. Identified motivation is at work when an individual engages in a task because they believe the task is important or represents their own goal (a feeling of "wanting" to do it). Ryan and Deci (2000) explain that identified motivation is a type of extrinsic motivation that is more self-determined and happens when an individual identifies the significance of a behavior and accepts it as a personal motivation. This form of motivation is considered an autonomous type of extrinsic motivation, as the individual's motivation for performing an act does not derive purely from his or her own interests, satisfaction, or curiosity; rather, the motivation stems from seeing the importance and benefit of carrying out the act.

Introjected motivation occurs when an individual engages in an activity to avoid guilt or to enhance his/her ego. Introjected motivation is considered a type of extrinsic motivation because a person either feels pressured to avoid guilt or wants to enhance their ego or pride (Ryan & Deci, 2000). One form of introjection is "ego involvement" (Ryan & Deci, 2000; Nicholls, 1984), when an individual performs an action to improve or maintain his/her self-esteem and self-worth. Although introjected motivation depends much on the person's internal decision, the decision

itself is influenced by external factors, whether those be superiors, peers, subordinates, etc.

The last element of motivation mentioned by SDT is when someone is not motivated at all, also called "amotivation." Amotivation is the lack or absence of motivation, whether intrinsic or extrinsic, and can be detected when individuals do not perceive the contingencies between what they do and the consequences (Ratelle, et al., 2007). Amotivation occurs when an individual loses interest in the work or activity and has a very low level of motivation to continue engaging in it or to complete it. There are many reasons why a person can end up in an amotivated state, for example, a lack of perceived competence, too much negativity from superiors or coworkers, lack of interest or value in the work, etc. Workers who lack any type of motivation normally become passive and ineffective and work without any purpose. Long-term amotivation at work eventually leads to burnout, resignation, or job termination.

2.7.8 Need for Relatedness

Deci (1975) introduced SDT, which conceptualizes the three psychological needs that are essential nutrients that contribute to a person's optimal functioning, growth, and wellbeing: competence, autonomy, and relatedness (Deci & Ryan, 2000). However, it is questionable whether the three psychological needs are equally important, especially in the context of virtual work. Later research on SDT has shown that competence and autonomy needs are important to maintain intrinsic motivation (Deci & Ryan, 1994). However, it is less clear for relatedness need (Ryan & Deci, 2017). Ryan and Deci posit that these basic psychological needs are crucial for psychological health and wellbeing and facilitate effective functioning in social settings. Deci, Olafsen, and Ryan (2017) explain that there is a correlation between organizational and managerial support for autonomy and the satisfaction of competence, autonomy, and relatedness. According to SDT, the satisfaction of the basic psychological needs lead to autonomous motivation, and the link between need satisfaction and intrinsic motivation is well established (Deci et al., 2017; Broeck et al., 2010).

However, not all workers can have their basic psychological needs satisfied, especially in a virtual work setting where the degree of self-perception of

competence, autonomy and relatedness may vary. When working virtually, virtual workers receive less feedback from supervisors to support their need for competence. Furthermore, it would be very difficult to have a mentor and/or other types of work-related social support to be able to receive essential, meaning feedback (Rockmann and Ballinger, 2017; Wiesenfeld et al., 2001). The fulfillment of employees' autonomy need depends largely on their manager/supervisor's managerial style. Managerial style plays an important role in workers' perception and fulfillment of basic needs support (Deci et al., 2017). Many studies agree that autonomy-supportive supervisors – those who acknowledge employees' perspectives and viewpoints, provide rationale for tasks and positive/meaningful feedback, offer choice, and empower decision-making (Humphrey et al., 2007; Broeck et al., 2010; Deci et al., 2017) – lead to intrinsic motivation and greater employee satisfaction in all three basic psychological needs (Gagné and Deci, 2005). However, in virtual work contexts, employees' perspectives may be difficult to acknowledge. Moreover, there can be less interpersonal relationship and interaction between employee and supervisor. Depending on the interpersonal context, the employees' perception of their supervisor's style can be either "autonomy supportive" or "nonsupportive."

For these reasons, the focus of this study is on how the need for "relatedness" impacts virtual workers and their willingness to continue in a job. For relatedness needs, coworkers and social support are positively linked to intrinsic motivation at work, job involvement, and job satisfaction (Hon, 2011). Good relationships with both coworkers and supervisors have been found to help motivate employees intrinsically and promote confidence (Zhou, 2003). This also provide a degree of security, and promote feelings of social-connectedness and support, leading to employees feeling more competent and autonomous, and thus experiencing high levels of autonomous motivation (Deci & Ryan, 1994). However, in the context of virtual work, there are limited coworker and supervisor interactions and even fewer opportunities to develop worker–organization relationships.

2.8 Hypothesis Development

The theoretical framework for this study is based on Herzberg's motivation-hygiene theory for job satisfaction and Deci's SDT for work motivation. Job satisfaction is one of the most important concepts in the study of organizational behavior, and Herzberg's theory laid the foundations for modern work on job satisfaction. Herzberg (1966) indicates that factors that lead to job satisfaction are separate from factors leading to job dissatisfaction and employee turnover. Motivators, such as providing chances for promotion and recognition, are elements of satisfaction that increase employee retention, while hygiene factors, such as pay, fringe benefits, and relationships with supervisors, are important factors without which job dissatisfaction can occur. Therefore, this study aims to determine whether the key motivator – promotion – and hygiene factors – pay, supervision, and fringe benefits – influence job retention in virtual and hybrid workers.

Pay is an essential factor that influences life satisfaction and happiness, and unless a worker is fulfilled or satisfied with their pay, they will always feel somewhat unsatisfied with the employer and/or work and feel that pay causes more dissatisfaction than satisfaction, ultimately leading to lower job retention. Thus, the first hypothesis is as follows:

H1: Pay has a positive relationship with job retention for virtual and hybrid workers.

The opportunity to be promoted and advance in a career is important for many employees. However, recent studies have shown that working remotely can lessen opportunities for promotion and career development due to lower interaction between employees and their supervisors and coworkers (Brynjolfsson et al., 2020; Baert et al., 2020). Thus, the second hypothesis is as follows:

H2: Promotion has a positive relationship with job retention for virtual and hybrid workers.

The relationship of workers with their superiors is an important factor affecting job retention. Virtual workers normally have more autonomy and work most of the time without their superior's direct supervision. Therefore, virtual teams require strong leadership (Lilian, 2014), as it is generally more difficult to lead virtual workers (Arnfak et al., 2016). A significant amount of trust is essential, and effective communication is necessary between the worker and supervisor. Therefore, the third hypothesis is formulated as follows:

H3: Supervision has a positive relationship with job retention for virtual and hybrid workers.

Fringe benefits are additional benefits given to workers apart from their salaries, for example, health insurance, life insurance, maternity benefits, a company car, free meals, etc. Many workers view benefits as substitutes for wages and therefore consider benefits one of the most important factors when determining whether to stay at or leave a job. This study therefore formulates its hypothesis as follows:

H4: Fringe benefits have a positive relationship with job retention for virtual and hybrid workers.

Virtual work significantly changes the working situation, as personal issues and family obligations can interfere and affect the working experience. Thus, the life-course approach (or life-course theory) was used to determine if life patterns, life events, transitions, age, gender, and family status affect the decision to stay or quit virtual jobs. Life-course fit, with an element of work–life integration, was included as one of the independent variables to determine if work-to-home and home-to-work spillovers influence virtual workers' job retention. The term "work–life integration" underscores the relationship between work and personal life, which is dynamic and transactional, and acknowledges the constant demands and tradeoffs for one's attention and efforts between domains (Guest, 2002; Morris & Madsen, 2007). Unlike work–life balance, where work and life are separated from each other, work–life integration involves blending and synergizing work with all other areas of life. This is more

important for virtual workers, where the boundaries between work and personal life are not as clearly distinguished as in traditional work settings; therefore, the assumption is that if those who work virtually are satisfied with their work–life integration and can manage the responsibilities of work and personal life well, they will have a higher retention rate. This study also focuses on factors related to family arrangements, for example, whether virtual workers have children or parents living with them while they work, and if so, whether the child/parent arrangements enable them to do their work effectively. This study addresses work and life responsibilities, such as whether work interrupts personal life, if work allows enough time to do other things (i.e., hobbies, spend time with family, relax, etc.), and whether having children/parents around while working affects the level of satisfaction with work–life integration. Thus, the fifth hypothesis is as follows:

H5: Life-course fit has a positive relationship with job retention for virtual and hybrid workers.

One of the challenges facing all organizations and enterprises is finding ways to motivate workers. Different people are motivated by different reasons. Workers who are satisfied with their jobs might not always be motivated, and those who are not satisfied with some aspects of their jobs but are still motivated to work might not always resign. For example, if a worker is extrinsically motivated, is currently paid well, and has a good relationship with coworkers, they might remain in a job even though they rarely receive any praise, acknowledgement, or promotion. On the other hand, if, in the same situation, this person is motivated by praise and acknowledgement, they might soon feel demotivated and look for another job, regardless of the pay and the good relationships at the workplace.

When working remotely, virtual workers are prone to being distracted by many other factors pulling their interests and time away from work. Being intrinsically motivated to do the job is therefore important to reduce the tendency to leave the job. This study determines if intrinsic motivation influences virtual and hybrid workers and affects their job retention with the following hypothesis:

H6: Intrinsic work motivation has a positive relationship with job retention for virtual and hybrid workers.

It is also important for organizations to understand whether workers are extrinsically motivated. Fundamentally, most people work to earn a living, while others work to be recognized and accepted by friends, family, and/or society as a whole. It is thus hypothesized as follows:

H7: Extrinsic work motivation has a positive relationship with job retention for virtual and hybrid workers.

According to SDT, the satisfaction of an individual's basic psychological needs leads to autonomous motivation. There is also an established link between intrinsic motivation and need satisfaction (Deci et al., 2017; Broeck et al., 2010). The focus of this study is to determine whether the need for relatedness affects job retention for virtual and hybrid workers. Relatedness is one of the factors that is positively linked to intrinsic work motivation (Hon, 2011), and having good relationships at work with both coworkers and supervisors can intrinsically motivate employees (Zhou, 2003). However, in the context of virtual work, there are limited worker interactions and worker–organization relationships. This leads to the following hypothesis:.

H8: The need for relatedness has a positive relationship with job retention for virtual and hybrid workers.

Employees at different levels have different expectations of their jobs and are satisfied by different factors. Some are satisfied if the pay is adequate, working conditions are decent, and/or they have good interpersonal relations with supervisors and coworkers. Others will only stay on the job if the work is meaningful and/or interesting. Studies have shown that operational workers and blue-collar workers are more influenced by hygiene factors, including salary, working conditions, job security, and relationships with peers, whereas higher-level and white-collar employees value motivating factors, such as the work itself, promotion, recognition, and achievement,

more than any other aspects of the job (Locke, 1973, Kovach, 1987, Toode, Routasalo, & Suominen, 2011; Hyun & Oh, 2011). Nevertheless, virtual work addresses a significant difference in the way work is done, where recognition, achievement, and promotion are more limited than in traditional work. It is interesting to see whether there is a difference in the outcomes of people at different job levels when they are working virtually. This study examines whether the differences in job level (operational/specialist vs. managerial) moderate the influences of the factors affecting job retention. The hypotheses are as follows:

H9a: The effect of pay on job retention is moderated by job level.
H9b: The effect of promotion on job retention is moderated by job level.
H9c: The effect of supervision on job retention is moderated by job level.
H9d: The effect of fringe benefits on job retention is moderated by job level.
H9e: The effect of life-course fit on job retention is moderated by job level.
H9f: The effect of intrinsic motivation on job retention is moderated by job level.
H9g: The effect of extrinsic motivation on job retention is moderated by job level.
H9h: The effect of relatedness need on job retention is moderated by job level.

This study also examines whether differences in virtual intensity have a significant influence on how workers perceive their jobs. Virtual intensity is the difference in the amount of time spent working remotely. High virtual intensity means that workers work primarily off-site outside of the traditional workplace. Medium virtual intensity means that workers work in hybrid work settings. Those with low virtual intensity are traditional onsite workers. This study examines whether the difference in virtual intensity (virtual vs. hybrid workers) moderates the influence of the factors affecting job retention. It is thus hypothesized as follows:

H10a: The effect of pay on job retention is moderated by virtual intensity.
H10b: The effect of promotion on job retention is moderated by virtual intensity.
H10c: The effect of supervision on job retention is moderated by virtual intensity.
H10d: The effect of fringe benefits on job retention is moderated by virtual intensity.

H10e: The effect of life-course fit on job retention is moderated by virtual intensity.

H10f: The effect of intrinsic motivation on job retention is moderated by virtual intensity.

H10g: The effect of extrinsic motivation on job retention is moderated by virtual intensity.

H10h: The effect of relatedness need on job retention is moderated by virtual intensity.

2.9 Conceptual Framework

Below is the conceptual framework for this study that illustrates all relevant variables identified based on the literature review:

Figure 1: This Study's Conceptual Framework
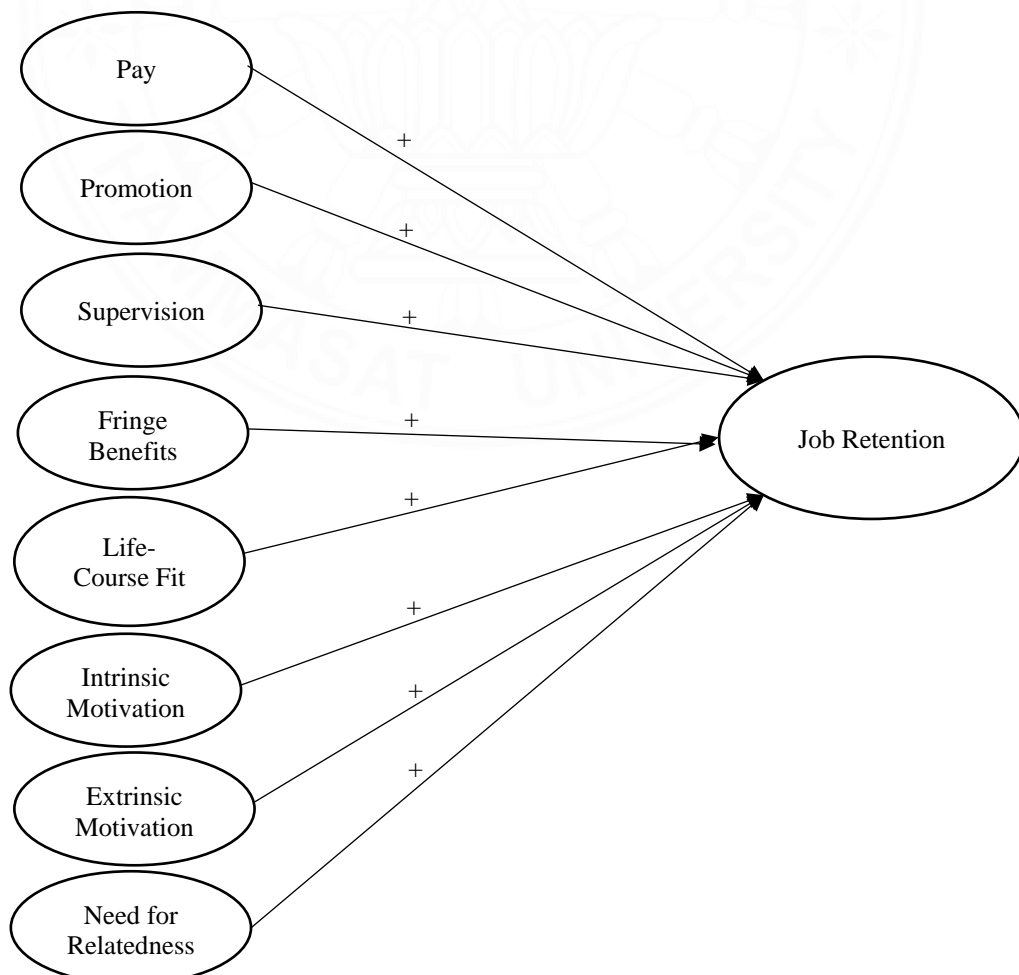
CHAPTER 3
RESEARCH METHODOLOGY

3.1 Methodology

This study aims to fully understand the dimensions of virtual work and the factors influencing the retention of virtual and hybrid workers. It was conducted using a quantitative approach. A questionnaire was used as a measurement instrument to test how each factor – pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and the need for relatedness – affect job retention of virtual and hybrid workers in different work sectors. A quantitative approach is more appropriate than a qualitative one for this study, as it aims to assess the relationships between the variables and scientifically test the hypotheses. The questionnaire is shown in the appendix.

