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Evidence on the Hierarchical, Multidimensional Nature of Behavioural Job Crafting

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While to date job crafting has been conceptualised as consisting of behaviours aiming at seeking more resources, decreasing hindering demands, and seeking more challenges, recent research suggests that individuals may restore the fit between their demands and preferences also by optimising their demands. Accordingly, optimising demands has been introduced in the resource-based perspective to job crafting as an additional strategy that aims at making the work processes more efficient, simplifying procedures and eliminating obstacles. In this paper, we explore and provide evidence for the validity of a four-factor, hierarchical structure of behavioural job crafting constituted by increasing resources, seeking challenges, decreasing demands, and optimising demands. Moreover, our results provide initial evidence suggesting that overall job crafting may be more strongly characterised by effortful actions to expand the work characteristics rather than to reduce them.

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INTRODUCTION

Nowadays, agreement exists that even in the most stable work environments with detailed job descriptions and clear work procedures, employee-driven job redesign behaviours are quite common at work and complement management-driven job redesign efforts (Demerouti, Veldhuis, Coombes, & Hunter, 2019; Lichtenthaler & Fischbach, 2019). Job crafting refers to proactive behaviours whereby employees craft their job to align it better with their own abilities, needs and preferences (Lichtenthaler & Fischbach, 2019; Wrzesniewski & Dutton, 2001). From its inception in the academic literature with the pioneering work of Wrzesniewski and Dutton (2001), research on job crafting has blossomed in the last ten years (Oldham & Fried, 2016) and several theoretical conceptualisations have been developed to understand how different job crafting strategies relate to positive and negative work-related outcomes.

Job crafting quantitative research has mainly been conducted within the resource-based perspective, which explains job crafting as behaviours (from which, behavioural job crafting) aiming at restoring the fit between person and job through the management of work resources and demands (Bruning & Campion, 2018; Tims, Bakker, & Derks, 2012). Within such a conceptualisation, employees seek to increase their resources and their challenging job demands (i.e., expansion job crafting), or to decrease their hindering job demands (i.e., contraction job crafting) (Tims & Bakker, 2010). Crafting job resources could take the form of increasing structural (e.g. trying to learn new things) or social (e.g. asking for performance feedback) resources. Increasing challenging demands consists of seeking new and challenging tasks at work (e.g. voluntarily taking on new responsibilities or extra tasks; Hakanen, Peeters, & Schaufeli, 2018), which sustain motivation, mastering and learning (Karasek & Theorell, 1990). Decreasing hindering job demands (e.g. making sure that one's job is mentally less demanding; Tims & Bakker, 2010) refers to a health-protecting coping mechanism adopted to reduce demands perceived as excessively high.

Moreover, recent research suggests that individuals may restore the fit between their demands and preferences not only by minimising demands (i.e., make work less intense) but also by optimising them (i.e., make work more efficient) (Demerouti & Peeters, 2018). Accordingly, optimising demands has been introduced in the resource-based perspective to job crafting as an additional strategy that aims at making the work process more efficient, simplifying procedures and eliminating obstacles. While through decreasing hindering demands employees aim at evading, reducing, or eliminating part of one's work, behaviours focusing on optimising demands are aimed at getting work done (Demerouti & Peeters, 2018). That is, optimising demands behaviours differ from reducing demands in that they focus on actively addressing

hindering characteristics of the job in order to improve the work process to deal with workload, rather than simply stepping away from demanding or unfavourable conditions. Indeed, from an approach-avoidance distinction (Elliot, 2006), human behaviour can be guided or channelled with the aim of keeping positive stimuli close and getting something positive that is currently absent (i.e., optimising a demanding work process in order to allow a better resource allocation), or with that of pushing away, and getting away from, something negative that is currently present (i.e., excessive demands). While reducing demands reflects relatively simple withdrawal-oriented behaviours (Zhang & Parker, 2018), optimising demands refers to an active strategy, which may include the temporary elimination or reduction of specific work activities, in order to enable the allocation of the available resources into other more important demands or tasks, resulting in an improvement of the work process. Thus, while the dimension of optimising demands encompasses behaviours that aim at promoting new positive work situations, reducing demands behaviours focus on escaping from negative situations (Elliot, 2006). Evidence from research shows that optimising demands occurred more often than reducing demands and that such behaviours were positively related to daily work engagement (Demerouti & Peeters, 2018). However, given its recent introduction in the literature, studies conducted to investigate how optimising demands behaviours are related to work and organisational outcomes are still scarce.

Overall, despite the increasing interest in employee-initiated work redesign, construct clarification is still needed to move knowledge in this field forward (Zhang & Parker, 2018). Indeed, even though scholars developed integrating frameworks aiming to synthesize the burgeoning perspectives on job crafting (e.g. Lichtenthaler & Fischbach, 2016; Bruning & Campion, 2018; Zhang & Parker, 2018), some important methodological and conceptual aspects still remain underexplored, limiting the chances to describe and explain the mechanisms of job crafting meaningfully. In this research, we aim at advancing knowledge on the nature and structure of behavioural job crafting in several ways.

First, we review the literature on the current job crafting scales developed and/or adapted to measure job crafting within the resource-based perspective. Such a step is important to map how behavioural job crafting has been operationalised in the literature, allowing to clarify its constituting dimensions and structure, including raising awareness on possible methodological inconsistencies and/or discrepancies.

Second, we empirically test how strategies aiming at crafting hindering demands by differently organising, rather than decreasing, them—that is, optimising demands—map into the conceptualisation of job crafting as changes employees make to balance their demands and resources (Tims &

Bakker, 2010). In investigating such a new structure of job crafting, we also test whether it remains stable over time and whether it replicates at a weekly level. By doing so, we answer to the call for deepening knowledge on how proactivity in the workplace can be enacted to withdraw from processes that are costly and/or ineffective, in such a way that is part of a broader set of behavioural strategies, that is, job crafting (Zhang & Parker, 2018). Such an investigation is crucial to unveil whether behavioural strategies focused on avoiding costly processes can theoretically be considered proactive.

Third, building on recent calls for research, we test behavioural job crafting as a hierarchical, aggregate, multidimensional construct composed of both reflective and formative components. In doing so, we answer to the need for considering the aggregate feature of different crafting strategies, contributing to refine knowledge on the measurement of behavioural job crafting (Zhang & Parker, 2018). Moreover, by testing the hierarchical structure of behavioural job crafting, we also investigate how such an aggregate, multidimensional construct relates to subsequent well-being, in terms of work engagement and emotional exhaustion.

Scales Developed to Measure Behavioural Job Crafting

Along with the flourishing amount of studies on the antecedents and outcomes of job crafting, much attention has also been paid to scale development. Indeed, several measures have been developed to assess the frequency of job crafting behaviours. However, if on one side scale refinement and adaptation are needed to move knowledge forward, the use of many different measures and criteria to adapt them might also jeopardise the chances to gain a reliable understanding of the phenomena itself.

In order to contribute to such a research stream, we performed a literature search and identified peer-reviewed articles, published in English, that referred to the development and/or validation of job crafting scales. The following electronic databases were used: SCOPUS (Elsevier), Web of Science, ScienceDirect, Directory of Open Access Journals (DOAJ), and others listed in Figure 1, searching for "job crafting scale" in titles, keywords, or abstracts. Overall, the search resulted in 159 records, including duplicates, which were subsequently removed. The remaining papers were screened for inclusion by investigating whether each of them was specifically focused on scale development/validation or introduced a new dimension or structure of behavioural job crafting. As a result, 13 papers were considered for the review. Figure 1 shows the flow chart of the systematic review and Table 1 provides an overview of the main characteristics of the studies considered.

