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EXHAUSTION AND TURNOVER IN THE CURRENT LABOUR MARKET: THE ROLE OF JOB INSECURITY AND USE OF TECHNOLOGY AFTER WORK

Abstract

Job insecurity and off-work hours Technology Assisted Job Demand (off-TAJD) can impact individual and organizational outcomes. This study aim is to investigate the relationship between job insecurity, off-TAJD, cognitive demands and turnover intention, considering the mediation of exhaustion.

The research involved a convenience sample of 543 employees with permanent contract (51% females). The multi-group SEM showed a partial mediation of exhaustion between job insecurity and turnover intention and a full mediation of exhaustion between off-TAJD and turnover intention in both Female and Male samples. Cognitive demands negatively related to turnover intention only for women. Theoretical and practical implications are discussed.

Keywords: job insecurity, off-work hours Technology Assisted Job Demand, exhaustion, turnover intention, Job Demands-Resources Theory

Abstract

L'insicurezza lavorativa e le richieste lavorative al di fuori dell'orario di lavoro supportate dalla tecnologia (*off-TAJD*) possono influenzare esiti individuali e organizzativi. Obiettivo di questo studio è indagare la relazione tra insicurezza lavorativa, *off-TAJD*, richieste cognitive e intenzione di turnover, considerando la mediazione dell'esaurimento. La ricerca ha coinvolto un campione di convenienza di 543 impiegati con contratto a tempo indeterminato (51% donne). Il *SEM* multi-gruppo ha mostrato una mediazione parziale dell'esaurimento tra insicurezza lavorativa e intenzione di turnover e una mediazione totale

dell'esaurimento tra *off-TAJD* e intenzione di turnover, sia nel campione maschile che femminile. Le richieste cognitive hanno mostrato una relazione negativa con l'intenzione di turnover solo nel campione femminile. Le implicazioni teoriche e pratiche sono discusse nell'articolo.

Keywords: insicurezza lavorativa, richieste lavorative al di fuori dell'orario di lavoro supportate dalla tecnologia (*off-TAJD),* esaurimento, intenzione di turnover, teoria delle richieste-risorse lavorative

Introduction

The working world is changing rapidly, globalization, technological development, and also periods of economic recession and occupational uncertainty are determining factors of this change (Vostal, 2014). In particular, Italy is one of the Eurozone countries where the Great Recession of 2008 has been harder, with negative consequences for people health (Mattei et al., 2015). Moreover, in the last years we assisted to the shift towards new ways of work management and organization, characterized by high levels of flexibility supported particularly by new job contracts, new technologies and constant internet availability. In this respects, in Italy in 2015, in the frame of the so called "Jobs Act" (Law n. 183/2014), the legislative decree n. 23 introduced a new type of permanent employment contract with rising protections against unfair dismissal (Contratto a Tutele Crescenti). This type of contract restricted the reintegration possibilities for workers in the event of unlawful dismissal. As a consequence, the perception of job stability and security among workers may decrease.

Job insecurity has received a considerable amount of research attention in latest years (Lee, Huang, & Ashford, 2018) and recent development and the rise of sharing economy indicated that job insecurity continue to be a prominent feature in workers' lives. The antecedents and consequences of job insecurity are summarized in several reviews, which showed negative consequences for employees and organizations (e.g. Cheng & Chang, 2008; De Witte, 1999; De Witte, Pienaar, & De Cuyper, 2016; Keim, Landis, Pierce, & Earnest, 2014; Sverke, Hellgren, & Näswall, 2002). Previous studies highlighted that the employment contract type is related to the level of job insecurity, finding differences between permanent and temporary workers (e.g. Silla, Gracia, & Peiró, 2005). Nevertheless, in this study, we aimed at investigating the role of job insecurity in a sample of workers with permanent contract. Because of changes in labour market, economic crisis and organizational restructuring also permanent workers may be worried about their job continuity, an issue that needs to be addressed.

Particularly, we intended to study the relative role of job insecurity compared to other work-related stressors (namely off-work hours Technology Assisted Job Demands –off-TAJD– and cognitive demands) in relation to workers exhaustion and their intention to leave the organization. We investigated these relationships on a sample of permanent workers from different occupational sectors, comparing women and men.

Job insecurity

In this study we considered job insecurity as a subjective perception that reflects the degree to which employees consider their jobs to be threatened; job insecurity refers to concerns about the continuation of one's job (Sverke & Hellgren, 2002) that is the workers' fear to lose their job and to become unemployed (De Witte, 1999).

Perceived job insecurity is also classified as a job demand (Schaufeli & Taris, 2014), according to the Job Demands-Resources (JD-R) Theory (Bakker & Demerouti, 2007, 2017).

Several studies (Keim et al., 2014; Lee et al., 2018; Sverke & Hellgren, 2002) focused on antecedents of job insecurity, at organizational and individual level. In particular, microeconomic and social environments, such as labour market characteristics, economic fluctuation, organizational change and several organizational practices conditions are potential antecedents of job insecurity, in addition to subjective characteristics of the individual.

