The Importance of Relational Work Design Characteristics: A Person-Centred Approach

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Abstract

Adopting a person-centred approach, we integrate the job demands-control-support model with relational work design theory to investigate employee work design profiles involving autonomy, workload, social support, and prosocial characteristics (representing the combined influence of task significance and beneficiary contact). For a sample of Australian not-for-profit employees (N=2421), we identified four work design profiles: "active connected"; "passive disconnected"; "high strain disconnected"; and "controlled disconnected". The most favourable profile, active connected, demonstrated the highest vigour and social worth, and was predicted by people being in higher managerial positions and having permanent employment contracts. The high strain disconnected and controlled disconnected profiles were associated with greater psychological exhaustion. Longer working hours predicted membership of the high strain disconnected profile.

JEL Classification: L31, L30, L20, L29

Keywords: job demands-control-support model**;** work characteristics; work design; relational characteristics; prosocial characteristics; person-centred approach; latent profile analysis

1. Introduction

In Australia, work design is recognised as a key way to achieve employee health, well-being, and productivity (Parker, 2015). Yet, the longitudinal Household, Income and Labour Dynamics in Australia study found that poor quality work persists, and is as bad as, or worse than, unemployment for mental health (Butterworth et al., 2013). Further, work-related injury and disease costs the Australian economy $61.8 billion (4.1% GDP; Safe Work Australia, 2012/13). Understanding how to create well designed jobs in the contemporary era is a key way organisations can promote employee well-being and performance, and reduce the economic burden of ill health.

Past research has confirmed that jobs with 'good' work design are those high in motivating work characteristics such as autonomy and job feedback (often referred to as job resources) and those with relatively low levels of job demands. There is strong evidence that these traditional work characteristics are important for individual and organisational outcomes, such as well-being and performance (e.g., Hackman and Oldham, 1975; Humphrey, et al., 2007; Parker, 2014). However, with the changing nature of work involving increased interdependence between employees, it is becoming more apparent that relational work characteristics play an important role (Grant, 2007; 2008b; Grant and Parker, 2009). To the extent that work design research has considered relational aspects, the focus has primarily been on social support (the extent to which colleagues provide support; Morgeson and Humphrey, 2006) and how social support affects outcomes such as performance, satisfaction, and burnout (e.g., Humphrey et al., 2007). Less attention has been paid to prosocial work characteristics such as beneficiary contact, which is presumed to operate, not through intrinsic motivation, but through prosocial processes. In addition, relational work characteristics have almost exclusively been investigated in isolation, without considering how they are experienced holistically, in combination with more traditional work characteristics such as job autonomy. Thus, current understanding of the importance of contemporary work design variables, as a coherent whole, is substantially limited.

The aims of this study are twofold. First, we integrate the job demands-control-support (JDCS; Karasek and Theorell, 1990) model with relational work design theory (Grant, 2007; 2008b)

to explore the constellations (profiles) of work characteristics that emerge within employee subgroups. Specifically, we investigate what profiles emerge when key relational work design characteristics - including the more contemporary characteristic of beneficiary contact, as well as the more traditional characteristics of social support and task significance - are considered alongside other traditional work characteristics such as autonomy and workload demands. Jobs comprise many different interrelated work characteristics which are experienced simultaneously as individuals are embedded within their work environments. Employees therefore experience jobs as a 'whole', rather than as a discrete set of experiences and judgements made about their individual work design characteristics. By including a range of work characteristics, we capture these holistic experiences and build on existing work design profile research, identifying profiles than better capture individuals' real-life work experiences.

Specifically, previous profile research has mainly considered work characteristics from the perspective of the JDCS model. This model focuses on job autonomy, job demands (typically workload), and social support as key work design characteristics which are intrinsically motivating. We go beyond this to include relational characteristics previously unexplored using person-centred methods (see Figure 1). Relational work design theory (Grant, 2008a) considers social support (included in the JDCS) and prosocial characteristics (not included in the JDCS) as two distinct dimensions of relational work characteristics. While social support is considered intrinsically motivating, prosocial characteristics such as task significance and contact with beneficiaries are considered to be prosocially motivating, activating employees' desire to make a positive difference in others' lives. By including both social support and prosocial characteristics, we capture both relational dimensions proposed by Grant's (2007) relational theory. This approach allows us to test the possibility that, for example, the impact of JDCS profiles includes relational work characteristics. We pursue this aim as work design profiles need to capture the breadth of work characteristics in order to reflect real life experiences.

Our second aim is to investigate the relations between the identified work design profiles with antecedents and outcomes, to explore who (i.e., which employees) is likely to belong to which profile,

and what the implications are for well-being. We explore a broad range of distinct well-being outcomes which capture the holistic nature of well-being: vigour as a theorised outcome of intrinsic motivation and relational benefits gained from connection with those internal to organisations (e.g., colleagues, peers) (e.g., Bakker and Demerouti, 2007); social worth as a theorised outcome of prosocial motivation and relational benefits gained from those external to organisations (e.g., customers, clients, patients) (Grant, 2008a); and burnout as an indicator of ill health, as predicted by the JDCS (Karasek and Theorell, 1990). To our knowledge, these relationships have not previously been explored together, using person-centred analyses. We also assess the impact of work demographics (e.g., age, managerial level, employment contract) as predictors of profile membership, further building theory, which so far says little about antecedents of work design (Parker et al., 2017). Practically, our results offer insight into potential work design targets for interventions aimed at improving well-being. Since our outcomes are related to sets of work characteristics in combination, managers and practitioners can consider developing holistic interventions which aim to improve several characteristics simultaneously.

We address our research aims using a person-centred approach (latent profile analysis; LPA). Person-centred approaches identify whether meaningful subgroups exist within a population, and accommodate interactive effects between a large number of variables which are easily interpretable (Morin et al., 2020). Person-centred approaches can model unobserved heterogeneity, allowing constellations of variables to be identified which might not otherwise be apparent. Further, by creating constellations of work design variables, these methods are able to account for the holistic impact of key work design characteristics on outcomes. Person-centred approaches are thus particularly appropriate for exploring the structure and function of core work design variables.

In what follows, we first outline the JDCS model, and how we integrate this perspective with relational theory (Grant, 2007). Second, we critically review and build on previous person-centred work design research. Third, we develop the rationale and specific hypotheses for the present study.

