UNIVERSITY OF TWENTE.

University of Twente

Master of Science Psychology

Faculty of Behavioral, Management and Social sciences (BMS)

Master Thesis

The Impact of Telework on Employee Motivation and Turnover Intention

A systematic review

1st Supervisor: Dr. Anne van Donges
2nd Supervisor: Dr. Marcel Pieterse

Leonie Eidt
l.eidt@student.utwente.nl
Student Number: 2897113
8th of March 2023

Abstract

Background and Objectives: Thanks to modern information and communication technology, and in response to a global pandemic, teleworking has become a new reality for many companies and workers. Companies are suffering from employee turnover and more and more employees are demanding flexible work arrangements such as teleworking to stay motivated, healthy, productive, and committed. The purpose of this review is to examine the effects of telework on intrinsic motivation and turnover intention of current staff and whether they stay motivated within the organization or company. The results should help to create sustainable teleworking conditions for both employees and companies. Therefore, this review also aims to identify theories that can be used to better understand the effects of telework on intrinsic motivation and turnover intention.

Research Design and Methods: A systematic literature review was conducted to investigate the impact of telework on intrinsic motivation and turnover intention. To identify articles, multiple literature searches using Web of Science, AMC digital library, EBSCO, and Scopus were conducted through September, October, and November of 2022. Twenty-seven studies were reviewed, including 755068 employees from 26 countries around the world.

Results: Most studies in this review concluded that telework tends to have positive effects on intrinsic motivation and decrease turnover intention. As an unintended outcome, job satisfaction has been shown to play an important role in both intrinsic motivation and intention to leave. Theories such as Self-Determination Theory, Conservation of Resources Theory, and the Job Demands-Resources Model have proven useful in explaining intrinsic motivation, turnover intention, and job satisfaction of teleworking employees. The results suggest that in addition to telework, many factors can have a positive impact, such as flexibility, voluntariness, values, and a supportive work environment. These are key elements for modern working conditions.

Conclusion: The positive effects of teleworking depend on many influencing psychological, individual, and organizational factors. Teleworking is not per se a good strategy for motivating and retaining employees. The results of this research highlight

the many factors and conditions that must be present and considered for telework to work.

Keywords: Telework, intrinsic motivation, turnover intention, flexible work, employees

Introduction

For a long time, work was equated with time spent in one place. This notion dates back to the industrial age when presence was synonymous with production. Time spent in the factory correlated with productivity. Work has changed. Working no longer means being in a particular place all the time (Dejoux & Léon, 2018). However, this is not a new phenomenon. Telework has been around for many decades.

Early definitions of telework such as telecommuting referred to replacing physical travel to a central work location by telecommunications technology or computer-based technology (Nilles et al., 1976; Olson & Primps, 1984). The teleworker has no personal contact with other co-workers but is able to communicate with them by using information (Sullivan, 2003) and modern technology (Abarca et al., 2020). Gajendran and Harrison (2007) define telework as an alternative work arrangement in which employees perform tasks elsewhere that are normally done in a primary or central workplace, for at least some portion of their work schedule.

Telework was steadily increasing in many sectors worldwide and continued to rise during the COVID-19 pandemic (OECD, 2022; Bockstahler et al., 2022; Gagné et al., 2022). To curb the virus, World Health Organization (2020) proposed regular teleworking as a preventive measure, which led to the introduction of telework for billions of people worldwide (Contreras et al., 2020). Workplaces around the world have had to adapt quickly to the pandemic, resulting in changes that will have a long-term impact and revolutionize the way we work and the technologies we use (Mark et al., 2022). As a result, many workplaces are transitioning to decentralized and remote workspaces outside the office connected by technologies. Barerro et al. (2022) predicted that 20% of full workdays will be supplied from home after the pandemic ends, compared with just five percent before. Not only are workdays supplied from home, but 25% of workers in high-income countries are also expected to continue remote working after the pandemic (Peters et al., 2022).

More than half (54%) of 16.000 employees surveyed from across 16 countries around the world would consider leaving their job post-COVID-19 pandemic if they are not afforded some form of flexibility in where and when they work. Almost nine in

every ten respondents of the survey find flexibility in both where and when they work important (Work Reimagined Employee Survey 2021, 2022). Teleworking employees mention the advantages of teleworking such as: less interference by colleagues, a gain in work schedule flexibility, fewer trips and therefore reduced loss of time, better organization of working hours as well as opportunities for better allocation of time (Tremblay & Thomsin, 2012).

Many companies are combining office work and telework by introducing hybrid work, which could be the best of both worlds as it offers greater work-life balance, without the concern of being isolated from colleagues (Choudhury et al., 2022). Hybrid work refers to working both at home and at the employer's sites (Halford, 2005). In implementing these forms of work environments, companies have found ways to incorporate teleworking into flexible work environments that allow workers to choose where they work. Appel-Meulenbroek et al. (2022) found that different types of work require different work settings. In their study, many respondents prefer to do their concentrative work at home, and many of the office workers prefer to do both concentrative and communicative work at the office. These results were limited by the heterogeneous conditions of the workers' home office, the length of the commute, and other aspects that influence workers' preferences for office or telework in a hybrid setting. As Nilles (1997) noted long ago, it takes both information technology and competent management to make telework work. To better understand the concrete effects of telework, only results from telework settings, not hybrid settings, will be considered in this review to make a clear distinction regarding the results of telework and not hybrid work.

To take advantage of the possibilities that teleworking offers, companies cannot be led in the same way as has been done traditionally (Contreras et al., 2020). Technology is not the most important factor in telework performance. Virtual teams are made up of people who have emotions and different needs in all areas of their lives (Abarca et al., 2020).

Self-Determination Theory (SDT) is a theory of human motivation, development, and wellness that has been used in many domains of life, such as work (Deci & Ryan, 2008). Ryan & Deci (2000) identified three basic psychological needs:

the need for (1) relatedness, (2) autonomy, and (3) competence. Intrinsic motivation (IM) describes a natural inclination toward assimilation, mastery, spontaneous interest, and exploration (Ryan & Deci, 2000). It results from the satisfaction of those basic psychological needs and is seen as a moderator for performance, both qualitative and quantitative in the work context (Deci et al., 2017). It is an example of autonomous motivation which is intentional and stands in contrast to amotivation, which involves a lack of intention and motivation (Gagné & Deci, 2005). Autonomous motivation leads people to behave with a full sense of volition, willingness, and choice instead of pressure and obligation (Deci & Ryan in Gagné, 2014). In relation to their work on SDT in work organizations, Deci et al. (2017) discuss future research topics that should be explored on SDT concepts in the workplace, such as specific tasks in the workplace, characteristics and behaviors of managers related to motivation and work outcomes, and the impact of modern technologies on work climate. Contrary to the belief of many companies that want to motivate their employees with money, monetary rewards do not increase IM. These rewards can be perceived as external control which undermines people's IM and diminishes the experience of autonomy. Instead, managerial support of needs was found to be the most important factor in promoting need satisfaction and intrinsic work motivation among employees of a Norwegian bank (Olafsen et al., 2015). Supporting environments have been found to fulfill the basic psychological need for autonomy, relatedness, and competence, which is needed for IM (Ryan & Deci, 2000). SDT has been shown to be applicable in the work context to understand the mechanisms by which lower motivation and higher turnover intentions occur (Gillet et al., 2013; Colledani et al., 2018).

Intrinsically motivated workers also tend to be more satisfied with their work. A comparison of job satisfaction (JS) between teleworkers and office workers at a large IT consulting firm with an official teleworking program found that teleworking is better able to satisfy workers' psychological needs for autonomy, competence, and relatedness, leading to higher job satisfaction. Needs satisfaction has been shown to be a predictor of intrinsic work motivation (Dysvik et al., 2013). Opposed to the assumption that telework decreases relatedness, even this need was better met in the telework condition (Brunelle & Fortin, 2021). This was also supported by a cross-sectional study in Finland

that showed the importance of structural factors such as work independence and the clarity of job criteria that make it easier for employees to adjust to remote work settings (van Zoonen et al., 2021).

Employee turnover has been recognized as a major managerial concern in contemporary work organizations (Pfeffer and Sutton, 2006). Turnover intention (TI) can be defined as withdrawal cognitions, the likelihood of changing jobs or lack of intention to stay (Gajendran & Harrison, 2007). Employee turnover has various organizational disruptions, which include but are not limited to, economic loss, bad reputation, loss of knowledge-skill inventory (Xu et al., 2022), operational effectiveness, customer satisfaction, and product or service quality (Jian et al., 2022). The impact of turnover intention per se on productivity has not been extensively studied. To prevent employees from developing higher levels of TI, attention should be paid to creating a work environment that increases or maintains high levels of IM (Dysvik & Kuvaas, 2010). Telework has shown to have some advantages such as a lesser TI (Vega et al., 2015). An early study by Igbaria & Guimaraes (1999) showed that telecommuters tended to be happier with their work, and more committed to their organizations than non-telecommuters. Golden (2006) found that a higher degree of teleworking was associated with higher levels of engagement and a greater willingness to stay with the organization.

Intrinsic motivation has been shown to be the strongest predictor for low levels of TI among employees representing more than 400 organizations from a wide range of industrial sectors (Dysvik & Kuvaas, 2010). Gajendran & Harrison (2007) found a negative correlation between teleworkers´ perceived autonomy and TI, confirming the influence of basic psychological needs satisfaction. As autonomy is crucial for IM (Ryan & Deci, 2000) this should be considered when considering employees' TI. Caringal-Go & Hechanova (2018) found that intrinsic motivators predict intent to stay and that employee needs should be considered by human resources management personnel. Heyns et al. (2022) found that satisfaction of self-determination needs is negatively related to TI and mediates the influence of supervisor support on TI. A meta-analysis by Guzeller & Celiker (2019) shows a negative relationship between organizational commitment and TI. Individuals who have emotional commitments to

their institutions will have lower turnover intentions than others. This commitment can result from more autonomy and flexibility regarding the work setting.

The purpose of this review is to understand the impact of telework alone or telework programs, if existent in the given study, on employees' intrinsic motivation (IM) or basic psychological needs satisfaction as a predictor of IM and to examine the impact of telework (TW) on IM and TI to better understand what motivates employees to stay and what motivates them to leave. Since there is very little research examining the relationship between IM and TI in telework situations, this review aims to understand whether IM, as a result of satisfying employees' psychological needs, could moderate TI in TW situations. Many workers say they prefer teleworking or intend to quit if their employer does not offer this type of flexible work arrangement (Work Reimagined Employee Survey 2021, 2022), but it is unclear whether the satisfaction of their psychological needs is actually guaranteed in a TW setting and whether they show a lower TI when teleworking.

The results of this review can be used to better understand turnover intentions as a possible consequence of low intrinsic work motivation and to discuss the potential benefits and effects of telework on employees. To examine the relationship between telework, IM, and TI, SDT is used to understand how to satisfy employees' basic psychological needs to support them in their own motivation at work. If telework can be a strategy for companies to better meet the basic psychological needs of employees, it may also be a strategy to retain employees. The aim of this review is to understand the following:

RQ 1: How does telework impact employees´ intrinsic motivation?

RQ 2: How does telework impact employees´ turnover intention?

RQ 3: Which theoretical frameworks are currently used to help explain the influence of telework on intrinsic motivation and turnover intention?