Tims and colleagues (2012) developed the first scale to measure behavioural job crafting based on the theoretical proposal of job crafting framed within

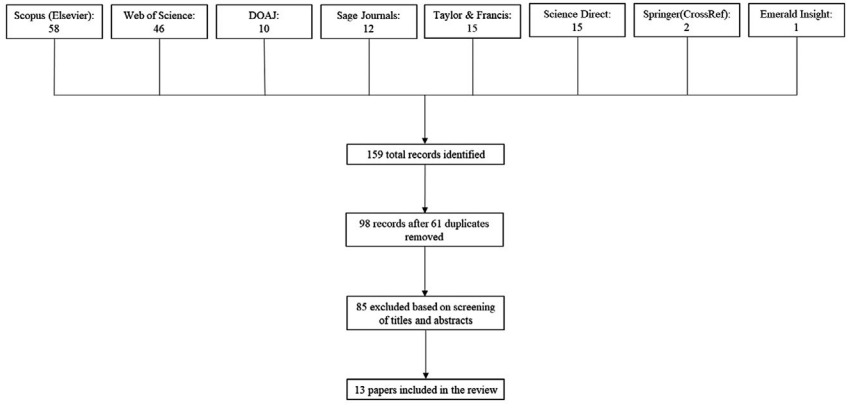

FIGURE 1. Flow chart of the systematic search. *Notes*: DOAJ = Directory of Open Access Journals.

the JD-R approach (Tims & Bakker, 2010). The Job Crafting Scale (JCS), originally developed in the Netherlands, comprehended four independent factors—that is, increasing social job resources, increasing structural job resources, increasing challenging job demands, and decreasing hindering job demands. Subsequently, the validity of the JCS was investigated in different contexts, with mixed results. For example, in the Brazilian context (cf. Chinelato, Ferreira, & Valentini, 2015), results from a second-order CFA provided evidence of a three-factor solution where the factor of decreasing hindering demands was deleted. Similarly, building on evidence from research on the different nature of expansion and contraction strategies, a study conducted in the Italian context investigated the structure of job crafting by considering only the dimensions of increasing structural and social job resources, and challenging job demands, without any investigation of the hierarchical structure of job crafting, nor of how decreasing hindering demands maps with the other dimensions (Cenciotti et al., 2016).

Contrarily, in a study conducted in Japan, results revealed a five-factor structure in which the dimension of decreasing hindering demands loaded on two factors rather than on a single one, differentiating between behaviours aiming at lowering emotional demands, and behaviours aiming at decreasing cognitive demands (Eguchi et al., 2016). In Spain, an adapted version of the JCS replicated the original, four-factor structure (Bakker et al., 2018), while results from an EFA conducted on a shortened, 12-item version, showed a three-factor structure in which the items of increasing structural job resources and challenging job demands loaded on the same factor (Sora, Caballer, & Garcia-Buades, 2018). Recently, an adaptation of the JCS to measure tour

TABLE 1
Scales Developed and/or Adapted to Measure Behavioural Job Crafting

Authors	*Sample*	*Country*	*Factors and Number of Items*	*Explained Variance for Factor (EFA)*	*Cronbach's alpha*	*FA*	*Rotation Criteria*	*Factor Models & Estimation Methods*	*Min Factor Loading for Retaining (EFA)*	*Cross-Loading Cut-off (EFA)*	*Total Variance Explained (EFA)*
Nielsen and Abildgaard (2012)	EFA: $N = 362$ CFA: $N = 408$	Denmark	Increasing challenging demands (4 items) Decreasing social job demands (3 items) Increasing social job resources (3 items) Increasing quantitative demands (3 items) Decreasing hindering demands (2 items)	25.70% 15.34% 8.97% 8.46% 7.98%	.85 .76 .75 .74 NR	EFA CFA	Oblimin, orthogonal	PCA (EFA) NR (CFA)	NR	NR[a]	66.44%
Petrou et al. (2012)	CFA: $N = 95$ MCFA: $N = 475$ occasions	NL	Seeking resources (6 items) Seeking challenges (3 items) Reducing demands (4 items)	/	.70[b] .76[b] .69[b]	CFA MCFA	/	ML	/	/	/
Tims et al. (2012)	EFA: $N = 375$ Multigroup CFA: $N = 616$	NL	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging demands (5 item) Decreasing hindering demands (6 items)	25.67% 8.01% 6.30% 14.6%	.82 .77 .75 .79	EFA CFA	Oblique[c]	ML (EFA) NR (CFA)	.35	<.35	54.24%
Chinelato et al. (2015)	$N = 491$	Brazil	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging demands (5 item)	/	.71 .78 .77	CFA	/	WLSMV	/	/	/

TABLE 1
Continued

Authors	*Sample*	*Country*	*Factors and Number of Items*	*Explained Variance for Factor (EFA)*	*Cronbach's alpha*	*FA*	*Rotation Criteria*	*Factor Models & Estimation Methods*	*Min Factor Loading for Retaining (EFA)*	*Cross-Loading Cut-off (EFA)*	*Total Variance Explained (EFA)*
Cenciotti et al. (2016)	EFA: *N* = 311 CFA: *N* = 410	Italy	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items)	38% 12% 5%	.81 .74 .78	EFA CFA	Promax	PAF (EFA) NR (CFA)	NR	NR	55%
Eguchi et al. (2016)	EFA: *N* = 486 CFA: *N* = 486	Japan	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items) Decreasing emotional demands (3 items) Decreasing cognitive demands (3 items)	29.99 % 6.54% 12.57% 4.31% 2.69%	.90 .76 .84 NR NR	EFA CFA	Promax	Unweighted least squares (EFA) NR (CFA)	NR	NR	56.1%
Lichtenthaler & Fischbach (2016)	*N* = 243	Germany	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items) Decreasing hindering job demands (6 items)	/	.77 .83 .88 .81	CFA	/	ML	/	/	/

TABLE 1
Continued

Authors	*Sample*	*Country*	*Factors and Number of Items*	*Explained Variance for Factor (EFA)*	*Cronbach's alpha*	*FA*	*Rotation Criteria*	*Factor Models & Estimation Methods*	*Min Factor Loading for Retaining (EFA)*	*Cross-Loading Cut-off (EFA)*	*Total Variance Explained (EFA)*
Nielsen et al. (2017)	MCFA: *N* = 820 occasions Multigroup CFAs: *N* = 608	Spain, UK, China, Taiwan	Increasing challenging demands (4 items) Decreasing social job demands (3 items) Increasing social job resources (3 items) Increasing quantitative demands (3 items) Decreasing social job demands (2 items)	/	.68/77[d] .68/78[d] .73/.85[d] .68/80[d] .67/76[d]	MCFA	/	MLR (MCFA) NR (CFA)	/	/	/
Bakker et al. (2018)	CFA1: *N* = 447 CFA2: *N* = 449	Spain	Increasing structural job resources (5 items) Decreasing hindering job demands (6 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items)	/	.70/.75 .77/.79 .78/.77 .76/.75	CFA[e]	/	ML	/	/	/
Demerouti and Peeters (2018)	*N* = 382 occasions	NL	Day-level minimizing demands (3 items) Day-level optimizing demands (5 items)	/	.78/.82 .87/.92	MCFA	/	ML	/	/	/
Sora et al. (2018)	EFA: *N* = 828 CFA: N = 819	Spain	Increasing structural job resources (3 items) Decreasing hindering job demands (3 items) Increasing social job resources (3 items) Increasing challenging job demands (3 items)	23.74%[f] 8.16% 12.69%	.75 .64 .78 .77	EFA CFA	Promax	Unweighted least squares (EFA) NR (CFA)	/[g]	/	44.59%