1.1 The job demands-control-support (JDCS) model

The JDCS (Karasek and Theorell, 1990) model comprises three aspects: job demands, job

control, and social support (see Figure 1). Job demands are considered stressors in the work environment which cause stress, such as workload (Karasek, 1979). Job control (referred to as job autonomy from hereon) refers to the degree of decision-making autonomy workers have in their job, including when, where and how they carry out job tasks and roles. Social support refers to the amount of help and advice workers receive from colleagues and managers. Both job autonomy and social support promote intrinsic motivation, fostering well-being. The strain hypothesis of the JDCS model proposes that high demands, low control, and low support will lead to the poorest well-being outcomes ('high strain' jobs), whereas low demands, high control, and high support will lead to 'low strain' jobs. The buffer hypothesis proposes that there is a three-way interaction between demands, control, and support, such that the negative effect of demands on stress is buffered, or reduced, by the positive impact of job control and social support. Due to this buffer effect, jobs which are high in demands but also high in control and support are considered 'active' jobs that predict optimal well-being. Jobs low in demands, control, and support are considered 'passive jobs'. Altogether, the model predicts eight different profiles[1]. While the additive, direct effects of job demands, autonomy, and support, on well-being have largely been supported in the literature, the three-way interaction, or buffer effect, has not (Hausser et al., 2010; Van der Doef and Maes, 1999). Profile research has also failed to find all eight profiles, as we discuss shortly. This may be because the model fails to take into account the impact of other work characteristics which individuals concurrently experience, such as expanded relational characteristics.

1.2 Relational work design theory

Modern relational work design theories argue that jobs have 'relational architectures,' with interdependencies and relationships with others embedded into one's job (Grant and Parker, 2009). Examples include working with clients, customers, or patients, receiving feedback from a supervisor,

[1] The eight profiles are: i) low strain isolated (high autonomy, low workload, low social support); ii) low strain collective (high autonomy, low workload, high social support); iii) passive isolated (low autonomy, low workload, low social support); iv) passive collective (low control, low workload, high social support; v) active isolated (high autonomy, high workload, low social support); vi) active collective (high autonomy, high workload, high support); vii) high strain isolated (low autonomy, high workload, low social support); and vii) high strain collective (low autonomy, high workload, high social support).

and building rapport with colleagues. In their meta-analysis, Humphrey et al. (2007) found that social characteristics predicted up to 40% of the variance in employee attitudes, above and beyond motivational characteristics such as autonomy. This underscores their importance and, given the ubiquitous nature of relational characteristics in contemporary jobs, it is likely that including them alongside more typical characteristics (e.g. autonomy, workload), will change the nature of the constellations of work characteristics observed and their relationships with outcomes.

Grant (2007) proposed that relational characteristics comprise two types (see Figure 1): social support; and prosocial characteristics. Research has long considered social support as a key relational characteristic impacting employee work attitudes and outcomes (Karasek and Theorell, 1990; Morgeson and Humphrey, 2006; Grant and Parker, 2009). This research has established robust links between social support characteristics such as colleague and supervisor support and well-being outcomes such as job satisfaction, organisational commitment (Humphrey et al., 2007), and work engagement (Bakker and Demerouti, 2007). Social support is theorized to drive intrinsic motivation because it allows individuals to develop a sense of belonging to a group or organisation, meeting the basic human need for relatedness (Deci and Ryan, 2000; Van den Broeck et al., 2010). In a test of the JDCS, Van Yperen and Hagedoorn (2003) found that, as hypothesized, social support related to increased intrinsic motivation regardless of levels of job autonomy and demands. Conversely, negative outcome relations have also been established, such as when employee interactions with clients, customers, and patients result in complaints, or there is a lack of supervisor and colleague support, both of which can lead to emotional demands and contribute to stress (Maslach et al., 2001; Duffy et al. 2002).

The established relationships between social support and outcomes are theorized to alter when other characteristics are simultaneously experienced, such as when social support is predicted to buffer against the negative effect of job demands (Karasek and Theorell, 1990). However, little research has tested the holistic impact of social support combined with other work characteristics on outcomes, ignoring the socially embedded nature of employees.

Prosocial characteristics are relational characteristics which generate meaning and purpose at

work, and include task significance, the sense that work is meaningful and has a positive impact on others (Hackman and Oldham, 1975), and beneficiary contact, opportunities to connect with those one's work benefits (Grant, 2008a). Jobs high in these characteristics have been linked to positive outcomes such as well-being and performance (Humphrey et al., 2007). The mechanism explaining the positive impact of these characteristics differs from the JDCS model, however, and focused on how these aspects of work are prosocially motivating, that is, they motivate individuals to strive towards work goals which benefit others and are personally meaningful. In contrast to intrinsic motivation, these work goals are not completed simply for their own sake. This argument was supported in a series of experiments which linked task significance to performance by fostering prosocial motivation (Grant, 2008a).

While there is strong theory to suggest that constellations of work characteristics should exist, empirical evidence for their existence is limited, as we now discuss.

1.3 Previous work investigating work characteristic profiles from a job demands-control-support perspective

Most research has focused on analysing the separate relationships between work characteristics, predictors and outcomes using multiple regression or typical approaches to structural equation modelling (i.e., variable-centred approaches). In contrast, person-centred approaches allow us to determine the existence and number of meaningful subgroups who experience different patterns of work characteristics. We identified only three studies which have investigated work design profiles from the JDCS perspective (Igic et al., 2017; Keller et al., 2016; Mäkikangas et al., 2018). None identified all eight profiles, and none included prosocial characteristics.

Specifically, Mäkikangas et al. (2018) included workload, autonomy, and support and observed two profiles in a sample of Finnish university employees: a 'collective low strain' profile high in autonomy and support and low in workload; and an 'isolated high strain' profile low in autonomy and support and high in workload. Igic et al. (2017) focused on social stressors (i.e., conflicts, negative group climate, and social animosities) alongside autonomy and task demands such

as workload, work interruptions, and task uncertainty. They also observed a low and a high strain profile, characterized by low and high social stressors, respectively. Job autonomy and demands varied less between these profiles than social stressors. Further, a trajectory was observed across a ten-year period which indicated a deterioration of individuals into high strain jobs, characterized by a substantial increase in social stressors as well as, to a lesser extent, task demands. An 'improvement into low strain' trajectory was characterised by stressors which reduced over time, and a 'stable, low social stressors' profile demonstrated a constant low level of social stressors over time. The impact of relational characteristics on profile shape is clearly evident in these results. Finally, across two samples, Keller et al. (2016) also observed a low and high strain profile, and these were particularly characterised by differences in social stressors (difficult supervisor and colleague interactions) and social support levels. Specifically, the high strain profile was high in social stressors and low in support, and the low strain profile was low in social stressors and high in support.