Methodology

A systematic review methodology was used to answer the research questions, using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement as a guide (Page et al., 2021). After an initial literature search, PICO (Miller & Forrest, 2001), (see Table 1), was used as a tool to develop a search strategy to identify potentially relevant studies. To identify articles, multiple literature searches (see Table 2) using Web of Science, AMC digital library, EBSCO and Scopus were conducted through September, October, and November of 2022. The last search was performed on November 29th, 2022, resulting in 667 hits (Table 3).

Table 1

PICO

Research Questions	How does telework impact employees' intrinsic motivation? How does telework impact employees' turnover intention?	
	Inclusion Criteria	Exclusion Criteria
Population	Workers in an organization (i.e., employees aged 18 or older)	Workers who are less than 18 years old, non-employee samples such as students, gig-workers, freelancers, e.g.,
Intervention	Telework Flexible Work Arrangements (FWA) (only when telework is part of FWA)	FWAs that did not include telework, office work and other work arrangements remote work without the use of ICT
	All studies were included	N/A

Comparator/ Control	irrespective of the presence or absence of comparator or control groups	
Outcomes	Intrinsic Motivation Turnover Intention Actual Turnover Rate	Other outcomes
Study design	Quantitative, qualitative, and mixed-methods studies	Reviews, discussion articles, articles, introducing theories / concepts / models / applications
Other	Published in a peer-reviewed academic journal in English	N/A

Literature Search

      The keywords used for literature searches included: telework, intrinsic motivation, turnover intention, and synonyms for these terms. Two search strategies were used. One for telework and intrinsic motivation, and one for telework and turnover intention. The Boolean operator NOT was used to exclude studies that addressed turnover intentions in addiction treatment, as the database search revealed many studies in this context.

Table 2

Search Strategy

	Search Strategy
1	”Telework*” OR ”Telecommut*” OR "home-based work*" OR "home-based telework*" OR "home-based e-work*" OR "home-based telecommut*" OR homework* OR home-work* OR "work* from hoame" OR "virtual Teams" OR "virtual office" OR "virtual work" OR "satellite office" OR "remote employee*" OR "remote work*" OR "remote office*" OR "e-work*" OR "electronic home work" OR "distance work*" OR ”flexible work*” OR ”mobile work*” OR "multi locational work*" OR "multi location work*" OR "nomadic work*" OR "agile work*" OR "telecentre" OR "telecenter" OR ”telecottage”
2	"intrinsic motivation“ OR "intrinsic* motivat*“ OR "instrinsic*“ OR "intrinsic work motivation“ OR "psychological needs“ OR "SDT“ OR "Self-determination Theory“ OR "self determination theory“
3	"Intention to quit*“ OR "ITQ“ OR "turnover intention“ OR "intention to leave“ OR "leaving intention“ OR "turnover“ OR "quit*“ OR "turnover“ OR "Employee turnover intentions“ OR "quitting behavior“ OR "employee turnover“
4	"addict*“ OR "nicotine“ OR "alcohol*“ OR "drug*“

Table 3

Database Searches

DATABASE	RQ 1 Strategy (1)Telework & (2)Intrinsic Motivation	RQ 2 Strategy (1)Telework & (3)Turnover Intention (4) NOT addict*	Total hits including duplicates
	Number of hits 29.11.2022	Number of hits 29.11.2022	
Web of Science	49	97	
Scopus	65	128	
ACM	34	60	
EBSCO Collection	119	115	
Total hits	267	400	667

Selection of Studies and Outcomes

Each study was required to meet one or more of the following criteria to be included in the systematic review: a qualitative study, quantitative study, mixed-methods study, participants are adult employees, peer-reviewed, open access, journal article, and written or translated into English. Studies were excluded if the following criteria were met: reviews, discussion articles, articles introducing theories or models, participants were self-employed, freelancers, gig-workers, or students or underage, and telework was described as working in remote areas without the use of information and communication technologies (ICT). These criteria were applied to limit the search to findings that addressed employees' needs and organizational strategies to increase intrinsic motivation and decrease turnover. Non-employees such as freelancers, gig

workers, and students were excluded to increase the ecological validity of the review so that the results can be applied to work settings of teleworking employees and help companies better understand the needs of teleworking employees. Although this report takes a closer look at theories in order to understand the outcomes of interest, articles presenting theories, concepts, etc., were not included in the report because the focus was on understanding the telework situation of employees rather than presenting theories for their own sake. Rayyan (Rayyan - AI Powered Tool for Systematic Literature Reviews, 2021) was used for duplicate detection of the hits (n = 667).

Data Extraction and Synthesis

After removing duplicates, title and abstract screening of articles (n = 489) (Table 2) was conducted. Abstracts were screened based on the in- and exclusion criteria (see Table 1). 80 articles were selected for a full-text screening to identify studies that were eligible for data extraction based on their hypotheses and operationalization of the variables. 27 articles were eligible for the review. 53 articles were excluded because they did not examine the effects of telework on intrinsic motivation or turnover intention. Articles that addressed the impact of flexible work arrangements (FWAs) were included if telework was a part of those arrangements. After identifying relevant studies, data extraction was performed. This included extracting the research method, theoretical framework, sample size, country, industry, and outcomes, e.g., quantitative or qualitative results. The studies were grouped based on their theoretical framework to better understand the underlying causes of the findings (see Table 7). A PRISMA flow chart was created to show the in- and exclusion of the initial hits (see Figure 1).

Figure 1

PRISMA Flowchart
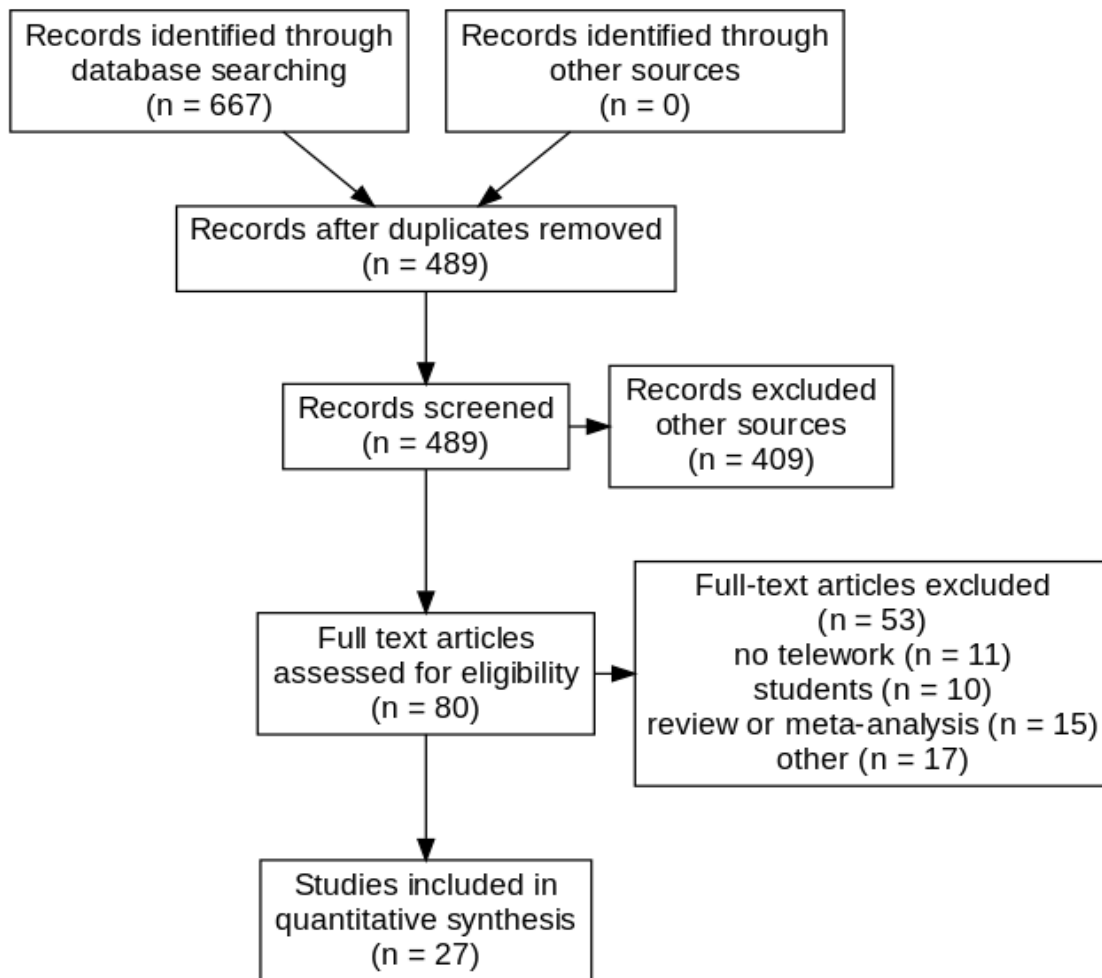
Risk of Bias and Quality Assessment

Each accepted study is assessed against a JBI Checklist for Analytical Cross Sectional Studies, JBI Checklist for Cohort Studies, or JBI Checklist for Randomized Control Trials (Martin, 2017). Scores are given according to whether the study presents clear, unambiguous findings based on evidence and argument. Quality scores for the 27 papers are given in Table 4, 5, and 6. 15 % (n=4) showed a high risk of

bias, 15 % (n=4) showed a moderate risk of bias and 70 % showed a low risk of bias (n=19). A check on the reliability of the screening and inclusion rest, such as an IRR test, was not taken. Risk of bias could have occurred as the quality assessment was conducted by a single person and not, as widely suggested, by more than one person to ensure interrater reliability.

Results

Database searches yielded a total of 667 articles with 489 non-duplicate original articles. After the screening rounds, 27 peer-reviewed studies that met the predefined inclusion criteria were included. A thematic synthesis was conducted to determine how telework influences intrinsic motivation and turnover intention. Therefore, the theoretical framework is presented along with the quantitative evidence in the articles. Most studies used a self-report questionnaire. Three studies (Choi, 2020; Peretz et al., 2018; Stavrou, 2005) measure actual turnover instead of turnover intention.

The 27 included studies involved 755068 participants, with 14 studies reporting on participants from technology and financial industries in high-income countries and 13 studies including industries such as healthcare, telecommunications, manufacturing, and education. The studies include samples from the following 26 countries: Australia, Austria, Denmark, Canada, China, Finland, France, Germany, Greece, Hungary, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Pakistan, Russia, Serbia, Slovenia, South Africa, Sweden, Switzerland, Taiwan, UK, USA. The studies were published in the following years: 2000 (n=1), 2005 (n=1), 2006 (n=2), 2008 (n=1), 2015 (n=2), 2018 (n=5), 2019 (n=2), 2020 (n=2), 2021 (n=4), 2022 (n=7).

Impact of Telework on Intrinsic Motivation and Turnover Intention

Out of the 27 studies reviewed, eight focused on intrinsic motivation (IM) and 19 on turnover intention (TI). To gain a deeper understanding of the impact of telework (TW), the results of the studies included in the study were analyzed and categorized based on the theoretical perspectives used to understand motivation and turnover. It was found that some theories can explain both intrinsic motivation and

the intention to quit. Flexible work arrangements (FWAs) were considered only if they included telework as an independent variable. FWAs can be defined as negotiated terms and conditions of employment that relate to the time and/or place of work (Catalyst, 1998). These include telecommuting, which is a matter of where the work is done, and flextime, which is about when the work is done (Allen & Shockley, 2009). In some studies, TW was not measured independently of FWA but was considered an important element of FWA. Therefore, the term FWA is also used synonymously with TW in this case. Factors affecting IM and TW are presented in Table 9.