A lot of studies analysed the consequences of job insecurity (Cheng & Chan, 2008; De Witte et al., 2016; Lee et al., 2018; Sverke et al., 2002). Important evidences emerged about the detrimental effect of job insecurity to employees health outcomes, for example mental and physical health (Hellgren & Sverke, 2003; Silla et al., 2005; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2009), psychological wellbeing (Mauno, Kinnunen, Mäkikangas, & Nätti, 2005) or burnout and emotional exhaustion (De Cuyper, Mäkikangas, Kinnunen, Mauno, & De Witte, 2012; Giunchi, Emanuel, Chambel, & Ghislieri, 2016; Kinnunen, Mäkikangas, Mauno, De Cuyper, & De Witte, 2014). Other studies confirmed the negative relationship between job insecurity and job satisfaction, organizational commitment and performance (Piccoli et al., 2017), and with work engagement (De Cuyper, Bernhard-Oettel, Berntson, De Witte, & Alarco, 2008). Moreover, researches showed that job insecurity had a positive relation with turnover intention (Laine, van der Heijden, Wickström, Hasselhorn, & Tackenberg, 2009; Mauno, De Cuyper, Tolvanen, Kinnunen, & Mäkikangas, 2014; Staufenbiel & König, 2010) and moderated the relationship between contract type and job satisfaction (Callea, Urbini, Ingusci, & Chirumbolo, 2016).

Research related to gender differences and perceptions of job insecurity reported ambiguous results. Some studies have shown that women experienced greater job insecurity than men (e.g., Emberland & Rundmo, 2010; Mauno & Kinnunen, 2002), other studies have not observed gender differences (e.g., Berntson, Näswall, & Sverke, 2010; Giunchi et al., 2016). In general, studies highlighted that when women perceive more job insecurity and/or report more negative consequences related to it, this is explained as due to their general unfavourable situation in the labour market (Keim et al., 2014); on the other hand, when this happens to men, results could be explained according to the gender role theory, suggesting that family roles are more significant to the identity of women, whereas work roles are more central to the identity of men (Barnett, Raudenbush, Brennan, Pleck, & Marshall, 1995). Furthermore, this study was conducted in Italy, a country where traditional gender values are still well-established, emphasizing a separation in gender roles: traditionally, it is supposed that men consider themselves as the "breadwinner" of their families, while women consider financial matters as their secondary responsibility (Ghislieri & Colombo, 2014). Therefore, male employees may suffer more from perceived job insecurity than female employees, because male workers are more aware of the possible negative consequences of job loss (De Witte, 1999).

New technologies use and off-work hours Technology-Assisted Job Demand

New technologies, especially rapid advances in telecommunication and information technology, are influencing how people experience and organize their work and personal life (Valcour & Hunter, 2005). For organizations, it is easier and more affordable to provide employees with technological tools capable of extending normal working hours beyond the traditional boundaries. As a consequence, employees tend to be more and more engaged in supplemental job-related activities, thanks to the support of advanced information and

telecommunications technologies, when they are at home and away from the traditional workplace (Fenner & Renn, 2004). In the case of the fulfilment of these supplemental work tasks is perceived as a request from the organization to use technological devices in order to work during off-work time, we refer to the off-work hours Technology-Assisted Job Demand (off-TAJD; Ghislieri, Colombo, Emanuel, Molino, & Cortese, 2017a; Ghislieri, Emanuel, Molino, Cortese, & Colombo, 2017b).

In recent years, several studies have examined the role of the use of technology for professional purposes in relation with well-being and work-family balance (Derks, van Duin, Tims, & Bakker, 2015; Derks, van Mierlo, & Schmitz, 2014; Ghislieri et al., 2017b). Sometimes, technology is depicted as a resource able to foster the successful integration of multiple life roles and is associated with work-life balance strategies (e.g. leaving the office earlier in order to solve a personal problem and conclude working activities remotely; Davis, 2002; Ghislieri et al., 2017b).

Nevertheless, technology has the potential to invade workers' lives leading to the risk of an imbalance between work and life (e.g. Davis, 2002; Higgins & Duxbury, 2005). There is increasing evidence that individuals who use technology to work at home experience greater work-family conflict and work-home interference (e.g. Derks & Bakker, 2014; Ghislieri et al., 2017b). Particularly, behaviours such as keeping smartphones turned on during the evening and responding to emails and/or calls may have a negative impact on work-life balance (Orlikowski, 2007). Moreover, for those who generally use technology, particularly smartphones, to stay connected to their work, it can be very difficult to psychologically detach from work (Derks & Bakker, 2014), resulting in higher levels of burnout and work-related exhaustion (Derks et al., 2014; Meijman & Mulder, 1998). Particularly, smartphone use during off-work time is associated with information overload and loss of control (Derks et al., 2014), which may be a source of stress (Edmunds & Morris, 2000).