The statistical method used for this study to test the hypotheses and to determine the causal relationships between variables is based on the structural equation modeling (SEM) technique. SEM is a multivariate statistical analysis technique used in situations where the key constructs are complex and multi-faceted.

This study used the structural model to test the influences of the independent variables – pay, promotion, supervision, fringe benefits, extrinsic motivation, intrinsic motivation, relatedness, and life-course fit – on the dependent variable – job retention.

3.2 Population

The population of the workforce in Thailand who are employed in the formal sectors – recognized for paying income taxes and contributing to social security – was around 11 million as of January 2021. Although there is no current information or statistics on the exact number of workers who work virtually or in hybrid work settings in Thailand, a study by PwC Thailand (2020) estimates that around 20% of Thai companies have shifted permanently to working from home. Therefore, the

estimated population of workers who are currently working virtually and will continue working virtually is not lower than 2 million.

3.3 Sample Size

The sampling technique used is quota sampling, a non-probabilistic sampling method implemented by identifying the different subsets of workers who are working virtually or in hybrid work settings according to this study's objectives.

Based on the SEM requirements, many researchers recommend the use of at least 200 participants as the sample size, or 5–15 respondents per item (Kline, 2016). This study has obtained a sample size of 623 participants. There were 500 virtual workers and 123 hybrid workers who participated in the questionnaire, including 361 at the operational/specialist job level and 262 at the managerial job level (see Table 2 below).

The questionnaire was distributed to employees of several large corporations in the service sector in Thailand that have allowed their employees to work virtually or in hybrid mode for at least one year. The questionnaire was distributed directly to the participants, with managers' consent, through instant messaging apps, including Line and WhatsApp.

Table 2: Sampling of Virtual and Hybrid Workers

Subsets	Population (Est.)	Response	Participants
Virtual Workers	1 million	500	623
Hybrid Workers	1 million	123	
Operational/Specialist Level	1.35 million	361	623
Managerial Level	650,000	262	

3.4 Measurement of Constructs

The questionnaire started by determining whether the participant is a "virtual worker" or "hybrid worker" by asking two questions adapted from O'Leary and Cummings (2007) and Kirkman et al. (2004), as follows:

1. "How many times did you meet with your team members face-to-face in the past year?" with 5 choices: almost every day, two – three days a week, once a week, once a month, and less than once a month.

2. "Describe where you and most of your team members work from in the past year." with 5 choices: same room, same building, different location in the same city, different city, and different country.

If participants answered that they meet with their team members face-to-face "two-three days a week" or "once a week," this study considers them "hybrid workers." If participants answered that they meet with their team members "once a month" or "less than once a month," this study considers them "virtual workers." The screening answer for traditional onsite workers is that they meet their team members "almost every day."

Testing the hypotheses requires accurate measurement of the constructs. There are currently many tools to measure job satisfaction, such as the Minnesota Satisfaction Questionnaire (MSQ), the Job Diagnostic Survey (JDS), the Job Satisfaction Survey (JSS), and the Job Descriptive Index (JDI). Two of these tools – the JSS and the JDI – are based on Herzberg's two-factor theory. For this study, we used items from the abridged JSS version, as it includes the four most important factors affecting job satisfaction – pay, promotion, supervision, and fringe benefits. Developed by Spector (1985), the JSS is used to assess employee attitudes toward their job and its different aspects, using six answer choices per item, from "strongly disagree" to "strongly agree." The JSS is currently one of the most frequently used measurement tools for job satisfaction. Based on the JSS, some of the items have reverse wording, and the scoring scale was adjusted accordingly. The items used to measure each variable of job satisfaction are as follows:

Pay

Pay means the financial income received from the company or organization as compensation. Based on Spector's (1985) JSS, this study used two items to measure pay and to determine if the respondent is satisfied with the frequency of raises and the opportunities for salary increases.

(PY1) Raises are too few and far between.

(PY2) I feel satisfied with my chances for salary increases.

Promotion

Promotion means job advancement to a higher position and/or receiving greater responsibilities. Based on Spector's (1985) JSS, this study used two items to measure promotion and to determine if the respondent is satisfied with the chances for promotion compared to other organizations.

(PM1) There is really too little chance for promotion in my job.

(PM2) I am satisfied with the chances for promotion.

Supervision

Supervision in this case means supervisors or managers who manage, guide, and advise their team members. Based on Spector's (1985) JSS, supervision was measured using four items to determine if the respondent is satisfied with the supervisor's competency, fairness, interest in the feelings of team members, and whether the respondent likes their supervisor.

(SP1) My supervisor is quite competent in doing his/her job.

(SP2) My supervisor is unfair to me.

(SP3) My supervisor shows too little interest in the feelings of subordinates.

(SP4) I like my supervisor.

Fringe Benefits

Fringe benefits are perks or compensations provided by the employer in addition to the base salary. Based on Spector's (1985) JSS, the variable fringe benefits was measured using four items to determine if the respondent is satisfied with the

benefits received, with the benefits in comparison to other organizations, with the equitability of the benefits, and whether there are benefits that the respondent feels they should have but do not.

(FB1) I am not satisfied with the benefits I receive.

(FB2) The benefits we receive are as good as most other organizations offer.

(FB3) The benefit package we have is equitable.

(FB4) There are benefits we do not have which we should have.

Life-Course Fit

To examine life-course fit, the first item was adapted from the Midlife in the United States (MIDUS) study (MIDUS, 2006; Moen, Kelly, & Hill, 2011), with a 5-point Likert scale using the following choices: all the time, most of the time, sometimes, rarely, and never. The item is: "When I work virtually, my job reduces the effort I can give to activities at home" For work–life integration, five items were adapted from studies by Johnson et al. (2020), Garcia et al. (2020), and Shanafelt, et al. (2019), with a 5-point Likert scale using the following choices: strongly disagree, disagree, neutral, agree, or strongly agree. The items include the following: "When I work virtually, work encroaches on my personal time;" "When I work virtually, work interruption on personal life is a problem;" "When I work virtually, work schedule leaves me enough time for my personal and/or family life;" "When I work virtually, I'm satisfied with my family/childcare arrangement;" and "When I work virtually, I'm satisfied with the division of family/parenting responsibilities".

(LC1) When working virtually, my job reduces the effort I can give to activities at home.

(WI1) When working virtually, work encroaches on my personal time.

(WI2) When working virtually, interruption of personal life owing to work is a problem.

(FA1) When working virtually, work schedule leaves me enough time for my personal and/or family life.

(FA2) When working virtually, I'm satisfied with my family/childcare arrangement.

(FA3) When working virtually, I'm satisfied with the division of family/parenting responsibilities.

Intrinsic Motivation

To test work motivation, this study adapted Gagné et al.'s (2010, 2014) Multidimensional Work Motivation Scale (MWMS) to measure different work-related behavioral regulations on intrinsic and extrinsic motivation. The MWMS is a multidimensional, practical tool to measure work motivation, developed by Gagné et al. (2014) based on the SDT framework, where participants answer each question to measure their level of motivation at work on a 1 (not at all) to 7 (completely) scale. The main question for the motivation section of the questionnaire was, "Why do you or would you put effort into your current job?"

"Intrinsic motivation" is motivation to do something for its inherent satisfaction (Ryan & Deci, 2000). Based on Gagné et al.'s (2010, 2014) MWMS, "intrinsic motivation" was measured using three items to determine if the respondent is intrinsically motivated, that is, whether the respondents have fun doing their work, feel excited when working, and think that their work is interesting.

(Intrin1) Because I have fun doing my job.

(Intrin2) Because what I do in my work is exciting.

(Intrin3) Because the work I do is interesting.

Extrinsic Motivation

"Extrinsic motivation" is motivation that is driven by external factors or rewards. Based on Gagné et al.'s (2010, 2014) MWMS, "extrinsic motivation" was measured using four items to determine if the respondent is motivated by external factors or rewards, that is, because the respondent wants to get approval from others, wants to be respected, wants to avoid being criticized by others, and wants to be rewarded financially.

(Ext-Soc1) To get others' approval (e.g., supervisor, colleagues, family, …).

(Ext-Soc2) Because others will respect me more (e.g., supervisor, colleagues, family, ...).

(Ext-Soc3) To avoid being criticized by others (e.g., supervisor, colleagues, family, …).

(Ext-Mat1) Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor, …).

Relatedness

This study adapted items from the Basic Need Satisfaction and Frustration Scale – Work Domain (Chen et al., 2015; Schultz, Ryan, Niemiec, Legate, & William, 2014) to measure the participants' level of satisfaction of relatedness needs while working virtually. A 5-point Likert-type scale (strongly disagree to strongly agree) was used to rate participants' agreement with each item. The items are reversals to reduce response bias:

(REL1) I feel that people who are important to me at work are cold and distant towards me.

(REL2) I have the impression that people I spend time with at work dislike me.

(REL3) I feel the relationships I have at work are just superficial.

Job Retention

The measurement of job retention was based on the Intention to Stay (ITS) scale (Nancarrow et al., 2014; Graham & Beltyukova, 2015; Zeytinoglu, Denton, Brookman, & Plenderleith, 2014), which is a positive construct (compared to the Intention to Leave scale) that measures the respondent's intention to stay in a job. Adapted for this study, the two items below were measured on a 5-point Likert scale ranging from strongly disagree to disagree, neutral, agree, or strongly agree.

(LT1) I would still like to work for the same job in 5 years.

(LT2) I can see a future for me with this job.

CHAPTER 4
RESULTS AND DISCUSSION

4.1 Demographic Data of Respondents

The demographic data of the respondents is reported in Table 3. The sample consisted of almost equal numbers of females and males (317 female respondents, 50.9%, and 306 male respondents, 49.1%). About 40.3%, or 251 sample respondents, are in the 25–34 age group. About 44%, or 274 sample respondents, are in the 35–44 age group; about 14.6%, or 91 sample respondents, are in the 45–54 age group; and about 1.1%, or 7 sample respondents, are in the 55–64 age group. Thus, most of the sample respondents are in the active working age group of 25–44 years old. Most of the participants (291 sample respondents, 46.7%) have a monthly salary of THB 60,000–100,000; 135 sample respondents (21.7%) earn from THB 100,000–150,000; 103 sample respondents (16.5%) earn from THB 30,000–60,000; 86 sample respondents (13.8%) earn more than THB 150,000; and only 8 sample respondents (1.3%) earn less than THB 30,000 per month.

The participants consisted of those working in the service sectors, including 290 sample respondents (46.5%) working in accounting, banking, or finance; 208 (33.4%) in IT or computer; 46 (7.3%) in consulting or business management; 40 (6.4%) in retail; 17 (2.7%) in transport or logistics; 16 (2.6%) in marketing, advertising, or PR; and 6 (1%) in other fields. Slightly more than half of the participants (361 respondents, 58%) are operational or specialist level, and 262 respondents (42%) are managerial level. Most of the respondents are virtual workers (500 respondents, 80.3%), while only 123 sample respondents (19.7%) are hybrid workers. Most of the participants (454 sample respondents, 72.9%) have no children, while 169 sample respondents (27.1%) have at least one child.

Table 3: Demographic Data of the Respondents

Category	Frequency	Percentage (%)
Total	623	100
Gender		
Female	317	50.9
Male	306	49.1
Age		
25–34 years old	251	40.3
35–44 years old	274	44
45–54 years old	91	14.6
55–64 years old	7	1.1
Salary		
Below THB 30,000	8	1.3
THB 30,000–60,000	103	16.5
THB 60,000–100,000	291	46.7
THB 100,000–150,000	135	21.7
Over 150,000	86	13.8
Children		
No children	454	72.9
At least one child	169	27.1
Virtuality		
Virtual	500	80.3
Hybrid	123	19.7
Job Level		
Operational/Specialist	361	58
Managerial	262	42

4.2 Descriptive Statistics of Independent and Dependent Variables

A total of 623 respondents completed the questionnaire. All of them completed it correctly, with no missing data, as the online questionnaire did not allow any questions to be left blank.

