Demands and Resources in Retail: The Role of Occupational Status and COVID-19[1]

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ABSTRACT

Challenges related to mental health and staff retention are common in the retail industry and were likely accentuated during COVID-19. This study used questionnaire data from Swedish retail employees (N = 388) to investigate whether job demands and resources differed based on occupational status and a crisis like the pandemic. Mean levels and associations with job satisfaction, turnover intention, and burnout were compared between blue-collar and white-collar employees, before and during the pandemic. Blue-collar employees reported greater physical demands, lower levels of resources, and higher levels of burnout. Job insecurity and emotional demands increased during the pandemic, especially for blue-collar employees. Overall, job demands and resources predicted outcomes in line with previous literature, but job insecurity was particularly salient for blue-collar employees, and autonomy for white-collar employees. Crises like the pandemic affect job demands and resources, potentially exposing lower occupational status employees to a higher risk for negative consequences such as burnout.

KEYWORDS

burnout / job demands-resources model / psychosocial work environment / well-being / work-related attitudes

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1. Introduction

Employing close to one out of 10 Nordic workers, the retail industry (including wholesale trade) is a major economic force across the Nordic countries (Eurostat 2020). Over the last decades, the retail sector has undergone major structural changes related to consumer behaviors, globalization, and digitalization – a development projected to continue (EU-OSHA 2018). This changing landscape of retail has resulted in a work situation characterized by flexible employment and understaffing (Broughton et al. 2016), often combined with emotionally demanding work (Tuckey et al. 2017). In the wake of the COVID-19 pandemic, which greatly impacted Nordic retail from early 2020, many of these developments have likely further been accelerated (Christensen et al. 2021).

Overall, little attention has been given to how the structural context of retail work trickles down to working conditions at employee level and how these, in turn, associate with work-related and health-related outcomes. Such associations are often described through the well-established Job Demands-Resources (JD-R) model (Demerouti et al. 2001). Empirical investigations of demands and resources in the context of retail work are relatively scarce, but previous literature has indicated differences both in comparison to other industries (Carré et al. 2010; Van Den Broeck et al. 2017) and based on occupational status (Korunka et al. 2009; Narayanan et al. 1999), although this rarely is the main study focus. In retail work specifically, blue-collar employees have been pointed out as particularly vulnerable to the demanding nature of customer-facing work alongside a high need for flexibility (Tuckey et al. 2017). Being at the intersection of both customer and organizational demands, blue-collar jobs in retail are portrayed as particularly stressful and prone to stress-related health outcomes such as burnout (Edmondson et al. 2019). This may be reflected in reported challenges related to employee mental health (Van Den Broeck et al. 2017), job satisfaction (Taipale et al. 2011), and staff retention (Carré et al. 2010) within retail, especially among blue-collar employees.

When the COVID-19 crisis hit the Nordics in 2020, the different countries took somewhat different routes in terms of implementing protective health measures. Sweden was less restrictive, initially relying mainly on guidelines and voluntary restraints; this led to smaller economic slow-down in some sectors, like arts and recreational services, compared to the Nordic neighbors, but for retail specifically, the slow-down was fairly similar across the Nordics, with 10-20% decline in economic value added (Andersen et al. 2022). The recovery in the sector was also relatively quick in the Nordic countries, which has been attributed to high levels of societal trust and cooperation, strong digitalization, and social safety nets. Nevertheless, most pandemic research focusing on retail has investigated economic factors and consumer behaviors, why a gap exists in terms of understanding how COVID-19 impacted the working conditions of retail employees (Lopes & Reis 2021). Factors like non-standard work (Ilsøe et al. 2021) and lower autonomy (Christensen et al. 2021) have been suggested to make some employees more vulnerable to work environment changes during the pandemic.

The aim of this study was to investigate whether industry-relevant job demands and resources differed based on occupational status and a crisis like the pandemic. Specifically, we compared mean levels and associations with job satisfaction, turnover intention, and burnout (a) between white-collar and blue-collar employees, and (b) before and during the COVID-19 pandemic. While the associations of job demands and resources with outcomes are well-established in general, less is known in terms of the

impact of contextual factors (Demerouti & Bakker 2023). Therefore, we pose research questions regarding the role of occupational status and the pandemic.

1.1. The Job Demands-Resources model

The JD-R model is a widely used framework for understanding how work environment factors relate to employee health and well-being. The model posits that job demands negatively affect health-related and work-related outcomes, while job resources contribute positively (Demerouti et al. 2001). Meta-analytic evidence supports the model's core assumptions, demonstrating relationships between job characteristics and employee well-being (e.g., Lesener et al. 2019). The model's flexibility allows its application across various contexts, predicting a wide variety of outcomes (Demerouti & Bakker 2023). The JD-R model's comprehensive nature, strong empirical support, and widespread use in systematic reviews and reports makes it an excellent theoretical basis for understanding how working conditions relate to work-related and health-related outcomes.

1.1.1. Job demands

Demands are focal in the JD-R model for explaining deteriorating effects on health and well-being. Job demands are defined as 'those physical, social or organizational aspects of the job that require sustained physical or mental effort' (Demerouti et al. 2001, p. 501). Many frontline employees experience and use their emotions in everyday work. Such emotional work may give rise to situations exposing employees to emotional demands. Emotional demands have previously been linked to lower job satisfaction (Hur et al. 2015) as well as higher turnover intention (Goodwin et al. 2011) and burnout (Brotheridge & Grandey 2002), especially in work settings with people-facing characteristics.

With the high need for flexibility and frequent use of non-standard employment in retail (Broadbridge 2002), employees are often exposed to job insecurity, or the perception of a risk to lose one's job (Tanimoto et al. 2021). Systematic overviews have found job insecurity to be negatively associated with job satisfaction and positively associated with turnover intention and burnout (for meta-analysis results, see Jiang & Lavaysse 2018). In retail specifically, Richardson and colleagues (2008) found that higher levels of job insecurity are related to poorer mental health.