Theoretically, new technologies are neutral since they can be switched-off, but in practice there is a common expectation that everyone reads and replies to emails constantly, which leads people to stay always connected. Today's employers have high expectations of employees availability, therefore individuals feel compelled to immediately answer to work messages and emails, also during off-work time (Davis, 2002; Derks & Bakker, 2014). This situation involves workers with specific smart working agreements but also traditional workers who are paid for hours worked in the office and should not be expected to be available during off-work time (Ghislieri et al., 2017b).

The ownership and use of digital devices (e.g. smartphones, tablets and laptops) are particularly high in Italy (We Are Social, 2017). The use of internet by the mean of the several available devices is huge among Italian professionals: 100% of directors, managers and academic professors, 99.5% of entrepreneurs and self-employed workers, and 98.8% of office workers and teachers (Belluati, 2016). Moreover, the high job insecurity and the weakness of the Italian labour market push people who have a job to intensify their workload in order to preserve it, and the use of technology supports this tendency to work intensification (Derks & Bakker, 2014; Ghislieri et al., 2017b).

Literature suggests to investigate gender differences regarding how the use of technology for work purposes can influence the work and personal life, particularly in Italy (Ghislieri et al., 2017b). In this country, although roles of men and women have become more balanced (Ghislieri & Colombo, 2014), differences still exist: on the one hand, women are more responsible for the family and care work, even when they have challenging occupations (Naldini & Saraceno, 2008), with higher need for strategies and supports to balance work and personal life; on the other hand, the working role is central for men (Ghislieri & Colombo, 2014), and the opportunity to be always connected and responsive could reinforce this centrality (Ghislieri et al., 2017b). Nevertheless, few studies have considered the

relationship between gender and the use of technology for work purposes, and most of them are in the field of work-life balance topic. Batt and Valcour (2003) found that technology use is associated with work-family conflict for women but not for men. Ghislieri et al. (2017b) found that off-TAJD is positively associated with work-family conflict for both men and women and with work-family enrichment only for men. No studies have found gender differences in the relationship between technology assisted supplemental work and stress-related or organizational outcomes so far.

The present study

This study aims at investigating the relationships between some principal variables considering the JD-R Theory (Bakker & Demerouti, 2007, 2017), based on a flexible model, adaptable to a different kind of organizations (Bakker, Demerouti, & Shaufeli, 2003a; Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003b; Emanuel et al., 2016; Molino et al., 2016), which has been largely used to explain health impairment and motivational processes. In this study we focused on the health impairment process and its effects in terms of turnover intention. According to the JD-R Theory, job demands are the main predictors of burnout; they "refer to those physical, psychological, social or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skill and are therefore associated with certain physiological and/or psychological costs" (Bakker & Demerouti, 2007, p. 312). Job demands are not harmful by definition but they turn into job stressors when meeting those demands requires high effort from which the person does not adequately recover (Meijman & Mulder, 1998).

Exhaustion and turnover intention are two of the main negative consequences considered in studies that applied the JD-R Theory (Bakker & Demerouti, 2007, 2017; Schaufeli & Taris, 2014); the first is an individual outcome while the latter is an organizational one. Exhaustion

is considered one of the core dimensions of burnout and can be defined as a consequence of intensive physical, affective and cognitive strain (Demerouti, Mostert, & Bakker, 2010). Turnover intention represents a conscious and deliberate willingness to voluntarily leave the organization.

As determinants of exhaustion and turnover, in this study we considered three job demands: job insecurity, off-TAJD and cognitive demands. The latter is introduced as control variable since it is typical of those professions that involve more mental than manual and/or physical abilities, as in our sample. Cognitive demands refer to the employee's perception about the amount of mental effort (e.g. concentration, attention, information processing) that the job requires (van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). Job insecurity and cognitive demands have been used in several studies as predictors of exhaustion (e.g. Bakker & Demerouti, 2017; Giunchi et al., 2016) and turnover intention (Tracey & Hinkin, 2008). Also off-TAJD has been defined as a job demand (Ghislieri et al., 2017a; Ghislieri et al., 2017b) and previous research have investigated its relation with work-family conflict and work-family enrichment (Ghislieri et al., 2017b); in literature, evidences about the relationship with both exhaustion and turnover intention are lacking.

According to the JD-R Theory we expect a positive relationship between the three job demands and both exhaustion and turnover intention:

Hypothesis 1: *a)* job insecurity, *b)* off-TAJD, and *c)* cognitive demands have a positive relationship with exhaustion.

Hypothesis 2: *a)* job insecurity, *b)* off-TAJD, and *c)* cognitive demands have a positive relationship with turnover intention.