Impact of Telework on Intrinsic Motivation

Of the eight included studies that addressed IM, six (Brunelle & Fortin, 2021; Perry et al., 2018; Stockkamp et al., 2022; Van Yperen et al., 2016; Venkatesh & Speier, 2000; Wörtler et al., 2022) found a positive effect of telework on IM or satisfaction of basic psychological needs, while one study found no significant effect of telework on basic psychological needs and IM (Heiden et al., 2021). Another study (Rietveld et al., 2022) found an increase in autonomy and competence but a decrease in relatedness and IM related to the circumstances of the switch to telework. This study shows that forced telework during the first lockdown had an impact on the motivation of employees in the organization.

Factors Related to Intrinsic Motivation

Intrinsic motivation has been operationalized in a variety of ways. Some of the studies examined intrinsic motivation as a stand-alone outcome, while others examined intrinsic motivation using the satisfaction of basic psychological needs as an outcome. Therefore, this review considers the satisfaction of basic needs at work, i.e., the satisfaction of autonomy, competence, and relatedness needs as explained in SDT (Deci & Ryan, 2008). The relationship between need satisfaction and intrinsic motivation has been studied using the Satisfaction of Basic Work-Related Needs Scale. This scale has been used for research on basic psychological needs and further developed for management research (Van den Broeck et al., 2016). The studies of Brunelle & Fortin (2021) and Wörtler et al. (2022) used this scale whereas other studies in this review

used other measures of basic needs satisfaction such as the Basic Psychological Need Satisfaction at Work Scale (Heiden et al., 2021) an SDT needs satisfaction measure from Deci et al. (2001) (Perry et al., 2018) or parts of it such as the need for autonomy (Van Yperen et al., 2016). The description of intrinsic motivation in this review is complemented by the results of the scales. The review identified several factors that show an effect on teleworkers' needs satisfaction and intrinsic motivation.

Telework Programs. Contrary to the hypothesis that there would be a negative correlation between telework and relatedness, this need was better met in the telework condition which can be explained by organizational awareness of social isolation in teleworking conditions (Brunelle & Fortin, 2021). As expected by Brunelle & Fortin, teleworkers experienced greater satisfaction with their need for autonomy and competence. The data in this study come from workers who participated in a formal telework program that was able to meet workers' basic psychological needs in all three dimensions. An early work by Venkatesh & Speier (2000) examined different training methods for teleworkers and found that game-based training increased IM and increased intention to use the technology. This can provide a mechanism to reduce social isolation and increase the technology acceptance that is needed for telework.

Availability of Telework. Opportunities for blended working can buffer the potential negative effects of high job demands on IM, but only for workers high in need for autonomy. The perceived possibility of blended working has a positive valence and shows a positive link to intrinsic work motivation (Van Yperen et al., 2016). Heiden et al. (2021) found no significant effects of frequency or amount of telework on IM. The data in this study came from teaching and research staff at Swedish public universities without formal telework programs, but which have offered telework opportunities for decades. Academics were equally satisfied with their need for autonomy, competence, and relatedness. Interestingly, none of these needs were related to the frequency or extent of telework among academics. This was explained by the high prevalence of telework of about 40% in Sweden, with a higher proportion among knowledge workers. Sweden has the second-highest TW prevalence in Europe. It could be that the option of TW, which is available to all, is becoming less attractive, which is reflected in staff ratings.

Voluntary or Forced Telework. Rietveld et al. (2022) found that forced telework influences IM among employees of a Dutch higher education institution. They show a positive relationship between telework and IM. Autonomy and competence increased, but relatedness, IM, and productivity decreased. They explain the decline in relatedness and productivity in terms of the characteristics of the sector, in which social interactions between students, lecturers, and staff together create education. This finding is contrary to the findings of Brunelle & Fortin (2021), which could be explained by the presence of a formal telework program that was implemented five years prior to the study instead of forced telework due to a pandemic.

Impact of Telework on Turnover Intention

Of the 19 studies that looked at TI, eleven (Berber et al., 2022; Choi, 2018, Choi, 2020; Ferdous et al., 2021; Golden, 2006; Golden et al., 2008; Greer & Payne, 2014; Hong et al., 202; Kaduk et al., 2019; Kroll & Nuesch, 2019; Park et al., 2018) showed a significant negative impact of TW on TI, which means that more telework decreases turnover intention, while one found a positive impact (Bakarich et al., 2022) and seven showed no significant impact (Peretz et al., 2018; Azar et al., 20x18), or cited other influencing factors (Kossek et al., 2006; Maier et al., 2022; Parent-Lamarche, 2022; Stavrou, 2005; Timms et al., 2015).

Factors Related to Turnover Intention

Several factors have been identified that are associated with TI or actual employee turnover.

Flexibility. Azar et al. (2018) found a significant total effect of FWAs' use on turnover intentions, but not a significant direct impact of FWAs on TI. According to the authors, management should prioritize facilitating the use of FWAs to increase worker satisfaction and decrease turnover intentions. This was supported by Berber et al. (2022). Allowing employees greater control over their jobs in terms of how, when, and where the job would be done makes them more satisfied, with reduced stress, and less willingness to leave their organizations (Berber et al., 2022). Positive effects occur when employees are satisfied with flexible work systems' utilization.

According to Kossek et al. (2006), TW alone did not predict lower turnover intentions. But employees from firms with TW policies, who perceived greater psychological job control over where, when and how they worked had significantly lower turnover intentions. Stavrou (2005) examined the impact of various flexible work bundles on actual turnover and found that nonstandard work patterns that emphasize flexibility rather than TW have a significant negative impact on staff turnover. TW alone had no negative effect on turnover.

Voluntary or Forced Telework. Kaduk et al. (2019) found a difference in TI related to involuntary and voluntary telework. Moderate or high choice over where an employee works lowers the intention to leave the firm. They report lower scores for TI among voluntary remote workers compared to involuntary remote workers. Voluntary remote work was associated with significantly lower turnover intentions. Kroll & Nuesch (2019) found that working from home (WFH) had a significant negative effect on TI. This effect on employee attitudes was less positive when TW was mandatory. Choi (2018) supports this finding. Non-teleworkers who were eligible for telework but decide to self-opt out of the program showed the lowest TI. Employees who telework still reported significantly higher TI. Bakarich et al. (2022) surveyed public accountants before COVID-19 and since COVID-19 to examine the impact of TW on turnover intentions and other outcomes. The results show that TI is positively and significantly associated with an increase in TW but is also influenced by role stress, burnout, rank, gender, and other variables. Bakarich et al. (2022) found that mandatory TW does not negatively affect TI, as suggested by other authors.

Organizational or Managerial Support. The relationship between telework and employee TI may depend on organizational characteristics. In agencies exhibiting systematic and managerial support of telework, teleworker intention to leave was lower (Choi, 2018). The authors suggest that institutional and managerial support for telework could enhance the benefits and reduce the costs of telework. Organizational characteristics including average pay, length of service, different occupational categories, full-time employment, and gender had an impact on voluntary turnover of employees. Agencies with longer average tenures of employees

had lower rates of voluntary turnover. Older and more experienced employees are less likely to quit their job. A higher average salary is likely to increase employee turnover because those who receive it are highly skilled and competitive, giving them more chances to leave their jobs for better alternatives (Choi, 2018). Timms et al. (2015) found that TW appears to have minimal association with TI. TI was related lack of supervisor support, not just TW status. The authors examined workers' use of FWAs and their relationship to TIs. Choi (2020) found that a 1% increase in the number of teleworkers in an agency reduced voluntary turnover by 0.02% in the following year. Agencies that are more supportive of employee TW report lower voluntary turnover, as employees who benefit from organizational support tend to reciprocate it (Choi, 2020).

   Culture or Values. Timms et al. (2015) also found that TI was related to being single and a culture of "long hours", not only TW status. Contrary to their expectations, FWAs did not have an impact, but the organizational culture did. Actual use of FWAs was a predictor of TI, and nonuse of FWAs was a predictor of work engagement. The use of FWAs is highly dependent on cultural norms in the workplace. Peretz et al. (2018) found that TW was negatively related to TI, but this effect was attenuated when FWAs did not align with cultural values. FWAs reduced TI, but significantly more so when culture supported FWAs. Employees can telework without the concern that others may disapprove because FWA is inconsistent with societal values. The authors suggest that organizations should consider national cultural characteristics before implementing TW, as a mismatch between national culture and FWAs would potentially reduce employee use of FWAs and increase the likelihood of turnover. The data for this study included about 5000 organizations from 21 countries. A study by Park et al. (2018) examined how employees can be satisfied and motivated to stay in the federal bureaucracy by implementing flexible work systems including TW. They found that TW outcomes are related to government reform values that may affect federal employees' perceptions of work and decisions. Satisfaction with teleworking and alternative work schedules was found to reduce turnover intentions. Institutional and cultural conditions could act as factors for enhancing positive organizational outcomes. Satisfaction with TW and alternative

work schedules had a positive effect on job satisfaction and TI. This study showed that not only flexibility but also satisfaction with flexible work systems was important for the outcome.

Technology. Teleworkers who reported the use of advanced technologies as an effective telework strategy reported significantly fewer turnover intentions (Greer & Payne, 2014). The authors of this study emphasize that effective use of flexible work arrangements, including telework, is a learned skill. They note that only 21% of managers have been formally trained in how to lead their employees in teleworking, and 17% of teleworkers have been formally trained in how to telework effectively. According to the authors, these circumstances may explain why employees who use technology effectively have lower TI.

Job Satisfaction. Satisfaction with Telework and alternative work schedules reduce turnover intentions. Teleworkers' levels of job satisfaction and TI are similar to those of workers who work a traditional schedule (Park et al., 2018). Kroll & Nuesch (2019) found that both working from home and flextime significantly increased job satisfaction. Working from home significantly decreased TI, whereas the negative effect of flextime on TI is not statistically significant. This sheds light on the impact of different flexible work practices.

Work Engagement. Hong et al. (2021) assessed employees' feelings when teleworking during COVID-19 lockdown and found that positive affect negatively predicted TI. Employees have to manage multiple tasks simultaneously under stressful work conditions, which leads to TI. The more positive emotions employees feel at work, the more energy they have to do their jobs well, leading to lower TI. Positive affect can positively predict different kind of work engagement. Teleworkers' cognitive, emotional, and behavioral engagement can negatively predict TI. TW was associated with a higher level of intention to quit because of its effect on work engagement (Parent-Lamarche, 2022). Teleworking was directly associated with a lower level of work engagement and indirectly associated with a higher intention to quit, but use of emotion, skill utilization, and recognition were directly associated with higher work engagement, as well as indirectly associated with TI.

Amount of Telework. Golden (2006) found that telework is negatively related to turnover intentions. A higher degree of teleworking is associated with more commitment to the organization and weakens turnover intentions. TW enables more beneficial resource management. Professionally isolated individuals who spent extensive amounts of time teleworking reported the lowest turnover intentions (Golden et al., 2008). TW may decrease employee work exhaustion.