These studies suggest that low and high strain profiles are robust, but that other profiles vary considerably, and particularly in terms of social characteristics. This may be due to studies adopting different work characteristics, and using different methods and samples, reducing comparability. However, this also suggests that the addition of extended relational characteristics, such as prosocial characteristics, are likely to further impact the nature and meaning of work design profiles when considered holistically. While previous JDCS profile studies have concentrated on social characteristics which tap intrinsic motivation, prosocial characteristics that tap prosocial motivation have been overlooked. This is an important omission, given that many jobs involve providing a service to others (e.g., teaching, nursing). The profiles that emerged in previous studies would not have accounted for the inherent interactions between core work design characteristics because prosocial characteristics were omitted, thus failing to capture a more comprehensive holistic nature of work design characteristics. By including extended relational characteristics, and moving beyond the focus on autonomy, workload, and social support, our study builds on previous work and may elucidate more nuanced profiles which better reflect the actual design of employees' work.

1.4 The present study

We propose that prosocial characteristics are integrated into the JDCS model to create a 'job-demands-control-relational' (JDCR) model (Figure 1). Specifically, we propose retaining job demands, job autonomy and social support from the JDCS, and adding the prosocial work characteristics of task significance and beneficiary contact. Further, we propose three key mechanisms which underlie this JDCR model: i) the traditional intrinsic motivational pathway which is promoted by autonomy and social support; ii) the traditional strain pathway which is activated by high demands and low autonomy; and iii) an additional prosocial motivational pathway which is promoted by prosocial characteristics. We suggest that including relational characteristics beyond social support may help build on previous research, and identify more nuanced work design profiles in addition to the core high resource, low demand, and high demand, low resource, profiles which have previously been found. We are aware of no other research that has investigated relational characteristics beyond social support and social stressors. Yet, doing so could yield crucial theoretical and practical insights, such as indicating avenues for further research, foci for interventions, and considerations for designing work.

Given the lack of previous research incorporating our relational characteristics, it is not clear how many distinct profiles may emerge. We thus developed Research Question 1: How many constellations with theoretically distinct patterns of autonomy, workload, social support and prosocial characteristics emerge?

Further, we draw on relational theory (Grant, 2007) and the JDCS (Karasek and Theorell, 1990) to theorize that higher levels of autonomy and relational characteristics will lead to better well-being and lower strain, and lower levels of autonomy and relational characteristics will lead to lower well-being and higher strain.

Hypothesis 1a: Both a 'low strain' constellation, consisting of high levels of autonomy and relational characteristics and low workload, and a 'high strain' constellation, consisting of low autonomy and relational characteristics and relatively high workload, will emerge.

We suggest that it is plausible that employees may experience different levels of social support and prosocial characteristics. For example, individuals may understand the important impact

of their work on others and have regular contact with those their job benefits, but may feel unsupported by their colleagues and/or supervisor. An example could be a teacher who interacts daily with pupils and feels rewarded by helping them learn, but faces a heavy workload with minimal help. This individual might retain prosocial motivation, and continue to perceive a sense of social worth, but might also experience high levels of exhaustion and low levels of vigour, suggesting diminished intrinsic motivation. Accordingly, we hypothesize:

Hypothesis 1b: There will be differences in levels of social support and prosocial characteristics across different work design profiles such that a profile with low levels of social support and high levels of prosocial characteristics will emerge, and vice versa.

1.5 Profile Outcomes

We investigated the predictive relations of our profiles with three distinct well-being outcomes: vigour, social worth, and psychological exhaustion. First, we focus on vigour as an outcome of intrinsic motivation. Vigour refers to high energy and persistence at work, and is a key indicator of work engagement (Bakker and Demerouti, 2008). Established research suggests that jobs that are high in resources such as autonomy and support lead to vigour because these characteristics allow individuals to experience pleasure and reward and are thus intrinsically motivating (e.g., Van Yperen and Hagedoorn, 2003; Bakker and Demerouti, 2007; Grant, 2007; Lesener et al., 2019). In addition, such jobs fulfil basic human needs for autonomy and belonging (Van den Broeck et al., 2010).

Second, we focus on social worth as an outcome of prosocial motivation. Social worth refers to the belief that one's contributions are valued by others (Grant, 2008a). Grant (2008a) argues that when employees work towards goals that benefit others, prosocial motivation is fostered, leading to better performance. In an intervention study with lifeguards, Grant (2008a) found that perceived social worth mediated the relationship between task significance and performance.

Third, we focus on psychological exhaustion as an outcome of high demands. Psychological exhaustion refers to extreme depletion of one's mental, cognitive energy such that one feels extremely tired and unable to function effectively at work (Frone and Tidwell, 2015). Exhaustion comprises one

of the three subdimensions of burnout (Maslach et al., 1996) and has been overwhelmingly linked to high demands such as workload and time pressure (e.g. Humphrey et al., 2007; Lesener et al., 2019). This is because individuals must invest energy in meeting their demands, which depletes their resources, leading to exhaustion (Bakker and Demerouti, 2007). Further, the JDCS theorises that when resources, in the form of autonomy and social support, are low, the negative impact of demands on exhaustion is greater.

Taken together, we expect that work design profiles characterized by higher autonomy and relational characteristics and lower demands, will foster both intrinsic and prosocial motivation and thereby predict vigour and social worth. This is in accordance with evidence showing that fostering both types of motivation simultaneously results in the most optimum performance outcomes (Grant, 2008c). Conversely, we expect that profiles low in autonomy and relational characteristics, and high in workload, will predict psychological exhaustion, in keeping with the JDCS (Karasek and Theorell, 1990; see also Humphrey et al., 2007; Lesener et al., 2019). Further, we expect that profiles high in social support but low in prosocial characteristics will be more related to vigour, as an indicator of intrinsic work motivation, while profiles high in significance and low in social support will be more related to social worth, as an indicator of prosocial motivation. In sum, we hypothesise:

Hypothesis 2a: Profiles high in autonomy, social support, and prosocial characteristics, and moderate in workload will be associated with higher levels of vigour, and social worth, and lower levels of psychological exhaustion.

Hypothesis 2b: Profiles low in autonomy, social support, and prosocial characteristics, with high workload, will be associated with lower levels of vigour, and social worth, and higher levels of psychological exhaustion.

Hypothesis 2c: Profiles high in social support but low in prosocial characteristics will be associated with vigour, while profiles high in prosocial characteristics but low in social support will be more related to social worth.

1.6 Profile Antecedents

We also aim to determine the characteristics of individuals occupying the different profiles.