In literature there is wide evidence about the effect of exhaustion on turnover intention and about the tendency of exhausted workers to withdraw from the work environment (Westman

& Eden, 1997). Huynh, Xanthopoulou and Winefield (2014) found a positive relationship between exhaustion and turnover intention in a sample of volunteer emergency service workers. This relationship was found also in a study among airline workers (Cho, Choi, & Lee, 2014) and in a study among call centre agents (Bakker et al., 2003a). Moreover, Chau, Dahling, Levy, and Diefendorff (2009) found a positive relationship between emotional exhaustion and actual turnover after 6 months, mediated by turnover intention, among a sample of bank tellers.

Hypothesis 3: exhaustion is positively related to turnover intention.

The relationship between job insecurity and turnover intention has received support in literature (Cheng & Chan, 2008; Laine et al., 2009; Staufenbiel & König, 2010; Sverke et al., 2002). The relationship between job insecurity and turnover intention mediated by exhaustion has been little tested so far. For example, Mauno et al. (2014) proposed that the job insecurity/turnover intention relationship can be mediated by reduced energy, which was conceptualized in well-being indicators as job exhaustion and vigour. Moreover, Emberland and Rundmo (2010) found that the path between job insecurity and turnover intention was mediated by lowered mental well-being and Michel, Stegmaier, Meiser, and Sonntag (2009) identified a mediator relationship between job insecurity and turnover intention via higher job exhaustion.

There is no evidence in literature about the mediational role of exhaustion in the relationship between off-TAJD and turnover intention. Few studies have considered other forms of technology use; for instance, Ferguson et al. (2016) investigated the indirect relationship between mWork (the use of mobile devices for work purposes during family time) and turnover, and they found a serial mediation of strain-based work-family conflict, burnout and organizational commitment. At the same time, there is no suggestion in literature about

the mediational role of exhaustion in the relationship between cognitive demands and turnover intention. Several studies (Hoonakker, Carayon, & Korunka, 2013; Schaufeli & Bakker, 2004; van Heerden, 2015) considered job demands in general and found that emotional exhaustion or work engagement mediated the relation between job demands and turnover intention. Molino, Bakker, and Ghislieri (2016) found a serial mediation of workaholism, work-family conflict and exhaustion among job demands (workload, cognitive demands, emotional demands, and customer-related social stressors) and intention to change. Knudsen, Ducharme, and Roman (2009) showed that emotional exhaustion partly mediated the relation between job demands (performance demands and centralization in their study) and turnover intention among leaders of addiction treatment organizations in the United States.

In this study we hypothesize a partial mediational role of exhaustion between the three job demands on the one hand and turnover intention on the other hand.

Hypothesis 4: exhaustion mediates the relationship between *a)* job insecurity, *b)* off-TAJD, and *c)* cognitive demands and turnover intention.

In this research we considered that it is important to explore possible gender differences. As mentioned above, several studies analysed possible gender differences in the dynamics related to job insecurity and use of technology for work purpose in off-work time (Ghislieri et al., 2017b; Giunchi et al., 2016). About exhaustion, the idea that burnout occurs more frequently among women is not uncommon but evidences are sometimes contradictory; some studies showed higher burnout for women, others showed higher scores for men, and others find no overall differences (Maslach, Schaufeli, & Leiter, 2001). For example, Bekker, Croon, and Bressers (2005), in a study among nurses, found that emotional exhaustion was not higher for women. A meta-analysis (Purvanova & Muros, 2010) revealed that female employees are slightly more emotionally exhausted than male

employees, while men are more depersonalized than women. Differences in burnout between women and men could be related to gender role stereotypes, but they could also reflect the confounding of gender with occupation (e.g. police officers are more likely to be male, nurses and teachers are more likely to be female; Maslach et al., 2001).

Some researches reported that women have higher levels of turnover than men. Causes for higher turnover among women include discrimination in pay and treatment, supervisory bias, lower status jobs, occupational segregation and dead-end jobs, and general lack of support and mentoring (Lee, Gerhart, Weller, & Trevor, 2008; Sousa-Poza & Sousa-Poza, 2007). Other studies (e.g. Sicherman, 1996) found that after controlling for personal and job characteristics, men and women showed similar turnover patterns. In general, studies indicated that when different reasons for turnover were considered, there were significant differences in turnover behaviours between men and women, for example, women were more likely to leave their jobs for personal or family-related reasons. Probably reflecting these mixed results, some recent studies including meta-analyses found that gender is a weak predictor of turnover (Allen, Bryant, & Vardaman, 2010; Griffeth, Hom, & Gaetner, 2000).

The perspective from which we studied the gender differences is explorative; therefore, we did not define specific hypotheses with regard to this. In our study we examined differences in the variables' means between the Female and Male samples and tested our hypotheses across both groups.

Method

Participants and procedure

The study involved a convenience sample of 543 Italian workers who filled in an on-line self-report questionnaire. The informed consent was present and integrated in the on-line administration procedure. The Bioethical Committee of the University of Turin examined and approved the research project (14/7/2016). Participation in the research was voluntary, without receiving any reward; data collection and analysis were anonymous.