A third important job demand in retail is physical demands like heavy lifting or twisted working positions. Physical demands have previously been found to associate with burnout (de Vries & Bakker 2022), but results are heterogenous (Aronsson et al. 2017). One out of five retail employees in Sweden report having a physically demanding job (SCB [Statistics Sweden] 2021) and on-the-rise concepts such as temporary pop-up stores might further expose employees in retail to physically demanding work situations without proper ergonomics or policies in place.

1.1.2. Job resources

Job resources refer to those aspects of the job that (a) facilitate reaching work goals, (b) reduce demands or associated costs, or (c) stimulate development (Demerouti et al.

2001). Autonomy, the freedom to decide when and how work should be done, is a widely investigated job resource associated with a range of outcomes (Spector 1986). Depending on theoretical starting point, similar definitions have also been referred to as control and decision latitude (Ganster & Fusilier 1989). Autonomy has been found to negatively associate with burnout (Alarcon 2011) and turnover (Kim & Kao 2014) and positively relate to job satisfaction (Matijaš et al. 2018). For retail employees specifically, Taipale and colleagues (2011) found that higher levels of autonomy were related to improved work-related attitudes.

Another important job resource is learning opportunities, especially since perceptions of 'replaceability' and limited development opportunities are common in retail (Broadbridge 2002; EU-OSHA 2018). A range of definitions of learning opportunities have been researched, ranging from collegial feedback to the variation of and level of skills and knowledge needed (Puhakka et al. 2021). Some research has focused on learning opportunities presented through the variety and breadth of skills available in one's job. In systematic reviews, this type of learning has been found to associate positively with job satisfaction (Felstead et al. 2015) and negatively with turnover (Van den Broeck et al. 2016) and burnout (Van Den Broeck et al. 2017).

Recent studies on retail work in Sweden have reported the lack of supportive leadership as a common and stressful experience (Wall et al. 2021). In general, supportive leadership has been found to associate positively with job satisfaction and mental health (Kuoppala et al. 2008), and negatively with turnover intention (Park & Min 2020). In retail specifically, previous literature has emphasized the importance of leadership to reduce stress among employees (Tuckey et al. 2017).

1.1.3. Personal resources

Personal resources are a somewhat later addition to the JD-R model and refer to individuals' sense of ability to control and impact their work environment. Personal resources, such as optimism and self-efficacy, have been found to predict employee attitudes and mental health (Xanthopoulou et al. 2007). When working conditions become unsustainable, a critical resource might be that of being able to find a better employment elsewhere, defined as employability. Employability has previously been linked to increased job satisfaction (De Cuyper et al. 2009), lower levels of turnover intention (De Cuyper et al. 2011), and burnout (Lu et al. 2016). Even though several different views and definitions of employability exist (Berntson & Marklund 2007), they all refer to the individual's likelihood to secure new employment, with a growing consensus that this resembles definitions of personal resources within the JD-R theory.

1.2. The role of occupational status

The JD-R model acknowledges that job demands and resources might differ depending on the context in which work is performed, such as in a specific industry, occupational status group, or in times of changes and crises (Demerouti & Bakker 2023). Blue-collar retail employees have previously been identified as more exposed to stress-related outcomes as compared to their white-collar colleagues (Tuckey et al. 2017). Based on the

wide range of jobs in retail, in many different settings, one may assume that both the levels and the importance of job demands and resources vary. Such differences have been reported for some job demands and resources in other sectors (e.g., Korunka et al. 2009). In light of this, the following research questions (RQs) were explored:

RQ1: Did mean levels of job demands, resources and outcomes differ between blue-collar and white-collar employees?

RQ2: Did job demands and resources associate differently with outcomes for blue-collar and white-collar employees?

1.3. The role of the pandemic

The retail industry was one of the industries that was early and substantially hit by the pandemic due to the preventive measures implemented, such as lock-down (Eurostat 2022). The literature investigating pandemic impact on work is growing, but, to our knowledge, little is known regarding working conditions in retail specifically or in terms of differences between blue-collar and white-collar employees before and during the pandemic. Job demands and resources have been suggested to be differently impacted by the pandemic (Demerouti & Bakker 2023). The pervasive measures taken during the pandemic might have had a disparate impact on job demands and resources in different work contexts, such as in retail, or between white-collar and blue-collar employees (Christensen et al. 2021). As an example, the opportunities to telecommute during the pandemic were generally much greater among white-collar employees while most blue-collar workers were employed in physical stores where this adaptation was not possible. In this study, such potential differences were investigated through the following research questions:

RQ3: Did mean levels of job demands, resources, and outcomes differ before and during the COVID-19 pandemic?

RQ4: Did job demands and resources associate differently with outcomes before and during the COVID-19 pandemic?

2. Method

2.1. Sample and procedure

Survey data was collected through the Swedish Longitudinal Occupational Survey of Health (SLOSH). The bi-annual data collections are a follow-up to the Swedish Work Environment Surveys for which the sample is randomly drawn from the whole Swedish population, stratified on county, sex, citizenship, and employment status. The present study used a sub-sample of retail employees who answered the 2018 (pre-pandemic) and 2020 (pandemic) data collections. Data collection was conducted by Statistics Sweden, from April to August/September both years. Postal questionnaires were used alongside the option to complete the survey online (2020 only). A maximum of two reminders were sent out. For a detailed description of SLOSH and a complete cohort profile, see www.slosh.se. SLOSH has been approved by the Regional Ethical Review Board in Stockholm (ref.no. 2012/373-31/5). The present study is part of a project with approval

from the Swedish Ethical Review Authority (ref.no. 2019-06331, 2022-02880-01, and 2022-03845-02).