The mean and standard deviations of the independent and dependent variables are as follows:

Table 4: Descriptive Statistics for Independent and Dependent Variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pay	623	1.00	6.00	3.49	1.18
Promotion	623	1.00	6.00	3.74	1.21
Supervision	623	1.00	6.00	4.73	.99
Fringe Benefits	623	1.00	6.00	3.91	.94
Extrinsic	623	1.00	7.00	4.55	1.32
Intrinsic	623	1.00	7.00	4.74	1.32
Relatedness	623	1.00	5.00	3.62	.75
Life-course Fit	623	1.00	5.00	3.35	.78
Job Retention	623	1.00	5.00	3.66	.92
Valid N (listwise)	623				

The mean and standard deviations of the questionnaire items are as follows:

Table 5. Descriptive Statistics for Each Questionnaire Item

	N	Min.	Max.	Mean	Std. Deviation
(PY1) Raises are too few and far between. *	623	1	6	3.02	1.384
(PY2) I feel satisfied with my chances for salary increases.	623	1	6	3.96	1.318
(PM1) There is really too little chance for promotion in my job. *	623	1	6	3.66	1.337
(PM2) I am satisfied with the chances for promotion.	623	1	6	3.81	1.342
(SP1) My supervisor is quite competent in doing his/her job.	623	1	6	5.00	1.010
(SP2) My supervisor is unfair to me.*	623	1	6	4.78	1.121
(SP3) My supervisor shows too little interest in the feelings of subordinates. *	623	1	6	4.34	1.309
(SP4) I like my supervisor.	623	1	6	4.78	1.208
(FB1) I am not satisfied with the benefits I receive. *	623	1	6	4.21	1.291
(FB2) The benefits we receive are as good as most other organizations offer.	623	1	6	4.22	1.091
(FB3) The benefit package we have is equitable.	623	1	6	4.22	1.121

(FB4) There are benefits we do not have which we should have. *	623	1	6	3.01	1.260
(Ext-Soc1) To get others' approval (e.g., supervisor, colleagues, family, …).	623	1	7	5.04	1.516
(Ext-Soc2) Because others will respect me more (e.g., supervisor, colleagues, family, ...).	623	1	7	4.57	1.663
(Ext-Soc3) To avoid being criticized by others (e.g., supervisor, colleagues, family, …).	623	1	7	4.34	1.804
(Ext-Mat1) Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor, …).	623	1	7	4.23	1.564
(Intrin1) Because I have fun doing my job.	623	1	7	4.85	1.495
(Intrin2) Because what I do in my work is exciting.	623	1	7	4.59	1.432
(Intrin3) Because the work I do is interesting.	623	1	7	4.78	1.394
(REL1) I feel that people who are important to me at work are cold and distant towards me. *	623	1	5	3.76	.991
(REL2) I have the impression that people I spend time with at work dislike me.*	623	1	5	3.72	.907
(REL3) I feel the relationships I have at work are just superficial. *	623	1	5	3.38	.973
(LC1) When working virtually, has your job reduced the effort you can give to activities at home?	623	1	5	3.38	1.058
(WI1) When working virtually, work encroaches on my personal time. *	623	1	5	2.82	1.106
(WI2) When working virtually, interruption of personal life owing to work is a problem. *	623	1	5	3.06	1.066
(FA1) When working virtually, work schedule leaves me enough time for my personal and/or family life.	623	1	5	3.62	1.014
(FA2) When working virtually, I am satisfied with my family/childcare arrangement.	623	1	5	3.60	.990

(FA3) When working virtually, I am satisfied with division of family/parenting responsibilities.	623	1	5	3.63	.962
(LT1) I would still like to work for the same job in 5 years.	623	1	5	3.68	1.028
(LT2) I can see a future for me with this job.	623	1	5	3.64	.985
Job Level	623	1	2	1.42	.494
Virtual Intensity	623	1	2	1.80	.398
Valid N (listwise)	623				

Note: * = Negatively worded items, which were reverse scored.

4.3 Research Results

This study used the SEM approach to analyze the data and followed Anderson and Gerbing's (1988) method of using the two-step approach to test the hypotheses. The first step tested the measurement model to establish the validity and reliability of the scales used in this study through confirmatory factor analysis (CFA), and the second step tested the structural relationships between the independent and dependent variables.

The loadings for the measurement model, shown in Table 6 below, indicate that the factor loadings for each item are greater than .50, suggesting that the convergent validity is adequate for all constructs. The discriminant validity was assessed by examining the square roots of the average variance extracted (AVE) from each construct. Normally, the AVE should be calculated for each construct and must be at least .50. If the AVE is less than .50, this indicates that the items explain more errors than the variance in the constructs. All of the constructs show an adequate level of AVE except pay and job retention, which have only two items per construct. Composite reliability (CR) was used to measure the internal consistency of scale items in the questionnaire. The results show that the CR values for supervision, fringe benefits, extrinsic motivation, intrinsic motivation, and life-course fit are above 0.80, which indicates good reliability of the measurement items, whereas relatedness is slightly

under at 0.792. Pay, promotion, and job retention have CR values lower than 0.80, which may be because each construct has only two questionnaire items.

Table 6: Measurement Model with Questionnaire Items, Item Means, Standard Deviation, Item Loadings, AVE, and CR (n = 623).

	Mean	Std. Deviation	Loadings	AVE*	CR**
(PY1) Raises are too few and far between.	3.02	1.384	.511	.342	.506
(PY2) I feel satisfied with my chances for salary increases.	3.96	1.318	.651		
(PM1) There is really too little chance for promotion in my job.	3.66	1.337	.752	.506	.671
(PM2) I am satisfied with the chances for promotion.	3.81	1.342	.668		
(SP1) My supervisor is quite competent in doing his/her job.	5.00	1.010	.838	.633	.873
(SP2) My supervisor is unfair to me.	4.78	1.121	.762		
(SP3) My supervisor shows too little interest in the feelings of subordinates.	4.34	1.309	.725		
(SP4) I like my supervisor.	4.78	1.208	.850		
(FB1) I am not satisfied with the benefits I receive.	4.21	1.291	.774	.562	.836
(FB2) The benefits we receive are as good as most other organizations offer.	4.22	1.091	.713		

(FB3) The benefit package we have is equitable.	4.22	1.121	.841		
(FB4) There are benefits we do not have which we should have.	3.01	1.260	.659		
(Ext-Soc1) To get others' approval (e.g., supervisor, colleagues, family, …).	5.04	1.516	.745	.535	.819
(Ext-Soc2) Because others will respect me more (e.g., supervisor, colleagues, family, ...).	4.57	1.663	.688		
(Ext-Soc3) To avoid being criticized by others (e.g., supervisor, colleagues, family, …).	4.34	1.804	.861		
(Ext-Mat1) Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor, …).	4.23	1.564	.609		
(Intrin1) Because I have fun doing my job.	4.85	1.495	.710	.578	.803
(Intrin2) Because what I do in my work is exciting.	4.59	1.432	.746		
(Intrin3) Because the work I do is interesting.	4.78	1.394	.820		
(REL1) When working virtually, I feel that people who are important to me at work are cold and distant towards me.	3.76	.991	.772	.560	.792
(REL2) When working virtually, I have the impression that people I spend time with at work dislike me.	3.72	.907	.797		
(REL3) When working virtually, I feel the relationships I have at work are just superficial.	3.38	.973	.671		
(LC1) When working virtually, has your job reduced the effort you can give to activities at home?	3.38	1.058	.692	.566	.886
(WI1) When working virtually, work encroaches on my personal time.	2.82	1.106	.702		
(WI2) When working virtually, interruption of personal life owing to work is a problem.	3.06	1.066	.752		

(FA1) When working virtually, work schedule leaves me enough time for my personal and/or family life.	3.62	1.014	.722		
(FA2) When working virtually, I am satisfied with my family/childcare arrangement.	3.60	.990	.829		
(FA3) When working virtually, I am satisfied with division of family/parenting responsibilities.	3.63	.962	.805		
(LT1) I would still like to work for the same job in 5 years.	3.68	1.028	.702	.452	.622
(LT2) I can see a future for me with this job.	3.64	.985	.642		

Note: * AVE = Average variance extracted. Calculated according to Fornell and Larcker (1981).
** CR = Composite reliability. Calculated according to Fornell and Larcker (1981)

The second step used the structural model to test the relationships between the independent variables and the dependent variable. The full structural model, shown below in Figure 2, was conducted in the SPSS AMOS program based on the research framework using the same criteria as the respective measurement model assessments.

Figure 2: Research Framework with Coefficient
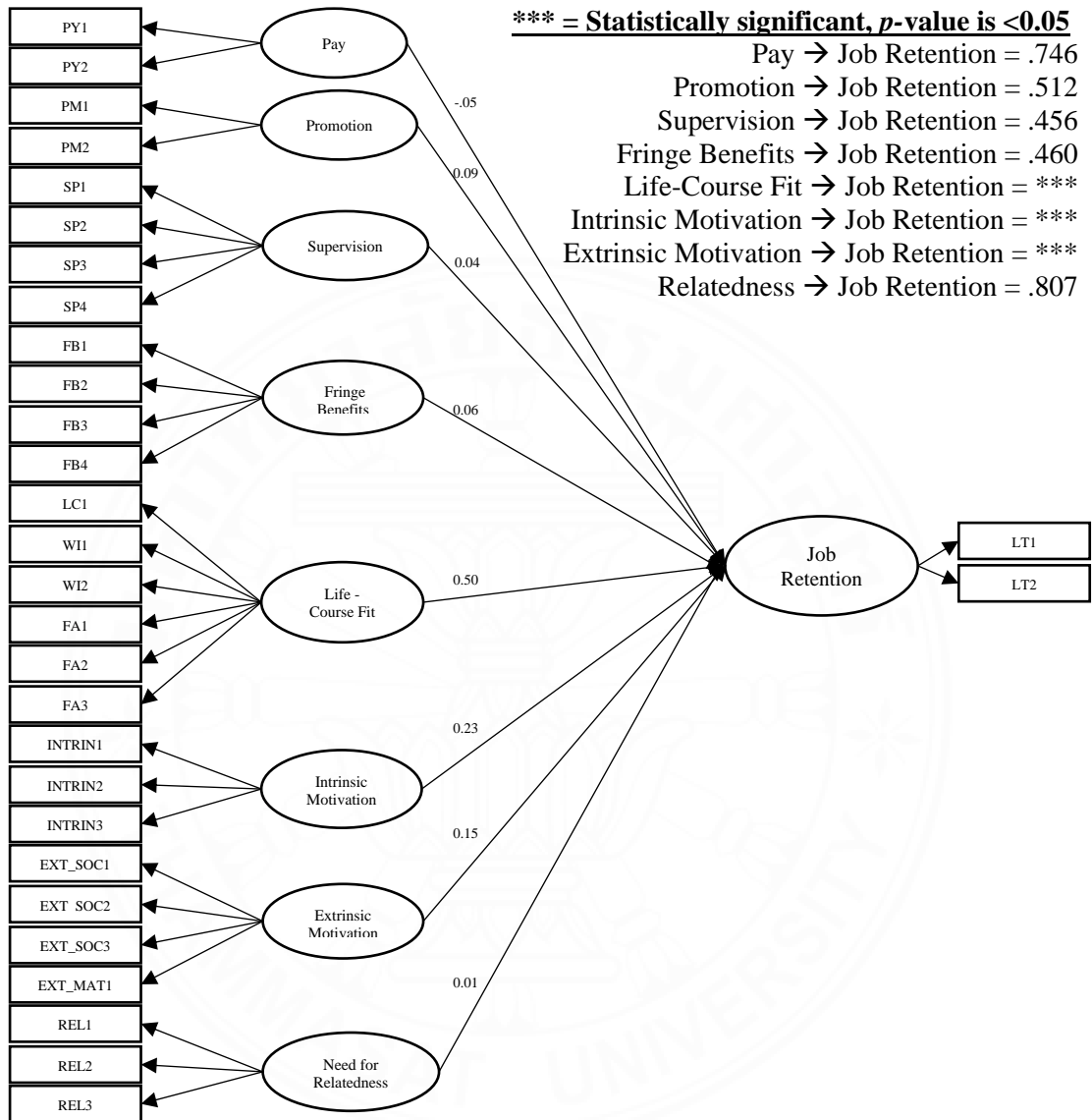
Modification indices were used to improve the model fit. The summary of the model fit (goodness-of-fit statistics) is within acceptable range, with the minimum discrepancy function by degrees of freedom divided or Chi-square/df (CMIN/DF) at 3.979, the comparative fit index (CFI) at .922, the goodness-of-fit (GFI) at .902, and the root mean square error of approximation (RMSEA) at .069 (see Table 7), indicating

that the proposed model could be tested. The recommended levels of fit indices estimates are as follows: CMIN/DF at below 5.0 for reasonable fit (Marsh and Hocevar, 1985), CFI at .90 or more for acceptable level (Bentler, 1990), GFI at .90 or more for acceptable level (Jöreskog & Sörbom, 1993; Hu & Bentler 1995), and RMSEA with results between .05 and .08 for reasonable fit (Browne & Cudeck, 1993; Diamantopoulos & Siguaw, 2000).

Table 7: Model Fit Summary

Goodness-of-Fit Indices	Value	Level of Acceptance	References
CMIN/DF	3.979	<5.0	Marsh and Hocevar, 1985
CFI	.922	>0.90	Bentler, 1990
GFI	.902	>0.90	Jöreskog & Sörbom, 1993; Hu & Bentler 1995
RMSEA	.069	<0.08	Browne & Cudeck, 1993; Diamantopoulos & Siguaw, 2000

Note: CMIN/DF = minimum discrepancy function by degrees of freedom divided; CFI = comparative fit index; GFI = goodness-of-fit index; and RMSEA = root mean square error of approximation.

4.3.1 Testing of Hypotheses

The results of the statistical analyses shown in Table 8 below indicate that life-course fit, intrinsic motivation, and extrinsic motivation of virtual and hybrid workers are positively associated with job retention. These results are significant and support hypotheses 5, 6, and 7 of this study.

Table 8: Test of Hypotheses 1–8 (Regression Weights)

Hypothesis Construct	Estimate	S.E.	C.R.	*p*-value
H1: Pay → Job Retention	-.053	.165	-.324	.746
H2: Promotion → Job Retention	.088	.134	.656	.512
H3: Supervision → Job Retention	.041	.055	.746	.456
H4: Fringe Benefits → Job Retention	.060	.082	.739	.460
H5: Life Course Fit → Job Retention	.502	.069	7.259	***
H6: Intrinsic → Job Retention	.228	.037	6.132	***
H7: Extrinsic → Job Retention	.149	.029	5.160	***
H8: Relatedness → Job Retention	.014	.059	.244	.807

Note: S.E. = standardized estimates; C.R. = critical ratio; *p*-value = the level of marginal significance within a statistical hypothesis test; *** = statistically significant, *p* <0.05

None of the motivator-hygiene factors – pay, promotion, supervision, and fringe benefits – contributes significantly to job retention, which does not support hypotheses 1, 2, 3, and 4. It is plausible that most participants are more appreciative of receiving an income during the pandemic, when many others worldwide lost theirs; hence, the independent variable pay has a non-significant relationship with job retention. When working remotely, the impact of direct supervision lessens significantly, resulting in a non-significant relationship with job retention. Promotion might not have a significant effect on most workers during this period of the COVID-19 pandemic, when retaining an income and maintaining job status is more important than striving for a promotion. Lastly, fringe benefits also has a non-significant relationship with job retention. This may be because the focus of most workers is to keep their jobs while there are still uncertainties due to the pandemic. This directly reflects Herzberg's theory on hygiene factors, where hygiene factors – pay, supervision, and fringe benefits – do not contribute to workers' satisfaction but are factors that can cause dissatisfaction if not addressed appropriately.