Among the participants, 278 were female (51.2%) and 265 were male (48.8%). In the Female sample, 53.2% were married or cohabited, 38.5% unmarried, 7.9% separated, divorced or widowed, and 43.0% had children. Among them, 62.3% had a bachelor's or master's degrees, 37.1% had finished high school. Their average age was 39.70 years (*SD* = 11.95; min = 22; max = 64). Most of the female participants had a full-time job (86.6%). The job profile was office workers for 78.1% of female participants and middle managers for 21.9%. Participants were from different occupational sectors: 20.9% private services, 16.5% education and research, 14.4% commerce, 14.4% public health, 12.6% public services, 7.9% industry, 4.0% social sector and 3.6% tourism; the remaining participants were from other sectors. Weekly working hours were, on average, 37.46 (*SD* = 8.67; min = 7; max = 60). Mean seniority on the profession was 13.11 years (*SD* = 11.87; min = 1; max = 42).

In the Male sample, 55.1% were married or cohabited, 38.1% unmarried, 6.8% separated, divorced or widowed, and 45.3% had children. Among them, 48.3% had finished high school, 47.6% had a bachelor's or master's degree. Their average age was 42.08 years (*SD* = 11.91; min = 22; max = 66). Most of the male participants had a full-time job (95.5%). The job profile was office workers for 69.4% of male participants and middle managers for 30.6%. Participants were from different occupational sectors: 25.7% industry, 24.5% private services, 12.8% commerce, 11.7% public services, 7.5% education and research, 6.8% public health, and 3.0% tourism; the remaining participants were from other sectors. Weekly

working hours were, on average, 40.36 (*SD* = 8.59; min = 7; max = 60). Mean seniority on the profession was 14.39 years (*SD* = 11.65; min = 1; max = 46).

Measures

Job insecurity was assessed with 4 items (De Witte, 2000). All items were scored on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree.* An example item is "I feel insecure about the future of my job". Cronbach's alpha in this study was .81.

Off-work hours Technology Assisted Job Demand (off-TAJD) was assessed with 3 items (Ghislieri et al., 2017a; Ghislieri et al., 2017b). All items were scored on a 5-point Likert scale, ranging from 1 = *never* to 5 = *always*. An example item is "How often does your organization require you to answer phone calls and emails during off-hours?" Cronbach's alpha was .95.

Cognitive demands was assessed with 4 items (Bakker et al., 2003b). All items were scored on a 5-point Likert scale, ranging from 1 = *never* to 5 = *always*. An example item is "My job require enhanced care or precision". Cronbach's alpha for the scale in this study was .77.

Exhaustion was assessed with 8 items of the Oldenburg Burnout Inventory (OLBI; Demerouti et al., 2010). All items were scored on a 5-point Likert scale, ranging from 1 = *strongly disagree* to 5 = *strongly agree.* An example item is "There are days when I feel tired before I arrive at work". Cronbach's alpha in this study was .78.

Turnover intention was assessed with 3 items of the Turnover subscale of the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983). All items were scored on a 4-point Likert scale, ranging from 1 = *disagree* to 4 = *agree*. An example of item is "I often think about quitting my job". Cronbach's alpha in this study was .79.

Data analysis

The statistics software IBM SPSS Statistics 24 was used to perform descriptive data analysis in each sample separately (Males and Females). Furthermore, Pearson correlations were tested in order to examine the relationships among variables, and Cronbach's alpha coefficient was calculated to test the reliability of each scale. The analysis of variance (*t*-test for independent samples) was used to examine differences in the variables' means between the two samples.

A multi-group full structural equation model (SEM) was performed using Mplus 7 in order to test the hypothesized model and the measurement model across both Male and Female samples. The method of estimation was Maximum Likelihood (ML). According to the literature (Bollen & Long, 1993), the model was assessed by several goodness-of-fit criteria: the χ^2 goodness-of-fit statistic; the Root Mean Square Error of Approximation (RMSEA); the Comparative Fit Index (CFI); the Tucker Lewis Index (TLI); and the Standardized Root Mean Square Residual (SRMR); the Akaike's Information Criterion (AIC). Non-significant values of χ^2 indicate that the hypothesized model fits the data. Values of RMSEA smaller than .05 indicate a good fit, values smaller than .08 indicate an acceptable fit and values greater than 1 should lead to model rejection. CFI and TLI values greater than .90 indicate an acceptable fit, and values greater than .95 indicate a good fit. The SRMR has a range from 0 to 1, with a cut-off criterion of .08, with higher values indicating poorer fit to the empirical data, and values lower than .05 indicating an excellent fit. Smaller values of AIC indicate better models. Finally, bootstrapping procedure was used to test the significance of the mediation effects (Shrout & Bolger, 2002).