TABLE 1
Continued

Authors	*Sample*	*Country*	*Factors and Number of Items*	*Explained Variance for Factor (EFA)*	*Cronbach's alpha*	*FA*	*Rotation Criteria*	*Factor Models & Estimation Methods*	*Min Factor Loading for Retaining (EFA)*	*Cross-Loading Cut-off (EFA)*	*Total Variance Explained (EFA)*
Yen et al. (2018)	EFA: *N* = 268 CFA1: *N* = 268 CFA2: *N* = 253	Taiwan	Increasing structural job resources (9 items) Increasing social job resources (8 items) Increasing challenging job demands (7 items) Decreasing hindering job demands (6 items)	NR	.90/.94 .90/.90 .88/.95 .91/.94	EFA CFA	NR	NR	.50	"*if the item exhibited a high factor loading on another factor*" (p.56)	NR
Ghadi (2019)	*N* = 513	Jordan	Increasing challenging job demands (4 items) Decreasing social demands (3 items) Increasing social job resources (3 items) Increasing quantitative demands (3 items) Decreasing hindering job demands (2 items)	/	.92 .88 .79 .71 .75	CFA	/	ML	/	/	/

NL = the Netherlands; FA = Factor Analysis; EFA = Exploratory Factor Analysis; CFA = Confirmatory Factor Analysis; MCFA = Multilevel Confirmatory Factor Analysis; ML = Maximum Likelihood; WLSMV = Weighted Least Squares Mean and Variance Adjusted; MLR = Maximum Likelihood Estimation with Robust Standard Errors; PCA = Principal Component Analysis; PAF = Principal Axis Factoring; NR = not reported.

[a]On page 374 is reported, "Early iterations of the factor analysis resulted in the removal of seven cross-loading job crafting items from any further analysis". No information is reported for the cut-off criteria adopted for cross-loadings.

[b]General level.

[c]Rotation method not reported.

[d]Range of reliabilities across the different samples are reported.

[e]On page 138, it is reported that "it is reasonable to continue doing an exploratory analysis" but no information is explicitly provided about factor model, estimation method, rotation criteria.

[f]In EFA, increasing structural job resources and challenging job demands loaded on the same factor.

[g]For scale construction, items with loading over .60 in previous validation studies were retained. No information is provided for minimum factor loading in the EFA.

leaders' job crafting behaviours in Taiwan was developed, and results provided support for the original four dimensions (Yen, Tsaur, & Tsai, 2018).

In the meantime, Nielsen and Abildgaard (2012) developed another alternative measure of behavioural job crafting, including the dimensions of decreasing social job demands and increasing quantitative demands. However, even though such a scale has been adapted to different cultural contexts (e.g. Ghadi, 2019; Nielsen et al., 2017), it has been less widely used compared to the original JCS (Rudolph, Katz, Lavigne, & Zacher, 2017). On the other side, in order to capture day-level fluctuations of job crafting behaviours, a slightly modified version of the JCS was proposed, in which increasing structural and social job resources collapsed, and three different types of job crafting behaviours were identified—that is, increasing resources, seeking challenges, and decreasing demands (Petrou et al., 2012). Such a scale represents a shortened version of the original JCS (Lichtenthaler & Fischbach, 2016) and allows to assess both the trait and state levels of job crafting. Finally, in an effort to capture behaviours aiming at optimising the work processes, Demerouti and Peeters (2018) introduced and tested the validity of optimising demands as another reduction-oriented job crafting strategy, which differs from behaviours aiming at making the job less strenuous in that it focuses on making work processes more efficient.

Overall, these findings seem to depict a rather complex nature of behavioural job crafting, with mixed evidence concerning its constituting dimensions. However, to make sense of this complexity, a closer examination of the factor analysis procedures used to investigate the structure of job crafting reveals inconsistent criteria, which may help explain such inconclusive findings. For example, among the studies considered, many different factor models are applied to conduct EFA, including both component (which assumes no measurement error, e.g. Principal Component Analysis, PCA) and factor (e.g. Principal Axis Factoring, PAF) models. Such methodological choices represent nonstatistical estimation methods, in that they do not require data distribution assumptions (Kaplan, 2009) and, consequently, do not provide standard errors to test model fit and other parameters, which limits the chances to statistically test hypotheses related to, for example, inter-factor correlations and factor loadings (Schmitt, 2011). On the other side, many studies investigated the structure of behavioural job crafting by relying only on CFA, which has been recently recognised, however, as an approach oftentimes not appropriate to reflect the nature of the data, given that indicators are rarely, if ever, perfectly and uniquely related to a single construct (Howard et al., 2018; Morin et al., 2016).

Moreover, even though response scales result in categories (e.g. 1 = never, 5 = often), which are not normally distributed, the majority of the studies that applied a statistical estimation method used maximum likelihood (ML).

However, using ML with categorical variables is associated to several pitfalls, including leading to "pseudo factors" that are artefacts of item difficulty and producing incorrect parameter estimates and standard errors (Brown, 2006). Finally, among the studies considered, several rotation criteria have been applied. Different rotation criteria, however, influence the factor structure and can have a sizeable impact on the inter-factor correlations and cross-loading magnitudes (Schmitt & Sass, 2011). For example, when applying orthogonal methods that do not allow factors to correlate, item loadings may become inflated if the factors are truly correlated. Rotation criteria become particularly important when considering that, based on the criterion chosen, CFA solutions may be more or less comparable to the EFA solution (Schmitt & Sass, 2011).

Such considerations are aligned with previous calls for more precise scale development procedures (e.g. Zhang & Parker, 2018), both from a conceptual and a methodological standpoint. Accordingly, in the following section we propose, explore, and test a job crafting structure composed of four dimensions—that is, increasing job resources, seeking job challenges, reducing job demands, and optimising job demands—trying to take stock of the methodological observations aforementioned.

Behavioural Job Crafting

Job crafting occurs when employees experience misfit between their motivational style and the work environment (Demerouti, 2014). Among the behavioural strategies that employees can proactively enact to reshape the characteristics of work, some behaviours have been found to be beneficial for positive work-related outcomes, while others, namely decreasing demands, seem to be related to dysfunctional effects (Petrou et al., 2012; Lichtenthaler & Fischbach, 2016; Zhang & Parker, 2018). Accordingly, scholars called attention to the need for a more complete unpacking of the implications of different contraction-oriented strategies (Rudolph et al., 2017), and for understanding how they map as part of a broader set of behaviours to intentionally reshape one's work (Zhang & Parker, 2018).

Partially contributing to such a research stream, Demerouti and Peeters (2018) suggested that employees may craft their work by optimising their demands, that is, by actively trying to make work processes more efficient rather than completely avoiding them. Compared to decreasing demands, optimising demands is more constructive and refers to attempts to make work more efficient, bypassing inefficient processes (Demerouti et al., 2019). In introducing such a dimension, authors expressly referred to optimising demands as an "additional job crafting strategy" (Demerouti & Peeters, 2018, p. 210). Nevertheless, even though evidence from research

showed that decreasing and optimising demands can be discriminated (Demerouti & Peeters, 2018), we are unaware of studies providing support for a structure of job crafting comprising such a newly introduced behavioural dimension together with the original ones. Understanding whether and how the dimension of optimising demands captures an aspect of employees' job crafting strategies is crucial to deepen knowledge about the functioning of a complex set of proactive strategies that may spontaneously occur at work.