The significant relationship between the effects of life-course fit and job retention when working remotely signifies that work/life interruption and family arrangements have a significant impact on virtual and hybrid workers. Working from home makes the boundary between work and personal life less clear. Having to deal with family matters during working hours is also a new phenomenon, especially for most traditional workers who had to suddenly shift to remote work; therefore, managing the boundaries between work and life becomes a necessary skill set most people need to have when working remotely.

These results indicate that there are significant relationships between both intrinsic and extrinsic motivation and job retention. It is important to note that workers can feel motivated by personal interests in their work, and at the same time, they can also feel motivated by external factors, such as wanting to gain their supervisor or colleagues' approval or avoid being criticized for not doing their jobs. Ultimately, most workers work to earn a living, therefore, they are also constantly extrinsically motivated, especially during the period before they receive their paychecks.

Finally, the results indicate that the need for relatedness does not significantly contribute to job retention. The need for relatedness is one of the factors that is positively linked to intrinsic work motivation (Hon, 2011), and having good social-connectedness and support can make workers feel more autonomous and competent in their work (Deci & Ryan, 1994). However, in the context of virtual work, workers have fewer interactions with supervisors and coworkers, especially in the form of informal interactions, which results in most online communication and virtual interaction being about work-related issues. Virtual workers might also feel somewhat disconnected from the overall bigger picture of the organization's goals and objectives and focus more on their day-to-day work and outcomes, thus weakening the worker–organization relationship and the worker's relatedness to organization culture.

4.3.2 Results of Hypothesis Testing with Discussion

The testing of each hypothesis with results and discussion are as follows:

Hypothesis 1 (H1): Pay has a positive relationship with job retention for virtual and hybrid workers.

The results from the SEM analysis did not support this hypothesis. This hypothesis is non-significant and thus not supported, as the *p*-value was .223 (p > 0.05), indicating that pay does not have a significant relationship to job retention. The result is consistent with Herzberg's theory on hygiene factors, in which pay, as a hygiene factor, does not contribute to workers' satisfaction but can cause dissatisfaction if not addressed. The respondents in this study are all workers who were still employed by their organizations during the COVID-19 pandemic and allowed to work either virtually or in hybrid modes. It is also important to note that most of the respondents in this study have quite high salaries, with 82.2% earning more than THB 60,000 per month, of which 35.5% of these respondents are earning more than THB 100,000 per month – a significant difference compared to the average salary per household in Thailand at THB 27,352, according to the Thai National Statistics Office (2021). Under these circumstances, regardless of whether the workers believe their current pay is reasonable, fair, and/or competitive when compared to others, as long as they receive their paycheck, pay is not an essential factor to determine job retention. This is in line with many prior studies that posit that hygiene factors contribute more to dissatisfaction in life and that money, although important, does not always contribute to happiness or satisfaction (Kasser, 2002; Kahneman, Diener, & Schwarz, 1999; Myers & Diener, 1995).

H2: Promotion has a positive relationship with job retention for virtual and hybrid workers.

This hypothesis is not supported. The statistical result indicates a non-significant relationship between promotion and job retention, with the *p*-value at .121 (p > 0.05). The opportunity to be promoted and advance in a career is essential for many workers. However, according to Herzberg's theory, promotion is a "motivator" that

makes workers more productive and committed to their work. The findings of this study indicate that promotion does not have a significant relationship with job retention for virtual and hybrid workers. It is possible that most of the sample respondents feel basically indifferent about their opportunity for promotion while they are working remotely. The results somewhat contradict some recent studies of remote work during the early period of the COVID-19 pandemic by Brynjolfsson et al. (2020) and Baert et al. (2020), which explain that workers who work remotely feel that there are downsides regarding career development, lower chances for promotion, and hampered professional development and prospects when working remotely due to lower interaction between employees and their supervisors and coworkers. One of the possible explanations for this contradiction might come the timing of this study at a later stage of the pandemic, between April 2022 and October 2022, when most workers are more comfortable working remotely and can almost function as normal. The level of interaction between workers and their colleagues and supervisors is being normalized through online communication channels and meeting platforms, and this can include the normalcy of possible opportunities for job promotion and career development.

H3: Supervision has a positive relationship with job retention for virtual and hybrid workers.

The results from the SEM analysis did not support this hypothesis, as the *p*-value between supervision and job retention was non-significant at .566 (p > 0.05). Supervision is the relationship between workers and their superiors. Arnfak et al. (2016) posit that it is generally more difficult to lead virtual workers, and Lilian (2014) concurs, adding that strong leadership is needed to manage virtual teams. This is because virtual workers have more autonomy, and most of the time, they work without any direct supervision. However, more current studies argue that the power dynamics between remote workers and their supervisors are changing (Malakyan, 2020), with remote workers acting as leaders themselves. Workers are now more adapted to working virtually, using digital platforms and online communication channels to allow better collaboration and lessen the need for constant monitoring or decision-making by supervisors to move the work forward. This, in turn, allows workers to take the lead in work, which results in the increased practice of shared leadership (Arnfalk et al., 2016;

Nordbäck & Espinosa, 2019). With supervisors having less direct influence and virtual workers taking on a stronger leadership mindset in their work, it is possible that supervision has become a non-significant factor in relation to job retention.

H4: Fringe benefits have a positive relationship with job retention for virtual and hybrid workers.

Fringe benefits was the last hygiene factor tested in this SEM that was shown to be non-significant, with the p-value between fringe benefits and job retention at .226 ($p > 0.05$). Fringe benefits are additional benefits given to workers apart from their salaries, for example, health insurance, life insurance, maternity benefits, etc. Many workers view benefits as substitutes for wages and consider fringe benefits an important element in determining whether to stay or leave a job. However, the result of this study has shown that for virtual and hybrid workers, fringe benefits do not have a positive relationship with job retention. Similar to other hygiene factors, the respondents who are virtual and hybrid workers were still receiving the same fringe benefits as when they were working in traditional workplaces and thus might not consider this a significant factor that determines whether they should stay or leave the job. Instead, fringe benefits might be an important factor for a worker to understand and consider before accepting a job. Therefore, this factor might not have much significance at this stage unless the workers are forced to reduce some benefits to help their organizations cut costs.

H5: Life-course fit in virtual work has a positive relationship with job retention for virtual and hybrid workers.

From the results, the SEM supports this hypothesis, with a significant p-value ($p < 0.05$) between life-course fit and job retention, indicating that life-course fit has a positive relationship with job satisfaction for virtual and hybrid workers. This confirms that virtual work is significantly affected by personal life, work and family interferences, and family arrangements at home. Thus, these factors can affect the decision to stay at or quit a job. It is essential for virtual workers to be able to integrate their work and personal lives effectively while synergizing work with all other areas of life, especially because the boundaries between work and personal life are not as clear

as in traditional work settings. Those who are satisfied with their work–life integration and can manage the responsibilities of work and personal life well will not change jobs, while those who cannot might quit and/or find a new job.

H6: Intrinsic work motivation has a positive relationship with job retention for virtual and hybrid workers.

The statistical results support this hypothesis with a significant *p*-value ($p < 0.05$) for the relationship between intrinsic motivation and job retention, suggesting that intrinsic motivation has a positive relationship to job retention for virtual and hybrid workers. Jobs comprise tasks that are fun and/or interesting, but most also have tasks that can be unstimulating or routine. When working remotely, workers are distracted by many factors throughout the day, with no one to directly oversee their work on boring or routine tasks. Therefore, being able to constantly keep oneself intrinsically motivated is crucial and can fundamentally affect whether the worker would like to stay at or leave the job.

H7: Extrinsic work motivation has a positive relationship with job retention for virtual and hybrid workers.

This study's statistical results support this hypothesis with a significant *p*-value ($p < 0.05$) between extrinsic motivation and job retention, suggesting that extrinsic motivation has a positive relationship to job retention for virtual and hybrid workers. Fundamentally, people work to earn a living. However, many also strive to be recognized and accepted by work colleagues, friends, family, and/or society. Virtual workers who work remotely tend to work harder and/or longer to prove their self-worth and gain acceptance with supervisors or coworkers, as there are fewer direct work interactions to prove that they are working effectively and are performing according to expectations. Hence, most virtual workers are extrinsically motivated financially, socially, or both, making this an essential factor that will influence their decision to stay in or leave a job.

H8: The need for relatedness has a positive relationship with job retention for virtual and hybrid workers.

The results from the SEM do not support this hypothesis. The *p*-value between extrinsic motivation and job retention is .861 (p > 0.05), indicating that the need for relatedness does not have a significant relationship to job retention for virtual and hybrid workers. Although the need for relatedness is one of the factors linked to intrinsic work motivation, job involvement, and satisfaction (Hon, 2011), when working remotely, workers have fewer interactions with supervisors and coworkers, especially in the form of informal interactions. Most communication and interaction are done online and are mostly about work-related issues. This can lead remote workers to feel disconnected from the overall bigger picture of the organization's goals and objectives, thereby reducing the comradery among colleagues and downplaying the importance of worker–organization relationships and workers' relatedness to organization culture. However, when compared to traditional workers, remote workers spend more time with family and friends, which strengthens their relationships outside of work, compensating for the lack of relationships with work colleagues and supervisors. This, thereby, lessens the significance of the need for relatedness at work.

4.3.3 Moderation Analysis

An AMOS moderation analysis was conducted to test the interaction effect of each variable, with pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and the need for relatedness as the predictors; job retention as the dependent variable; and job level and virtual intensity as the moderators. The results are shown in Tables 9 and 10.

Table 9: Moderation Analysis: Job Level, Hypotheses 9a to 9h (H9a–H9h)

Moderating Variable: Job Level	Estimate	S.E.	C.R.	*p*-value
H9a: ZRETENTION ← INTPAYJOBLEVEL	-.199	.039	-5.104	***
H9b: ZRETENTION ← INTPROJOBLEVEL	-.165	.040	-4.130	***
H9c: ZRETENTION ← INTSUPJOBLEVEL	-.073	.039	-1.862	.063
H9d: ZRETENTION ← INTBENJOBLEVEL	-.107	.039	-2.766	.006
H9e: ZRETENTION ← INTLCFJOBLEVEL	.094	.039	2.434	.015
H9f: ZRETENTION ← INTINTJOBLEVEL	-.028	.035	-.777	.437
H9g: ZRETENTION ← INTEXTJOBLEVEL	-.159	.038	-4.179	***
H9h: ZRETENTION ← INTRELJOBLEVEL	-.129	.038	-3.371	***

Note: S.E. standardized estimates; C.R. = critical ratio; *p*-value = the level of marginal significance within a statistical hypothesis test; *** = statistically significant, *p* <0.05

Table 10: Moderation Analysis: Virtual Intensity, Hypotheses 10a to 10h (H10a–H10h)

Moderating Variable: Virtual Intensity	Estimate	S.E.	C.R.	*p*-value
H10a: ZRETENTION ← INTPAYVIRTUALITY	.165	.047	3.475	***
H10b: ZRETENTION ← INTPROVIRTUALITY	.000	.043	.011	.992
H10c: ZRETENTION ← INTSUPVIRTUALITY	.175	.039	4.460	***
H10d: ZRETENTION ← INTBENVIRTUALITY	-.191	.036	-5.267	***
H10e: ZRETENTION ← INTLCFVIRTUALITY	-.088	.038	-2.345	.019
H10f: ZRETENTION ← INTINTVIRTUALITY	.041	.032	1.273	.203
H10g: ZRETENTION ← INTEXTVIRTUALITY	-.198	.056	-3.529	***
H10h: ZRETENTION ← INTRELVIRTUALITY	.067	.036	1.856	.063

Note: S.E. standardized estimates; C.R. = critical ratio; *p*-value = the level of marginal significance within a statistical hypothesis test; *** = statistically significant, *p* <0.05

Since the *p*-value must be lower than 0.05 to be considered significant, the moderation effect results show that "job level" as an interaction

moderating variable for pay, promotion, fringe benefits, life-course fit, extrinsic motivation, and need for relatedness on job retention is statistically significant. The effect of "virtual intensity" as an interaction effect on pay, supervision, fringe benefits, life-course fit, and extrinsic motivation on job retention is also significant.

4.3.4 Moderation Analysis on Job Level

As workers at different levels have different expectations about their jobs, some are satisfied if the pay is adequate, working conditions are decent, and/or they have good interpersonal relations with supervisors and coworkers, while others seek work that is meaningful, fun and/or interesting. Many studies have shown that operational-level workers are more influenced by hygiene factors, while higher-level workers value motivating factors, such as the work itself, recognition, and achievement (Locke, 1968 & 1973, Kovach, 1987, Toode, Routasalo, & Suominen, 2011; Hyun & Oh, 2011). The way of working for virtual workers is quite different from work in traditional work settings; therefore, this study also examined whether differences in job level (operational/specialist vs. manager) influence the factors affecting job retention.

This study used an AMOS moderation analysis to test the interaction effect (Aguinis, 2004), with results indicating that the moderator variable job level has a significant effect on the relationships between the independent variables pay, promotion, fringe benefits, life-course fit, extrinsic motivation, and need for relatedness and the dependent variable, job retention. As shown in the figures below, these positive relationships were statistically significant ($p = < 0.05$). The results for each hypothesis based on the moderating factor "job level" are as follows:
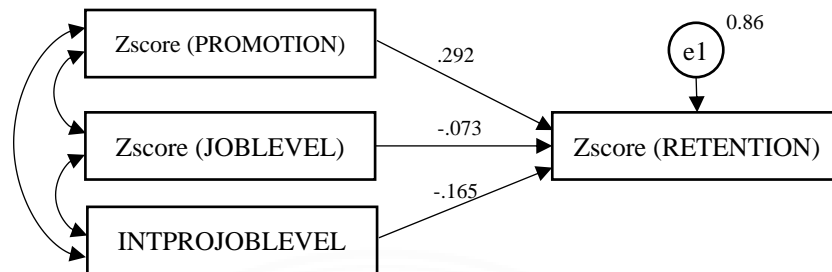
H9a: The effect of pay on job retention is moderated by job level.
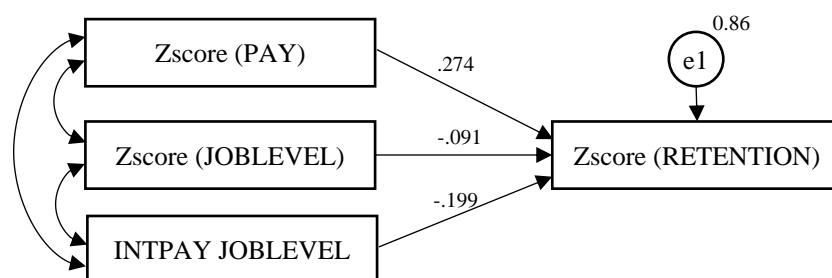
	Estimate	S.E.	C.R.	p-value
ZRETENTION ← ZPAY	.274	.038	7.226	***
ZRETENTION ← ZJOBLEVEL	-.091	.037	-2.445	.014
ZRETENTION ← INTPAYJOBLEVEL	-.199	.039	-5.104	***

The moderation analysis results support this hypothesis. The effect of pay on job retention is significantly moderated by job level ($p < 0.05$), indicating that the relationship between pay and job retention is different for operational/specialist-level virtual workers and managerial virtual workers. The estimated interaction predictor at -.199 shows that the interaction between pay and job level negatively affects job retention. This means that if the job level is managerial level or above, the relationship between pay and job retention is more negative than that of the operational/specialist job level. This is in line with several studies, for example, Kahneman and Deaton's (2010) study on the impact of income, where people who earn around USD 75,000 per year or more do not worry much about their day-to-day financial problems, but those who earn less are constantly worried, experience emotional pain, and have a low evaluation of life and mental health. True to Herzberg's motivation-hygiene theory, for those who earn less or are in financial difficulty, pay is an important factor that influences general life satisfaction and happiness. Unless the worker is satisfied with the pay or believes that their pay matches the amount of work contributed (Vroom's expectancy theory), the worker will always feel somewhat unsatisfied with the pay, and pay causes more dissatisfaction than satisfaction. Although the respondents are not earning as much as USD 75,000 per year, their salaries are considered quite high compared to the standard in Thailand, and therefore the same mindset comes into play, where those with a higher job level (and higher pay) see pay as less significant to their satisfaction at work. They might have felt especially appreciative during the pandemic when most of the respondents still had jobs and income while so many others lost them and were struggling financially.