Results

Descriptive analysis, correlations and analysis of variance

Table 1 shows correlations among the study variables and internal consistency of each scale, separately for Female and Male groups. All α values meet the criterion of .70 (Nunnally & Bernstein, 1994) as they ranged between .77 and .96. All the significant correlations between the variables were in line with the expected directions in both groups, except for the negative correlation between cognitive demands and turnover intention in Female group.

- Insert Table 1 around here -

Analysis of variance between the Female and Male samples showed the following significant differences: females showed higher level of exhaustion [t (541) = 2.51, $p < .01$]; males showed higher level of turnover intention [t (541) = -2.65, $p < .01$].

Multi-group Structural Equation Model

The multi-group full SEM of the hypothesized model was tested both with all structural parameters constrained to be equal across groups, namely M_1, and with all structural parameters not constrained, namely M_2. As shown in Table 2, both models fitted to the data well, but M_2 did not present a significantly better fit; therefore, we choose the more parsimonious M_1: χ^2 (220, N_{Female} = 278, N_{Male} = 265) = 400.03, $p < .01$, CFI = .96, TLI = .95, RMSEA = .06 (90% CI .05, .06), SRMR = .06.

- Insert Table 2 around here –

Examination of the modification indices of M_1 revealed that releasing the equality constraints of the parameter Cognitive Demands → Turnover Intention and retesting the

model, it resulted in a better overall model, namely M_{1a}, showing for this parameter a significant difference between females and males: χ^2 (219, N_{Female} = 278, N_{Male} = 265) = 395.79, $p < .01$, CFI = .96, TLI = .95, RMSEA = .06 (90% CI .05, .06), SRMR = .06. The final model M_{1a} is graphically represented in Figure 1.

By examining the estimated model, the variables showed good item loadings in both groups. As for the structural model, among the considered job demands only job insecurity (F: β = .29, $p < .001$; M: β = .30, $p < .001$) and off-TAJD (F: β = .16, $p < .001$; M: β = .15, $p < .001$) presented a significant positive relationship with exhaustion in both groups. Exhaustion had a strong positive relationship with turnover intention in both groups (F: β = .55, $p < .001$; M: β = .58, $p < .001$). Moreover, job insecurity presented a positive relationship with turnover intention in both samples (F: β = .12, $p < .01$; M: β = .13, $p < .01$) and cognitive demands showed a negative relationship with turnover intention only in Female sample (F: β = -.25, $p < .001$). The final model explained 13% of the variance of exhaustion and 40% of the variance of turnover intention in both samples.

Subsequently, the mediating paths were evaluated using a bootstrapping procedure which extracted 2000 new samples from the original sample and calculated all direct and indirect parameters of the model (Preacher & Hayes, 2008). A significant mediation occurs when the confidence interval does not include zero. Results in Table 3 shows the statistically significant mediated effects. Particularly, the bootstrapping procedure confirmed that exhaustion was a partial mediator between job insecurity and turnover intention in Female and Male samples, showing indirect effects equal to, respectively, .16 e .17. Moreover, exhaustion was a full mediator between off-TAJD and turnover intention, showing indirect effects equal to, respectively, .10 and .11.

- Insert Table 3 around here -

Discussion

This study aimed to examine the relationship between job insecurity, off-TAJD, cognitive demands and turnover intention, considering the mediational role of exhaustion. Moreover, the study analysed these relationships in permanent workers, exploring possible differences between female and male workers. Few studies analysed the role of job insecurity in a sample of employees with permanent contract so far; our study confirms the importance of investigating its consequences also for this kind of workers.

The Hypotheses 1a, 1b and 1c stated respectively that job insecurity, off-TAJD and cognitive demands were positively related with exhaustion. Bivariate correlations showed a significant positive relation in both groups only for job insecurity and off-TAJD. The estimated model showed that job insecurity and off-TAJD had a direct effect on exhaustion in Female and Male sample; cognitive demands showed a not significant relation with exhaustion in both groups. Thus, H1a and H1b were confirmed and H1c was not. These results showed additional evidence that job demands are among the main predictors of burnout and exhaustion (Bakker & Demerouti, 2007, 2017). In particular, findings underlined the positive relation between job insecurity and exhaustion, according to previous studies (De Cuyper et al., 2012; Giunchi et al., 2016; Kinnunen et al., 2014). Moreover the demanding role of off-TAJD emerged, showing for the first time its positive relation with exhaustion; future studies could deepen the role of request from the organization to use technological devices in order to work during off-work time in well-being and ill-being dynamics.