Other factors. Ferdous et al. (2021) found a significant negative effect of TW on TI, mediated by work-life balance (WLB) and age. WLB had a significant negative direct effect on TI. This effect was significant for young employees but not significant for mature employees. According to Maier et al. (2022), TW also negatively affects regular office workers because perceived inequality creates feelings of envy toward teleworkers, which increases office workers' dissatisfaction with their jobs and leads to higher turnover intentions due to social comparison with teleworkers who are perceived to be better off. Data for this particular study were collected before and since the pandemic.

Mediators and Moderators

Factors such as different types of work engagement (Hong et al., 2021; Parent-Lamarche, 2022), job satisfaction (Berber et al., 2022; Azar et al., 2018), organizational or managerial support (Choi, 2018; Park et al., 2018) work exhaustion (Golden, 2006), perceived competence (Rietveld et al., 2022), work-life-balance (Ferdous et al., 2021) and time spent teleworking (Golden et al., 2008) have been shown to moderate or mediate between TW and IM or TI or other factors associated with these outcomes in a TW context.

Work Engagement

Positive affect was negatively related to TI, mediated by employees' remote work engagement during COVID-19. Those who actively participate in their remote work, showed lower TI (Hong et al., 2021). Work engagement played a mediating role between teleworking, individual characteristics, and organizational characteristics with the intention to quit (Parent-Lamarche, 2022).

Job Satisfaction

Berber et al. (2022) found a mediating role of job satisfaction in explaining the relationship between FWA and turnover intentions. A negative mediation relationship was found, as the indirect effect of FWA on turnover intentions via job satisfaction was significant. Azar et al. (2018) found no direct effect of FWAs on TI when job satisfaction was present. Job satisfaction fully mediated the relation between FWA use and turnover intentions. A relationship between FWA use and intention to change jobs should not be assumed, and companies would be well advised to focus on job satisfaction to maximize the impact of FWAs.

Organizational or Managerial Support

Managerial support also moderates the relationship between telework and TI, suggesting that teleworkers who perceive greater support from supervisors tend to consider turnover less than others (Choi, 2018). Park et al. (2018) found that the positive effects of TW are moderated by the kind of values promoted by reforms within the organization.

Other Factors

Time spent teleworking moderates the relationship between professional isolation and turnover intentions (Golden et al., 2008). Work exhaustion was found to fully mediate the relationship between TW and TI (Golden, 2006). The increase in perceived competence found by Rietveld et al. (2022) is likely due to a group of workers who indicated that they prefer to work online. This group appears to be more productive than others which has a mediating and moderating effect on the overall decline in productivity seen among those who do not share this preference. Employees with a preference for TW felt sufficiently skilled to work online and had confidence in their own abilities. This finding highlights the importance of choice. Ferdous et al. (2021) found a moderating effect of work-life balance (WLB). TW was positively associated with WLB and WLB is negatively related to TI. A higher WLB among teleworkers leads to a lower TI.

Theoretical Backgrounds of the Included Articles

Studies were categorized by the theoretical framework (see Table 7). Seven studies used Self-Determination Theory (SDT), four used Conservation of Resources Theory (COR), four used Social Exchange Theory (SET), and four used the Job Demands-Resources Model (JD-R) as their theoretical framework.

Self-Determination Theory

According to Deci et al. (2017), Self-Determination Theory (SDT) is a macro theory of human motivation that has been successfully applied across domains including education, virtual worlds, fields of work motivation, and management. SDT differentiates types of motivation and maintains that different types of motivation have functionally different catalyzers, concomitants, and consequences. Seven studies (Brunelle & Fortin, 2021; Heiden et al., 2021; Perry et al., 2018; Rietveld et al., 2022; Timms et al., 2015; Venkatesh & Speier, 2000, and Wörtler et al., 2022) used the theoretical framework of SDT.

Job Demands-Resources Model

The JD-R model proposes that the interaction between job demands and job resources is important for the development of job strain and motivation as well. Job resources may buffer the impact of job demands on job strain, including burnout. The JD-R model can reveal the strengths and weaknesses of individuals, work groups, departments, and organizations (Bakker & Demerouti, 2007). Four studies (Kaduk et al., 2019; Parent-Lamarche; 2022; Timms et al., 2015 and Van Yperen et al., 2016) used this theoretical framework.

Social Exchange Theory

Social Exchange Theory explains the relationship between employee and employer based on the norm of reciprocity in the social contract and exchange (Rousseau, 1995). In the current review, four studies used this theoretical framework (Choi, 2018; Choi, 2020; Greer & Payne, 2014, and Kossek et al., 2006).

Conservation of Resources Theory

Hobfoll (1989) explains the conservation of resources as follows: individuals use various resources (e.g., physical energy and cognitive attention) to meet the demands of their environment, but when their resources are depleted and not replenished, they experience stress. Wright & Cropanzano (1998) used the COR as a framework for the first study that simultaneously examined the relationship between JS and turnover. In the current review, four studies used this theoretical framework (Choi, 2020; Golden, 2006; Stockkamp et al., 2022, and Kroll & Nuesch, 2019). Quantitative data was provided by all four of the studies. All four studies positively supported the second research question by creating a positive association between FWA and TI, while Stockkamp et al. (2022) made a positive association between IM and Job Satisfaction.

Other Theoretical Frameworks

The remaining studies used other frameworks such as Boundary Theory, Trait Activation Theory, Social Comparison Theory or did not mention theoretical frameworks. Boundary Theory describes boundaries as a means of simplifying and ordering the environment (Ashforth et al., 2000). Trait activation theory (Christiansen & Tett, 2013) states that latent traits are expressed as work behaviors in response to trait-relevant situational cues and lead to intrinsic reward as a need satisfaction. Social Comparison Theory (Festinger, 1954) describes the drive to evaluate oneself and the need for such evaluation through comparison with others, which includes both social influence processes and certain forms of competitive behavior. Ten studies (Azar et al., 2018; Bakarich et al., 2022; Berber, 2022; Ferdous, 2021; Golden et al., 2008; Hong et al., 2021; Maier et al., 2022; Park et al., 2018; Peretz et al., 2018; Stavrou, 2005) either did not base their work on any theoretical framework (Azar et al., 2018 Bakarich et al., 2022; Berber, 2022; Golden et al., 2008; Park et al., 2018; Peretz et al., 2018; Stavrou, 2005) or based their work on some other framework such as Boundary Theory (Ferdous, 2021), Trait Activation Theory (Hong et al., 2021) or Social Comparison Theory (Maier et al., 2022). Nine out of ten studies quantified the data forming a positive relation between FWA and TI.

Summary of Results

Five studies found significant effects of telework on intrinsic motivation. Thirteen studies found significant negative effects on turnover intention. Nine studies found no significant effect or both positive and negative effects of telework on the outcomes of interest. The included studies show a variety of factors related to intrinsic motivation and turnover intention in the context of telework. In addition to the direct effects of telework, existing theories, concepts, and characteristics of the work can help to understand the dynamics associated with telework. Several telework factors related to intrinsic motivation and turnover intention were identified (see Table 9). The following factors were related to both intrinsic motivation and turnover intention: organizational or management support, voluntary, mandatory or forced telework, job satisfaction, telework programs or policies, and technology. Autonomy, availability of telework and other factors such as strain were only related to intrinsic motivation, whereas flexibility, work engagement, amount of telework, culture or values, and other factors such as envy, age, and work-life balance were related to turnover intention only.

Table 9

Factors Affecting Outcomes of Telework

Factor	Intrinsic Motivation	Turnover Intention
Autonomy	Perry et al. (2018) Wörtler et al. (2022)	
Organizational or managerial support	Wörtler et al. (2022) → empowering leadership & managerial support	Choi (2018) Choi (2020) Timms et al. (2015) → lack of supervisor & organizational support
Voluntary, mandatory or forced TW	Rietveld et al. (2022) Stockkamp et al. (2022)	Bakarich et al. (2022) → no effect of

		mandatory TW
		Choi (2018)
		Kaduk et al. (2019)
		Kroll & Nuesch (2019)
Job Satisfaction	Stockkamp et al. (2022)	Azar et al. (2018
		Park et al. (2018)
Flexibility		Azar et al., 2018
		Berber et al. (2022)
		Kossek et al. (2006)
		Stavrou (2005)
Work engagement		Hong et al. (2021)
		Parent-Lamarche (2022)
TW programs/policies	Brunelle & Fortin (2021)	Kossek et al. (2006
	Venkatesh & Speier (2000)	(telework policies)
Availability of TW	Van Yperen et al. (2016)	
	Heiden et al. (2021)	
Amount of TW		Golden (2006) → higher
		degree of TW → lower TI
		Golden et al. (2008)
Culture or values		Park et al. (2018)
		(Federal reform values)
		Peretz et al. (2018) →
		negative effect of TW
		attenuated when FWA
		did not align with
		cultural values

		Timms et al. (2015) → cultural norms in the workplace
Technology	Venkatesh & Speier (2000)	Greer & Payne (2014)
other	Perry et al. (2018) (strain)	Maier et al. (2022) → envy
		Ferdous et al. (2021) → age, work-life balance

Additional Findings - Job Satisfaction

JS was found to be an important aspect of the impact of telework on both employee motivation and turnover intention. JS is the degree to which people like their jobs. It refers to the employee's subjective evaluation of his or her own job, either in its entirety or in relation to its various characteristics (Fernández-Macias & Muñoz de Bustillo Llorente, 2014). JS was assessed using the Michigan Organizational Assessment Questionnaire-Job Satisfaction Subscale (MOAQ-JSS) (Cammann et al., 2019) in most studies that report this outcome. JS was quantified in five studies (Azar et al., 2018; Berber et al., 2022; Brunelle & Fortin, 2021; Park et al., 2018, and Stockkamp et al., 2022). The review found that JS is an important factor related to both IM and TI of teleworkers. Therefore, although the review did not aim to examine the role of JS in telework situations and its impact on the selected outcomes, the results are also reported as they could help to better understand the impact on IM and TI in TW.

Satisfaction with telework and alternative work schedules increases job satisfaction. In addition, satisfaction with telework and alternative work schedules decreases TI (Park et al., 2018). According to Stockkamp et al. (2022), IM positively predicts JS. Kroll & Nuesch (2019) found that working from home was associated with increased job satisfaction. JS mediated the relationship between FWA use and TI (Azar et al., 2018). Berber et al. (2022) found a positive and statistically significant

relationship between FWA and JS. FWAs may contribute to increasing job satisfaction and, in turn, JS contributes to decreasing TI. In some models, moderate or high job location choices led to higher JS (Kaduk et al., 2019). Brunelle & Fortin (2021) explained the impact of telework on employees' job satisfaction by satisfying basic psychological needs.

Discussion

The aim of this review was to understand the impact of telework on intrinsic motivation and turnover intention. The results suggest that the effects of telework on both outcomes, intrinsic motivation and turnover intention, are not influenced by telework alone. The effect of telework on both outcomes is moderated or mediated by a multitude of aspects such as organizational values, managerial and organizational support, flexibility, and others that are crucial to employee motivation and retention. To promote a work environment that motivates and retains employees, it is crucial to consider these mediating or moderating factors that foster high intrinsic motivation while reducing turnover intentions. Additionally, the review identified several theories that contribute to a better understanding of telework. Overall, the results suggest that TW, either alone or embedded in flexible work arrangements or strategies, has a positive effect on motivation and can reduce turnover intention.