2.2. Pre-pandemic data collection (T1)

In 2018, the total sample consisted of 37,043 individuals with a response rate of 48.2%. A non-response analysis indicated that non-responders in general were younger and more often men, born outside of Sweden or the Nordics, unmarried, and with a lower level of education, and annual income as compared to the responders (SCB [Statistics Sweden] 2018). To identify employees in the retail sector, individuals were selected using their registered occupational codes (Swedish Standard Classification of Occupations 2012 [SSYK]), following previous research in the retail industry in Sweden (AFA Försäkring [AFA Insurance] 2017). This resulted in 518 participants working in the retail industry at T1.

2.3. Pandemic data collection (T2)

In 2020, 35,700 participants were invited with a 49% response rate. Non-responder characteristics were similar to 2018 (SCB [Statistics Sweden] 2020). Out of the retail employees identified at T1, 127 had left retail at T2 and were hence excluded, leaving 391 eligible participants. Employees leaving the retail industry before T2 were similar to those staying in the industry regarding gender, age, employment contract, and full-time/part-time work, but generally had a higher level of education.

2.4. Longitudinal sample

Partial attrition was identified among 4% of the eligible participants. Missing data were analyzed for Missingness Completely At Random (MCAR) (Jamshidian & Jalal 2010). No evidence was found against MCAR and missing data was imputed using Predictive Means Matching across all study variables and both time points simultaneously (van Buuren 2018). Cases with >50% missing observations were removed, in accordance with recommendations, along with participants missing necessary grouping variables. The final sample consisted of 388 retail employees with data available for both T1 and T2. Mean age at T1 was 51 (SD = 9, range: 24-77), and the sample included more women (54%) than men (46%). Most participants had completed 3-4 years of high school education (62%), while 30% held a university degree of 3 years or more. The proportion of full-time employees was 70%, and 83% had a permanent contract. Based on socioeconomic classification, participants were further divided into two occupational status groups: white-collar employees (N = 252, 65%) and blue-collar employees (N = 136, 35%). The blue-collar group included occupations normally organized by LO (The Swedish Trade Union Confederation), with job titles such as retail salesperson, warehouse worker, and hairdresser. Occupations in the white-collar group are normally organized by TCO (The Swedish Confederation of Professional Employees) or Saco (The Swedish Confederation of Professional Associations), and included business-to-business

salesperson or purchaser, and first or second-line manager in retail as the most common job titles. There were no significant differences between the two occupational status groups in regard to age or contract type. The blue-collar group, however, included more women (χ^2[1, N = 388] = 10.54, p = .001, φ = .17), part-time employees (χ^2[1, N = 348] = 42.82, $p < .001$, φ = .36), and had a lower level of education (χ^2[2, N = 388] = 48.12, $p < .001$, V = .35). These differences reflect differences between white-collar and blue-collar employees in the general population of retail employees in Sweden, but, overall, the sample included more women, full-time, and older employees (cf. Eurostat 2020; SCB [Statistics Sweden] 2023).

2.5. Measures

Table 1 presents the variables included in the study, including the number of items, example items, scale range, and source. Table 2 provides means (and standard deviations), reliability estimates, and correlations. Reliability estimates were calculated using Cronbach's alpha and were good for all scales ($\alpha > .70$; Nunnally & Bernstein 1994), with an exception for learning opportunities.

2.6. Statistical analyses

RQ1 and *RQ3* were analyzed by comparing mean levels between the blue-collar and white-collar groups and both time points (including group*time interactions) using repeated measures multivariate analysis of variance (MANOVA) supplemented with univariate tests.

RQ2 and *RQ4* were investigated using hierarchical multiple linear regressions with job satisfaction, turnover intention, and burnout as the outcome variables. Predictors were added in four pre-determined steps. Step 1 introduced demographic controls (gender and age), based on previous reports on gender and age differences in turnover and burnout (Brewer & Shapard 2004; Purvanova & Muros 2010; Rubenstein et al. 2018). Step 2 added job demands (emotional demands, job insecurity, and physical demands), while Step 3 added job resources (autonomy, learning opportunities, and supportive leadership). Step 4 added employability, as a personal resource. In total, 12 separate regression analyses were performed, as the regressions for each outcome were conducted for the two sub-groups and time points independently. To compare regression coefficients between the two occupational status groups, regression models were defined and fitted in Lavaan (Rosseel 2012). Freely estimated models (free intercepts and regression coefficients) were compared with constrained models (constraining the coefficient of each predictor variable in question) and tested using conventional chi-square difference tests. Differences across time were performed using the same software, by fitting regressions for the two time points simultaneously and comparing freely estimated with constrained models. Due to the large number of parameter estimations for these analyses, testing was conducted separately in the blue-collar and white-collar groups. Here, a less conservative significance level of $p < .10$ is also reported to avoid disregarding any notable differences on the basis of a single dichotomous cut-off point as the statistical power is low (Gelman & Stern 2006; Rosnow & Rosenthal 1992).

Table 1 Overview of measures

Variable	No. of items	Example of item	Range	Source
Demographics				
Gender	1	–	0 = Man, 1 = Woman	–
Age	1	–	Years	–
Job demands				
Emotional demands	4	Does your work put you in emotionally disturbing situations?	1-5[a]	Berthelsen et al. 2020
Job insecurity	3	I'm worried about being laid off.	1-5[b]	Hellgren et al. 1999
Physical demands	3	Do you have to lift at least 15 kg several times a day?	1-6[c]	Arbetsmiljöverket [Swedish Work Environment Authority] 2018
Job resources				
Autonomy	2	Do you have a choice in deciding how you do your work?	1-4[d]	Karasek et al. 1998
Learning opportunities	3	Do you have the possibility of learning new things through your work?	1-4[d]	Karasek et al. 1998
Supportive leadership	5	Does your manager show that he/she cares about you?	1-4[d]	Setterlind & Larsson 1995
Personal resource				
Employability	1	How easy would it be for you to get another, similar job without having to change housing?	1-4[e]	Arbetsmiljöverket [Swedish Work Environment Authority] 2018
Outcomes				
Job satisfaction	1	Roughly, how satisfied are you with your work?	1-8[g]	Arbetsmiljöverket [Swedish Work Environment Authority] 2018
Turnover intention	1	I feel like resigning from my current employment.	1-5[b]	Hellgren et al. 1997
Burnout	8	I feel burned out.	1-7[f]	Melamed et al. 1999