The Hypotheses 2a, 2b and 2c stated respectively that job insecurity, off-TAJD and cognitive demands were positively related with turnover intention. Bivariate correlations and the estimated model showed some significant relations in both groups; job insecurity

had a direct positive relation with turnover intention in both groups; off-TAJD and turnover intention were not significantly related in both groups. Cognitive demands, instead, showed a negative significant relation with turnover intention, only in Female group. Thus, only H2a was confirmed for both groups, while H2b and H2c was not confirmed. Results showed the demanding role of job insecurity and its relation with turnover intention, as shown in previous studies (Laine et al., 2009; Mauno et al., 2014). Referring to cognitive demands, in this study emerged the negative relationship with turnover intention for females. As mentioned, in JD-R Theory (Bakker & Demerouti, 2007, 2017) job demands are defined as aspects of work that require effort and are associated with negative outcomes. However, some authors have underlined that job demands may also play a motivational role (Bakker & Demerouti, 2017); LePine, Podsakoff and LePine (2005) in fact distinguished between hindrance and challenge job demands. Hindrance job demands involve excessive or undesirable constraints that interfere with individual's ability to achieve goals (Cavanaugh, Boswell, Roehling, & Boudreau, 2000); examples are role conflict or role ambiguity. Instead, challenge job demands are demands that cost effort but that potentially promote personal growth and achievement of the employee (Podsakoff, LePine, & LePine, 2007), as found in previous studies for workload, time pressure, responsibility and cognitive demands (Bakker et al., 2005; van den Broeck et al., 2010). These demands, under certain conditions, have the potential to be considered as rewarding work experiences well worth the discomfort involved, and are therefore considered as "good" stressors (Bakker & Demerouti, 2017). The challenge role of cognitive demands could also explain the non-relationship with exhaustion found in this study, despite our expectations.

The Hypothesis 3 stated that exhaustion was positively related to turnover intention and was confirmed. Bivariate correlation and the estimated model showed a positive strong relation between exhaustion and turnover intention in both groups, according to several studies

reporting the effect of exhaustion on turnover intention and about the tendency of exhausted workers to withdraw from the work environment (Bakker et al., 2003a; Chau et al., 2009; Cho et al., 2014; Huynh et al., 2014; Westman & Eden, 1997).

The Hypotheses 4a, 4b and 4c stated that exhaustion mediated the relationship between respectively job insecurity, off-TAJD, cognitive demands and turnover intention. The mediational role of exhaustion among job demands and turnover intention emerged in both groups: in particular, exhaustion mediated the relationship between job insecurity and turnover intention and between off-TAJD and turnover intention, confirming H4a and H4b. Previous studies about the mediational role of exhaustion in the relationship between off-TAJD and turnover are lack but our results underlined the importance to investigate this direct and indirect relationship, as shown for example in Ferguson et al. (2016) study. Referring to job insecurity, our research confirmed the mediational role of exhaustion in the relationship with turnover, which has been little tested in previous studies (Emberland & Rundmo, 2010; Mauno et al., 2014; Michel et al., 2009). Moreover, results did not confirm H4c, specifically the mediation of exhaustion between cognitive demands and turnover intention; there is no suggestion about this relation in literature and in our study cognitive demands may probably play a role as challenge demands, as previously mentioned.

In this study we were interested in observing possible gender differences. The analysis of variance reported minimal differences between Female and Male samples: females showed higher level of exhaustion, males showed higher level of turnover intention. Referring to exhaustion, evidences about gender differences are sometimes contradictory in literature, some studies showed higher burnout for women (Bekker et al., 2005; Purvanova & Muros, 2010) and Masclach et al. (2001) underlined that gender differences in burnout could be related to gender role stereotypes and gender segregation in occupations. Also about gender differences in turnover intention previous results are contradictory; contrary to previous

studies (Lee et al., 2008; Sousa-Poza & Sousa-Poza, 2007) our results found a higher level of turnover intention for men. The estimated model did not reported gender differences, except for the relation between cognitive demands and turnover intention: this difference may be due to female and male occupational sectors or organizational contexts, in which cognitive demands may play a different role, as hindrance demands or challenge demands (Bakker & Demerouti, 2017). This result should be investigated in future studies considering samples from specific organizational contexts.

Limitations

Despite its findings, the present study presents certain limitations. The first one is related to its cross-sectional design which did not permit to establish causality relations between variables (Podsakoff, MacKenzie, & Podsakoff, 2012). Further studies should use longitudinal or diary approaches in order to examine the causal relationship between variables over time. A second limitation is the use of self-reported data that can potentially inflate results (Conway, 2002), because of respondents' tendency to answer in a consistent manner. In future studies it would be interesting to consider also other-reported and objective ratings, for example actual turnover rate measured after a period of time or the real number of emails and phone calls received during leisure time. Also the convenience sampling procedure can be considered a limitation, since it poses constraints on the extent to which study's findings can be generalized. Particularly, gender differences found in this study could be affected by differences in professions and occupational sectors; future studies should investigate these relationships and potential differences between women and men within specific working contexts. Finally, the present study did not take into account job or personal resources; in the future it would be important to investigate their potential buffering role as supported by the JD-R Theory (Bakker & Demerouti, 2007, 2017). Future

studies could integrate quantitative and qualitative methods, in order to better understand the meaning of job insecurity for this specific kind of workers, with permanent contracts, and how it interacts with other job and personal dimensions.