Such information contributes to knowledge around the antecedents of work design (e.g., Parker et al., 2017), and could help organisations identify employees who might benefit most from work redesign interventions. In our study, we consider age, gender, employment contract type, work hours, and managerial level as potential profile membership predictors. Previously, Mauno et al. (2016), found that those in a stable high strain profile tended to be older and employed on permanent contracts, whereas those in a stable low strain profile tended to be younger and employed on temporary contracts. Those who are older may be more likely to hold positions with more responsibility, and therefore experience greater decision-latitude in their day-to-day roles. Such responsibility may come with associated demands, increasing workload. In contrast, employees with casual or fixed contracts are typically constrained in the type and variety of tasks they are required or asked to do, limiting their autonomy, but also potentially reducing their demands. It may also be more difficult for these employees to build relationships with others if their employment is short-term or sporadic, or gain a clear understanding of how their work impacts others unless they are in direct contact with beneficiaries. We therefore predict that those who are older or in permanent contracts are more likely to belong to profiles comprising higher autonomy and relational characteristics, as well as higher demands.

Further, Makikangas et al. (2018) found that longer work hours predicted membership of an "isolated high-strain" job in which social support and autonomy was lower, and workload higher, than in a "collective low-strain" job. This supports established research that associates longer working hours with lower social support and increased stress (Lee et al., 2017), as well as increased job demands, burnout, and exhaustion (Park and Lake 2005). This is because those with high demands may feel greater pressure to work longer to meet work goals (e.g., Park and Lake, 2005). Long working hours is a useful indicator of exhaustion for employers who would like to reduce risk of burnout. We therefore expect that those working longer hours will be in profiles characterized by relatively high demands.

Managerial level, or seniority, is likely to predict levels of job resources and demands, as senior managers likely experience more autonomy (e.g., in the form of behavioral latitude), support

(e.g., from other senior managers) and task significance (e.g., having a clear understanding of their impact), than lower level employees. Senior managers are also likely to experience higher demands due to increased responsibility. In support, Van den Broeck et al. (2011) found that employees in jobs with high resources were more likely to occupy managerial positions. We therefore expect senior managers to more likely belong to active job profiles. In terms of gender, Van den Broeck et al. (2011) found that a significantly greater proportion of females than males were in "demanding" (high demands, low resources) or "poor" (low demands, low resources) jobs, rather than "rich" (high demands, high resources) or "resourceful" (low demands, high resources) jobs. We therefore predict that females are more likely to belong to high strain profiles. Our final set of hypotheses are:

Hypothesis 3a: Employees who are: (i) older;(ii) male; (iii) on permanent employment contracts; or (iv) occupy higher managerial levels, are more likely to belong to more favourable profiles (i.e., those with high autonomy and relational characteristics and moderate workload).

Hypothesis 3b: Those working longer hours are more likely to belong to profiles high in workload and relatively low in resources.

2. Method

2.1 Participants and procedures

The sample consisted of 2,421 employees in Not-For-Profit (NFP) organisations across Australia[2]. There are over 56,000 NFP organisations across Australia, employing over a million people, and contributing over AUD$34,000 GDP (ABS, 2015). Understanding the work design profiles which promote the best work outcomes is therefore important for the Australian economy. Further, relational characteristics are likely to vary within this sector making this sample particularly appropriate for this study. For example, workers may be in varying contact with diverse beneficiaries, such as students and parents in education establishments, patients in hospitals, and customers in

[2]Approval to conduct this research was provided by the University of Western Australia, in accordance with its ethics review and approval procedures (RA/4/1/8885). For more detail about this project, please see: to avoid revealing author identity, website reference to be added following blind review.

charity shops. Other workers may consistently experience less contact with beneficiaries if they work 'behind the scenes' in an office or from home. Participants in our sample were 73% female, with an average age of 44 years (*SD*=12.02). The minimum age was 15 years and the maximum age was 99 years. Please see Table 1 for further descriptive statistics.

2.2 Measures

Unless stated otherwise, the response scale for all measures comprised a 5-point Likert scale (1=strongly disagree, 5=strongly agree). Reliabilities can be found in the diagonal in Table 1.

Job autonomy characteristics. Work-scheduling autonomy, decision-making autonomy, and work method autonomy were each measured using two items of the Work Design Questionnaire (WDQ; Morgeson and Humphrey, 2006). Example items are, respectively, 'The job allows me to make my own decisions about how to schedule my work', 'The job allows me to make a lot of decisions on my own', and 'The job allows me to decide on my own how to go about doing my work'. These three autonomy scales formed a second-order variable, determined theoretically and empirically by confirmatory factor analyses (see Supplementary Material).

Social support. Social support was measured with two items from the WDQ (Morgeson and Humphrey, 2006). An example item is: 'I have the opportunity to meet with others in my work'.

Prosocial characteristics. Task significance was measured with two items from the WDQ (Morgeson and Humphrey, 2006). An example item is: 'The results of my work are likely to significantly affect the lives of other people'. Beneficiary contact was measured with two items from Grant (2008a). An example item is, 'My job gives me the opportunity to meet the people who benefit from my work'. These two scales formed a second-order variable (see Supplementary Material).

Workload. Workload was measured with two items (Kinicki and Vecchio, 1994). An example item is: 'There is just not enough time to do my work'.

Profile antecedents. In accordance with our hypotheses, the following characteristics were included as profile predictors: age, gender (1=male; 0=female), managerial level (1=assistant; 2=professional; 3=officer; 4=manager; 5=senior manager; 6=director; 7=executive; 8=chief executive/head of organisation; 9=board director/chair), employment contract (1=casual; 2=fixed-

term; 3=permanent), and working hours.

Profile outcomes. Vigour was measured with three items from the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2006). An example item is 'At my work, I feel bursting with energy'. Psychological exhaustion was measured with two items (Frone and Tidwell, 2015). An example item is, 'I feel emotionally worn out at the end of the workday'. To reduce survey fatigue, the full scale was not used. Vigour is considered the main indicator of work engagement (Gonzalez-Roma et al., 2006). Social worth was measured with the exact same two items used by Grant (2008a). An example is: 'I feel that others appreciate my work'.

2.3 Analytic procedures

M*plus* 8.4 was employed to carry out factor analyses and latent profile analyses using its robust maximum likelihood estimator (MLR). Fit of each CFA was assessed using standard goodness-of-fit indices and compared to alternative models (supplementary material). We used factor scores from our final CFA model in our latent profile analyses (Meyer and Morin, 2016). Our LPAs followed best practice recommendations (e.g., Morin et al., 2011; Morin et al., 2016; McLarnon and O'Neill, 2018). Fit indices informed the optimal number of profiles (Morin et al., 2011; Masyn 2013; Morin et al., 2016). Lower values on the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Consistent AIC (CAIC), and sample-adjusted BIC (SABIC) indicate better fitting models. Elbow plots of the information criteria helped identify where the slope on the information criteria 'flatten off,' as they might not reach a minimum despite increasing numbers of profiles. As well, p-values <.05 for the Likelihood Ratio (LMR) and the Bootstrap Likelihood Ratio (BLRT) test indicate that the k model has a significantly better fit than the k-1 model. Importantly, the final model we retained was informed by theoretical expectations, as well as the statistical adequacy (i.e., a solution that had negative variances was deemed untrustworthy). We assessed relationships with antecedents and outcomes by adding the antecedents, and factor scores from CFAs of our outcomes, using M*plus'* R3STEP (antecedents) and BCH (outcomes) functions (see also supplementary material).