Drawing on the conceptualisation of behavioural job crafting as composed of the dimensions of seeking resources, seeking challenges, and reducing demands (Petrou et al., 2012), integrated with the dimension of optimising demands (Demerouti & Peeters, 2018), we expect that:

> *Hypothesis 1*: When exploring (a) and confirming (b) the new structure of the revised JCS, a four-factor structure will provide a better fit to the data compared to a three-, two-, and one-factor solution.

Evidence from research shows that proactive behaviours display both a trait and a state component, meaning that proactivity at work includes both a stable and a more contextual component (Petrou et al., 2012; Sonnentag, 2003). Moreover, previous research conducted through diary studies reported evidence of a similar factor structure at both the between- and the within-level of analysis (Petrou et al., 2012). Similarly, we expect that:

> *Hypothesis 2*: The revised JCS will show a four-factor structure at both the within- and between-levels.

Differently from state conditions that change across time and may fluctuate on daily or weekly levels, general tendencies are rather stable (Xanthopoulou et al., 2009). That is, individuals who tend to engage in seeking resources and/or challenges, decreasing and/or optimising demands as for their general tendencies are likely to display such behaviours in a relatively stable fashion. Accordingly:

> *Hypothesis 3*: The four dimensions of the revised JCS will be highly correlated across three time points.

Expansion and Contraction Strategies of Behavioural Job Crafting

Despite the differences in the existing perspectives on job crafting, scholars agree that employees can craft their job by engaging in two broad classes of

behaviours, that is, those aiming at expanding the elements of work (being resources, boundaries, or meaning), and those aiming at contracting, reducing or limiting them (Petrou et al., 2012; Zhang & Parker, 2018). Such a distinction has been referred to within different theoretical backgrounds, including regulatory focus theory (Higgins, 1997; see Lichtenthaler & Fischbach, 2016), and approach-avoidance motivation theory (Elliot, 2006; see Bruning & Campion, 2018).

Even though such theoretical frameworks provide a guide to map, distinguish, and understand different crafting strategies, we argue that they are not overlapping with the original distinction between contraction and expansion job crafting strategies, and thus invite for avoiding the interchangeable usage of such terms for the following reasons. Approach crafting has been defined as effortful and directed actions to seek positive work aspects, while avoidance crafting has been referred to as directed actions to escape from, and avoid, negative work aspects (Zhang & Parker, 2018). Accordingly, in this perspective, the focus is on the motivation of the employee rather than on the characteristics of the job, which are expanded or contracted, depending on the strategy adopted. As long as one considers the dimensions of seeking more resources and challenges, or decreasing hindering job demands, approach/avoidance and expansion/contraction dimensions may overlap, in that an employee who aims at seeking positive aspects of the work is likely to expand its boundaries or characteristics, while when driven by avoidance motives they may be likely to withdraw from tasks, eventually contracting and limiting the (demanding) elements of the work environment. However, when considering behaviours intentionally enacted to optimise work processes, the convergence between approach/avoidance and expansion/contraction may not be so intuitive. Indeed, in this case, such a behaviour should correspond to either a strategy to face (approach) the demands of the work environment (Zhang & Parker, 2018), or differently, when assuming a job characteristics perspective, to a contraction strategy aiming at eliminating the work characteristics or processes perceived as costly and inefficient (Demerouti & Peeters, 2018).

Against this background, we identify job crafting as either expansion- or contraction-oriented, where expansion job crafting behaviours are defined as those that increase the number or complexity of tasks, and contraction job crafting behaviours as those that reduce either the number of tasks or their complexity (Laurence, 2010). Within this conceptualisation, seeking resources and challenges represent expansion-oriented behaviours while decreasing and optimising demands constitute two forms of contraction-oriented ones. Indeed, when employees seek more resources, they may ask for more feedback or advice, as well as engage in extra activities that build new resources in order to ensure that the quality of their deliverables is optimal or even

beyond expectations. Likely, by seeking more challenges, employees may try to expand the scope of their responsibilities and look for new and appealing work tasks. These behaviours represent self-initiated strategies that enlarge one's work characteristics to include elements of work and related activities that were not originally prescribed (Bruning & Campion, 2019). Differently, employees who reduce their demands, for example, through bypassing tasks that were originally part of their job description, or by actively trying to avoid co-workers, clients or supervisors to reduce possible additional job demands, engage in behaviours aiming at limiting the requirements of the work and related effort expenditures. On the other hand, employees may also decide to contract their efforts at work by establishing more efficient procedures that facilitate task completion, for example, by planning and prioritisation, or by (re)organising their work processes according to their own strengths and competencies, which all reflect optimising demands behaviours.

Moreover, from a methodological point of view, scales developed to measure behavioural job crafting do not assess employees' motivation in terms of approach or avoidance drivers, while they "only" map different behaviours aiming at redesigning the characteristics of the job. Accordingly, defining the nature of job crafting behaviours as approach and/or avoidance tendencies means to infer employees' motivations that are not measured. For these reasons, in this paper, we refer to contraction and expansion strategies.

The Hierarchical Structure of Behavioural Job Crafting

As recently proposed by Zhang and Parker (2018), job crafting can be conceptualised as a hierarchical construct with different higher-order, aggregate and superordinate constructs. In their conceptualisation, authors argue that it is possible to distinguish between different levels of crafting dimensions based on (i) job crafting orientation (approach/avoidance), (ii) form (cognitive/behavioural), and (iii) content (resources/demands). Moreover, they argue that while job crafting content and form are reflective constructs, orientation and overall job crafting represent formative constructs, being caused by job crafting form (the former) and, at a higher level, by orientation (the latter).

Drawing on such a proposal and building on our argument about the differences between approach/avoidance and expansion/contraction strategies, in this study we focus only on behavioural job crafting as a set of expansion and contraction strategies and test a hierarchical, multidimensional measurement model including both a reflective and a formative part. Specifically, we argue that every job crafting behaviour constitutes a single reflective construct, which in turn form different higher-order factors. Namely, we propose four reflective constructs (i.e., seeking resources, seeking challenges, decreasing demands, and optimising demands) as lower-order factors. In turn, increasing resources and

seeking challenges form expansion strategies while reducing demands and optimising demands form contraction ones. Finally, contraction and expansion strategies contribute together to define a superordinate construct referred to as behavioural job crafting. Such a proposal is grounded in the theoretical conceptualisation of behavioural job crafting, where the indicators used to assess each employees' job crafting strategy constitute imperfect reflection of the underlying latent construct (Bollen, 1989; Nunnally & Bernstein, 1994), meaning that such indicators are reflective of the specific job crafting behaviour they represent. Indeed, the indicators reflecting each job crafting behaviour have shown to exhibit high levels of internal consistency reliability, be highly correlated, and be interchangeable as for the dimensions they represent, which are all key features of models with reflective indicators (cf. Bollen & Lennox, 1991; MacKenzie, Podsakoff, & Jarvis 2005). Differently, contraction and expansion strategies represent formative constructs in that their indicators (i.e., each specific job crafting behaviour) tap different facets of the conceptual domain of the crafting strategy adopted (i.e., oriented towards expansion or contraction). Moreover, each job crafting behaviour is not conceptually interchangeable with another and defines a distinct type of proactive behaviour which in turn contributes to defining a unique part of the strategy adopted (i.e., expansion- or contraction-oriented). In turn, such strategies are also capturing different facets of an overall, formative, higher-order construct, that is, behavioural job crafting. Thereby, employees who craft their job can do it by either engaging in expansion-oriented strategies or contraction-oriented ones, which are constituted by two very different sets of actions, that are not interchangeable, nor are likely to share the same antecedents and outcomes, which constitute decision rules for determining the nature of formative constructs (cf. Jarvis, MacKenzie, & Podsakoff, 2003). Accordingly, we propose the following:

> *Hypothesis 4*: A hierarchical, multidimensional model composed of four first-order, reflective factors (i.e., seeking resources, seeking challenges, decreasing demands, and optimising demands), causing two second-order formative factors (i.e., expansion and contraction strategies), causing one third-order formative factor, i.e., behavioural job crafting, will provide a good fit to the data.