[a]1 = Never/Almost never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always. [b]From 1 = Strongly disagree to 5 = Strongly agree. [c]1 = A little, maybe 1/10th of the time, 2 = Approx. ¼th of the time, 3 = Half the time, 4 = Approx. ¾th of the time, 5 = Almost all of the time, 6 = No, not at all. [d]1 = No, never, 2 = No, seldom, 3 = Yes, sometimes, 4 = Yes, often. [e]1 = Very hard, 2 = Quite hard, 3 = Quite easy, 4 = Very easy, 5 = Don't know (omitted). [f]From 1 = Almost never to 7 = Almost always. [g]From 1 = Very dissatisfied to 8 = Very satisfied.

Table 2 Reliability estimates (Cronbach's alpha) and correlations for all study variables at T1 and T2 (white-collar above diagonals, blue-collar below diagonals)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	Cronbach's alpha White-collar	Blue-collar
T1														
Demographics														
1. Gender (woman)	–	-.13*	.16*	.06	.13*	-.27**	.01	.02	-.02	-.09	.17**	.24**	–	–
2. Age	-.01	–	-.05	.06	-.02	.07	.07	-.07	-.26**	.04	-.13*	-.19**	–	–
Job demands														
3. Emotional demands	.24**	-.09		.07	.22**	-.28**	.08	-.08	.04	-.16*	.13*	.30**	.84	.85
4. Job insecurity	-.06	.01	-.02	–	-.04	-.09	-.05	-.15*	-.20**	-.23**	.26**	.28**	.94	.93
5. Physical demands	-.06	-.03	.05	.09	–	-.08	-.03	-.01	-.04	-.08	.07	.20**	.89	.71
Job resources														
6. Autonomy	-.00	.04	.08	-.13	-.11	–	.20**	.13*	-.02	.26**	-.14*	-.18**	.79	.80
7. Learning opportunities	.24**	.07	.44**	-.11	-.14	.28**	–	.08	.08	.14*	-.00	-.02	.62	.70
8. Supportive leadership	.06	-.09	-.04	-.22**	-.05	.39**	.29**	–	.12	.45**	-.26**	-.18**	.90	.91
Personal resource														
9. Employability	.14	-.20*	.10	-.17*	-.02	.07	.20*	.12	–	.17**	-.05	-.24**	–	–
Outcomes														
10. Job satisfaction	.16	.10	.06	-.36**	-.04	.29**	.37**	.50**	.26**	–	-.51**	-.42**	–	–
11. Turnover intention	-.01	-.32**	.14	.16	-.05	-.17*	-.03	-.26**	.01	-.56**	–	.39**	–	–
12. Burnout	.05	-.20*	.26**	.42**	.06	-.08	.05	-.22**	-.10	-.52**	.46**	–	.91	.94

(Continued)

Table 2 *(Continued)*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	Cronbach's alpha White-collar	Cronbach's alpha Blue-collar
T2														
Demographics														
1. Gender (woman)	–	-.13*	.18**	.06	.17**	-.30**	-.04	.01	.03	-.07	-.04	.15*	–	–
2. Age	-.01	–	-.03	-.01	-.02	.08	-.07	-.08	-.10	-.03	-.05	-.12	–	–
Job demands														
3. Emotional demands	.24**	-.12	–	-.02	.37**	-.19**	.13*	-.07	.11	-.11	.08	.31**	.83	.88
4. Job insecurity	-.09	-.15	.17*	–	-.11	-.13*	-.05	-.13*	-.11	-.08	.14*	.14*	.96	.96
5. Physical demands	-.09	-.02	.13	.06	–	-.03	.02	-.05	-.01	-.09	.02	.29**	.88	.77
Job resources														
6. Autonomy	-.10	.07	.04	-.09	-.16	–	.30**	.16**	-.07	.39**	-.24**	-.25**	.76	.87
7. Learning opportunities	.19*	.02	.47**	.09	-.21*	.34**	–	.09	.10	.23**	-.08	.02	.65	.68
8. Supportive leadership	.01	-.03	-.01	-.18*	-.23**	.23**	.22**	–	-.02	.39**	-.32**	-.26**	.90	.90
Personal resource														
9. Employability	.10	-.23**	.12	-.18*	.01	.04	.19*	.05	–	.06	.05	-.10	–	–
Outcomes														
10. Job satisfaction	.31**	.06	.13	-.20*	-.25**	.32**	.33**	.52**	.21*	–	-.50**	-.32**	.90	.90
11. Turnover intention	-.05	-.07	.13	.19*	.14	-.25**	-.11	-.43**	.02	-.52**	–	.28**	–	–
12. Burnout	.02	-.23**	.14	.42**	.18*	-.16	-.04	-.40**	-.19*	-.48**	.40**	–	.92	.94

*p < .05, **p < .01.
Blue-collar: N = 136, White-collar: N = 252.

3. Results

3.1. Mean level differences between blue-collar and white-collar employees (RQ1)

Table 3 presents mean levels of variables in the two occupational status groups before the pandemic (T1) and during the pandemic (T2) with tests of differences. Reported levels of job demands were similar in both groups, except for physical demands where blue-collar employees reported higher levels as compared to white-collar employees. For all job resources (autonomy, learning opportunities, and supportive leadership), white-collar employees reported higher levels as compared to blue-collar employees. For employability, no difference was found. Regarding outcomes, a difference was observed only for burnout, where blue-collar employees reported higher levels.