Results and Implications

Managers should consider their employees' telework needs and preferences. A difference in turnover intention was found in relation to involuntary and voluntary telework (Kaduk et al., 2019). A recent study by Šmite et al. (2023) examined employee preferences for working from home and concluded that these should be considered by companies that currently have very different strategies for flexible work and telework. There are differences among workers in the number of days they want to work in the office and from home, ranging from working exclusively in the office to working entirely remotely. This current study reflects the different preferences of employees located in Sweden, the USA and the UK in 2020. The authors found that companies are not able to satisfy all needs because workers' needs

vary greatly (Šmite et al., 2023). This aligns with the findings of this review. Therefore, companies and managers must understand the needs of employees and recognize the importance of factors such as flexibility and voluntariness, as preferences and needs vary widely and there is no one-fits-all solution. A good way to do this is by implementing telework programs or policies, which were positively related to intrinsic motivation (Brunelle & Fortin, 2021; Venkatesh & Speier, 2000) and negatively related to turnover intention (Kossek et al., 2006). Berber et al. (2022) suggest that managers should create an environment that promotes effective flexible work arrangements. Park et al. (2018), Peretz et al. (2018), and Timms et al. (2015) show that organizational culture has an impact on the uptake, quality, and outcomes of telework. The results of Timms et al. (2015) do not support previous findings showing a negative impact of TW on TI and explain this by the relevance of other organizational factors such as cultural norms in the workplace. Although many workers desire the option of teleworking (Work Reimagined Employee Survey 2021, 2022), telework can have negative effects in the form of envy (Maier et al., 2022) among workers whose jobs are, due to the characteristics of the work itself, not suitable for telework or among workers who are forced to work remotely but would like to work in the office (Kaduk et al., 2019). This should be considered when managing employees in telework or hybrid environments to make the best of both worlds, as mentioned in Choudhury et al. (2022).

The pandemic has drastically changed working conditions and raised the question of what work can be done remotely. Jobs posted after March 2020 were 9.6% more likely to be offered as remote jobs (Norlander & Erickson, 2022). Businesses and workers have learned to successfully telework, and a digital advance has been successfully applied to traditional office workplaces. However, forced TW was found to have a negative impact on intrinsic motivation (Rietveld et al., 2022), which highlights the importance of voluntariness and choice as a key element of telework practices. Although more work can be done remotely, not every employee wants to telework. This review found that many of the factors for increasing intrinsic motivation and reducing turnover intention that apply to traditional office work are also relevant to telework. The results of this review explain different aspects that can lead to an increase in intrinsic

motivation and a decrease in the intention to quit due to teleworking or in the presence of it. This could help companies retain their employees in the future and answer the question of how to shape the future work environment for teleworkers.

Šmite et al. (2023) highlight the importance of finding new creative ways to sustain the networking and cooperation culture that was cultivated trough constant office connectivity before the pandemic. Companies will require new virtual networking activities and events or even mandatory office-based events to increase relatedness among employees. Deschênes (2023) found that professional isolation negatively affects telework satisfaction but does not affect organizational commitment, while Šmite et al. (2023) found that social isolation is not always a problem but gives employees recovering from burnout more control over their workday. The relationship between telework satisfaction and professional isolation was moderated by perceived organizational support, suggesting that a supportive environment may reduce potential negative effects of telework. Organizational or managerial support was also related to intrinsic motivation (Wörtler et al., 2022) and turnover intention (Choi, 2018, 2020; Timms et al., 2015) in flexible work settings. The results of the review are consistent with Ryan & Deci (2000), who found that a supportive environment meets the basic psychological needs for autonomy, relatedness, and competence, which are necessary for intrinsic motivation. This framework explains why formal telework programs that address the satisfaction of basic needs in employee management have a positive impact on intrinsic motivation, job satisfaction and turnover intention.

This review shows that Self-Determination Theory, Conservation of Resources, and Job Demands-Resources Model are useful theories to explain intrinsic motivation as well as turnover intention and job satisfaction within the context of telework. The previous application of these theories can therefore be extended to the understanding of telework. These theories can be used to better understand the work experience of teleworkers.

The findings have a high ecological validity as they stem from diverse industries across a broad variety of countries and organizations, integrating different

ways of implementing telework for a broad variety of employees from very diverse cultural, personal, occupational, and organizational contexts.

Limitations

The inclusion of Self-determination theory in the search strategy yielded many hits for this theory, which may be a limitation in terms of identifying theories explaining intrinsic work motivation because the search strategy was used specifically to look for hits for Self-determination theory. Seven of the 27 studies in this review used this framework and it has been proven to provide a good way to understand human motivation in different aspects of life, such as work. However, a future review could use other frameworks, especially when more research of data on the impact of telework on IM and TI that was conducted during or after the pandemic, has been published.

However, the concept of job satisfaction can partially explain the relationship between intrinsic motivation and turnover intention among teleworkers. This review included Flexible Work Arrangements (FWAs) that could limit the validity of the sole effects of telework on outcomes. FWAs are a way to implement various flexible work strategies, of which telework is an important component. Therefore, the results of FWAs were also considered, but only if telework was a key element of it. FWAs in general include more than just teleworking they also include other flexible work methods such as flextime. On the other hand, the results of this review suggest that FWAs should be implemented instead of telework alone. Based on the findings that focus on various factors that relate to, mediate, or moderate the effects of telework, it makes sense to examine FWAs instead of telework alone to consider the multiple influences on and needs of employees in organizations. However, the study by Kroll & Nuesch (2019) found different effects of teleworking and flextime. TW was able to lower TI, while flextime had no significant negative effect on TI, suggesting that different forms of flexibility yield different results.

Although the review includes the most recent studies and 55% of these studies have been published since the onset of the pandemic, most of the included articles do not address changes that have occurred as a result of the pandemic.

However, data from six of the included studies were obtained during the pandemic, implying a sudden introduction of telework as an emergency measure rather than a well-planned and carefully implemented TW program (Bakarich et al., 2022; Berber et al., 2022; Hong et al., 2021; Maier et al., 2022; Parent-Lamarche, 2022; Rietveld et al., 2022). The findings reflect the experiences, opinions, and intentions of employees who were confronted with a new work environment that suddenly needed to be organized and managed.

Three of the eight studies (Perry et al., 2018; Stockkamp et al., 2022; Wörtler et al., 2022) that examined intrinsic motivation had a high risk of bias. This could limit the reliability of the results in favor of TW. None of the studies that examined turnover intention showed a high risk of bias.

Future Studies

The included studies were not sufficient to explain the relationship between intrinsic motivation and turnover intention in the presence of telework, as there was too little scientific literature addressing this relationship in the database search for this review. It would be interesting to investigate a possible interaction. Telework was introduced suddenly and globally due to the pandemic. Although some of the studies considered this event, the impact of changes in the work environment, corporate culture, telework programs or policies, and other aspects need further investigation. Future research could also address the question of whether it makes a difference whether TW is implemented from the top down or required from the bottom up, as this research shows the importance of employee choice. This review is an initial approach to understanding telework following a global pandemic that forced many industries to adopt telework and create new technology-enabled work arrangements for a broad range of employees. In the coming years, much research will be published that looks at data collected during or after the pandemic and provides deeper insight into how the work environment changed in response to the demand for telework due to the global spread of a virus. Future reviews and studies could also apply the analysis to work situations under normal conditions, independent of the pandemic event, but taking into account the changes that the pandemic has brought in the long

run. Most of the studies included in this review were cross-sectional (n=20). Repeated measures designs investigating the association between telework and intrinsic motivation or turnover intentions are currently rare. This could reduce the validity over a longer period. Future studies could further investigate the relationship between telework, intrinsic motivation, job satisfaction, and turnover intention by comparing different telework settings within organizations to better understand the interaction between these aspects so that formal telework programs can be optimally tailored to the needs of employees and organizations. Future studies of teleworkers' intrinsic motivation and turnover intention could also consider telework policies, values, and the culture of the company, as well as different types of support such as company and supervisor support. The interaction between these aspects is so complex that multiple studies could be conducted on individual mechanisms of action. Studying the multiple effects that telework and flexible work arrangements can have promises deeper insights into how employees can be managed so that they stay motivated and do not look for another employer. The way companies use new technologies and tools to organize work will also change, as technological development does not stand still. This should also be considered in future studies. This review shows that the success of telework in terms of intrinsic motivation and low turnover intention does not only depend on direct effects, but to a considerable extent on several variables and indirect effects that must be taken into account in order to make telework work for both employees and companies. Freedom of choice is also an important issue to consider, as telecommuting can have negative effects if it is forced. This can be a challenging but promising issue for organizations and researchers.

Conclusions

Teleworking is a good strategy for motivating and retaining employees. However, the results of this research highlight the many factors and conditions that must be present and considered for telework to work. The above findings and theories shed light on how to understand workers' needs in the workplace to keep them motivated, engaged, satisfied, and reduce their turnover intention. The employee-workplace alignment

mechanism is not a one-size-fits-all solution but must keep in mind the satisfaction of workers' needs (Appel-Meulenbroek et al., 2022). The results of this review point towards organizational and managerial support, voluntariness, and flexibility regarding when, where, and how work is done, the importance of telework programs or policies, and culture and values. Unanticipated results of this review point to the importance of job satisfaction and other factors in the context of intrinsic motivation and turnover intention. The benefits of telework seem to depend more strongly than expected on several individual and organizational factors that should be considered when implementing telework, hybrid work, or FWAs. A review by Vleeshouwers et al. (2022) also showed a strong link between telework and job satisfaction across several studies. Although several factors have been identified, the relationship between organizational and managerial support for autonomy, support, and satisfaction of all three basic psychological needs has already been explained by SDT (Deci et al., 2017). For telework to work, the general findings about intrinsic motivation and turnover intention in the traditional office workplace, such as satisfaction of basic psychological needs, job satisfaction, organizational and managerial support, culture, and many others, can be applied to telework and should be incorporated into telework programs and policies.

References

Abarca, V. M. G., Palos-Sanchez, P. R., & Rus-Arias, E. (2020). Working in Virtual

Teams: A Systematic Literature Review and a Bibliometric Analysis. IEEE

Access, 8, 168923–168940. https://doi.org/10.1109/ACCESS.2020.3023546

Allen, T., & Shockley, K. (2009). Flexible Work Arrangements: Help or Hype? (S.

265–284).

Appel-Meulenbroek, R., Kemperman, A., van de Water, A., Weijs-Perrée, M., &

Verhaegh, J. (2022). How to attract employees back to the office? A stated

choice study on hybrid working preferences. Journal of Environmental

Psychology, 81, 101784. https://doi.org/10.1016/j.jenvp.2022.101784

Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a Day's Work: Boundaries

and Micro Role Transitions. The Academy of Management Review, 25(3), 472.

https://doi.org/10.2307/259305

*Azar, S., Khan, A., & Van Eerde, W. (2018). Modelling linkages between flexible

work arrangements' use and organizational outcomes. Journal of Business

Research, 91, 134–143. https://doi.org/10.1016/j.jbusres.2018.06.004

*Bakarich, K. M., Marcy, A. S., & O'Brien, P. E. (2022). Has the fever left a burn?A

study of the impact of COVID-19 remote working arrangements on public

accountants' burnout. Accounting Research Journal, 35(6), 792–814.

https://doi.org/10.1108/ARJ-09-2021-0249

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of

the art. Journal of Managerial Psychology, 22(3), 309–328.

https://doi.org/10.1108/02683940710733115

*Barrero, J. M., Bloom, N., & Davis, S. J. (2021). Why Working from Home Will Stick

(Working Paper Nr. 28731; Working Paper Series). National Bureau of

Economic Research. https://doi.org/10.3386/w28731

*Berber, N., Gašić, D., Katić, I., & Borocki, J. (2022). The Mediating Role of Job

Satisfaction in the Relationship between FWAs and Turnover Intentions.