Relationships with Employees' Well-Being

Research has shown that employees' engagement in expansion-oriented job crafting positively relates to health, motivation, and performance, while behaviours aiming at decreasing demands are not or even negatively related to the same outcomes (Demerouti, Bakker, & Halbesleben, 2015; Lichtenthaler & Fischbach, 2019; Makikangas, 2018; Rudolph et al., 2017; Weseler & Niessen, 2016).

Specifically, previous studies suggest that job crafting leads to improvement in employee well-being and performance because of experienced balance between job demands and resources, which leads to enhanced person-job fit, eventually facilitating performance and occupational well-being. Indeed, evidence from research shows that job crafting is associated with higher work engagement and lower exhaustion (Demerouti, Bakker, & Gevers, 2015; Petrou et al., 2012; Petrou, Demerouti, & Schaufeli, 2015; Tims, Bakker, & Derks, 2013). Consistent with these findings, a recent meta-analysis reported that overall job crafting is positively related to work engagement and negatively associated with job strain (Rudolph et al., 2017). Accordingly:

Hypothesis 5: Behavioural job crafting will be positively associated with work engagement and negatively associated with exhaustion.

METHOD

Participants and Procedure

Sample 1. A total of 936 participants (54% females; M_{age} = 36.84, SD = 12.42) from various occupational contexts working for different organisations composed the first sample, used to test Hypothesis 1. Participants in this sample filled in a questionnaire measuring demographic information and job crafting. Among these, 630 participants were also asked to report their levels of work engagement and exhaustion, which were used to test Hypotheses 4 and 5. These participants were recruited by masters' students who were asked to contact at least three employees willing to voluntarily take part in the study as part of a course requirement and used the data for the course assignment. Such a recruitment procedure has been shown to secure heterogeneity of the sample and of the jobs among participants (Demerouti & Rispens, 2014). Participants were either contacted via email or directly by the students and asked to fill in a paper-and-pencil questionnaire or to complete the same survey available by clicking on a link. In both cases, participants received information about the purpose of the study and assurance about the anonymity of all responses, instructions about the completion of the questionnaire, and, for those who did not complete the questionnaire online, a return envelope.

Sample 2. To test Hypothesis 2, 199 Italian employees (51.5% females; M_{age} = 40, SD = 11.44) from various occupational contexts completed both a weekly diary for three weeks and a general questionnaire. Paper-and-pencil questionnaires were collected. The participants received the same information

and materials described above with the addition of a diary booklet to be completed in three weeks, each one at the end of a working week. Of the 240 survey packages distributed, excluding participants who did not fill in the questionnaire on all the weeks, 199 participants (N = 796 occasions) responded to the general and weekly questionnaires (83% response rate).

Sample 3. Hypothesis 3 was tested with data collected in eight Italian private companies operating in different sectors, that is, personal care, local craft businesses, pharmaceutics, trading, and social services. Participants (55.3% females; M_{age} = 37, SD = 14.52) filled in the same questionnaire over three waves with a two-month time-lag between each data collection. Questionnaires were distributed to 350 workers and 287 were returned at Time 1 (response rate = 82%), 238 were returned at Time 2 (response rate = 68%), and 226 completed questionnaires were returned at Time 3 (response rate = 64%). Participation was voluntary and anonymous. Each participant received information about how to generate a univocal code that permitted us to track across the three waves.

Measures

Job Crafting. Job crafting was measured by the general level JCS developed by Petrou and colleagues (2012) integrated with the optimising demands scale developed by Demerouti and Peeters (2018). Since the original instrument was published in English, we translated the survey into Italian using back-translation (Brislin, 1980). First, a bilingual speaker who was not familiar with the items translated the original JCS into Italian. Second, another bilingual speaker back-translated the same items into English. Given that this process did not give rise to significant changes to any of the items, the two bilingual speakers concluded that the Italian version of the JCS is consistent with the original one in meaning.

The JCS (Petrou et al., 2012) contains 13 items referring to 3 dimensions, that is, 6 items measure the general level of seeking resources behaviours (Sample 1, α = .84), 3 items measure the general level of seeking challenges (Sample 1, α = .83), and 4 items measure the general level of reducing demands (Sample 1, α = .85). Demerouti and Peeters' optimising scale consists of 5 items (Sample 1, α = .90). In Sample 3, Cronbach's α for seeking resources was .85 at Time 1, and .88 at both Time 2 and Time 3. For seeking challenges, Cronbach's α was .87 at Time 1, and .90 at both Time 2 and Time 3. The dimension of reducing demands, considering the factor structure resulting from the EFA (reported below, 3 items), showed a Cronbach's α of .86 at every time point. Lastly, Cronbach's α for optimising demands (6 items) was .90 at every time point. Respondents indicated how often they engaged

in every behaviour during the past three months using a scale ranging from 1 = *never* to 5 = *often*.

Weekly Job Crafting. Weekly job crafting was measured by the same job crafting scale described above. In the diary study, all items were rephrased to measure job crafting behaviours on a weekly basis, that is, respondents indicated how often they engaged in every behaviour during the past week using a scale ranging from 1 = *never* to 5 = *often*. Sample items include "*In the past week I have…*" "*asked my colleagues for advice*" (weekly seeking resources) "*asked for more responsibilities*" (weekly seeking challenges), "*tried to ensure that my work is emotionally less intense*" (weekly decreasing demands), and "*tried to simplify the complexity of my tasks at work*" (weekly optimising demands).

Work Engagement. Work engagement was assessed with three items from the Italian version of the Utrecht Work Engagement Scale capturing three sub-dimensions of work engagement, namely vigour, dedication, and absorption (Balducci, Fraccaroli, & Schaufeli, 2010). The items were "*At my work, I feel bursting with energy*" (vigour), "*I am enthusiastic about my job*" (dedication), and "*I am immersed in my job*" (absorption). Responses were given on a 7-point scale ranging from 0 = *never* to 6 = *always*. Based on results from Schaufeli, Bakker, and Salanova (2006) showing that the three dimensions are closely related, we used one overall index for work engagement (Cronbach's $\alpha = .90$).

Exhaustion. Exhaustion was measured with three items from the Oldenburg Burnout Inventory (Demerouti & Nachreiner, 1996), which have been translated and back-translated into Italian. Items were scored on a 5-point, Likert-type scale from 1 = *strongly disagree* to 5 = *strongly agree* such that higher scores indicated a higher level of the exhaustion. An example item is "*After my work, I regularly feel worn out and weary*". Cronbach's α was .79.