3. Results

3.1 Results of initial analytic procedures

Statistical results provided support for the second-order structure of the autonomy and prosocial variables. First, Table 1 shows the first-order indicators of each second-order factor were all significantly intercorrelated, ranging between .34 (between task significance and beneficiary contact) and .68 (between decision-making and method autonomy). Confirmatory factor analyses (CFA) revealed that our hypothesised model with two second-order factors (autonomy and prosocial characteristics, see Figure 1), and two first order factors (workload and social support) fit the data well ($\chi^2(67)=136.26$, $p<.01$, RMSEA=.02, CFI=.99, SRMR=.03), and statistically significantly better than alternative models (see Table A, supplementary material).

-----INSERT TABLE 1 ABOUT HERE-----

3.2 LPA results

We estimated models with one to nine profiles. The CAIC, AIC, BIC, and SABIC, all decreased with the addition of more profiles (Table 2). The LMR was significant for all profile solutions up to six profiles, after which the LMR was $p>.05$. In contrast, the BLRT remained significant for all profile solutions, suggesting that solutions with increasing profiles continually offered significantly improved fit. Elbow plots were unhelpful as there was no obvious levelling off. Entropy values ranged between 0.77 and 0.97.

Profile graphs revealed that two, three, and four profile solutions contained distinct profiles which differed in shape, suggesting meaningful distinctions between them. In particular, the four-profile solution revealed two profiles which were similar except in the level of relational characteristics present (see Table B1, supplementary material; and Figure 2). In the five-profile model, two of the recovered profiles were highly similar, suggesting redundancy (see Table B2, supplementary material). Although a clear statistical solution was not forthcoming, on balance, the significant BLRT, lower information criteria, and recovery of a unique set of profiles indicated that the four-profile solution was optimal. Based on our theoretical and statistical reasoning, we retained this four-profile solution as our final model (Figure 2), thereby addressing Research Question 1.

In the four profile solution, profile one comprised the largest proportion of employees, 72%,

who had relatively high job autonomy, workload, social support, and prosocial characteristics. We named this profile "active connected", as it reflected the "active collected" profile of the JDCS. The term "connected" (as opposed to "collective") conveys the idea that individuals experience connection through relational characteristics more broadly, rather than solely social support. Profile two comprised 21% of respondents and consisted of below average autonomy, and relatively social support, and prosocial characteristics, as well as relatively low workload. We named this profile "passive disconnected", as it reflected the "passive isolated" profile of the JDCS. The term "disconnected" encompasses the idea that individuals in this group not only lack support (which is suggested by the term, "isolated"), but also lack connection with the beneficiaries and purpose of their job. Profile three comprised 6% of employees, and was characterised by very low job autonomy, below average social support and prosocial characteristics, and relatively high workload. We named this profile "high strain disconnected", as it reflected the classic "high strain isolated" profile of the JDCS but went further to include low prosocial characteristics. Profile four comprised 1% of respondents and consisted of very low job autonomy, social support, and prosocial characteristics, and average workload. We named this profile "controlled, very disconnected", and it did not reflect well any of the profiles defined by the JDCS.

These results partially support Hypothesis 1a because profile three strongly resembled high strain jobs. The classic low strain profile comprising low job demands and high autonomy was not observed. Hypothesis 1b was also partially supported as we observed different levels of social support and prosocial characteristics between profiles, particularly between passive disconnected, high strain disconnected, and controlled disconnected, profiles. However, it was not fully supported as we had expected more contrasting differences.

Having established the four profile solution, we proceeded to test relationships with outcomes and antecedents.

-----INSERT TABLE 2 and FIGURE 1 ABOUT HERE-----

3.3 Profile Outcomes

Means for each outcome are reported in Table 3 (see also Figure 3). Those in active

connected jobs experienced significantly higher vigour and social worth than any other profile. Exhaustion approached the sample mean, and was significantly lower than in the high strain profile. Those in passive disconnected jobs experienced significantly lower vigour and social worth than those in active connected jobs, albeit significantly higher vigour and social worth than those with high strain disconnected jobs or controlled disconnected jobs. Exhaustion levels were significantly lower than in all other jobs. These individuals, therefore, experience little strain but poorer well-being. Those in high strain disconnected jobs experienced significantly higher vigour and social worth than those in controlled disconnected jobs, but significantly lower than those in active connected jobs and passive disconnected jobs. Exhaustion was not significantly different to that experienced by people in passive disconnected jobs, but was significantly higher than in all other profiles. Thus, these individuals appear to experience poor well-being coupled with the highest strain. Finally, those in controlled disconnected jobs experienced significantly lower vigour and social worth than in any other profile. Exhaustion was significantly higher than in disconnected low strain jobs. These individuals appeared to experience the poorest well-being overall, in addition to relatively high strain.

In sum, profiles with the highest and lowest amounts of both relational characteristics (social support and prosocial characteristics) and autonomy characteristics (i.e. active connected jobs, and controlled disconnected jobs, respectively) were associated with the highest and lowest levels of vigour and social worth, respectively. This suggests the powerful role of relational and autonomy aspects for well-being. Exhaustion remained similar across the profiles, with only those in passive disconnected jobs experiencing significantly lower exhaustion than those in other profiles. Our results therefore partially support Hypotheses 2a and 2b. Unfortunately, Hypothesis 2c could not be fully tested as we did not observe profiles which starkly contrasted in levels of social support and prosocial characteristics.

-----INSERT TABLE 3, FIGURE 2, AND FIGURE 3 ABOUT HERE-----

3.4 Profile Antecedents

In terms of managerial level, for every increase in hierarchical level (e.g., from assistant to professional, or manager to senior manager), individuals were 1.6× more likely to be in active

connected jobs than high strain disconnected jobs or controlled disconnected jobs, and 1.2× more likely to report active connected jobs than passive disconnected jobs (Table 4). Further, employees who worked longer hours were 1.3× more likely to be in high strain disconnected jobs than controlled disconnected jobs, 1.1× more likely to be in active connected jobs than passive disconnected jobs, and 1.3× more likely to be in high strain disconnected jobs than controlled disconnected jobs. In terms of gender, males were 2.2× more likely to be in high strain disconnected jobs than passive disconnected jobs , and 1.9× more likely to be in high strain disconnected jobs than active connected jobs. There were no significant differences between profiles for age or employment contract suggesting that those who were younger or older, or employed on a permanent, fixed-term, or casual basis, were no more likely to be in one profile than another.