Sustainability, 14(8), 4502. https://doi.org/10.3390/su14084502

Bockstahler, M., Jurecic, M., & Rief, S. (o. J.). WORKING FROM HOME

EXPERIENCE. 66.

*Brunelle, E., & Fortin, J. (2021). Distance Makes the Heart Grow Fonder: An

Examination of Teleworkers' and Office Workers' Job Satisfaction Through the

Lens of Self-Determination Theory. SAGE OPEN, 11(1).

https://doi.org/10.1177/2158244020985516

Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (2019). Michigan Organizational Assessment Questionnaire—Job Satisfaction Subscale [Data set]. American Psychological Association. https://doi.org/10.1037/t09214-000

Caringal-Go, J. F., & Hechanova, Ma. R. M. (2018). Motivational Needs and Intent to Stay of Social Enterprise Workers. Journal of Social Entrepreneurship, 9(3), 200–214. https://doi.org/10.1080/19420676.2018.1468352

Catalyst (Organization). (1998). Work time: A new approach to flexibility : managing the work / time equation. New York: Catalyst.

*Choi, S. (2018). Managing flexible work arrangements in government: Testing the effects of institutional and managerial support. Public Personnel Management, 47(1), 26–50. https://doi.org/10.1177/0091026017738540

*Choi, S. (2020). Flexible work arrangements and employee retention: A longitudinal analysis of the federal workforces. Public Personnel Management, 49(3), 470–495. https://doi.org/10.1177/0091026019886340

Choudhury, P., Khanna, T., Makridis, C., & Schirmann, K. (2022). Is Hybrid Work the Best of Both Worlds? Evidence from a Field Experiment. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4068741

Christiansen, N. D., & Tett, R. P. (Hrsg.). (2013). Handbook of personality at work. Routledge.

Colledani, D., Capozza, D., Falvo, R., & Di Bernardo, G. A. (2018). The Work-Related Basic Need Satisfaction Scale: An Italian Validation. Frontiers in Psychology, 9. https://www.frontiersin.org/article/10.3389/fpsyg.2018.01859

Contreras, F., Baykal, E., & Abid, G. (2020). E-Leadership and Teleworking in Times of COVID-19 and Beyond: What We Know and Where Do We Go. Frontiers in Psycholonilgy, 11. https://www.frontiersin.org/articles/10.3389/fpsyg.2020.590271

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. Personality and Social Psychology Bulletin, 27, 930–942.

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-Determination Theory in Work Organizations: The State of a Science. Annual Review of Organizational Psychology and Organizational Behavior, 4(1), 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. Canadian Psychology / Psychologie Canadienne, 49(3), 182–185. https://doi.org/10.1037/a0012801

Dejoux, C., & Léon, E. (2018). Métamorphose des managers...: À l'ère du numérique et de l'intelligence artificielle. Pearson.

Deschênes, A.-A. (2023). Professional isolation and pandemic teleworkers' satisfaction and commitment: The role of perceived organizational and supervisor support. European Review of Applied Psychology, 73(2), 100823. https://doi.org/10.1016/j.erap.2022.100823

Dysvik, A., Kuvaas, B., & Gagné, M. (2013). An investigation of the unique, synergistic and balanced relationships between basic psychological needs and intrinsic motivation. Journal of Applied Social Psychology, 43(5), 1050–1064. https://doi.org/10.1111/jasp.12068

Dysvik, A., & Kuvaas, B. (2010). Exploring the relative and combined influence of mastery-approach goals and work intrinsic motivation on employee turnover intention. Personnel Review, 39(5), 622–638. https://doi.org/10.1108/00483481011064172

Fernández-Macias, E., & Muñoz de Bustillo Llorente, R. (2014). Job Satisfaction. In A. C. Michalos (Hrsg.), Encyclopedia of Quality of Life and Well-Being Research (S. 3451–3454). Springer Netherlands. https://doi.org/10.1007/978-94-007-0753-5_1568

*Ferdous, T., Ali, M., & French, E. (2021). Use of flexible work practices and employee outcomes: The role of work–life balance and employee age. Journal of Management & Organization, 1–21. https://doi.org/10.1017/jmo.2020.44

Festinger, L. (1954). A theory of social comparison processes. Human Relations, 7, 117–140. https://doi.org/10.1177/001872675400700202

Gagné, M. (2014). The Oxford Handbook of Work Engagement, Motivation, and Self-determination Theory. Oxford University Press.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation: SELF-DETERMINATION THEORY AND WORK MOTIVATION. Journal of Organizational Behavior, 26(4), 331–362. https://doi.org/10.1002/job.322

Gagné, M., Parker, S. K., Griffin, M. A., Dunlop, P. D., Knight, C., Klonek, F. E., & Parent-Rocheleau, X. (2022). Understanding and shaping the future of work with self-determination theory. Nature Reviews Psychology, 1(7), 378–392. https://doi.org/10.1038/s44159-022-00056-w

Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. Journal of Applied Psychology, 92(6), 1524–1541. https://doi.org/10.1037/0021-9010.92.6.1524

Gillet, N., Gagne, M., Sauvagere, S., & Fouquereau, E. (2013). The role of supervisor autonomy support, organizational support, and autonomous and controlled motivation in predicting employees' satisfaction and turnover intentions. European Journal of Work and Organizational Psychology, 22(4), 450–460. https://doi.org/10.1080/1359432X.2012.665228

*Golden, T. D. (2006). Avoiding depletion in virtual work: Telework and the intervening impact of work exhaustion on commitment and turnover intentions. Journal of Vocational Behavior, 69(1), 176–187. https://doi.org/10.1016/j.jvb.2006.02.003

*Golden, T. D., Veiga, J. F., & Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: Does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter? Journal of Applied Psychology, 93(6), 1412–1421. https://doi.org/10.1037/a0012722

*Greer, T. W., & Payne, S. C. (2014). Overcoming telework challenges: Outcomes of successful telework strategies. The Psychologist-Manager Journal, 17(2), 87–111. https://doi.org/10.1037/mgr0000014

Guzeller, C. O., & Celiker, N. (2019). Examining the relationship between organizational commitment and turnover intention via a meta-analysis. International Journal of Culture, Tourism and Hospitality Research, 14(1), 102–120. https://doi.org/10.1108/IJCTHR-05-2019-0094

Halford, S. (2005). Hybrid workspace: Re-spatialisations of work, organisation and management. New Technology, Work and Employment, 20(1), 19–33. https://doi.org/10.1111/j.1468-005X.2005.00141.x

Hard Facts, Dangerous Half-Truths, and Total Nonsense: Profiting from Evidence-Based Management. (o. J.). Stanford Graduate School of Business. Abgerufen 16. Januar 2023, von https://www.gsb.stanford.edu/faculty-research/books/hard-facts-dangerous-half-truths

*Heiden, M., Widar, L., Wiitavaara, B., & Boman, E. (2021). Telework in academia: Associations with health and well-being among staff. Higher Education, 81(4), 707–722. https://doi.org/10.1007/s10734-020-00569-4

Heyns, M. M., McCallaghan, S., & de Wet, E. H. (2022). The role of supervisor support and basic psychological needs in predicting work engagement, burnout and turnover intentions in a medical contract research service setting. Research in Social and Administrative Pharmacy, 18(6), 2981–2988. https://doi.org/10.1016/j.sapharm.2021.07.009

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. American Psychologist, 44(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

*Hong, J., Petsangsri, S., & Cui, Y. (2021). Positive Affect Predicts Turnover Intention Mediated by Online Work Engagement: A Perspective of R&D Professionals in the Information and Communication Technology Industry. FRONTIERS IN PSYCHOLOGY, 12. https://doi.org/10.3389/fpsyg.2021.764953

Igbaria, M., & Guimaraes, T. (1999). Exploring Differences in Employee Turnover Intentions and Its Determinants among Telecommuters and Non-Telecommuters. Journal of Management Information Systems, 16(1), 147–164. https://doi.org/10.1080/07421222.1999.11518237

Jian, Q., Wang, X., Al-Smadi, H. M., Waheed, A., Badulescu, A., & Samad, S. (2022). Proposing a Robust Model to Reduce Employees' Turnover Intentions in an Ethical Leadership Framework: Empirical Evidence from the Healthcare Sector.

International Journal of Environmental Research and Public Health, 19(15).

Scopus. https://doi.org/10.3390/ijerph19158939

*Kaduk, A., Genadek, K., Kelly, E., & Moen, P. (2019). Involuntary vs. Voluntary flexible work: Insights for scholars and stakeholders. COMMUNITY WORK & FAMILY, 22(4), 412–442. https://doi.org/10.1080/13668803.2019.1616532

*Kossek, E. E., Lautsch, B. A., & Eaton, S. C. (2006). Telecommuting, control, and boundary management: Correlates of policy use and practice, job control, and work-family effectiveness. Journal of Vocational Behavior, 68(2), 347–367. https://doi.org/10.1016/j.jvb.2005.07.002

*Kroll, C., & Nuesch, S. (2019). The effects of flexible work practices on employee attitudes: Evidence from a large-scale panel study in Germany. INTERNATIONAL JOURNAL OF HUMAN RESOURCE MANAGEMENT, 30(9), 1505–1525. https://doi.org/10.1080/09585192.2017.1289548

*Maier, C., Laumer, S., & Weitzel, T. (2022). A Dark Side of Telework: A Social Comparison-Based Study from the Perspective of Office Workers. Business & Information Systems Engineering, 64(6), 793–811. https://doi.org/10.1007/s12599-022-00758-8

Mark, G., Kun, A. L., Rintel, S., & Sellen, A. (2022). Introduction to this special issue: The future of remote work: responses to the pandemic. Human–Computer Interaction, 37(5), 397–403. https://doi.org/10.1080/07370024.2022.2038170

Martin, J. (2017a). © Joanna Briggs Institute 2017 Critical Appraisal Checklist for Analytical Cross Sectional Studies.

Martin, J. (2017b). © Joanna Briggs Institute 2017 Critical Appraisal Checklist for Cohort Studies.

Martin, J. (2017c). © Joanna Briggs Institute 2017 Critical Appraisal Checklist for RCTs.

Miller, S. A., & Forrest, J. L. (2001). Enhancing your practice through evidence-based decision making: PICO, learning how to ask good questions. Journal of Evidence Based Dental Practice, 1(2), 136–141. https://doi.org/10.1016/S1532-3382(01)70024-3

Nilles, J. M. (1997). Telework: Enabling Distributed Organizations: Implications for IT Managers. Information Systems Management, 14(4), 7–14. https://doi.org/10.1080/10580539708907069

Norlander, P., & Erickson, C. L. (2022). The Role of Institutions in Job Teleworkability

Before and After the Covid-19 Pandemic (SSRN Scholarly Paper Nr. 4321862).

https://doi.org/10.2139/ssrn.4321862

Nilles, J. M., Carlson, F. R., Gray, P., & Hanneman, G. (1976). Telecommuting—An

Alternative to Urban Transportation Congestion. IEEE Transactions on Systems,

Man, and Cybernetics, SMC-6(2), 77–84.

https://doi.org/10.1109/TSMC.1976.5409177

Olafsen, A. H., Halvari, H., Forest, J., & Deci, E. L. (2015). Show them the money?