Statistical Analyses

Analyses were conducted using Mplus 8.0 (Muthén & Muthén, 2010). Assessment of model fit was based on the model chi-square (χ^2), the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR). CFI and TLI values close to .95 or higher in combination with RMSEA and SRMR $\leq .08$ indicate a good fit (Hu & Bentler, 1999).

The amount of within-wave missingness in Sample 1 was trivial, ranging between 0.00 and 0.50 per cent. As for Samples 2 and 3, we compared

participants with all data waves against those with only T1 data on job crafting dimensions. Participants who completed all data waves did not significantly differ from participants who completed them all on any job crafting dimension. Accordingly, the pairwise deletion was used to manage missing data (Asparouhov & Muthén, 2010).

RESULTS

Exploratory and Confirmatory Factor Analyses. First, EFA and CFA analyses were run using two subsets of data from Sample 1, which was split. Exploratory Factor Analysis in the CFA framework (cf. Brown, 2006) was used to investigate the structure of behavioural job crafting, with oblique Goemin and Promax rotations, among 458 participants from Sample 1. A Weighted Least Squares Mean and Variance adjusted (WLSMV) estimator was used, which assumes the categorical nature of the data. Fit statistics from the EFA and factor loadings from the two rotations explored, that is, Geomin and Promax, are reported in Tables 2 and 3. As it can be seen in Table 2, a four-factor solution for the EFA fit the data better than the other models explored, supporting Hypothesis 1a. Results from the inspection of the rotation solutions (see Table 3) show a highly similar solution across the two different rotations. Loadings ranged between .57 and .86 for increasing resources, between .67 and .91 for seeking challenges, between .81 and .97 for reducing demands, and between .72 and .94 for optimising demands. Also, our results showed that the item coded RD4 "*I try to simplify the complexity of my tasks at work*", which was originally considered as part of the dimension of reducing demands, is instead part of the dimension of optimising demands. Based on these results, in the following analyses, we included this item among those referring to the dimension of optimising demands.

Confirmatory factor analysis (CFA) was run among 478 participants of Sample 1 to verify the solution obtained from the EFA. Accordingly, our model included four latent variables—that is, seeking resources, seeking

TABLE 2
Fit Statistics of the Exploratory Factor Analyses ($N = 458$)

Model	*Description*	χ^2 *(df)*	*CFI*	*TLI*	*RMSEA*	*SRMR*
EFA	1-factor	3939.316 (135)	.735	.699	.248	.208
	2-factor	2330.285 (118)	.846	.800	.202	.133
	3-factor	1166.785 (102)	.926	.889	.151	.068
	4-factor	403.442 (87)	.978	.961	.089	.030

Notes: χ^2 = chi-squared; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation; SRMR = standardised root mean square error of approximation.

TABLE 3
Geomin and Promax Rotated Loadings from the EFA, 4-Factor Solution

	Geomin				*Promax*			
Item	*F1*	*F2*	*F3*	*F4*	*F1*	*F2*	*F3*	*F4*
IR1	**.57**	–.07	.17	.04	**.58**	.16	–.13	.05
IR2	**.83**	.01	–.13	.01	**.86**	–.14	–.07	.02
IR3	**.70**	–.14	.15	.04	**.71**	.14	–.21	.04
IR4	**.57**	.36	.06	–.18	**.59**	.08	.29	–.18
IR5	**.62**	.12	.13	–.01	**.64**	.13	.06	–.00
IR6	**.66**	.18	–.07	–.02	**.69**	–.07	.16	–.01
SC1	.13	–.01	**.67**	–.02	.11	**.68**	–.04	–.01
SC2	.13	.19	**.72**	.03	.10	**.75**	.14	.04
SC3	.04	.03	**.89**	.06	.01	**.91**	–.01	.06
RD1	.03	.05	–.00	**.82**	.03	.02	.05	**.82**
RD2	–.03	–.01	.03	**.97**	–.04	.05	.00	**.97**
RD3	–.01	.03	.03	**.81**	–.01	.05	.03	**.81**
RD4	.15	**.74**	–.28	.19	.18	–.24	**.72**	.19
OD1	.08	**.90**	–.26	.08	.12	–.21	**.87**	.09
OD2	–.14	**.93**	–.01	.01	–.07	.04	**.91**	.02
OD3	–.15	**.94**	.06	–.02	–.13	.12	**.92**	–.01
OD4	–.00	**.86**	.11	–.12	.02	.16	**.83**	–.11
OD5	–.11	**.77**	.16	–.01	–.10	.21	**.75**	–.00

challenges, reducing demands, and optimising demands. Each latent construct was indicated by its items, and correlation coefficients were modelled between the study variables. Results revealed satisfactory model fit: $\chi^2_{(113)} = 331.86$, $p < .001$; CFI = .96; TLI =.94, SRMR = .05; RMSEA =.06, providing support for Hypothesis 1b. Factor loadings were all significant and ranged from .62 to .98. To confirm the unexpected finding that one item originally conceived as referring to reducing demands is instead part of the dimension of optimising demands, we also tested an alternative model in which reducing demands was indicated by all its four items. Results ($\chi^2_{(113)} = 587.23$, $p < .001$; CFI = .91; TLI =.87, SRMR = .09; RMSEA =.09) confirmed that the solution obtained from the EFA fitted the data better than the alternative one.

Multilevel Confirmatory Factor Analysis. To test Hypothesis 2, multilevel confirmatory factor analysis (MCFA) was used (Muthen, 1994), adjusting for the nested data structure using robust standard errors (MLR). The weekly data we collected have a multilevel structure, with repeated measurements nested within persons. Before conducting the MCFA, we examined the intraclass correlations (ICC1; Bliese, 2000). The ICC1 reflects the amount of between-person variability compared to the amount of total variability

and ranges from 0 to 1, with higher values indicating greater proportions of between-level variance (Dyer, Hanges, & Hall, 2005). In our data, ICC1 values of the items ranged from .45 to .61, suggesting enough between-person variation to use multilevel analysis. Model 1 was proposed as the null hypothesis. Model 2 tested a two-factor model, in which the items of the expansion dimensions, that is, seeking resources and challenges, and the items of the contraction dimensions, that is, decreasing and optimising demands, collapsed into two factors. Furthermore, we also tested a three-factor model, in which only reducing and optimising demands collapsed into one factor, while the dimensions of seeking challenges and increasing resources were kept as the original structure. Finally, the fourth model assumed the proposed four-factor structure. Results revealed that the four-factor solution fitted the data well ($\chi^2_{(304)} = 925.07$, CFI = .89, TLI = .88, RMSEA = .05). The SRMR at the two levels indicated that the fit of the between-level of the model was better than the within-level (SRMR-within = .07 vs SRMR-between = .06). All the alternative models resulted in a significant lack of fit. The one-factor model fit was $\chi^2_{(322)} = 2830.87$, CFI = .57, TLI = .52, RMSEA = .10, SRMR-within = .15 and SRMR-between = .19. The fit of the two-factor model was $\chi^2_{(318)} = 2882.48$, CFI = .56, TLI = .51, RMSEA = .10, SRMR-within = .10 and SRMR-between = .11. The three-factor model revealed a fit of $\chi^2_{(312)} = 1858.28$, CFI = .74, TLI = .70, RMSEA = .08, SRMR-within = .08 and SRMR-between = .10. The Satorra–Bentler scaled chi-square difference test (Satorra & Bentler, 2001) showed that the four-factor model provided a much better fit to the data than (a) the one-factor model (SBS-$\Delta_{\chi 2} = 3457.55$, $\Delta_{df} = 18$; $p < .001$); (b) the two-factor model ($\Delta_{\chi 2} = 394.97$, $\Delta_{df} = 14$; $p < .001$); (c) the three-factor model (SBS-$\Delta_{\chi 2} = 11813.52$, $\Delta_{df} = 8$; $p < .001$). Thus, the four-factor model explained our data best, and therefore Hypothesis 2 was supported (see Figure 2).