3.2. Mean level differences before and during the COVID-19 pandemic (RQ3)

Over time, from before (T1) to during the pandemic (T2), the only significant differences over time concerned emotional demands and job insecurity, where levels increased from T1 to T2. There was a significant interaction effect between group and time for emotional demands, where the mean level increased more in the blue-collar group. No other significant interaction effects were observed.

3.3. Comparing predictor–outcome associations between occupational status groups (RQ2) and before/during the pandemic (RQ4)

Table 4 presents the hierarchical multiple regression results along with tests for differences in regression coefficients between the occupational status groups and over time.

3.3.1. Job satisfaction

Overall, the full models (all four steps) for predicting job satisfaction explained 37-42% of the variance in the blue-collar group and 26-27% in the white-collar group. In Step 1, the demographic controls did not account for any significant amount of variance in either group at any of the time points, with one exception. During the pandemic (T2), demographics explained 9% of the variance in the blue-collar group, with women reporting higher job satisfaction. Step 2 (job demands) explained an additional 6% of the variance in the white-collar group and 11% in the blue-collar group before the pandemic (T1). A significant addition of explained variance at T2 was seen only among blue-collar employees (7%). Job insecurity was negatively associated with job satisfaction in both groups at T1, but not at T2. Step 3 (job resources) increased the amount of explained variance in both groups at both time points, 20-22% at T1 and 24-25% at T2. At T1, autonomy predicted job satisfaction in the white-collar group but not in the blue-collar. A positive association between autonomy and job satisfaction was, however,

found in both groups at T2. Learning opportunities was positively associated with job satisfaction for blue-collar employees and at T1 only. Supportive leadership consistently predicted job satisfaction in both groups, both at T1 and T2. In Step 4, employability increased the amount of explained variance with 1-2% in the blue-collar group at both time points, but did not contribute in the white-collar group. Employability was positively related to job satisfaction for blue-collar employees at both T1 and T2, but was not significant in the white-collar group.

3.3.2. *Turnover intention*

For turnover intention, the full models explained 17-20% of the variance in the blue-collar group and 13-14% in the white-collar. Demographic controls explained a significant amount of the variance in turnover intention before the pandemic (T1), 9% in the blue-collar group and 3% in the white-collar group, but not during the pandemic (T2). Age was negatively associated with turnover intention in both groups at T1. With job demands added to the models, the explained variance in turnover intention did not increase in the blue-collar group; in the white-collar group, explained variance increased by 7 percentage units, but at T1 only. The only significant predictor–outcome relationship observed in Step 2 was a positive association between job insecurity and turnover intention in the white-collar group at T1. Job resources added an additional 5-17% (blue-collar group) and 4-12% (white-collar group) of explained variance in turnover intention. Autonomy was negatively related to turnover intention for white-collar employees and at T2 only. No significant associations were observed between learning opportunities and turnover intention. Supportive leadership consistently showed a negative association with turnover intention in both groups and at both time points. Employability added no significant explained variance in any group or time point, nor showed any significant associations with turnover intention.

3.3.3. *Burnout*

For burnout, the amount of explained variance in the full models was 26-32% (blue-collar) and 24-29% (white-collar). Demographic controls explained a significant amount of variance only for white-collar employees before the pandemic (T1; 8%), and during the pandemic (T2) for both blue-collar (4%) and white-collar (3%) employees. Gender (woman) was positively related to burnout only in the white-collar group at T1. Age was negatively related to burnout in both groups and at both time points. Job demands added 17-22% (blue-collar) and 13-14% (white-collar) of explained variance. Emotional demands were positively associated with burnout in both groups at T1 but only in the white-collar group at T2. Job insecurity predicted burnout in both groups at T1, but only for blue-collar employees at T2. Physical demands predicted burnout

in the white-collar group only (both T1 and T2). Job resources did not explain any added explained variance in burnout above job demands at T1, but added 6-8% at T2. Autonomy was negatively related to burnout only in the white-collar group and at T2. Learning opportunities were unrelated to burnout. Supportive leadership was significant only for white-collar employees at T1, but showed negative associations with burnout in both groups at T2. Employability added an additional 6 units of explained variance in burnout for white-collar employees only at T1 and 2-3% in both groups at T2. In the white-collar group, employability was negatively associated with burnout at both time points. There was a negative association between employability and burnout in the blue-collar group at T2 only.

Table 3 Mean levels, standard deviations, and tests for differences between groups and over time for all study variables

	T1		T2		W^f		
	BC	WC	BC	WC	Group	Time	Group*Time
Job demands					157.38**	27.72**	7.49
Emotional demands[a]	2.28 (.76)	2.25 (.75)	2.46 (.80)	2.29 (.75)	1.82	11.15**	4.36*
Job insecurity[a]	1.30 (.68)	1.37 (.74)	1.59 (1.02)	1.49 (.89)	.05	18.69**	3.29
Physical demands[b]	3.02 (1.24)	1.58 (.94)	3.03 (1.33)	1.54 (.89)	156.77**	.19	.37
Job resources					29.57**	.99	2.02
Autonomy[c]	2.79 (.82)	3.14 (.74)	2.76 (.87)	3.12 (.77)	19.44**	.59	.00
Learning opportunities[c]	3.18 (.57)	3.40 (.43)	3.16 (.56)	3.39 (.49)	18.53**	.48	.33
Supportive leadership[c]	2.99 (.72)	3.12 (.71)	2.93 (.76)	3.15 (.70)	6.51*	.08	1.76
Personal resource							
Employability[a]	2.30 (1.01)	2.39 (.94)	2.27 (.99)	2.37 (.96)	.91	.35	.00
Outcomes					18.10**	4.94	2.98
Job satisfaction[e]	5.98 (1.53)	6.10 (1.36)	6.09 (1.42)	6.19 (1.47)	.66	2.51	.01
Turnover intention[a]	1.62 (.99)	1.88 (1.14)	1.69 (1.05)	1.79 (1.16)	3.56	.02	1.83
Burnout[d]	2.59 (1.46)	2.32 (1.18)	2.55 (1.50)	2.18 (1.17)	5.63*	3.19	.92

*p < .05, **p < .01.
N = 136 (Blue collar, BC) and N = 252 (White collar, WC).
[a] Range 1-5. [b] 1-6. [c] 1-4. [d] 1-7. [e] 1-8.
[f] Multivariate repeated measures ANOVA, *df* = 3, 384.