H9b: The effect of promotion on job retention is moderated by job level.

	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZPROMOTION	.292	.038	7.612	***
ZRETENTION ← ZJOBLEVEL	-.073	.037	-1.968	.049
ZRETENTION ← INTPROJOBLEVEL	-.165	.040	-4.130	***

The moderation analysis results support this hypothesis. The effect of promotion on job retention is significantly moderated by job level ($p < 0.05$), with an estimated interaction effect at -.165, which shows that the interaction between promotion and job level significantly and negatively affects job retention. This means that the higher the job level, the more negative the relationship between promotion and job retention becomes. The results reflect respondents' feelings about promotion, where operational-level workers are more concerned about lower chances for promotion and career development than those at the managerial level. One of the possible explanations is that most managerial workers are more comfortable with remote work than operational/specialist workers and have normal functionality and interactions with their colleagues and supervisors through online communication channels and meeting platforms, which can include the normality of possible opportunities for job promotion and career development (to a lesser extent).

H9c: The effect of supervision on job retention is moderated by job level.
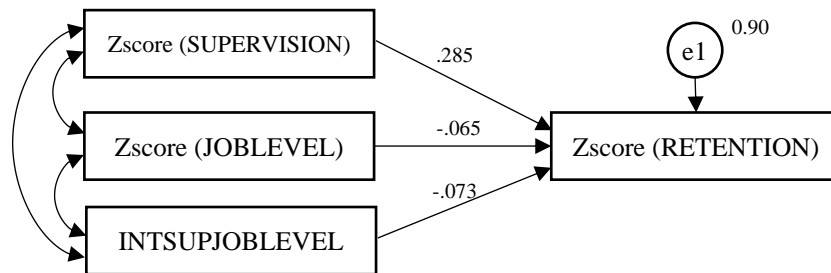
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZSUPERVISION	.285	.038	7.403	***
ZRETENTION ← ZJOBLEVEL	-.065	.038	-1.705	.088
ZRETENTION ← INTSUPJOBLEVEL	-.073	.039	-1.862	.063

The moderation analysis results do not support this hypothesis. The effect of supervision on job retention is not significantly moderated by job level (*p*-value = .063). This might be in line with recent studies on remote work, where the power dynamics between remote workers and their supervisors have changed. Remote workers are more adapted to working virtually and are acting as leaders themselves (Arnfalk et al., 2016; Nordbäck & Espinosa, 2019; Malakyan, 2020), collaborating better and lessening the need for supervisors to constantly monitor or make decisions. Each worker, be they manager or operational staff, has to focus more on the work at hand and trust that other team members will deliver their part. This contributes to less supervision but more collaboration – leading to supervision becoming a non-significant factor in relation to job retention.

H9d: The effect of fringe benefits on job retention is moderated by job level.
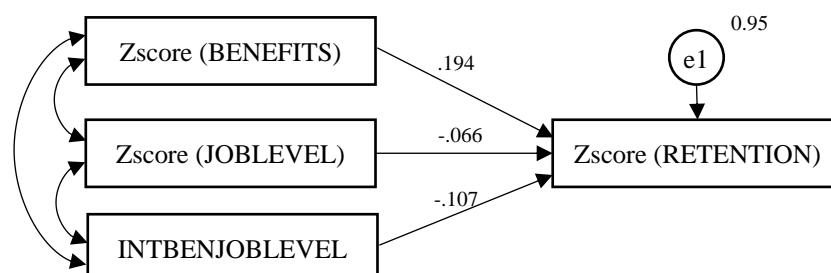
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZBENEFITS	.194	.040	4.908	***
ZRETENTION ← ZJOBLEVEL	-.066	.039	-1.677	.094
ZRETENTION ← INTBENJOBLEVEL	-.107	.039	-2.766	.006***

The moderation analysis results support this hypothesis. The effect of fringe benefits on job retention is significantly moderated by job level (*p*-value = .006). From the results, the estimated interaction effect is at -.107, which shows that the interaction between fringe benefits and job level negatively affects job retention. As the job level becomes higher, the relationship between fringe benefits and job retention becomes more negative. Similar to other hygiene factors, the respondents who are virtual and hybrid workers were still receiving the same fringe benefits as when they were working in the traditional workplace, and those with a higher job level might feel that fringe benefits have less importance than those at a lower job level. The latter group might feel that they need to depend more on these additional benefits, especially on health insurance and other additional benefits or financial allowances.

H9e: The effect of life-course fit on job retention is moderated by job level.
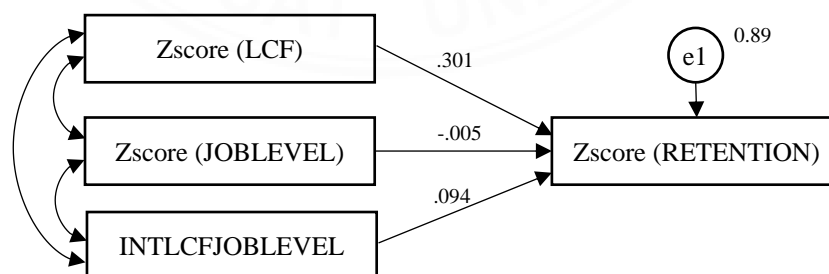
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZLCF	.301	.039	7.703	***
ZRETENTION ← ZJOBLEVEL	-.005	.039	-.118	.906
ZRETENTION ← INTLCFJOBLEVEL	.094	.039	2.434	.015

The moderation analysis results support this hypothesis. The effect of life-course fit on job retention is significantly moderated by job level ($p < 0.05$), which indicates that the relationship between life-course fit and job retention is different for operational/specialist-level virtual workers and managerial virtual workers. From the results, the estimated interaction predictor at .094 shows that the interaction between life-course fit and job level positively affects job retention: if the job level is higher, the relationship between life-course fit and job retention is more positive. This indicates that virtual and hybrid workers at higher job levels are more affected by factors related to life-course fit – personal issues, work and/or family interferences, and/or family arrangements at home – than those at the operational level. One of the distractions many virtual workers had during the pandemic was their children, who also had to stay home because schools closed. From the data collected in this study, over one-third, or 34.4%, of the managerial-level respondents have at least one child, while only 21.9% of the operational/specialist-level respondents have children. Many managerial-level workers also have work that requires more concentration or creativity than operational-level workers, and therefore they can be more affected by interruptions from family members or work/life interference.

H9f: The effect of intrinsic motivation on job retention is moderated by job level.
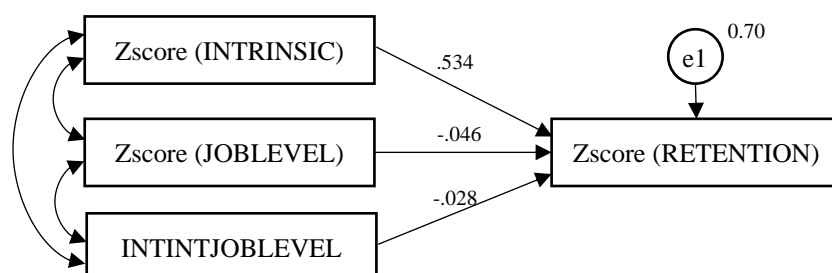
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZINTRINSIC	.534	.034	15.546	***
ZRETENTION ← ZJOBLEVEL	-.046	.034	-1.353	.176
ZRETENTION ← INTINTJOBLEVEL	-.028	.035	-.777	.437

The moderation analysis results do not support this hypothesis. The effect of intrinsic motivation on job retention is not significantly moderated by job level (*p*-value = .437). This contradicts with many earlier studies that argued that people with higher job levels are more likely to be intrinsically motivated. For the respondents of this study, intrinsic motivation is more of a personal attitude toward work; it has less to do with whether the work is managerial or operational/specialist. People may like or be interested in their jobs or hate them, regardless of whether they are managers or operational staff.

H9g: The effect of extrinsic motivation on job retention is moderated by job level.
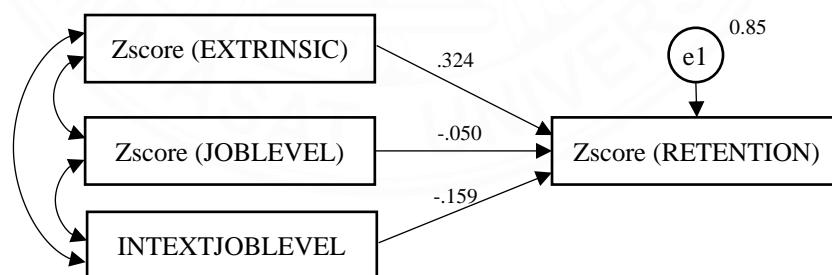
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZEXTRINSIC	.324	.037	8.651	***
ZRETENTION ← ZJOBLEVEL	-.050	.037	-1.349	.177
ZRETENTION ← INTEXTJOBLEVEL	-.159	.038	-4.179	***

The moderation analysis results support this hypothesis. The effect of extrinsic motivation on job retention is significantly moderated by job level ($p < 0.05$), indicating that the relationship between extrinsic motivation and job retention is different for operational/specialist-level virtual workers and managerial virtual workers. The estimated interaction predictor at -.159 shows that the interaction between extrinsic motivation and job level negatively affects job retention. This means that if the job level is higher, the relationship between extrinsic motivation and job retention is more negative than at a lower job level. This means that operational-level workers are more motivated by financial rewards, acknowledgement, and praise than their managerial counterparts. This reflects that lower-level workers might feel more insecure and vulnerable about their job and income when compared to their managerial counterparts, who, on average, earn more and are older. Operational-level workers could also feel that they need to demonstrate their competence and produce more work to prove that they are working even if they are not in the office, whereas managerial workers might have to prove less as long as they deliver results.

H9h: The effect of relatedness need on job retention is moderated by job level.
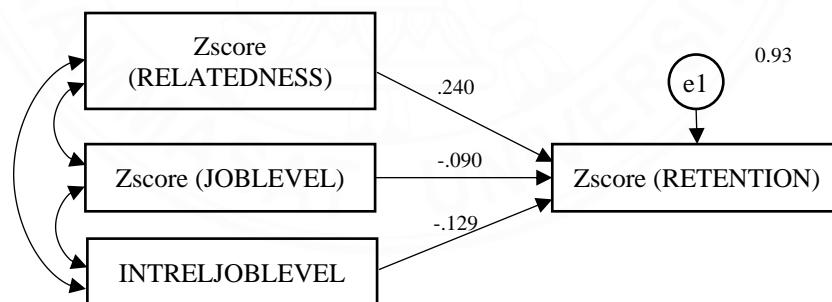
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZRELATEDNESS	.240	.039	6.130	***
ZRETENTION ← ZJOBLEVEL	-.090	.039	-2.317	.021
ZRETENTION ← INTRELJOBLEVEL	-.129	.038	-3.371	***

The moderation analysis results support this hypothesis. The effect of relatedness need on job retention is significantly moderated by job level ($p < 0.05$). The estimated interaction effect at -.129 shows that the interaction between the need for relatedness and job level negatively affects job retention. If the job level is higher, the relationship between the need for relatedness and job retention is more negative than that at a lower job level. When working remotely, many people lose touch with the organization's main vision and strategies and focus more on what needs to be done on a day-to-day basis. For those at the managerial level, most of their work is more strategic, with outcomes that have a clearer impact on the organization. They also know where their contributions support other colleagues. However, operational-level workers, who work on smaller day-to-day assignments and routine tasks, might need to know how their work contributes to the organization's goals and feel more related and aligned with the organization's bigger picture to keep them motivated and see the value of their contributions to the overall organization. Peer support may be more important for operational workers than for their managerial counterparts.

4.3.5 Moderation Analysis on Virtual Intensity

This study also examined whether differences in virtual intensity, or virtuality, have a significant influence on how workers perceive their job. Virtual intensity is the difference in the amount of time spent working remotely: high virtual intensity means that the worker works primarily off-site and works at the office around once a month or less, while medium virtual intensity means that the worker works in hybrid work settings where they are expected to come into the office two to three times a week or at least once a week, and those with low virtual intensity are traditional onsite workers. This study has determined whether differences in virtual intensity (virtual vs. hybrid workers) influence the factors leading to job retention.

This study used an AMOS moderation analysis to test the interaction effect (Aguinis, 2004), with results indicating that the moderator variable virtual intensity has an effect on the relationship between the independent variables supervision, fringe benefits, and life-course fit and the dependent variable, job

retention. The results for each hypothesis based on the moderating factor virtual intensity are described below.

H10a: The effect of pay on job retention is moderated by virtual intensity.
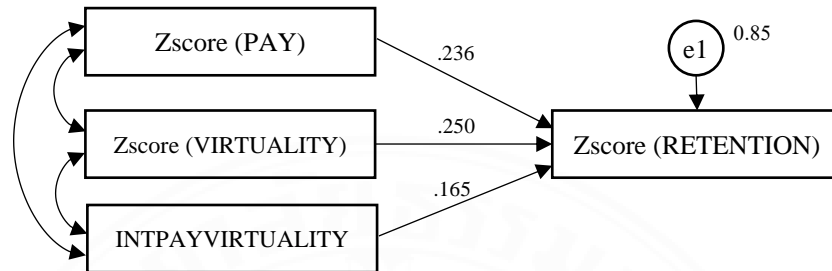
	Estimate	S.E.	C.R.	p-value
ZRETENTION ← ZPAY	.236	.039	6.108	***
ZRETENTION ← ZVIRTUALITY	.250	.039	6.428	***
ZRETENTION ← INTPAYVIRTUALITY	.165	.047	3.475	***

The moderation analysis results support this hypothesis. The effect of pay on job retention is significantly moderated by virtual intensity ($p < 0.05$). From the results, the estimated interaction effect at .165 shows that the interaction between pay and virtual intensity positively affects job retention. This means that the relationship between pay and job retention is more positive for virtual workers than for hybrid workers. This could indicate that virtual workers are more concerned about pay than their hybrid counterparts. This may be true, as most of the respondents who are working virtually might feel some insecurity about their jobs, as they have very limited knowledge of their performance or pay in comparison to other coworkers. Virtual workers also enjoy more flexibility to work or do something else during work hours, which means that they would need more motivation and effort to complete the work. Since people work primarily to earn a living, the notions of "work equals pay" and "equal pay for equal work" may be clearer for virtual workers than hybrid workers, because virtual workers, while having the freedom to do other things during working

hours, would have to constantly remind themselves that they have to work and finish their job/tasks to get paid.