Test-Retest Reliability. To investigate whether the dimensions of job crafting are stable over time, we inspected correlation coefficients of the data collected in Sample 3. Results (see Table 4) showed that Time 1 increasing resources was positively and significantly related to its measurement at Time 2 ($r = .84$, $p < .01$) and Time 3 ($r = .82$, $p < .01$), and the relationship between Time 2 and Time 3 was $r = .87$, $p < .01$. Time 1 seeking challenges was positively and significantly related to its measurement at Time 2 ($r = .84$, $p < .01$) and Time 3 ($r = .79$, $p < .01$), and the relationship between Time 2 and Time 3 was $r = .82$, $p < .01$. Reducing hindering demands measured at Time 1 was positively and significantly related to its measurement at Time 2 ($r = .80$, $p < .01$) and Time 3 ($r = .76$, $p < .01$), and the relationship between Time 2 and Time 3 was $r = .76$, $p < .01$. Time 1 optimising demands was positively and significantly related to its measurement at Time 2 ($r = .74$, $p < .01$) and Time 3 ($r = .72$, $p < .01$), and the relationship between Time 2 and Time 3 was $r = .80$,

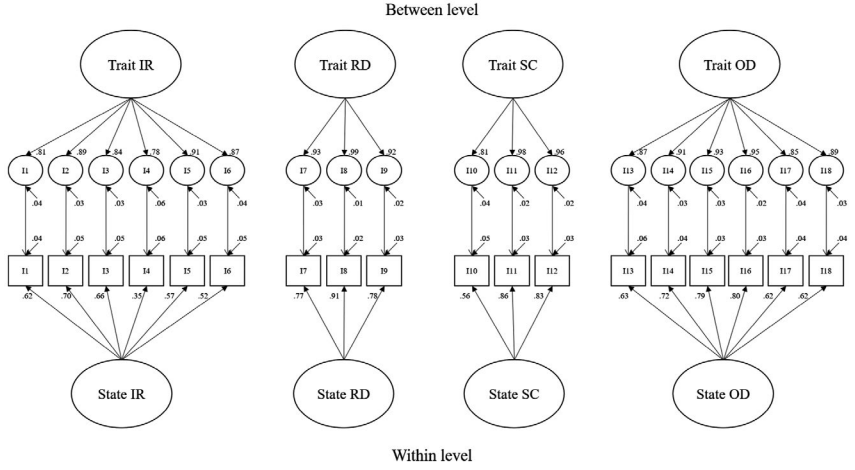

FIGURE 2. Path diagram of the final four-factor model (standardised solution). *Notes*: At the bottom of the figure, squares represent observed indicators. Each item is associated with a random error, represented by an oblique arrow. At the top of the figure, indicators in circles represent group means for each observed indicator. Group means load onto the aggregate latent variable and are associated with their respective error terms, represented by an oblique arrow. The full model connects the disaggregate and corresponding aggregate indicators. Thus, the observed values of the original indicators (in squares) are considered to be a function of both the within- and between-level latent constructs (state and trait variables, respectively) (cf. Muthen, 1994; Dyer et al., 2005). Between level = between-person level. Within level = within-person level. IR = Increasing resources; RD = Reducing demands; SC = Seeking challenges; OD = Optimising demands.

$p < .01$. Since all correlations exceeded the minimum correlation criterion of .40 between data collection points (Robinson, Shaver, & Wrightsman, 1991), our scale shows good test-retest reliability, supporting Hypothesis 3.

Hierarchical Model with Reflective and Formative Indicators. To test the hierarchical structure of job crafting, we used data from Sample 1, of participants who filled in also the measures on work engagement and exhaustion. Participants who completed the entire questionnaire, including job crafting measures, work engagement, and exhaustion were 591. The model we tested is a third-order model with both reflective and formative indicators. Specifically, building on the proposal of Zhang and Parker (2018), we hypothesised behavioural job crafting as a formative construct formed by expansion and contraction strategies that employees can proactively engage in. Such strategies are behavioural in nature, meaning that different behaviours contribute to their formation, that is, increasing resources and challenges, reducing and

TABLE 4
Correlations among the Four Dimensions of Job Crafting across Three Waves. Cronbach's α are Reported on the Diagonal (N = 226)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Time 1												
1. IR1	(.85)											
2. SC1	.60**	(.87)										
3. RD1	.39**	.38**	(.86)									
4. OD1	.59**	.52**	.51**	(.90)								
Time 2												
5. IR2	.84**	.60**	.36**	.52**	(.88)							
6. SC2	.58**	.84**	.31**	.47**	.64**	(.90)						
7. RD2	.40**	.38**	.80**	.49**	.46**	.35**	(.86)					
8. OD2	.60**	.58**	.51**	.74**	.63**	.63**	.60**	(.90)				
Time 3												
9. IR3	.82**	.58**	.29**	.51**	.87**	.57**	.37**	.57**	(.88)			
10. SC3	.59**	.79**	.29**	.44**	.60**	.82**	.35**	.59**	.62**	(.90)		
11. RD3	.46**	.36**	.76**	.47**	.43**	.34**	.76**	.53**	.41**	.37**	(.86)	
12. OD3	.57**	.56**	.41**	.72**	.59**	.56**	.47**	.80**	.59**	.62**	.58**	(.90)

Note. IR = Increasing resources; SC = Seeking challenges; RD = Reducing demands; OD = Optimising demands.
**$p < .01$.

optimising demands. These behavioural dimensions are, in turn, reflected by the items of the JCS.

Given that identification problems are an issue in models with formative indicators (MacCallum & Browne, 1993), we added two reflective indicators predicted by job crafting, that is, work engagement and exhaustion. Apart from a methodological consideration, such a choice can be justified based on previous research suggesting that job crafting leads to improvement in employee well-being because of enhanced person-job fit. Indeed, evidence from research shows that job crafting is associated with higher work engagement and lower exhaustion (Demerouti, Bakker, & Gevers, 2015; Petrou et al., 2012; Petrou, Demerouti, & Schaufeli, 2015; Tims, Bakker, & Derks, 2013).

We created our model by first defining its reflective parts, then by creating the two second-order factors, that is, expansion and contraction tendencies, and regressing them on their respective behavioural strategies. For the model to be identified (cf. Brown, 2006), we also constrained the first path of each regression to a non-zero value (i.e., 1), and fixed the residual variance of the formative latent factor to zero. Finally, we created the third-order variable, job crafting, and regressed it on the two main strategies of expansion and contraction, again fixing one of the two paths to a non-zero value and the residual variance to zero. As a final step, we regressed work engagement and exhaustion on job crafting. Even though results revealed a satisfactory model fit: $\chi^2_{(240)} = 835.822$, $p < .001$; CFI = .93; TLI = .91, SRMR = .06; RMSEA = .065, a closer inspection revealed that reducing demands had a path with a value over 1 (i.e., $\beta = 1.043$) with the formative construct of contraction strategies (while optimising demands showed a standardised coefficient of –.754 with contraction strategies), meaning that there may be collinearity problems. On the other side, it must be noticed that our model implies collinearity by design, given that the second-order constructs are part of the higher-order construct (i.e., behavioural job crafting is the combination of contraction and expansion strategies and is nearly perfectly predictable by them). Therefore, in order to solve such a problem, we decided to test an alternative model by including only two levels, that is, a reflective part and one formative factor, that is, behavioural job crafting, without differentiating between expansion- and contraction-oriented strategies, formed by its different behavioural facets. Results showed that such a model fitted the data better, in that no path resulted in being higher than 1. Overall, such results provided only partial support for Hypothesis 4. Standardised estimates and standard errors from the final model are displayed in Figure 3.