The role of pay, managerial need support, and justice in a self-determination

theory model of intrinsic work motivation. Scandinavian Journal of Psychology,

56(4), 447–457. https://doi.org/10.1111/sjop.12211

Olson, M. H., & Primps, S. B. (1984). Working at Home with Computers: Work and

Nonwork Issues. Journal of Social Issues, 40(3), 97–112.

https://doi.org/10.1111/j.1540-4560.1984.tb00194.x

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C.

D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville,

J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-

Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement:

An updated guideline for reporting systematic reviews. BMJ (Clinical Research Ed.), 372, n71. https://doi.org/10.1136/bmj.n71

*Parent-Lamarche, A. (2022). Teleworking, Work Engagement, and Intention to Quit during the COVID-19 Pandemic: Same Storm, Different Boats? International Journal of Environmental Research and Public Health, 19(3). https://doi.org/10.3390/ijerph19031267

*Park, S. M., Joaquin, M. E., Min, K. R., & Ugaddan, R. G. (2018). Do reform values matter? Federal worker satisfaction and turnover intention at the dawn of the trump presidency. The American Review of Public Administration, 48(6), 506–521. https://doi.org/10.1177/0275074017706674

Peretz, H., Fried, Y., & Levi, A. (2018). Flexible work arrangements, national culture, organisational characteristics, and organisational outcomes: A study across 21 countries. Human Resource Management Journal, 28(1), 182–200. https://doi.org/10.1111/1748-8583.12172

*Perry, S. J., Rubino, C., & Hunter, E. M. (2018). Stress in remote work: Two studies testing the Demand-Control-Person model. European Journal of Work and Organizational Psychology, 27(5), 577–593. https://doi.org/10.1080/1359432X.2018.1487402

Peters, S. E., Dennerlein, J. T., Wagner, G. R., & Sorensen, G. (2022). Work and worker

    health in the post-pandemic world: A public health perspective. The Lancet

    Public Health, 7(2), e188–e194. https://doi.org/10.1016/S24682667(21)00259-0

Rayyan - AI Powered Tool for Systematic Literature Reviews (2021), 8 November.

    Available at: https://www.rayyan.ai/ (Accessed: 26 April 2023).

*Rietveld, J. R., Hiemstra, D., Brouwer, A. E., & Waalkens, J. (2022). Motivation and

    productivity of employees in higher education during the first lockdown.

    Administrative Sciences, 12(1). https://doi.org/10.3390/admsci12010001

Rousseau, D. (1995). Psychological contracts in organizations: Understanding written

    and unwritten agreements. Sage publications.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of

    intrinsic motivation, social development, and well-being. American

    Psychologist, 55(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Šmite, D., Moe, N. B., Klotins, E., & Gonzalez-Huerta, J. (2023). From forced

    Working-From-Home to voluntary working-from-anywhere: Two revolutions in

    telework. Journal of Systems and Software, 195, 111509.

    https://doi.org/10.1016/j.jss.2022.111509

*Stavrou, E. T. (2005). Flexible work bundles and organizational competitiveness: A cross-national study of the European work context. Journal of Organizational Behavior, 26(8), 923–947. https://doi.org/10.1002/job.356

*Stockkamp, M., Kuonath, A., Kühnel, J., Kennecke, S., & Frey, D. (2022). Intrinsic motivation as a double-edged sword: Investigating effects on well-being and the role of flex place practices as moderator to buffer adverse effects. Applied Psychology: Health and Well-Being. https://doi.org/10.1111/aphw.12399

Sullivan, C. (2003). What's in a name? Definitions and conceptualisations of teleworking and homeworking. New Technology, Work and Employment, 18(3), 158–165. https://doi.org/10.1111/1468-005X.00118

Teleworking in the COVID-19 pandemic: Trends and prospects. (o. J.). OECD. Abgerufen 8. Juni 2022, von https://www.oecd.org/coronavirus/policy-responses/teleworking-in-the-covid-19-pandemic-trends-and-prospects-72a416b6/

*Timms, C., Brough, P., O'Driscoll, M., Kalliath, T., Siu, O., Sit, C., & Lo, D. (2015). Flexible work arrangements, work engagement, turnover intentions and psychological health. ASIA PACIFIC JOURNAL OF HUMAN RESOURCES, 53(1), 83–103. https://doi.org/10.1111/1744-7941.12030

Tremblay, D. G., & Thomsin, L. (2012). Telework and mobile working: Analysis of its

    benefits and drawbacks. International Journal of Work Innovation, 1(1), 100.

    https://doi.org/10.1504/IJWI.2012.047995

Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A Review of

    Self-Determination Theory's Basic Psychological Needs at Work. Journal of

    Management, 42(5), 1195–1229. https://doi.org/10.1177/0149206316632058

*Van Yperen, N. W., Wörtler, B., & De Jonge, K. M. M. (2016). Workers' intrinsic work

    motivation when job demands are high: The role of need for autonomy and

    perceived opportunity for blended working. Computers in Human Behavior, 60,

    179–184. https://doi.org/10.1016/j.chb.2016.02.068

van Zoonen, W., Sivunen, A., Blomqvist, K., Olsson, T., Ropponen, A., Henttonen, K.,

    & Vartiainen, M. (2021). Factors Influencing Adjustment to Remote Work:

    Employees' Initial Responses to the COVID-19 Pandemic. International

    Journal of Environmental Research and Public Health, 18(13), 6966.

    https://doi.org/10.3390/ijerph18136966

Vega, R. P., Anderson, A. J., & Kaplan, S. A. (2015). A Within-Person Examination of

    the Effects of Telework. Journal of Business and Psychology, 30(2), 313–323.

    https://doi.org/10.1007/s10869-014-9359-4

*Venkatesh, V., & Speier, C. (2000). Creating an effective training environment for enhancing telework. INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES, 52(6), 991–1005. https://doi.org/10.1006/ijhc.1999.0367

Vleeshouwers, J., Fløvik, L., Christensen, J. O., Johannessen, H. A., Bakke Finne, L., Mohr, B., Jørgensen, I. L., & Lunde, L.-K. (2022). The relationship between telework from home and the psychosocial work environment: A systematic review. International Archives of Occupational and Environmental Health, 95(10), 2025–2051. https://doi.org/10.1007/s00420-022-01901-4

Work reimagined employee survey 2021: The real estate implications. (o. J.). Abgerufen 15. November 2022, von https://www.ey.com/en_us/real-estate-hospitality-construction/work-reimagined-employee-survey-2021-the-real-estate-implication

World Health Organization. (2020). Getting your workplace ready for COVID-19: How COVID-19 spreads, 19 March 2020 (WHO/2019-nCov/workplace/2020.2). World Health Organization. https://apps.who.int/iris/handle/10665/331584

*Wörtler, B., Van Yperen, N. W., & Barelds, D. P. H. (2022). The link between empowering leadership and employees' perceptions of the effectiveness of blended working. Scandinavian Journal of Psychology, 63(3), 208–218. https://doi.org/10.1111/sjop.12796

Wright, T. A., & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job

performance and voluntary turnover. Journal of Applied Psychology, 83(3),

486–493. https://doi.org/10.1037/0021-9010.83.3.486

Xu, Y., Jie, D., Wu, H., Shi, X., Badulescu, D., Akbar, S., & Badulescu, A. (2022).

Reducing Employee Turnover Intentions in Tourism and Hospitality Sector: The

Mediating Effect of Quality of Work Life and Intrinsic Motivation.

International Journal of Environmental Research and Public Health, 19(18).

Scopus. https://doi.org/10.3390/ijerph191811222

Appendix

Table 4

Quality Assessment Cross-sectional Studies

Study	1	2	3	4	5	6	7	8	Score	Risk of Bias
Azar et al., 2018	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	87.5%	low
Bakarich et al., 2022	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	87.5%	low
Berber et al., 2022	Yes	Yes	U	Yes	Yes	No	Yes	No	62.5%	moderate
Brunelle & Fortin, 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Choi, 2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Ferdous et al., 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Golden, 2006	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	87.5%	low
Golden et al., 2008	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	87.5%	low
Greer & Payne, 2014	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	87.5%	low
Heiden et al., 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Hong et al., 2021	Yes	Yes	Yes	Yes	No	No	Yes	Yes	75%	low
Kaduk et al., 2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Kossek et al., 2006	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low

Maier et al., 2022	Yes	U	Yes	Yes	Yes	Yes	Yes	Yes	87.5%	low
Parent-Lamarche, 2022	U	Yes	Yes	Yes	Yes	Yes	Yes	Yes	87.5%	low
Park et al., 2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Peretz et al., 2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Rietveld et al., 2022	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	87.5%	low
Stavrou, 2005	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low
Van Yperen et al., 2016	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	low

Note. Abbreviations: JBI, Joanna Briggs Institute; Y, Yes; N, No; N/A, not applicable; U, unclear.

JBI Checklist items:
1. Were the criteria for inclusion in the sample clearly defined?
2. Were the study subjects and the setting described in detail?
3. Was the exposure measured in a valid and reliable way?
4. Were objective, standard criteria used for measurement of the condition?
5. Were confounding factors identified?
6. Were strategies to deal with confounding factors stated?
7. Were the outcomes measured in a valid and reliable way?
8. Was appropriate statistical analysis used?

Table 5

Quality Assessment Cohort Studies

Study	1	2	3	4	5	6	7	8	9	10	11	Score	Risk of Bias
Choi, 2019	N/A	N/A	Yes	Yes	Yes	No	Yes	Yes	N/A	N/A	Yes	54.5 %	moderate
Kroll et al. 2017	N/A	N/A	Yes	Yes	Yes	No	Yes	Yes	U	U	Yes	54.5 %	moderate
Perry et al. 2018	N/A	N/A	Yes	Yes	Yes	Yes	No	U	N/A	N/A	Yes	45.4%	high
Stockkamp et al., 2022	N/A	N/A	Yes	Yes	Yes	No	Yes	U	No	No	Yes	45,5 %	high
Timms et al. 2015	N/A	N/A	Yes	Yes	Yes	No	Yes	U	Yes	No	Yes	54.5 %	moderate
Wortler at al. 2022	N/A	N/A	Yes	Yes	No	No	Yes	U	Yes	No	Yes	45,5 %	high

Note. Abbreviations: JBI, Joanna Briggs Institute; Y, Yes; N, No; N/A, not applicable; U, unclear.

JBI Checklist items:
1. Were the two groups similar and recruited from the same population?
2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?
3. Was the exposure measured in a valid and reliable way?
4. Were confounding factors identified?
5. Were strategies to deal with confounding factors stated?
6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?
7. Were the outcomes measured in a valid and reliable way?
8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?
9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?
10. Were strategies to address incomplete follow up utilized?
11. Was appropriate statistical analysis used?

Table 6

Quality Assessment Randomized Control Trial

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	Score	Risk of Bias
Venkatesh et al. 2000	Yes	Yes	Yes	Yes	U	U	N/A	Yes	Yes	Yes	Yes	No	Yes	69.2%	moderate

Note. Abbreviations: JBI, Joanna Briggs Institute; Y, Yes; N, No; N/A, not applicable; U, unclear.