H10b: The effect of promotion on job retention is moderated by virtual intensity.
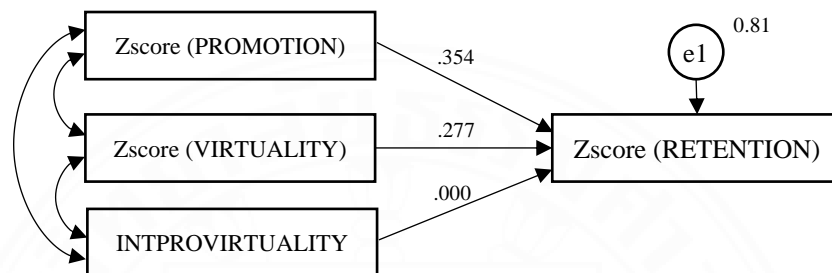
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZPROMOTION	354	.037	9.582	***
ZRETENTION ← ZVIRTUALITY	.277	.037	7.526	***
ZRETENTION ← INTPROVIRTUALITY	.000	.043	.011	.992

The moderation analysis results do not support this hypothesis. The effect of promotion on job retention is not significantly moderated by virtual intensity (*p*-value = .992). This means that the relationship between promotion and job retention is not significantly different for virtual workers and hybrid workers. As addressed earlier, no relationship was found between promotion and job retention. This result also shows that feelings about promotion are not related to virtual intensity. The reason for this result may be the normally quite low chances of promotion; a promotion would typically come once every one to three years and would not be affected by whether the worker is working virtually or in hybrid mode.

H10c: The effect of supervision on job retention is moderated by virtual intensity.
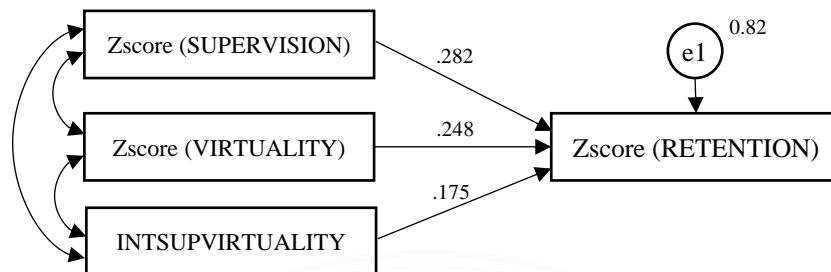
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZSUPERVISION	.282	.037	7.707	***
ZRETENTION ← ZVIRTUALITY	.248	.036	6.814	***
ZRETENTION ← INTSUPVIRTUALITY	.175	.039	4.460	***

The moderation analysis results support this hypothesis. The effect of supervision on job retention is significantly moderated by virtual intensity ($p < 0.05$), indicating that the relationship between supervision and job retention is different for virtual workers and hybrid workers. The estimated interaction effect at .175 shows that the interaction between supervision and virtual intensity positively affects job retention. This means that for virtual workers, the relationship between supervision and job retention is more positive than for hybrid workers. This may be because hybrid workers still work at the workplace for a few days each week, providing some normalcy in the interactions between workers and supervisors/managers.

On the other hand, virtual workers who work primarily elsewhere might not have much opportunity to meet with their supervisors face-to-face. Therefore, their relationships are slightly different and need more trust and understanding to function effectively. Although advanced communication technology and meeting platforms have helped make virtual work much easier, many supervisors and managers have yet to evolve and accept this new way of working where workers have more autonomy and can work without any direct supervision. Supervision is, therefore, a more significant factor for virtual workers than for those who work in hybrid modes.

H10d: The effect of fringe benefits on job retention is moderated by virtual intensity.
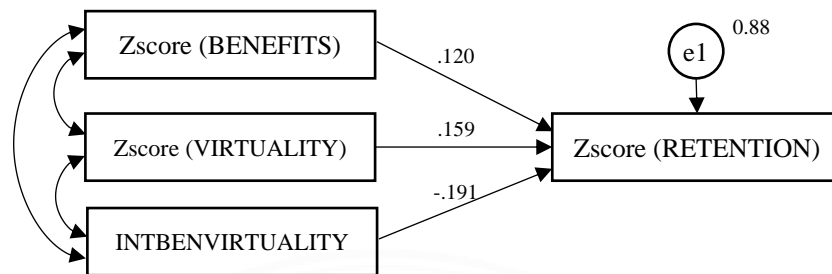
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZBENEFITS	.120	.039	3.099	.002
ZRETENTION ← ZVIRTUALITY	.159	.040	3.971	***
ZRETENTION ← INTBENVIRTUALITY	-.191	.036	-5.267	***

The moderation analysis results support this hypothesis. The effect of fringe benefits on job retention is significantly moderated by virtual intensity ($p < 0.05$), indicating that the relationship between fringe benefits and job retention is different for virtual workers and hybrid workers. The estimated interaction effect at -.191 shows that the interaction between fringe benefits and virtual intensity negatively affects job retention. This means that for virtual workers, the relationship between fringe benefits and job retention is more negative than for hybrid workers. The reasons behind such findings may vary. For virtual workers, the benefits of not having to commute to work, having more personal time with family and friends, a flexible work schedule, and more autonomy to work at will would probably offset the normal fringe benefits offered to traditional workers, making them willing to sacrifice some of their fringe benefits to be able to work remotely. On the other hand, hybrid workers enjoy the benefits of both worlds, being able to come to the office while also taking some days to work elsewhere, and therefore, more organizations are reconsidering adapting the hybrid mode as one of their incentives/benefits. A recent study by Barrero, Bloom, and Davis (2020) explains that many workers now prefer to work in a hybrid mode, working from home

at least some days of the week, and value two to three days of remote work per week about the same as an 8% pay raise, on average.

H10e: The effect of life-course fit on job retention is moderated by virtual intensity.
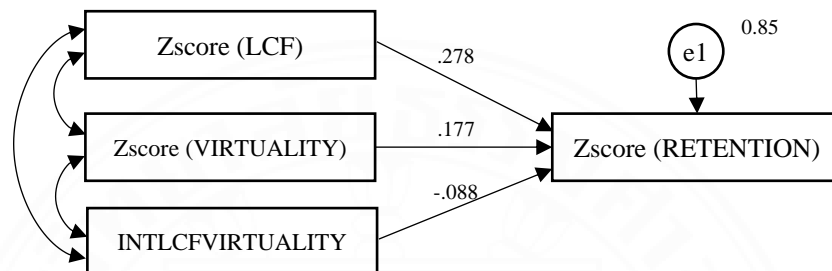
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZLCF	.278	.038	7.389	***
ZRETENTION ← ZVIRTUALITY	.177	.039	4.547	***
ZRETENTION ← INTLCFVIRTUALITY	-.088	.038	-2.345	.019

The moderation analysis results support this hypothesis. The effect of life-course fit on job retention is significantly moderated by virtual intensity (*p*-value = .019), indicating that the relationship between life-course fit and job retention is different for virtual workers and hybrid workers. The estimated interaction effect at -.088 shows that the interaction between life-course fit and virtual intensity negatively affects job retention. This means that the relationship between life-course fit and job retention is more negative for virtual workers than for hybrid workers. The result indicates that personal issues, work/life interference, and family arrangements affect hybrid workers slightly more than virtual workers.

This result comes as a surprise, but it could be due to the fact that people function better in stable and predictable environments and situations. Virtual workers who work from home can set up routines and schedules to manage household chores and other personal/family responsibilities while setting clearer boundaries for

when to work and when to stop. Hybrid workers, on the other hand, have to manage all of the same responsibilities while working remotely in addition to juggling their work while changing their workplace from the office to somewhere else.

H10f: The effect of intrinsic motivation on job retention is moderated by virtual intensity.
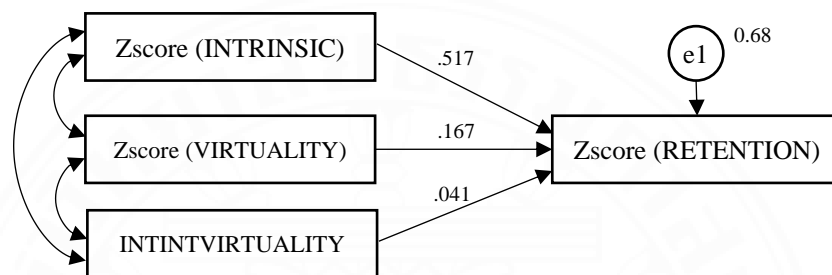
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZINTRINSIC	.517	.034	15.351	***
ZRETENTION ← ZVIRTUALITY	.167	.035	4.824	***
ZRETENTION ← INTINTVIRTUALITY	.041	.032	1.273	.203

The moderation analysis results do not support this hypothesis. The effect of intrinsic motivation on job retention is not significantly moderated by virtual intensity (*p*-value = .203), indicating that the relationship between intrinsic motivation and job retention is not significantly different for virtual workers and hybrid workers. People are interested in different things. Some would be fully interested in the work they are doing, while others might enjoy only some part of their works or simply work to earn a living. The result shows that whether a person is intrinsically interested in the work is a personal interest and has no relationship to whether they are working virtually or in hybrid mode.

H10g: The effect of extrinsic motivation on job retention is moderated by virtual intensity.
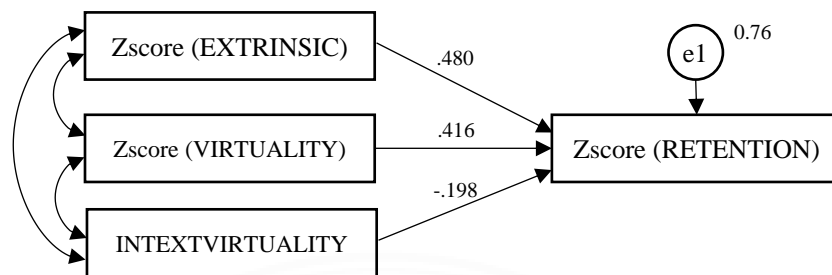
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZEXTRINSIC	.480	.040	11.976	***
ZRETENTION ← ZVIRTUALITY	.416	.042	9.882	***
ZRETENTION ← INTEXTVIRTUALITY	-.198	.056	-3.529	***

The moderation analysis results support this hypothesis. The effect of extrinsic motivation on job retention is significantly moderated by virtual intensity (*p* < 0.05), indicating that the relationship between extrinsic motivation and job retention is different for virtual workers and hybrid workers. From the results, the estimated interaction effect at -.198 shows that the interaction between extrinsic motivation and virtual intensity negatively affects job retention and the relationship between extrinsic motivation and job retention is more negative for virtual workers than for hybrid workers. This means that external motivation factors such as acknowledgement, feedback, respect, approval, and rewards are more essential for hybrid workers than for virtual workers. When working together in a workplace, people have a tendency to compete and compare with others, while when working alone remotely, a person focuses less on others and more on managing oneself and one's time. There is a possibility that hybrid workers could be more extrinsically motivated, as they are more influenced by others at the workplace, being made aware of who makes more money, who gets more favors from superiors, or even who works harder or longer hours, etc.

H10h: The effect of relatedness need on job retention is moderated by virtual intensity.
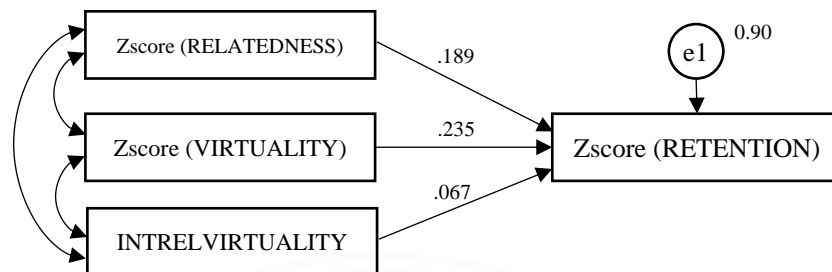
	Estimate	S.E.	C.R.	*p*-value
ZRETENTION ← ZRELATEDNESS	.189	.039	4.905	***
ZRETENTION ← ZVIRTUALITY	.235	.039	6.005	***
ZRETENTION ← INTRELVIRTUALITY	.067	.036	1.856	.063

The moderation analysis results do not support this hypothesis. The effect of relatedness on job retention is not significantly moderated by virtual intensity (*p*-value = .063), indicating that the relationship between the need for relatedness and job retention is not significantly different for virtual workers and hybrid workers. This also comes as a surprise. The results show that whether a person feels related to their colleagues or organization is more of a personal feeling and has no relationship to or effect on whether they work virtually or in a hybrid mode. It can also mean that virtual workers and hybrid workers feel less related to their colleagues and organization because the increased relatedness with people outside of work. Virtual workers will only communicate with their direct supervisor and colleagues that they need to work with and hardly interact with other people at work who are outside their scope. In a hybrid work environment, most hybrid workers also come and go on different days. When they do come into the workplace, they fill up their schedule with work and meetings that they cannot do while working elsewhere, and therefore, the interaction between other colleagues at work becomes less frequent and less predictable, thus lessening the significance of relatedness at work.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

This study aimed at fully understanding the different dimensions of job retention for virtual and hybrid workers in several work contexts and sectors. This study was conducted with two main objectives: 1) to test the relationships of factors related to job satisfaction (pay, promotion, supervision, and fringe benefits); work motivation (intrinsic and extrinsic); basic psychological needs of relatedness; and life-course fit in virtual work to job retention for virtual workers and hybrid workers; and 2) to examine how these factors vary for those with different job levels (operational/specialist vs. managerial) and different virtual intensities (working fully virtually vs. working in hybrid modes). The research questions were as follows. RQ1: Is there a relationship between pay, promotion, supervision, fringe benefits, life-course fit, intrinsic motivation, extrinsic motivation, and need for relatedness and job retention for virtual and hybrid workers? RQ2: Is the relationship of each factor with job retention moderated by job level (operational/specialist workers vs. managerial workers) and virtual intensity (virtual workers vs. hybrid workers)? The hypotheses in this study are as follows:

H1: Pay has a positive relationship with job retention for virtual and hybrid workers.