Taken together, these results are consistent with Hypotheses 3a iv) and 3b), but not 3a i), ii) or iii). This suggests that employees who hold a managerial position are more likely to experience autonomy and relational characteristics in their jobs, and that males are more likely to belong to high strain profiles rather than females. However, contract type does not affect the work design profile in which individuals find themselves. In addition, our results suggest that those who work longer hours are likely to have higher demands or be in engaging, stimulating jobs (e.g., active connected jobs). These results are important as they indicate groups of employees who are more at risk of experiencing low autonomy, or low relational jobs, and also those likely to experience higher demands, thus suggesting potential targets for work design interventions.

-----INSERT TABLE 4 ABOUT HERE-----

4. Discussion

Adopting a person-centred approach, this study integrated prosocial work design characteristics with the more traditional relational characteristic, social support, and the well-established work design characteristics, job autonomy, and workload, encompassed within the JDCS model, to uncover work design profiles of employees. A four profile solution offered an optimal fit. While the largest proportion of employees (72%) were in the most favourable profile (active connected jobs), 28% were

in one of three less favourable profiles (passive disconnected jobs, high strain disconnected jobs, or controlled disconnected jobs). This suggests that interventions could be useful to help employees transition into the active connected profile from less favourable profiles.

4.1 Nature of Work Design Profiles

Our results suggest that while the balance between autonomy and demands may 'drive' some profiles, such as high and low strain profiles, relational characteristics underlie the structure of other work design profiles. However, inclusion of relational characteristics are not typically considered by traditional work design models. Thus, our results are important as they support the view that work design characteristics co-occur in constellations, and that person-centred approaches are appropriate for studying work design. If these other characteristics are not accounted for, and their interdependencies are not adequately acknowledged, erroneous conclusions could be made, and nuanced relationships between job characteristics may be overlooked. In our study, social support and prosocial characteristics tended to covary despite operating via theoretically different motivational mechanisms. Some empirical research suggests that prosocial motivation is augmented by intrinsic motivation (Grant, 2008c), thus, it is likely that social support, alongside autonomy, promoted intrinsic motivation and augmented the effect of prosocial characteristics on social worth.

We observed two profiles that were similar to those predicted by the JDCS model: passive disconnected; and high strain disconnected. Our high strain disconnected profile was also observed by Mäkikangas et al. (2018), and other person-centred research which included social characteristics (e.g., Keller et al., 2016; Igic et al., 2017). Our active connected profile additionally resembled Mäkikangas et al.'s (2018) collective low strain profile, however, workload was above average in ours, and below average in theirs. Unlike previous studies, we did not observe the classic JDCS profile of low strain that comprising high autonomy and support, and low demands. However, we did find a profile low in all characteristics, and especially relational characteristics (passive disconnected), which largely resembles the low strain profile and highlights the importance of relational characteristics.

The NFP context of our sample could explain the differences observed between our study and

previous ones. Morin et al. (2016) noted that the accumulation of research demonstrating similar profiles across diverse contexts indicates generalizability, yet different profiles may emerge which reflect different subpopulations particular to specific contexts. Our findings add to the weight of evidence for a high strain profile, but also suggest more nuanced profiles shaped by autonomy and relational characteristics.

4.2 Profile Antecedents and Outcomes

Work design profiles high in both autonomy and relational characteristics were powerful predictors of vigour and social worth, suggesting the importance of these predictors for eudaimonic well-being. This supports the view that psychological well-being is driven by independence and self-determination, as well as the ability to develop meaningful relationships with others (Ryff, 2017). Profiles high in autonomy and relational characteristics were also combined with a moderate level of demands, and associated with a moderate level of exhaustion (e.g., active connected). This suggests that work which is challenging and motivating can also generate some anxiety and stress. Thus, modest demands alongside plentiful autonomy, social support, and prosocial characteristics may actually contribute towards positive outcomes overall (e.g., Parker, 2014).

Specifically, social worth was significantly lower in high strain disconnected jobs than in passive disconnected jobs, despite the fact that both social support and prosocial characteristics were significantly higher in the former. We suggest individuals need more support and connection with those beneficiaries impacted by their jobs than present in this profile, to buffer the strong effect of high workload and low autonomy on social worth. This is in keeping with the JDCS model (Karasek and Theorell, 1990). In contrast, where autonomy was higher, demands lower, and relational characteristics were below average, the impact on social worth may have been less severe, as the higher autonomy and fewer demands may have compensated somewhat for the impact of low support and prosocial characteristics. Perhaps when employees have the freedom to choose how, where, and when they do their work, or to craft their jobs towards meaningful activities (Tims et al., 2012), individuals feel their contributions are more valued, increasing their sense of social worth. Building autonomy could therefore increase social worth. These interdependencies between job characteristics

support the view that workers experience 'whole' jobs rather than discrete aspects of jobs, and thus that constellations of work characteristics interact to impact outcomes.

As expected, exhaustion was highest when demands were highest and autonomy was relatively low (high strain disconnected profile). Conversely, when autonomy and relational characteristics were higher and demands were moderate (active connected profile), vigour was optimised. These results are important, given that the interaction effect between autonomy and demands has proven difficult to ascertain in past research (e.g., Häusser et al., 2010; Van der Doef and Maes, 1999). Thus, a considerable advantage and contribution of our study is in recovering evidence of this pattern through use of person-centred methodologies. In sum, our results suggest that the most favourable work designs are ones which are high in autonomy, social support, and relational characteristics, and contain moderate job demands. This supports other researcher's theorising (e.g. Parker, 2014).

Our research also contributes to knowledge of the antecedents of work design. Understanding how favourable work designs can be created aids in understanding who is most likely to be at risk of poor work design. For example, managers tended to be in profiles with high job demands. While demands may come with the nature of managerial jobs, which tend to involve greater responsibility and decision-making, the need for resources to deal with these demands is high, else exhaustion and poor well-being is likely (Karasek, 1979; Bakker and Demerouti, 2007). Managerial jobs should therefore be designed with high autonomy, social support, and prosocial characteristics. Organisations should also be aware of the dangers of employing casual staff and staff on fixed-term contracts, as these employees tended to be in less favourable profiles and thus at more risk of poor outcomes. Individuals occupying these roles should be afforded greater work design flexibility, and be given additional means to enhance the relational characteristics of their role. Finally, being male, and long working hours, predicted membership of the high strain disconnected profile, and thus indicated employees who were likely to be at risk of exhaustion. Organisations could promote work-life balance, discourage long working hours, hire additional employees, or encourage colleagues to support each other when workloads are high.