JBI Checklist items:
1. Was true randomization used for assignment of participants to treatment groups?
2. Was allocation to treatment groups concealed?
3. Were treatment groups similar at the baseline?
4. Were participants blind to treatment assignment?
5. Were those delivering treatment blind to treatment assignment?
6. Were outcomes assessors blind to treatment assignment?
7. Were treatment groups treated identically other than the intervention of interest?
8. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?
9. Were participants analyzed in the groups to which they were randomized?
10. Were outcomes measured in the same way for treatment groups?
11. Were outcomes measured in a reliable way?
12. Was appropriate statistical analysis used?
13. Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?

Table 7

Theoretical Framework, Geographical Location, Sample Size, Time of Data Collection, Industry, Instrument, Findings and Impact of Included Articles

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Conservation of Resources Theory (COR)								
Choi, 2020	USA	428	2010 - 2015	Public Administration Departments	TI	Employee separation rate of federal agencies over 3 years	Higher rates of TW participation contribute to lowering employee turnover. One percentage increase of TW participation decreased voluntary turnover by 0.02% in the following year.	negative
Golden, 2006	USA	393	2001	Computerbased Technology	TI	Three-item scale developed by Schaubroeck, Cotton, and Jennings (1989)	TW is negatively related to turnover intentions. A higher degree of teleworking is associated with weakened turnover intentions. Work exhaustion mediates the relationships between teleworking and turnover intentions.	negative
Kroll & Nuesch, 2019	Germany	6132	2013-2014	N/A	TI	TI: Three-item scale developed by Schaubroeck, Cotton, and Jennings (1989)	Working from home significantly decreases TI. FWPs increase JS and decrease employee TI.	negative

| Stockkamp et al., 2022 | Germany | 408 | N/A | Vehicle, Engine, and Machine Manufacturing | IM JS | Three-item subscale of the Multi-dimensional Work Intrinsic Motivation: Motivation Scale (MWMS; Gagné et al.,2014) Job Satisfaction: Michigan Organizational Assessment Questionnaire (MOAQ-JSS: Cammann et al., 1983) | Voluntary TW positively influences IM. IM positively predicts JS. | positive |

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Job Demands-Resources Model (JD-R)								
Kaduk et al., 2019	USA	758	N/A	Information Technology	TI	Survey Data	Employees working at least 20% of their hours at home and reporting moderate or high choice over where they work have lower intentions to leave the firm (as well as higher JS in some models). Voluntary remote work is associated with significantly lower TI.	negative
Parent-	Canada	254	2020	Finance	TI	Three-item seven-point	TW indirectly influenced intention to	positive

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Lamarche, 2022						additive scale with responses to each item (e.g., "I planned to look for a new job over the next 12 months")	quit via work engagement.	
Timms et al., 2015	Australia	823	N/A	Banking, Education, Public Service and Community Service	TI	Three-item turnover intentions measure (Brough & Frame, 2004)	FWAs are a predictor of TI. TI were associated with being single, experiencing a 'long work hours' culture and a lack of supervisor support.	positive
Van Yperen et al., 2016	Netherlands	657	N/A	Information and Communication Technology	IM	Need for autonomy: four-item need strength measure developed by Van Yperen et al. (2014) Intrinsic Motivation Scale (Vallerand, 1997)	The perceived opportunity for blended working is positively valenced; the link with intrinsic work motivation is positive. Perceived opportunities for blended working can buffer the potential negative effects of high job demands on IM, but only for workers high in need for autonomy.	positive

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Self-Determination Theory (SDT)								
Brunelle & Fortin,	Canada	448	2017-2018	Technology	BPN	Basic Psychological Needs Satisfaction: BPNSS (Van	Teleworkers experience greater satisfaction of their need for autonomy	positive

2021					JS	den Broeck et al., 2016) Job Satisfaction: MOAQ-JSS; (Cammann et al., 1983)	and competence than office workers do. TW better satisfies the need for relatedness	
Heiden et al., 2021	Sweden	392	2017-2018	Public Universities	BPN	Need Satisfaction at Work (BPNS-W) scale (Eriksson and Boman 2018)	No significant effects were found between amount of TW (in hours per week) and intrinsic work motivation.	not significant
Perry et al., 2018	USA	258	N/A	N/A	BPN	Needs satisfaction measure from Deci et al. (2001)	Autonomy may help employees avoid strain as they work remotely more often, particularly if emotional stability is also higher. The study supports SDT in remote TW. Employees with high emotional stability and high autonomy appear best positioned to meet their needs for autonomy and relatedness, even when remote work is more frequent.	positive
Rietveld et al., 2022	Netherlands	623	2020	Technology	IM	Intrinsic Motivation Inventory (IMI; Misbah et al. 2021; Ryan 1982)	Enforced teleworking has an impact on motivation. Employees experience a slight increase in autonomy and a slight increase in competence, but clear decrease in perceived relatedness and IM.	negative

Timms et al., 2015	Australia	823	N/A	Banking, Education, Public Service and Community Service	TI	Three-item turnover intentions measure (Brough & Frame, 2004)	FWAs are a predictor of TI. TIs were associated with being single, experiencing a 'long work hours' culture and a lack of supervisor support.	positive
Venkatesh & Speier, 2000	USA	69	N/A	Technology	IM	Three items (Davis et al., 1992; Venkatesh & Speier, 1999)	Teleworking participants will have higher IM in game-based training.	positive
Wörtler et al., 2022	Netherlands	405	N/A	Public administration Social insurance	BPN	Work-related Basic Need Satisfaction scale (WBNS scale; Van den Broeck et al., 2010)	For workers high in need for autonomy, the perceived opportunity for blended working is an effective, contemporary resource to cope with the increasing job demands typically observed in today's workplace.	positive

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Social Exchange Theory (SET)								
Choi, 2018	USA	376577	2015-2016	Public Management	TI	Survey question "Are you considering leaving your organization within the next year?"	Non-teleworkers who were eligible for TW but decide to self-opt out of the program showed the lowest TI. In agencies exhibiting systematic and	negative

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
							managerial support of TW, teleworker intention to leave was less.	
							Approximately 31% of the sample respondents reported intention to leave their agencies. When disaggregated by TW status, 34% of non-teleworkers by barrier reported turnover intention, which is higher than for the others—29% of teleworkers and 27% of non-teleworkers by choice.	
Choi, 2020	USA	428	2010-2015	Public Administration Departments	TI	Employee separation rate of federal agencies over the 3-year target period	Agencies with more teleworkers will have less TI. Agencies with high TW participation will have less TI.	negative
Greer & Payne, 2014	USA	342	N/A	Finance	TI	Three items from Boroff and Lewin (1997	Teleworkers who reported use of advanced technologies as an effective TW strategy reported significantly fewer TI.	negative
Kossek et al., 2006	Canada	245	2000-2001	Finance	TI	Two items developed by Boroff and Lewin (1997)	Perceived greater psychological job control had significantly lower TI.	partially significant
Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework

Other frameworks or no framework

Boundary Theory (BT)

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Ferdous et al., 2021	Australia	293	2018-2019	For-Profit Oganizations	TI	Three-item scale used by Brough et al. (2014)	FWPs usage had a significant negative effect on employee TI, mediated by WLB. Age difference: negative relationship was significant for young employees but not significant for mature employees.	negative

Trait Activation Theory (TAT)

Author and Year	Country	Sample Size	Time of Data Collection	Industry	Outcome	Instrument	Findings	Impact of Telework
Hong et al., 2021	China	386	2019	Information Technology	TI	Chinese version of the Turnover Intention Scale (Su, 2021)	Emotional engagement was negatively correlated to TI. Cognitive engagement was negativity correlated to TI. A higher degree of positive affect was negatively related to TI. Positive affect can negatively predict TI mediated by three types of work engagement.	negative

Social Comparison Theory (SCT)

Maier et al., 2022	Germany	269	2020	Automotive Industry	TI	Three items (Maier et al. 2013; Thatcher et al. 2002)	Perceived TW disparity from the perspective of regular office workers increases their feelings of envy toward teleworkers and increases their job dissatisfaction. Higher job dissatisfaction leads to more TI.	not significant
N/A									
Azar et al., 2018	Pakistan	289	2017	Business Management including Healthcare Telecommunication Technology Finance Manifacturing	TI JS	Michigan Organizational Assessment Questionnaire (MOAQ-JSS; Cammann et al., 1979)	JS mediated the relationship between FWAs' use and TI. A significant total effect of FWAs' use on TI was found. In the presence of JS, the direct impact of FWAs on TI was not significant, while the indirect mediating effects of JS were significant.	not significant
Bakarich et al., 2022	USA	159	2020	Accounting	TI	N/A	TI increased significantly since remote work began.	positive
Berber et al., 2022	Serbia	219	2020-2021	Business Organizations	TI JS	Four questions including "I often think about leaving my current job", "I	Positive and statistically significant relationship between FWA and JS was found. A negative and statistically	negative

probably won't have a bright future if I stay in this company", "Maybe next year I will leave my current company and start working for someone else", "I plan to stay in this company for a longer time to develop my career (R)"), based on Chen

and Francesco (2000)

JS: ("Job satisfaction", "I like the kind of work I do", "I like my job better than the average worker does", "I find real enjoyment in my work", "I feel a great sense of personal satisfaction when I do my job well", "Considering everything, I am satisfied with my job"), consisting of five questions, derived from Morgeson and Humphrey (2006)

significant relationship was found between FWA and TI. Regarding the mediating role of JS in explaining the relationship between FWA and TI, a negative mediation relationship was found, since the indirect effect of FWA on TI through JS was significant.

Golden et al., 2008	USA	261	2002-2003	Technology	TI	Three-item scale developed by Schaubroeck, Cotton, and Jennings (1989)	Time spent teleworking moderates the relationship between professional isolation and TI. Professional isolation decreases TI. Professionally isolated individuals who spent extensive amounts of time teleworking reported the lowest TI.	negative
Park et al., 2018	USA	421748	2016	Federal Bureaucracy	TI	One item asking respondents whether they intend to leave their organization within the next year. JS: Federal Employee Viewpoint Survey (FEVS) items.	TW satisfaction is negatively associated with TI.	negative
Peretz et al., 2018	Australia, Austria, Canada, Denmark, Germany, Greece, Hungary, Israel, Italy, Japan, Finland, France, The	4790	N/A	Services: Health, Education, Research, Finance, Transportation, Political, Entertainment, and Communication totaling 66.4% Products: food, chemical	TI	One single item: Average yearly turnover percentage in the organization	Teleworking was negatively related to turnover.	negative

	Netherlands, Russia, Slovenia, South Africa, Sweden, Switzerland, Taiwan, the United States, and the UK			products, textile, machinery, and knowledge-based products totaling 33.6%) Sector: 20% public, 80% private				
Stavrou, 2005	Australia, Canada, New Zealand, USA, Finland, Sweden, Norway, Denmark	281	N/A	Manufacturing, Services and other	TI	Year's percentage of staff leaving the organization	No significant effect of telework on TI was found.	not significant

Table 8

List of Abbreviations

Abbreviation	Meaning
COR	Conservation of Resources
FWA	Flexible Work Arrangement
ICT	Information and Communication Technologies
IM	Intrinsic Motivation
JBI	Joanna Briggs Institute
JD-R	Job Demands-Resources
JS	Job Satisfaction
SDT	Self-Determination Theory
SET	Social Exchange Theory
TI	Turnover Intention
TW	Telework*
WFH	Work* from home
WFO	Work* from the office

WHO   World Health Organization

WLB   Work-LifeBalance