H2: Promotion has a positive relationship with job retention for virtual and hybrid workers.

H3: Supervision has a positive relationship with job retention for virtual and hybrid workers.

H4: Fringe benefits have a positive relationship with job retention for virtual and hybrid workers.

H5: Life-course fit in virtual work has a positive relationship with job retention for virtual and hybrid workers.

H6: Intrinsic motivation has a positive relationship with job retention for virtual and hybrid workers.

H7: Extrinsic motivation has a positive relationship with job retention for virtual and hybrid workers.

H8: The need for relatedness has a positive relationship with job retention for virtual and hybrid workers.

H9a: The effect of pay on job retention is moderated by virtual intensity.

H9b: The effect of promotion on job retention is moderated by virtual intensity.

H9c: The effect of supervision on job retention is moderated by virtual intensity.

H9d: The effect of fringe benefits on job retention is moderated by virtual intensity.

H9e: The effect of life-course fit on job retention is moderated by virtual intensity.

H9f: The effect of intrinsic motivation on job retention is moderated by virtual intensity.

H9g: The effect of extrinsic motivation on job retention is moderated by virtual intensity.

H9h: The effect of relatedness need on job retention is moderated by virtual intensity.

H10a: The effect of pay on job retention is moderated by job level.

H10b: The effect of promotion on job retention is moderated by job level.

H10c: The effect of supervision on job retention is moderated by job level.

H10d: The effect of fringe benefits on job retention is moderated by job level.

CH10e: The effect of life-course fit on job retention is moderated by job level.

H10f: The effect of intrinsic motivation on job retention is moderated by job level.

H10g: The effect of extrinsic motivation on job retention is moderated by job level.

H10h: The effect of relatedness need on job retention is moderated by job level.

This study also revisited theories of job satisfaction and work motivation and examined factors that motivate, satisfy, and ensure job retention for virtual and hybrid workers. The COVID-19 pandemic has forced millions of people worldwide to work remotely and from home. Organizations have had to reconsider their approaches to work and what works best for their organizations and employees. This study aimed to contextualize this new phenomenon and contribute to current job satisfaction and motivation theories, especially Herzberg's motivation-hygiene theory and Deci's SDT.

This study was conducted using a quantitative method, and the data was collected through a questionnaire from April 2021 to October 2021, which was toward the end of the most intense phase of the COVID-19 pandemic. There were a total of 623 respondents from several service sectors in Bangkok, Thailand. Data analysis techniques were used to assess the different hypotheses by testing the independent variables – pay, promotion, supervision, fringe benefits, intrinsic motivation, extrinsic motivation, relatedness, and life-course fit – and their relationship with the dependent variable – job retention – for virtual and hybrid workers, including the effects of two moderating variables – job level and virtual intensity. CFA was used to explore the underlying factor structure of the variables and verify the relationship between observed variables and constructs. The results show an acceptable model fit (goodness-of-fit), with indices including CMIN/DF at 3.979, CFI at .922, GFI at .902, and RMSEA at .069, indicating that the proposed model met an acceptable threshold and could be tested.

5.1.1 Overview and Interpretation of Key Findings

Addressing Research Gap 1, the results of the statistical analyses indicate that life-course fit and the intrinsic and extrinsic motivation of virtual and hybrid workers are positively associated with job retention. These results are significant and support hypotheses 5, 6, and 7 of this study. The SEM supports hypothesis 5, with a significant p-value ($p < 0.05$) for the relationship between life-course fit and job retention, indicating that life-course fit has a positive relationship to job satisfaction for

virtual and hybrid workers. This result confirms that working virtually is significantly affected by personal life, work and family interferences, and family arrangements at home, and that these factors affect job retention. The results also support hypothesis 6, with a significant p-value ($p < 0.05$) for the relationship between intrinsic motivation and job retention, indicating that intrinsic motivation has a positive relationship to job retention for virtual and hybrid workers. Workers are constantly distracted when working remotely, whether due to personal issues or interference from family members, children, or even pets. It is therefore important for organizations to keep remote workers fundamentally interested in the job and able to find joy in the work itself, as it could be more difficult for them to stay on the job if they are not intrinsically motivated by their jobs. The last relationship with a significant p-value ($p < 0.05$) is the one between extrinsic motivation and job retention, showing that extrinsic motivation has a positive relationship to job retention for virtual and hybrid workers. Most people work to earn a living; therefore, they are fundamentally financially motivated. However, many are also motivated by other external factors, such as being recognized and/or accepted by others. During the pandemic, many workers who worked remotely tended to work harder and longer hours due to many reasons, for example, to prove their self-worth, to ensure that they gain acceptance from the company and supervisors, and/or to ensure that they maintain their jobs – all extrinsic motivations. One of the ways workers can tell whether they are in good standing in their work is through feedback from either supervisors or coworkers. The farther you are physically from the workplace, the more important it is to receive feedback, whether it is recognition or even criticism.

The results from this study also show that hygiene factors – pay, promotion, supervision, and fringe benefits – do not affect the job retention of virtual and hybrid workers. On the other hand, life-course fit and both intrinsic and extrinsic motivation significantly affect the job retention of virtual and hybrid workers. Thus, based on the statistical results of this study, life-course fit theory and SDT are found to better explain the job retention of virtual and hybrid workers than Herzberg's motivator-hygiene factor theory.

The data suggests that workers are motivated by many factors and can be both intrinsically and extrinsically motivated at the same time. People are complex beings, and there is no one-size-fits-all approach to motivation. An employee

can be truly interested in the work they are doing (intrinsic motivation), but if they never receive any praise or acknowledgement or the pay is unreasonable (extrinsic motivations), they might eventually decide to leave a job.

Research Gap 2 is related to the two moderating variables for this study: job level and virtual intensity. For job level, the results from the AMOS interaction effect show that the moderator variable job level has a significant effect on the relationship between the independent variables pay, promotion, fringe benefits, life-course fit, extrinsic motivation, and relatedness and the dependent variable, job retention, supporting hypotheses 9a, 9b, d, 9e, 9g, and 9h. The data also indicates that the moderator variable virtual intensity has a significant effect on the relationship between the independent variables pay, supervision, fringe benefit, life-course fit, and extrinsic motivation and the dependent variable, job retention, supporting hypotheses 10a, 10c, 10d, 10e, 10g.

The results for the moderating variable job level indicate that pay, promotion, fringe benefits, extrinsic motivation, and relatedness become more negative with increasing job level and therefore have stronger relationships with operational/specialist-level workers than managerial workers. On the other hand, life-course fit becomes more positive with increasing job level, while supervision and intrinsic motivation are not significantly moderated by job level. The possible reason why pay, promotion, and fringe benefits have a stronger relationship with operational/specialist-level workers is because those who earn less are constantly more worried about financial difficulties, opportunities to be promoted, and whether their benefits will be affected than their managerial colleagues. This is especially true during the COVID-19 pandemic, when they were more vulnerable and would suffer more if their jobs were made redundant or their pay and benefits reduced. Operational-level workers are also more extrinsically motivated and could feel that they need to demonstrate their competence and produce more work to prove to their superiors that they are working even if they are not in the office, whereas managerial workers might have to prove less as long as they deliver results. For relatedness, when working remotely, workers have less interaction with their peers and supervisors, and sometimes lose touch with the organization's main vision and strategies and focus more on the day-to-day tasks in front of them. For those at the manager level, work is more strategic,

with outcomes that have a clearer impact on the organization, but operational-level workers, who work on smaller day-to-day assignments and routine tasks, might need to know how their work contributes to the bigger goals of the organization to feel more related and aligned with the organization's bigger picture. On the other hand, virtual and hybrid workers at higher job levels are more affected by factors related to life-course fit, for example, personal, work, and/or family interferences or family arrangements at home, than those at the operational level. One of the distractions many virtual workers had was their children, who also had to stay home because schools closed during the pandemic. Of the respondents in this study, over one-third of the managerial-level respondents have at least one child, while only a fifth of the operational/specialist-level respondents have children. Many managerial-level workers also have work that requires more concentration or creativity than operational-level workers, and therefore they could be more affected by interruptions from family members or work/life interference.

The results from the testing of the moderating variable virtual intensity indicate that the variables fringe benefits, extrinsic motivation, and life-course fit become more negative with increasing virtual intensity and therefore have stronger positive relationships for hybrid workers than virtual workers. On the other hand, pay and supervision become more positive with increasing virtual intensity, while promotion, intrinsic motivation, and relatedness are not significantly moderated by virtual intensity. The possible reason why fringe benefits have a weaker relationship with virtual workers is because virtual workers are more satisfied not having to commute to work, having more personal time with family and friends, a flexible working schedule, and more autonomy to work at will, which probably offset the normal fringe benefits offered. The relationship between extrinsic motivation and job retention is stronger for hybrid workers than virtual workers because when working together in a workplace, workers have a tendency to compete and compare with others, and there is a possibility that hybrid workers could be more extrinsically motivated, as they are more influenced by others at the workplace. Life-course fit also affects hybrid workers slightly more than virtual workers, which comes as a surprise, but could be possible because people function better in stable and predictable environments. Hybrid workers, having to switch back and forth between working at the workplace and

elsewhere while managing both work and personal and/or family responsibilities might feel that life-course fit affect them more. The relationship between pay and job retention is stronger for virtual workers than hybrid workers. This is because virtual workers have more autonomy and flexibility to work or do something else during work hours, so they can choose to work or not, and might feel that they have to constantly put an effort to work and remind themselves that they need to work to earn a living, hence they have a stronger pull toward pay than hybrid workers. Supervision also affects virtual workers more than hybrid workers because virtual workers have less opportunity to meet with their supervisors face-to-face and their relationships depended more on trust and understanding to function effectively.

5.1.2 Theoretical and Practical Contributions

This study revisited the theories of job satisfaction and work motivation and examined approaches to motivating, satisfying, and ensuring job retention for virtual and hybrid workers. Before the COVID-19 pandemic, there were only a few positions in which working remotely was required or even acceptable, such as sales or software developers. However, the COVID-19 pandemic forced workers of all positions to work from home and proved that this working mode is possible for almost all positions and types of work. This new phenomenon made organizations rethink their approach to physical workspaces and experiment with work in this new virtual context to see what works best for their organizations and employees. Given the research questions, this study has contextualized this new phenomenon and contributed to the understanding of current theories of job satisfaction and motivation, especially Herzberg's motivation-hygiene theory and Deci's SDT. Addressing the research gaps, the study empirically tested the theoretical frameworks for job satisfaction, work motivation, and life-course fit in virtual and hybrid workers, with theoretical and practical contributions as follows:

1) Herzberg's motivator and hygiene factors – pay, promotion, supervision, and fringe benefits – did not have significant relationships with virtual and hybrid workers' job retention.

Theoretical contributions: Pay, supervision, and fringe benefits as hygiene factors and promotion as a motivator are not significantly related to virtual and

hybrid workers' job retention. The results from this study show that virtual and hybrid workers' level of satisfaction with their pay, promotion, supervision, and fringe benefits does not affect their job retention. This contradicts many studies that have posited that people quit their jobs because of low pay, no opportunity for promotion, bad supervision, and/or low fringe benefits, whereas this study shows that for virtual and hybrid workers, these factors cause satisfaction or dissatisfaction but do not affect their decision to quit or remain in a job.

The results also challenge Herzberg's theory that promotion is a motivator because in this study promotion does not have a significant relationship to job retention for virtual and hybrid workers, whereas intrinsic motivation (interest in the job itself) and extrinsic motivation (respect, acknowledgement, or rewards) are significantly related to job retention. This may mean that workers are more motivated by short-term rewards rather than longer-term motivators, such as promotion.

2) SDT's intrinsic and extrinsic motivation have significant relationships with virtual and hybrid workers' job retention.

Theoretical contributions: Both intrinsic and extrinsic motivation are significantly related to virtual and hybrid workers' job retention. This indicates that virtual and hybrid workers will make the decision to quit or remain at a job based on their levels of intrinsic and extrinsic motivation. This study confirms that humans are complex beings and can be motivated both intrinsically and extrinsically at the same time and that Deci's approach of testing intrinsic and extrinsic motivation after a task completion is not applicable to testing intrinsic and extrinsic motivation at work. A day of work comprises many tasks; some are interesting to the workers (intrinsic motivation), while others can be tedious and boring. Each worker is also different, so an interesting task for one worker can be boring for another, but they will continue working to ensure that they will receive a paycheck, receive praise from supervisors or coworkers, and/or avoid being criticized by others (extrinsic motivations).

Practical contributions: The basic sentiment about work is that most workers feel that work is something they need to do, not something that they want to do. In virtual work, there is no supervisor or fellow colleagues around to observe, which makes it even harder for workers to concentrate and continue working on tasks they do not enjoy or are not interested in. If given the option, people tend to procrastinate or

avoid doing tasks they feel uncomfortable doing. Encouragement, praise, or rewards (extrinsic motivation) from managers and/or coworkers could help motivate workers to complete these tasks, but it would not sustain them for long. It is therefore important for organizations and managers to try to understand, or at least have some basic knowledge of, what each worker enjoys and what interests them (intrinsic motivation). Workers themselves also need to find ways to keep themselves engaged and interested in their work. Hence, as demonstrated in Figure 3, to retain virtual and hybrid workers, organizations and managers must maintain a balance and keep workers motivated, both intrinsically and extrinsically.