Table 4 Results of hierarchical multiple regression analysis of demographics, job demands, job resources, and personal resources on outcomes across the groups and time points (standardized parameter estimates from the last step)

	Job satisfaction								Turnover intention								Burnout							
	T1			T2			χ^2_{time} [a]		T1			T2			χ^2_{time} [a]		T1			T2			χ^2_{time} [a]	
	BC	WC	χ^2_{grp} [a]	BC	WC	χ^2_{grp} [a]	BC	WC	BC	WC	χ^2_{grp} [a]	BC	WC	χ^2_{grp} [a]	BC	WC	BC	WC	χ^2_{grp} [a]	BC	WC	χ^2_{grp} [a]	BC	WC
Step 1: Demographics																								
Gender (woman)	.08	−.03	1.16	.28**	.04	7.46**	11.56**	1.08	−.03	.12	2.05	−.08	−.12	.17	.46	7.01**	.03	.14*	.72	.06	.02	.27	.23	3.31†
Age	.15*	.08	.54	.09	−.01	1.02	.91	1.41	−.35**	−.15*	1.47	−.03	−.06	.28	15.19**	1.17	−.22**	−.24**	.00	−.24**	−.12*	1.85	.07	5.01*
ΔR²	.02	.00		.09**	.00				.09**	.03**		.00	.00				.03	.08**		.04*	.03*			
Step 2: Job demands																								
Emotional demands	−.04	−.07	.06	.04	−.04	.64	.67	.14	.09	.05	.08	.15	.04	.79	.24	.02	.22**	.21**	.18	.03	.19**	1.21	3.07†	.15
Job insecurity	−.23**	−.13*	1.84	−.05	.01	.56	6.65**	4.80*	.11	.22**	1.02	.09	.09	.04	.24	3.03†	.38**	.21**	3.2†	.28**	.11	3.08†	2.96*	4.26*
Physical demands	.05	−.04	1.03	−.08	−.06	.00	3.30†	.14	−.09	.04	1.17	−.01	.02	.09	.75	.06	.01	.12*	1.58	.09	.21**	1.44	.90	1.82
ΔR²	.11**	.06**		.07**	.01				.03	.07**		.03	.01				.22**	.14**		.17**	.13**			
Step 3: Job resources																								
Autonomy	.06	.15*	.74	.21**	.31**	2.8†	1.76	5.87*	−.08	−.04	.11	−.16	−.21**	.66	.59	4.89*	.01	−.03	.18	−.03	−.17**	1.75	.23	4.10*
Learning opportunities	.19*	.07	.86	.05	.11	.51	1.56	.38	.06	.04	.00	−.05	−.01	.10	.99	.34	.07	.03	.19	.05	.07	.02	.04	.35
Supportive leadership	.36**	.40**	.00	.42**	.32**	.40	.03	.26	−.24**	−.24**	.06	−.37**	−.27**	.15	1.49	.24	−.16	−.12*	.46	−.34**	−.22**	2.43	3.07†	2.27
ΔR²	.22**	.20**		.25**	.24**				.05*	.04**		.17**	.12**				.01	.01		.08**	.06**			
Step 4: Personal resource																								
Employability	.16*	.11	.61	.15*	.08	.51	.05	.15	−.02	−.01	.00	.06	.04	.03	.77	.36	−.11	−.25**	1.56	−.20*	−.14*	1.09	1.90	3.60†
ΔR²	.02*	.01		.01*	.00				.00	.00		.00	.00				.00	.06**		.03*	.02*			
Model R²	.37**	.27**		.42**	.26**				.17**	.14**		.20**	.13**				.26**	.29**		.32**	.24**			

†p < .10, *p < .05, **p < .01. N = 136 (Blue collar; BC) and N = 252 (White collar; WC).
[a]Testing differences in size of parameter estimates (step 4) between groups and over time. A significant χ^2 (df = 1) indicates that the estimates differ across the two groups/time points.

3.3.4. *Significant differences based on occupational status*

Even though many of the regression coefficients showed inconsistencies, the vast majority of differences did not reach statistical significance. The additional analyses, testing for equality of the regression weights across occupational status groups and time, revealed, however, that the positive association between gender (woman) and job satisfaction at T2 was significantly stronger in the blue-collar group, compared to the white-collar group. The association between job insecurity and burnout was stronger in the blue-collar group at both time points. Finally, there was a significant difference for the positive association between autonomy and job satisfaction at T2, which was stronger in the white-collar group.

3.3.5. *Significant differences from before to during the pandemic*

Comparisons of the coefficients before (T1) and during (T2) the pandemic generally showed non-significant results, with some exceptions. The positive association between gender (woman) and job satisfaction in the blue-collar group was stronger at T2 as compared to T1. In the white-collar group, the positive association between gender and burnout at T1 changed to become non-significant at T2. For age, the T1 negative association with turnover intention in the blue-collar group and the negative association with burnout in the white-collar group became significantly weaker at T2. Emotional demands were positively associated with burnout in the blue-collar group at T1 but not T2. In both groups, job insecurity was more weakly associated with job satisfaction and burnout at T2. The positive association between job insecurity and turnover intention in the white-collar group at T1 became non-significant at T2. In terms of job resources, the associations between autonomy and all three outcomes in the white-collar group were consistently stronger at T2. The negative relationship between supportive leadership and burnout in the blue-collar group was stronger at T2 than at T1. For employability, the only difference in associations observed over time concerned burnout in the white-collar group, which was weaker at T2.