Practical implications

In a working environment where stable jobs are becoming the exception rather than the rule (Allvin, Mellner, Movitz, & Aronsson, 2013), it is crucial to plan interventions also for those workers with permanent contracts. The main one at the organizational level is related to clarity and flow of information, since one of the causes of insecurity is the lack of clear communication about what will happen in the future (Abildgaard, Nielsen, & Sverke, 2017). Therefore, particularly in a time of economic and occupational crisis, organizations may consider increasing the amount of contact and communication with their employees (Robinson & Morrison, 2000). In case of organisational restructuring or change, a proactive approach with high level of employees' involvement and participative decision making can be able to outbalance perception of job insecurity (Abildgaard et al., 2017).

Career practitioners should plan counselling and coaching interventions aimed at strengthening employees' capacity to deal with changes and their employability, considering also its role in buffering negative consequences of job insecurity on health (Silla et al., 2009). Also life-designing interventions could help individuals to articulate and enact a career story able to support adaptive and flexible responses to developmental tasks and possible occupational transitions (Savickas, 2012).

This study results suggest also to address the use of technology after work and the "always on" approach, which requires workers to be always online and available (Derks et al., 2014; Ghislieri et al., 2017b), typical of many Italian organizations. In case where the use of technology for supplemental work is a crucial aspect of the work it should be clearly

communicate and its consequences should be monitored; where it is not strictly indispensable it needs to be reduced or even avoided (Ghislieri et al., 2017b). The inability to disengage from work during off-work hours may interfere with an adequate recovery (Derks & Bakker, 2014), with potential negative consequences for well-being (Meijman & Mulder, 1998; Sonnentag & Fritz, 2007) and work-family balance (Derks & Bakker, 2014; Molino, Cortese, Bakker, & Ghislieri, 2015; van Hooff, Geurts, Kompier, & Taris, 2006). In organization, managers and supervisors should encourage and support segmentation practices (Sonnentag, Binnewies, & Mojza, 2010) adapting their requests, expectations and behaviours.

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Table 1. Means, standard deviations, Cronbach's alphas, and correlations among the study variables for Female (n = 278) and Male (n = 265) groups.

	Female		Male						
	M	*SD*	*M*	*SD*	*1*	*2*	*3*	*4*	*5*
1. Turnover intention	2.11	1.13	2.37	1.12	*.80/.78*	.46**	.27**	.09	-.01
2. Exhaustion	2.75	.66	2.61	.68	.42**	*.77/.79*	.30**	.18**	.06
3. Job insecurity	1.94	.80	2.08	.84	.32**	.29**	*.79/.83*	.12	-.07
4. Off-TAJD	2.22	1.24	2.17	1.26	.04	.19**	.12*	*.95/.96*	.16*
5. Cognitive demands	4.19	.66	4.10	.67	-.17**	.11	-.10	.24**	*.78/.77*

Notes. Correlations for the Female group below the diagonal; correlations for the Male group above the diagonal. Cronbach's α for Female/Male samples on the diagonal.
* $p < .05$; ** $p < .01$.

Table 2. Results of multi-group SEMs.

	χ^2	*df*	*p*	CFI	TLI	RMSEA	SRMR	AIC	Comparison	$\Delta\chi^2$ (Δdf)	*p*
M_1.	400.03	220	< .01	.96	.95	.06 (.05, .06)	.06	21271.22			
M_2.	394.38	210	< .01	.96	.95	.06 (.05, .07)	.06	21285.57	M_2–M_1	5.65 (10)	> .05
M_{1a}.	395.79	219	< .01	.96	.95	.06 (.05, .06)	.06	21268.98	M_2–M_{1a}	4.24 (1)	< .05

Note.
M_1. Hypothesized model with all structural parameters constrained
M_2. Hypothesized model with all structural parameters free
M_{1a}. M_1 with parameter Cognitive Demands → Turnover Intention released

Table 3. Indirect effects using bootstrapping (2000 replications).

Indirect effects Female sample	Bootstrap			
	Est.	S.E.	*p*	CI 95%
Job Insecurity → Exhaustion → Turnover Intention	.16	.03	.000	(.10, .22)
Off-TAJD → Exhaustion → Turnover Intention	.10	.03	.008	(.02, .15)
Indirect effects Male sample	Bootstrap			
	Est.	S.E.	*p*	CI 95%
Job Insecurity → Exhaustion → Turnover Intention	.17	.03	.000	(.11, .24)
Off-TAJD → Exhaustion → Turnover Intention	.11	.03	.001	(.02, .15)

Note. All parameter estimates are presented as standardized coefficients. CI = confidence interval.

Figure 1. The final model (standardized path coefficients, $p < .001$; * $p < .01$). Results of the multi-group analysis: Female (*Male*). Discontinuous lines indicate non-significant relationships.