Figure 3: Relationship between Intrinsic Motivation, Extrinsic Motivation, and Job Retention
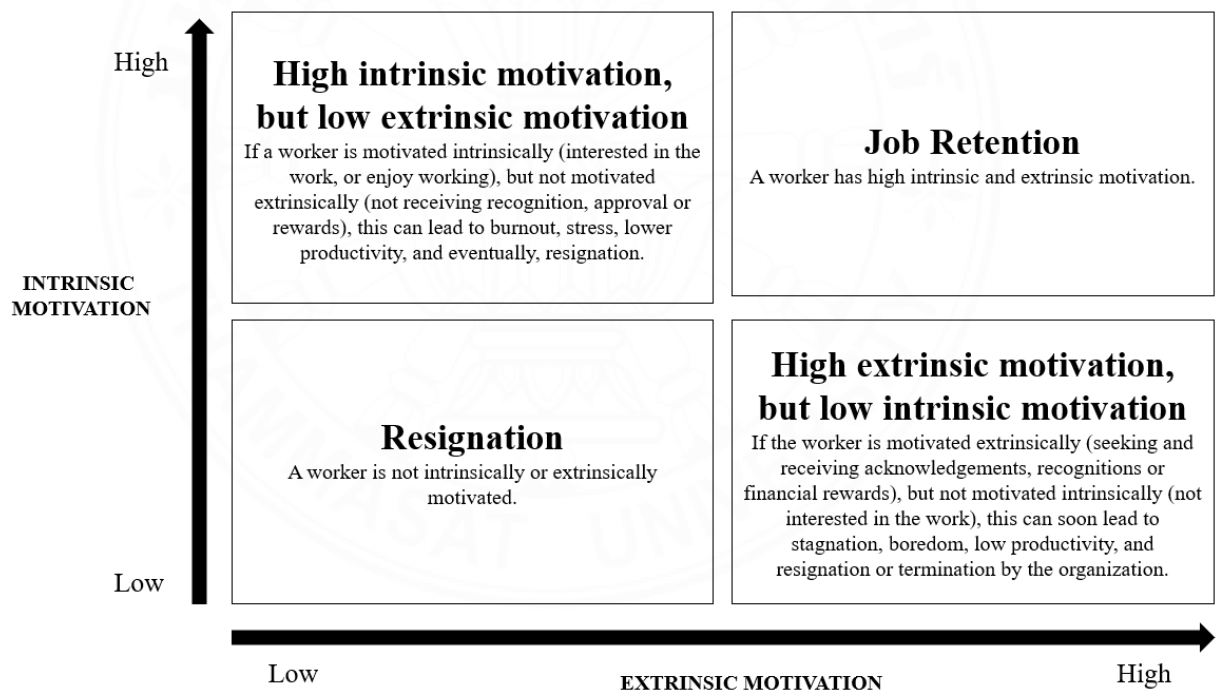
3) The factors related to life-course fit – personal life, work/life interruption, and family arrangements – have significant relationships with virtual and hybrid workers' job retention.

Theoretical contributions: Life-course fit significantly affects virtual and hybrid workers' job retention. This indicates that virtual and hybrid workers will

either quit their jobs or stay on based on whether they can effectively integrate their work and personal lives and manage work/life interruptions and family arrangements while working remotely. Most of the existing theories of job satisfaction and work motivation, including Herzberg's motivation-hygiene theory and Deci's SDT, do not include elements of personal life, work/life interruption, and family arrangements in their development. The results from this study show that these factors are significant for remote workers. Therefore, future studies related to remote work should also include elements related to personal/family issues to test whether these factors have a significant influence on other work environments and conditions.

Practical contributions: Organizations and managers should also consider these factors – personal life, work/life interruption, and family arrangements – when managing remote workers' satisfaction, motivation, and job retention. The attitude toward work is changing, from working to earn a living for survival or to improve one's standard of living to working to improve the quality of life overall. People still want to work, but they also want to spend more time with their families and friends and by themselves. There is a growing trend of workers refusing to work full-time at the workplace and requesting to work from home at least a few days per week or else they will resign and find a new workplace that offers this option. This is why the effects of personal life, work and life interruptions, and family arrangements on job retention for virtual and hybrid workers are significantly impactful and need to be considered and addressed when dealing with remote work options moving forward.

4) The need for relatedness in SDT does not have a significant relationship with virtual and hybrid workers' job retention.

Theoretical contributions: The need for relatedness is not significantly related to virtual and hybrid workers' job retention. This indicates that for remote workers, the need for relatedness with coworkers, supervisors, or organizations is non-significant and does not affect job retention. The result of this finding contradicts SDT's basic psychological need theory, which posits that relatedness is essential for a person's psychological wellbeing and optimal functioning and that if it is thwarted, there will be distinct functional costs. Possible reasons why the need for relatedness is not significant for virtual and hybrid workers are as follows:

1. Less high-quality relationships with work colleagues, supervisors, and/or the organization are replaced by more high-quality relationships with family, friends, and/or oneself.

2. When working remotely, both virtual and hybrid workers focus more on completing the job and/or tasks, while interactions with colleagues are more work-focused, and there are fewer "informal" interactions. Virtual workers hardly interact with people at work outside their work scope, while hybrid workers come and go on different days, and therefore have less high-quality relationships with other colleagues at work.

5.2 Limitations and Future Research Agenda

This is one of the first studies on virtual and hybrid workers to leverage motivation-hygiene theory, SDT, and life-course fit in this context. Therefore, there are certain limitations that must be taken into account.

First, the situational impact of the COVID-19 pandemic has had a significant influence on the study's outcome, which means that the results can only be generalized with care. The respondents, although still having secure jobs, were concerned about their family, about their health, and about their financial situation, among other issues. Many hybrid workers were concerned about coming into the workplace and being exposed to COVID-19 on the way to work or from their colleagues, while those who had children at home had to juggle their responsibilities throughout the day. Keeping their jobs to maintain an income while managing their workload to stay afloat became the norm, and this was also reflected in this study's results. Although some of the respondents have continued working virtually, many respondents have either switched to working in a hybrid model or have returned to working fully at their workplace. Replicating this study now with the same sample or in a different location could yield different results. Future research in normal situational contexts should be conducted to improve the validity of the results.

Second, to avoid overwhelming respondents with too many items and a very long questionnaire, this study selected only the items directly related to the topics

of interest from the full JSS, the MWMS, and the Basic Psychological Needs survey. Therefore, this study may have generated only partial aspects of job satisfaction, work motivation, and basic psychological needs, and could lead to certain biases that should be considered when interpreting the outcomes. For future research, it would be interesting to see the results of the full survey questionnaire to verify the validity of these results.

Finally, future researchers are encouraged to use this as an introductory study to continue examining the factors that influence and affect virtual and hybrid workers, as the remote work trend is here to stay, has been adopted by many organizations, and is also constantly questioned by more traditional leaders. Other aspects of work, such as work performance, behavior, and collaboration, should also be further examined to better understand this new way of working. It is also important that future studies on job satisfaction, work motivation, and job retention consider comparing traditional workers with virtual and/or hybrid workers and also examine a sample size that is more diversified and has a balanced mix of respondents with and without children. As most work-related studies do not include factors on personal life and family interference and issues, it is also important to add these factors as influencing variables to test the validity of this study's findings in other environments, both in traditional workplaces and remote work.

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APPENDIX

QUESTIONNAIRE

Dear Participants,

My name is Vasu Thirasak, a doctorate student from Thammasat University. I am currently working on my dissertation to determine the relationship between pay, promotion, supervision, fringe benefits, intrinsic motivation, extrinsic motivation, life-course fit, and the need for relatedness, and how they influence job retention for virtual and hybrid workers. This questionnaire is intended to collect data from workers who are currently working remotely in Thailand. This questionnaire will require not more than 15-20 minutes of your time. Your participation is entirely voluntary, and all information collected will be kept strictly confidential for use of study purposes only. You have the right to refuse to answer any items or halt your participation at any time for any reason. Please feel free to contact me at vasu.thirasak@gmail or call 098 592 9565 if you have any queries regarding the questionnaire. Thank you very much for your kind cooperation.

Part 1: Virtuality

(V1) How many times did you meet with your team members face-to-face in the past year? *

☐ Almost every day ☐ Two – three days a week ☐ Once a week ☐ Once a month ☐ Less than once a month

(V2) Describe where you and most of your team members work from in the past year.

☐ Same room ☐ Same building ☐ Different location in the same city

☐ Different city ☐ Different country

* If you select "Almost every day", the questionnaire will end here.

Part 2: Items based on Job Satisfaction Survey (JSS) (Copyright Paul E. Spector 1994, All rights reserved.)

Please mark the one number for each question that comes closest to reflecting your opinion.

(PY1) Raises are too few and far between.

☐ 1　☐ 2　☐ 3　☐ 4　☐ 5 ☐ 6

Strongly disagree　　　　　　　　　　　　　　　　　Strongly agree

(PY2) I feel satisfied with my chances for salary increases.

☐ 1　☐ 2　☐ 3　☐ 4　☐ 5 ☐ 6

Strongly disagree　　　　　　　　　　　　　　　　　Strongly agree

(PM1) There is really too little change for promotion on my job.

☐ 1　☐ 2　☐ 3　☐ 4　☐ 5 ☐ 6

Strongly disagree　　　　　　　　　　　　　　　　　Strongly agree

(PM2) I am satisfied with my chances for promotion.

☐ 1　☐ 2　☐ 3　☐ 4　☐ 5 ☐ 6

Strongly disagree　　　　　　　　　　　　　　　　　Strongly agree

(SP1) My supervisor is quite competent in doing his/her job.

☐ 1　☐ 2　☐ 3　☐ 4　☐ 5 ☐ 6

Strongly disagree　　　　　　　　　　　　　　　　　Strongly agree

(SP2) My supervisor is unfair to me.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 ☐ 6

Strongly disagree   Strongly agree

(SP3) My supervisor shows too little interest in the feelings of subordinates.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 ☐ 6

Strongly disagree   Strongly agree

(SP4) I like my supervisor.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 ☐ 6

Strongly disagree   Strongly agree

(FB1) I am not satisfied with the benefits I receive.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 ☐ 6

Strongly disagree   Strongly agree

(FB2) The benefits we receive are as good as most other organizations offer.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 ☐ 6

Strongly disagree   Strongly agree

(FB3) The benefit package we have is equitable.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 ☐ 6

Strongly disagree   Strongly agree

(FB4) There are benefits we do not have which we should have.

$\square$ 1 $\square$ 2 $\square$ 3 $\square$ 4 $\square$ 5 $\square$ 6

Strongly disagree   Strongly agree

Part 3: Items based on Multidimensional Work Motivation Scale (MWMS)

The question is "Why do you or would you put effort into your current job?". Please rate the following statements on a scale from 1 - 7, with 1 = "not at all", 2 = "very little", 3 = "a little", 4 = "moderately", 5 = "strongly", 6 = "very strongly", and 7 = "completely".

(Ext-Soc1) To get others' approval (e.g., supervisor, colleagues, family, clients, …).

$\square$ 1 $\square$ 2 $\square$ 3 $\square$ 4 $\square$ 5 $\square$ 6 $\square$ 7

Not at all   Completely

(Ext-Soc2) Because others will respect me more (e.g., supervisor, colleagues, family, clients, …).

$\square$ 1 $\square$ 2 $\square$ 3 $\square$ 4 $\square$ 5 $\square$ 6 $\square$ 7

Not at all   Completely

(Ext-Soc3) To avoid being criticized by others (e.g., supervisor, colleagues, family, clients, …).

$\square$ 1 $\square$ 2 $\square$ 3 $\square$ 4 $\square$ 5 $\square$ 6 $\square$ 7

Not at all   Completely

(Ext-Mat1) Because others will reward me financially only if I put enough effort in my job (e.g., employer, supervisor, …).

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7

Not at all   Completely

(Intrin1) Because I have fun doing my job.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7

Not at all   Completely

(Intrin2) Because what I do in my work is exciting.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7

Not at all   Completely

(Intrin3) Because the work I do is interesting.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7

Not at all   Completely

Part 4: Basic Psychological Need – The Need for Relatedness

The following questions concern your feelings about your job **while working virtually**. Please indicate how much you agree with each of the following statements given your experiences on this job.

(REL1) I feel that people who are important to me at work are cold and distant towards me.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(REL2) I have the impression that people I spend time with at work dislike me.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(REL3) When working virtually, I feel the relationships I have at work are just superficial.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

Part 5: Life-Course Fit (LCF)

Please rate the following statements on a scale from 1 - 5, with 1 = "all the time", 2 = "most of the time", "sometimes", "rarely", and "never".

(LC1) When working virtually, my job reduces the effort I can give to activities at home.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

All the time   Never

Please rate the following statements on a scale from 1 - 5, with 1 = "strongly disagree", 2 = "disagree", 3 = "neutral", 4 = "agree", and 5 = "strongly agree".

(WI1) When working virtually, work encroaches on my personal time.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(WI2) When working virtually, work interruption on personal life is a problem.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(PT1) When working virtually, work schedule leaves me enough time for my personal and/or family life.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(FA1) When working virtually, I'm satisfied with family childcare arrangement.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(FA2) When working virtually, I'm satisfied with division of family/parenting responsibilities.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

Part 6: Job Retention – Intention to Stay (ITS)

If you remain working remotely, what comes closest to reflecting your opinion. Please rate the following statements on a scale from 1 - 5, with 1 = "strongly disagree", 2 = "disagree", 3 = "neutral", 4 = "agree", and 5 = "strongly agree".

(LT1) I would still like to work for the same job in 5 years.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

(LT2) I can see a future for me with this job.

☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5

Strongly disagree   Strongly agree

Part 7: Personal Information

Gender: ☐ Male   ☐ Female   ☐ Prefer not to answer

Age: ☐ Less than 24   ☐ 25 – 34   ☐ 35 – 44   ☐ 45 – 54   ☐ 55 – 64   ☐ 65+

Country: _____

Education: ☐ High School   ☐ Bachelor's Degree   ☐ Master's or Ph.D.

Monthly Income: ☐ Less than THB 30,000 ☐ THB 30,000 – THB 59,999 ☐ THB 60,000 – THB 99,999 ☐ THB 100,000 – THB 150,000   ☐ Over THB 150,000

Employment Status: ☐ Full-time   ☐ Part-time   ☐ Others (please specify)

Job Category: ☐ Staff/Operational ☐ Technical/Specialist
☐Supervisor/Managerial/Executive ☐ Other (please specify)

What is your job role?

☐ Staff/Operation/Individual Contributor ☐ Supervisor/Team Lead ☐ Manager
☐ Director ☐ Other (please specify)

In which industry/sector do you currently work in?

☐ Business, consultancy or management ☐ Accountancy, banking or finance
☐ Charity and voluntary work ☐ Creative arts or design ☐ Energy and utilities
☐ Engineering or manufacturing ☐ Environment or agriculture ☐ Healthcare
☐ Hospitality or events ☐ Insurance ☐ IT or Computer ☐ Law
☐ Law enforcement and security   ☐ Leisure, sport or tourism
☐ Marketing, advertising or PR   ☐ Media or digital ☐ Property or construction
☐ Public services or administration ☐ Recruitment or HR   ☐ Retail   ☐ Sales
☐ Science or pharmaceuticals   ☐ Social care   ☐ Teacher, training or education
☐ Transport or logistics   ☐ Student   ☐ Unemployed

Marital Status: ☐ Married ☐ Single ☐ Divorced ☐ Prefer not to say

Children: ☐ None ☐ One ☐ Two ☐ More than two

Children Age Range: ☐ N/A ☐ Toddler (ages 0-1 years) ☐ Preschooler (ages 2-5 years) ☐ School-aged child (ages 6-14 years) ☐ Adolescent (ages 15-24 years) ☐ None of the above.

BIOGRAPHY

Name	Vasu Thirasak
Educational Attainment	2000: Bachelor of Arts, Business Administration, Mahidol University International College (MUIC)
	2005: Master in Public Administration, John Jay College of Criminal Justice, City University of New York (CUNY)

Publication

Thirasak, V. (2019). *Building an Effective Startup Team.* Proceedings of the 3rd International Conference on Advances in Business and Law (ICABL), Dubai, UAE, 3. https://publications.ud.ac.ae/index.php/ICABML-CP