4. Discussion

In this study, the aim was to investigate whether job demands and resources, relevant to work in the retail industry, differed based on occupational status and a crisis like the pandemic. Specifically, we compared mean levels and associations with job satisfaction, turnover intention, and burnout (a) between white-collar and blue-collar employees, and (b) before and during the COVID-19 pandemic.

4.1. Mean level differences between blue-collar and white-collar employees (RQ1)

In terms of job demands, the levels of physical demands were higher in the blue-collar group compared to the white-collar group. Levels of emotional demands and job

insecurity were similar in the two groups. For job resources (autonomy, learning opportunities, and supportive leadership), white-collar employees consistently reported higher levels. Similar differences in job resources have been reported from the industry previously (Narayanan et al. 1999). Regarding the outcomes, levels of burnout were higher in the blue-collar group. This strengthens previous reports on blue-collar employees in retail being more exposed to stress-related outcomes as compared to white-collar employees (Edmondson et al. 2019; Tuckey et al. 2017).

4.2. Mean level differences before and during the COVID-19 pandemic (RQ3)

Over time, from before to during the pandemic, mean level differences were generally few. No significant differences were found for any of the outcomes, job resources, or the personal resource (employability). In terms of job demands, however, levels of emotional demands and job insecurity were higher in both occupational status groups during the pandemic. Given the situation in Swedish retail when responses were collected at T2 (April-September 2020), this may be expected. A significant interaction effect of group and time was observed for emotional demands, indicating that the levels increased more in the blue-collar group, compared to the white-collar group. Limited ability to work from home in this group may have exposed employees to additional demands when working in physical stores, like COVID exposure and reduced staffing. The fact that the increase in job insecurity did not differ between the occupational status groups is a bit surprising, given that non-standard work generally is more prevalent among blue-collar employees and positively associated with job insecurity (Kinnunen et al. 2014). One explanation might be that the share of permanent contracts was very high in the sample and that non-standard work mostly was reflected through part-time work.

4.3. Comparing predictor–outcome associations between occupational status groups (RQ2) and before/during the pandemic (RQ4)

Comparing predictor–outcome associations across the two occupational status groups (*RQ2*), one significant difference was observed among the job demands, where job insecurity predicted burnout more strongly in the blue-collar group both before and during the pandemic. Previous literature on this topic have proposed several moderating mechanisms between job insecurity and outcomes. Many of these are prevalent among blue-collar employees in retail, such as non-standard work (Kinnunen et al. 2014) and frequent change (Schumacher et al. 2016). The stronger association with burnout among blue-collar employees concurred with higher levels of burnout in this group overall as well as lower levels of important job resources during the pandemic. This suggests that blue-collar employees in retail might be more vulnerable to potential consequences of job insecurity in comparison to white-collar employees. Another difference was observed for autonomy, where the association with job satisfaction was stronger in the white-collar group during the pandemic. Both levels and the importance of autonomy for predicting outcomes have previously been shown to be higher among white-collar employees (Morgeson & Humphrey 2006), primarily attributed to differences in expectations of autonomy and job complexity.

Changing focus to differences in predictor–outcome associations over time (*RQ4*), the relationships between autonomy and all outcomes consistently became stronger during the pandemic in the white-collar group, but not in the blue-collar group. This may indicate that autonomy is an increasingly important job resource for explaining health-related and work-related outcomes in times of change and uncertainty, at least in jobs of higher complexity. Autonomy has been identified as a key job characteristic for the future of work in the Nordics (Christensen et al. 2021). It can be assumed that autonomy came to greater benefit during the pandemic for those employees that could adapt their work to the restrictions imposed, for example, through working from home. Taken together, our findings contribute with support to the extended JD-R model (Demerouti & Bakker 2023) that crises influence job characteristics by increasing the level of job demands and the importance of job resources. We show that not only the levels, but also the importance of job demands and resources, like job insecurity and autonomy, was influenced by the pandemic and that such impact differentially affected employees based on their occupational status. This raises a general concern as to whether blue-collar employees in the retail industry have less resources to cope with potential adversities and consequences of change and crises, compared to their white-collar equivalents. In practice, this is a call for employers and managers to strengthen the access to important job resources for their employees, especially blue-collar workers.

At the same time, the associations of job insecurity with job satisfaction and burnout overall became weaker during the pandemic. In the light of previous research, this is somewhat unexpected as consistent associations with both short-term (e.g., job satisfaction) and more long-term outcomes (e.g., turnover intention and burnout) have been reported (Jiang & Lavaysse 2018). Previous research investigating job insecurity during (organizational) change (Schumacher et al. 2016) has however suggested varying patterns where associations are strongest in the midst of change and uncertainty. As the data collection in this study was conducted early during the pandemic, any deteriorating impact on outcomes might be lagged and emerge later. Another potential explanation could be that the vigilance of one's job as a stressor (as compared to one's health or other concerns) might have been lower during this overwhelming time. The factors highlighted as key for the quick recovery of retail in the Nordics overall (societal trust, digitalization, social safety nets; Andersen et al. 2022) might also have contributed here. The findings suggest that contextual factors impact both levels of job insecurity as well as associations with related consequences as emphasized in recent literature (Klug et al. 2024).