Results from the hierarchical model tested showed that job crafting was positively and significantly related to work engagement ($\beta = .51$, $p < .001$), while it was significantly and negatively related to exhaustion ($\beta = –.25$, $p < .001$), providing support for Hypothesis 5.

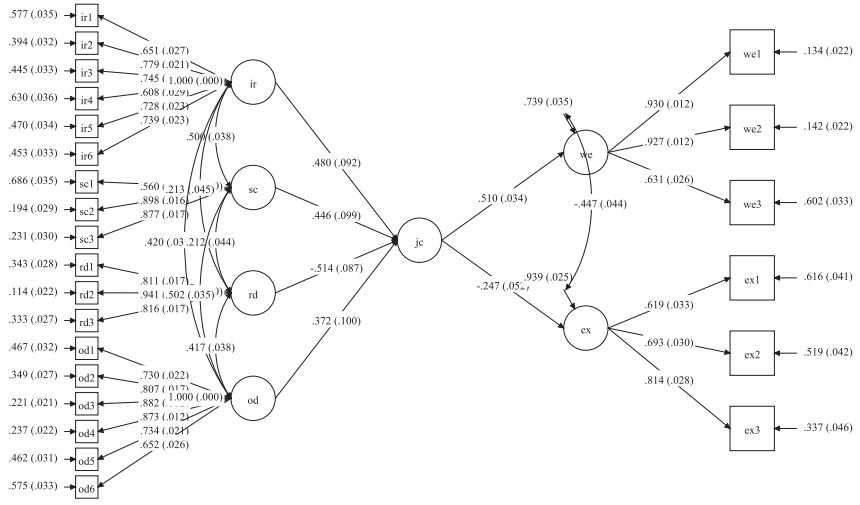

FIGURE 3. Graphical representation of the standardised results from the final hierarchical model with reflective and formative indicators.
Notes: IR = Increasing resources; SC = Seeking challenges; RD = Reducing demands; OD = Optimising demands; JC = Job crafting; WE = Work engagement; EX = Exhaustion.

DISCUSSION

This study contributed to further knowledge on the nature of behavioural job crafting by investigating the aspects underlying its operationalisation and measurement. By integrating the dimension of optimising demands in the general job crafting scale, we were able to assess how such a four-dimension conceptualisation of job crafting maps into the JD-R approach to job crafting (Petrou et al., 2012; Tims & Bakker, 2010) and whether it is a better solution to explain job crafting behaviours. Within the JD-R framework to job crafting, our results showed that four behavioural dimensions can capture different facets of employees' efforts to balance the characteristics of their job, both at the general and at the state level. Accordingly, the studies presented here suggest that four distinct dimensions—that is, seeking resources, seeking challenges, reducing demands, and optimising demands—can be used to discriminate different behaviours employees may engage in to redesign their work on their own initiative.

Our findings also show that general job crafting behavioural tendencies are stable when measured across relatively distant time points. This means that, while job resources and demands may fluctuate on a daily and weekly basis, influencing daily and weekly employees' engagement in different job crafting strategies, on a general level individual differences in the extent to which

employees tend to craft their jobs through specific strategies are quite stable over time. Even though these findings are consistent with previous ones (e.g. Nielsen et al., 2017; Petrou et al., 2012), to the best of our knowledge this is the first study testing the stability of four different behavioural strategies referring to the management of job demands and resources over three time points in four months.

While much research has been conducted to investigate how the three main dimensions of job crafting (i.e., increasing resources, seeking challenges, and reducing demands) relate to well-being indicators, we are unaware of studies that investigated such a relationship by also considering the contribution of optimising demands and the hierarchical structure of behavioural job crafting. Our study sheds light on such a gap and unveils that conceptualising job crafting as a set of behaviours rather than as the result of two broad classes of strategies is a more precise way to describe it. Within such a conceptualisation, results show that optimising demands, together with seeking resources and challenges, is positively related to behavioural job crafting, which may signal that employees who craft their work by optimising it, thus by avoiding inefficient processes, actually do not shrink their job but rather expand it by allowing a better resource allocation. On the contrary, results from the hierarchical model also show that decreasing demands is negatively related to job crafting, meaning that an increase in such a behaviour diminishes the extent to which employees overall craft their job in a way that is consistent with a complex set of proactive strategies. Such a finding adds to previous mixed evidence on the nature of avoidance job crafting as a proactive behaviour (e.g. Rudolph et al., 2017; Zhang & Parker, 2018), suggesting that when employees engage in withdrawal-oriented behaviours in order to simply avoid hindering job demands they do not actively change their job in a self-initiated manner that is consistent with the other set of behavioural strategies characterising job crafting. Accordingly, this initial evidence may suggest job crafting is characterised more by effortful and directed actions to seek positive aspects of work (Zhang & Parker, 2018), rather than by withdraw-oriented behaviours concerning the negative ones.

Limitations and Future Research

Besides its merits, this research has some limitations that deserve attention in future research. In this paper, we explicitly focused on behavioural job crafting and have not investigated cognitive job crafting. However, such a crafting strategy has been proven to be an important way to influence employees' positive outcomes (Berg, Dutton, & Wrzesniewski 2013; Wrzesniewski & Dutton, 2001) and research is needed to improve its measures and to understand how different job crafting forms are intertwined and influence each other.

Moreover, in this study, we focused on the validity of the job crafting scale developed by Petrou et al. (2012) integrated with items from the scale of optimising demands (Demerouti & Peeters, 2018). Accordingly, we were not able to investigate whether different scales of job crafting based on other theoretical frameworks can be used interchangeably, nor to provide an empirical comparison of them. Future research could try to investigate whether there are significant differences in reliability, criterion-related or construct-related validity between different job crafting measures. Besides, our study focused on the conceptualisation of behavioural job crafting as a higher-order formative construct, eventually defined by four indicators. Given that the consequences of dropping a formative indicator from a measurement model are potentially much more damaging than the consequences of dropping a reflective indicator (MacKenzie et al., 2005), future research could try to improve the measurement of a formative job crafting construct by including additional strategies that may be key to tap into the facets of behavioural job crafting, here not considered (e.g. actions to avoid aspects of the job that lack positive resources, cf. Zhang & Parker, 2018), which may provide a more nuanced and complete understanding of the nature of behavioural job crafting.

Also, when we investigated fluctuations in the revised structure of job crafting that we proposed, we relied on three weekly diaries rather than on daily ones or on more diaries. Future research could additionally investigate the properties of the proposed behavioural structure of job crafting in daily measures or during more weeks, which may be preferable to capture the within-participant variance.

Moreover, to keep our surveys as short as possible, we did not include measures of proactive personality or other individual dispositions that may significantly influence employees' engagement in job crafting behaviours. Future studies could try to replicate our findings controlling for such dispositional factors. Finally, the measures of work engagement and exhaustion that we collected to test our hypotheses were cross-sectional, not allowing to assume causality in the relationships observed between job crafting and well-being.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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