4.3 Strengths and limitations

The strengths of this study lie in the integration of relational work design theory with the JDCS model. Including extended relational characteristics alongside traditional work characteristics allowed us to explore more holistic constellations of work design apparent in employees. Further, we assessed how well these profiles explained outcomes and were predicted by antecedents. Our large sample increases robustness, and is likely to be generalizable to other industries in which relational characteristics are important.

Limitations include the cross-sectional design, limiting causal conclusions. However, our primary intention to assess the presence, nature, and validity of our profiles was appropriate for such a sample. In addition, our investigation into specific antecedents and outcomes is novel, and the first step towards developing more detailed and nuanced theory for testing in longitudinal studies. Although we relied on self-report measures, increasing the risk of common method variance (Podsakoff et al., 2003), other research suggests that interaction effects are robust despite common method variance (e.g., Evans, 1985; Siemsen et al., 2010; Meyer and Morin, 2016). This suggests that our profiles, which represent the combined influence of the work design characteristics, are robust.

4.4 Future directions

Future studies could investigate which employees are likely to change profiles over time, and why, using latent transition analyses (e.g. Kam et al., 2016). This could help organisations and practitioners identify individuals likely to move from more favourable profiles to less favourable ones, and vice versa, paving the way for interventions to promote positive outcomes. In addition, exploring additional demographic factors such as job type (e.g., industrial, office-based, 'gig' work) might identify associations with nuanced profiles. Moreover, these relationships may be different between industries, helping identify which profiles tend to generalise across contexts and which are context-dependent. As most employees are embedded within relational structures, it is likely that our results generalize to other types of jobs and industrial sectors, and are also applicable to jobs in other similar geographical regions (e.g., North America, Europe). Leadership behaviours may also impact profile membership as leaders design jobs for individuals and thus directly impact individuals' experiences of work characteristics (Parker et al., 2017; Parker et al., 2019). A leader who designs

jobs in which employees have little control over what tasks they complete and have high workloads, is likely to promote unfavourable profiles and poor outcomes. Organisational factors are also important to consider (Parker et al., 2017). For example, procedures and policies such as flexible working may impact individuals' sense of autonomy, and technology systems may increase efficiency and reduce demands.

4.5 Implications for practice

First, our results suggest that organisations should enhance employee autonomy and relational characteristics, and reduce unnecessary demands, to promote well-being. Second, our results are important for managers who design and redesign work. 28% of our sample were in one of three less favourable profiles which could amount to a large number of individuals in jobs with poor work designs within many organisations. Interventions targeting specific profiles could help prevent long-term effects, such as exhaustion, absenteeism, and poor performance (e.g., Bakker and Demerouti, 2007; Lesener et al., 2019). Critically, it is likely that multiple work design areas will need to be targeted simultaneously to promote the transition of employees from an unfavourable profile to a favourable one (i.e., active, connected jobs), with the areas targeted reflective of the profile that individuals are in.

For example, managers could first assess employees' work design via surveys, to identify who belongs to unfavourable work characteristic profiles. For those in controlled, disconnected jobs, for instance, improving autonomy and relational work aspects would be most important. This might involve introducing flexible working policies to give people more autonomy over how and when they complete their work, and involving employees in decision-making processes. Work redesign intervention reviews show that such strategies for increasing autonomy are effective for well-being (e.g., Daniels et al., 2017) as well as performance (Knight & Parker, 2019). Relational aspects of work could be increased by managers providing access to supportive communication channels such as online messaging and virtual platforms (e.g., Teams, Zoom), and encouraging employees to connect with each other to problem-solve, share knowledge, and collaborate. Managers could also use regular team meetings to convey the important roles that employees' work plays in the organisation, and the

positive impact it has on others. Evidence suggests these types of relational interventions promote employees' sense of purpose and belonging to the organisation (e.g., Grant, 2008a). For those in high strain disconnected jobs where job demands are high, as well as autonomy and relational characteristics being low, managers could also help employees re-prioritise tasks, increase staffing, or re-assess team and organisational goals and deadlines to make them more realistic and manageable. Managers could track success by re-assessing employees' work design following interventions.

In addition, the importance of relational characteristics as profile indicators is clearly apparent in our study, as profile shape was influenced by levels of these characteristics and were low in all the unfavourable profiles albeit to differing degrees. These characteristics have typically been under explored in previous profile research, yet our findings suggest that managers and organisations should pay particularly close attention to designing work which is relational, alongside promoting other characteristics which are more typically explored, such as autonomy. In summary, taking a holistic view of employees' work design and addressing multiple focal areas simultaneously could mean that organisations can help employees transition from unfavourable profiles to favourable ones more successfully than if discrete work characteristics are targeted in isolation.

5. Conclusion

As individuals increasingly work interdependently with others in team settings and in organisations that involve volunteers, customers, and patients, the role of relational characteristics that promote prosocial motivation and meaning are likely to be increasingly important for positive outcomes. Our study demonstrates the importance of relational characteristics in the formation of work design profiles, and suggests nuanced relationships with well-being outcomes such as social worth. We urge researchers and practitioners to consider the holistic impact of 'whole' jobs, involving extended relational characteristics in addition to more traditional work characteristics when designing and redesigning work.

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Table 1

Descriptive Statistics, Bivariate Correlations, and Reliabilities for demographic and research variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Age	44.05	12.02									
2. Gender	.26	.44	.07								
3. Managerial level	5.00	2.12	.33	.15							
4. Hours worked	8.04	2.34	.03	.11	.34						
5. Employment contract	2.65	.55	.08	<.01	.13	.20					
6. Decision-making autonomy	4.09	.882	.14	.03	.31	.07	.06	(.91)			
7. Scheduling autonomy	4.21	.848	.11	-.03	.23	.01	.08	.59	(.76)		
8. Work-method autonomy	4.24	.757	.11	-.02	.28	.06	.09	.68	.60	(.84)	
9. Job autonomy[a]	4.18	.719	.14	-.01	.32	.06	.09	.88	.85	.87	
10. Workload	3.44	1.048	-.01	-.03	.16	.24	.09	.02	-.03	.01	.00
11. Social support	3.99	.861	-.03	-.02	-.06	.00	.02	.18	.13	.17	.18
12. Task significance	4.04	.853	-.02	.06	.11	.12	-.02	.22	.11	.15	.18
13. Beneficiary contact	3.93	.95	.03	.03	.04	.02	-.03	.22	.16	.16	.21

14. Prosocial characteristics[b]	3.98	.739	.01	.05	.09	.08	-.03	.27	.17	.19	.24
15. Vigour	3.72	.833	.14	.01	.15	.07	.03	.34	.27	.32	.36
16. Psychological exhaustion	3.3	.984	-.08	-.03	.02	.23	.05	-.09	-.14	-.10	-.13
17. Social worth	4.05	.777	.08	.07	.12	-.01	.01	.36	.28	.36	.38