Looking at the predictor–outcome associations in light of the JD-R model and previous literature, the results are somewhat inconclusive as only 13 out of 36 tested associations with job satisfaction and 8 out of 36 with turnover intention were significant. For these two outcomes, job insecurity was the only significant job demand (however only before the pandemic). In contrast to previous research (Goodwin et al. 2011; Hur et al. 2015), neither emotional nor physical demands showed any significant associations with job satisfaction or turnover intention. The findings for burnout were nevertheless more consistent and largely replicated previous research (for meta-analysis results, see Aronsson et al. 2017) as all job demands predicted burnout (even though fewer associations were significant during the pandemic). Physical demands predicted burnout only in the white-collar group which came across as a bit counter-intuitive. The stereotypical white-collar employee is often portrayed as an office worker (with more sitting and

less physically demanding work tasks), a stereotype that is at least partly reflected in our study as levels of physical demands were lower in this group. The consequences of physical demands, when controlling for other job demands and resources, might, however, differ across occupational groups. There are many potential mechanisms, but employees working in roles where the majority of work is conducted in non-physical settings could be more vulnerable to mental health consequences of physical demands, when they occur, due to lack of appropriate resources to manage them.

In terms of job resources, we found that autonomy predicted all three outcomes, but mainly in the white-collar group during the pandemic, as discussed previously. Surprisingly, the associations between learning opportunities and outcomes were significant in only one case: for job satisfaction among blue-collar employees. Previous research has found learning opportunities to associate also with turnover and burnout (Van den Broeck et al. 2016; Van Der Molen et al. 2020). Clearly, other definitions of learning and development need to be considered to understand what aspects are most relevant in the retail industry. Supportive leadership was consistently related to all outcomes, both before and during the pandemic, in line with previous research highlighting the importance of leadership in retail (Tuckey et al. 2017). These findings highlight the importance of employers investing in supportive leaders to keep retail employees satisfied with their jobs, retaining them and reducing the risk of burnout. For blue-collar employees, supportive leadership became more important during the pandemic emphasizing this aspect of leadership which might be particularly challenging during a crisis.

Employability, conceptualized as a personal resource, has been shown to associate positively with job satisfaction (De Cuyper et al. 2009) and negatively with burnout (Lu et al. 2016). In line with this, employability related positively to job satisfaction (only in the blue-collar group) and negatively to burnout (both groups). However, employability was unrelated to turnover intention, which contradicts previous findings (De Cuyper et al. 2011).

5. Methodological considerations

Several measures were taken to make the results in this study as robust and generalizable as possible. The data was collected through a nationally representative sample from the same individuals at two consecutive time-points. As always, there are however a number of potential limitations that should be addressed.

First, the design of the study relies on independent analyses for the two consecutive time-points, before and during the pandemic. This was chosen since the aim of the study was to investigate differences in mean levels and predictor–outcome associations between the occupational status groups before as well as during the pandemic. At the same time, this does not allow for drawing any conclusions on potential causality. The associations between predictors and outcomes in this study, however, were based on the well-established JD–R model and previous findings, and were found to be supported at large. Future research should nevertheless aim at following participants over more than two repeated measurements and control for reversed causal relationships. This would also allow for investigating potential long-term changes in post-pandemic retail working conditions.

All variables in the study relied on self-reports, known to increase the risk of common-method variance (Spector 2006). At the same time, many of the variables of interest are perception-based and hence very difficult to measure with methods beyond self-reporting. Several measures were taken to mitigate the risk of common method variance, such as using validated scales and protecting participants' confidentiality (Podsakoff et al. 2003). Some of the variables could be addressed in future studies with more objective measurements, like actual turnover.

Lastly, all data was collected in Sweden. In order to identify individuals working in the retail industry across both data waves, occupational codes were used. The occupational codes used were based on previous reports on the Swedish retail industry, but as occupational roles exist across sectors some coverage error is to be expected. The same applies to the division of the sample into occupational status groups. Future research should expand on the variety of roles within retail and also consider a more nuanced operationalization of occupational status, including intermediate groups. When it comes to generalizability across the Nordic countries and to the retail industry in general, it is worth considering that, while the Swedish and Nordic labor markets are generally characterized by relatively strong social protection and union density, differences do exist (Rasmussen et al. 2019). Even though the retail industry is undergoing similar structural changes on Nordic, or even global, levels, certain characteristics differ across countries and the financial impact on retail during the pandemic varied considerably (Eurostat 2022). Concerning the Nordic countries specifically (Andersen et al. 2022), the financial impact was comparable, but some of the study variables, like job insecurity, are impacted by labor market characteristics and should hence be generalized with caution. It is also worth considering that the mean age in this sample was relatively high, while retail is often portrayed as a 'young' sector. Young workers might be exposed to a more precarious working situation in general and hence more vulnerable to negative consequences (Klug et al. 2019). Future studies should also target a younger population of retail employees for comparative purposes. At the same time, older workers in retail might have been exposed to potentially negative working conditions for a longer time and have a harder time to get out of an unsustainable working situation.

6. Conclusions

This study addressed a gap in the existing literature in terms of how the context of the retail industry trickles down to the working conditions of employees. We investigated whether mean levels of industry-relevant job demands and resources and their relationships with outcomes differed between white- and blue-collar employees and in times of a substantial crisis like the pandemic. The findings suggest that blue-collar employees in retail are exposed to a higher degree of job demands and levels of burnout in combination with lower access to job resources, compared to white-collar employees. Job demands and resources were associated with job satisfaction, turnover intention and burnout largely in line with theory and previous literature, but more inconsistent during the pandemic. Overall, the observed differences, both in terms of levels of job demands and resources and their associations with outcomes among blue-collar and white-collar employees, raise concerns about unequal exposure to unsustainable working conditions that was exacerbated during the pandemic. The results add to the

theory on job demands and resources, offering support that contextual factors like crises and structural change have an impact on not only the levels of job demands and resources, but also how they associate with work-related and health-related outcomes. The context might affect different categories of employees in different ways, which emphasizes the need for employers and policy-makers to account for contextual factors when implementing support during times of organizational change or crises like the COVID-19 pandemic.

Funding

Acknowledgements

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