Table 1 cont'd

Variable	10	11	12	13	14	15	16	17
10. Workload	(.86)							
11. Social support	.00	(.60)						
12. Task significance	.10	.21	(.69)					
13. Beneficiary contact	.07	.26	.34					
14. Prosocial characteristics[b]	.10	.29	.80	.84				
15. Vigour	-.06	.26	.26	.27	.32	(.89)		
16. Psychological exhaustion	.39	-.04	.09	.03	.07	-.16	(.88)	
17. Social worth	-.04	.31	.27	.30	.35	.42	-.12	(.93)

Note. For all r≥.06, p<.05; for all r≥.07, p<.01;Where appropriate, Cronbach's coefficient alpha is provided in the diagonal in parentheses; Gender was binary coded (1=male; 0=female); Managerial level was coded 1=assistant; 2=professional; 3=officer; 4=manager; 5=senior manager; 6=director; 7=executive; 8=chief executive / head of organisation; 9=board director / chair; Employment contract was coded 1=casual; 2=fixed-term; 3=permanent..

[a]Job autonomy is the second-order profile indicator comprising decision-making autonomy, scheduling autonomy, and work-method autonomy.

[b]Prosocial characteristics refers to the second-order profile indicator comprising task significance and beneficiary contact.

Table 2

Latent Profile Analysis Class Enumeration Fit Indices (N=2421)

Model	LL	#parameters	AIC	CAIC	BIC	SABIC	Entropy	LMR (*p*)	BLRT (*p*)	AWE	Bayes Factor
One profile	-7733.25	8	15482.51	15536.84	15528.84	15503.43	--	--	<0.01	15615.17	
Two classes	-7483.93	13	14993.85	15082.15	15069.15	15027.84	0.77	0.02	<0.01	15209.45	6.7359E-117
Three classes	-7374.05	18	14784.11	14906.36	14888.36	14831.17	0.78	0.04	<0.01	15082.61	1.2716E-62
Four classes	-7283.64	23	14613.28	14769.49	14746.49	14673.42	0.79	0.01	<0.01	14994.71	1.84985E-60
Five classes	-6979.74	28	14015.48	14205.65	14177.65	14088.69	0.95	0.00	<0.01	14479.83	1.8331E-159
Six classes	-6871.27	33	13808.53	14032.66	13999.66	13894.82	0.96	0.02	<0.01	14355.81	7.02442E-81
Seven classes	-6720.69	38	13517.37	13775.47	13737.47	13616.73	0.92	0.08	<0.01	14147.57	1.8709E-105
Eight classes	-6611.46	43	13308.92	13600.97	13557.97	13421.35	0.94	0.14	<0.01	14022.03	8.74077E-94
Nine classes	-6510.04	48	13116.08	13442.10	13394.10	13241.59	0.97	0.77	<0.01	13912.11	1.10868E-96

Note. For all models, means differed across profiles, respective variances were constrained to equality. LL=Loglikelihood value; AIC=Akaike Information Criterion; CAIC=Consistent AIC; BIC=Bayesian Information Criterion; SABIC=Sample size adjusted BIC; LMR=Lo, Mendel and Rubin LRT test; BLRT=Bootstrapped LRT; AWE=Approximate Weight of Evidence Criterion

Table 3

Outcome means and pairwise comparisons between profiles (N=2421)

	Means of Outcomes				Profile comparisons					
	Active connected (P1)	Passive disconnected (P2)	High strain disconnected (P3)	Controlled disconnected (P4)	P1 vs P2	P1 vs P3	P1 vs P4	P2 vs P3	P2 vs P4	P3 vs P4
Vigour	0.20	-0.45	-0.66	-1.30	0.65**	0.85**	1.49**	0.21*	0.85**	0.64**
Exhaustion	0.01	-0.18	0.40	0.25	0.19**	-0.39**	-0.23	-0.57**	-0.42*	0.15
Social worth	0.18	-0.35	-0.71	-1.52	0.54**	0.89**	1.71**	0.36**	1.17**	0.81**

Note. Scores for outcome variables were derived from factor scores with a mean of 0 and a standard deviation of 1; P=Profile

*p<0.1; **p<.01

Table 4

Multinomial Logistic Regression Results of the Effect of Antecedents on Latent Profile Membership (N=2119)

Antecedent	Profile 1 vs 2				Profile 1 vs 3				Profile 1 vs 4			
	Coefficient	SE	*p*	OR	Coefficient	SE	*p*	OR	Coefficient	SE	*p*	OR
Age	0.00	0.01	0.73	1.00	-0.01	0.01	0.56	0.99	0.02	0.02	0.18	1.02
Gender	0.17	0.20	0.39	1.18	-0.62	0.28	0.03	0.54	-0.57	0.54	0.29	0.56
Managerial level	0.17	0.05	0.00	1.19	0.49	0.09	0.00	1.63	0.48	0.16	0.00	1.62
Employment contract	0.10	0.15	0.53	0.91	0.16	0.23	0.49	0.86	-0.15	0.41	0.72	1.16
Working hours	0.11	0.04	0.00	1.11	-0.12	0.07	0.09	0.89	0.14	0.09	0.12	1.14
	Profile 2 vs 3				Profile 2 vs 4				Profile 3 vs 4			
Age	0.00	0.01	0.75	1.00	0.03	0.02	0.16	1.03	0.03	0.02	0.14	1.03
Gender	-0.79	0.32	0.01	0.45	-0.74	0.57	0.19	0.48	0.05	0.61	0.93	1.05
Managerial level	0.32	0.10	0.00	1.37	0.31	0.16	0.06	1.36	-0.01	0.18	0.97	0.99
Employment contract	0.06	0.25	0.81	0.94	-0.24	0.43	0.57	1.28	-0.31	0.47	0.51	1.36
Working hours	-0.23	0.08	0.00	0.80	0.03	0.09	0.76	1.03	0.25	0.11	0.02	1.29

Note. Listwise deletion was applied to auxiliary variables, reducing sample size; Profile 1= Profile 1=active connected jobs; Profile 2=passive disconnected jobs; Profile 3=high strain disconnected jobs; Profile 4=controlled disconnected jobs; OR=odds ratio; SE=standard error of the coefficient; Gender was binary

coded (1=male; 0=female); Managerial level was coded 1=assistant; 2=professional; 3=officer; 4=manager; 5=senior manager; 6=director; 7=executive; 8=chief executive / head of organisation; 9=board director / chair; Employment contract was coded 1=casual; 2=fixed-term; 3=permanent.