The Short Form of the Workplace Affective Commitment Multidimensional Questionnaire (WACMQ-S): A Bifactor-ESEM Approach among Healthcare Professionals

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Abstract

Although it has long been recognized that employees' workplace affective commitment can be directed at a variety of foci, theory and research on this multifocal perspective remain underdeveloped, possibly due to the lack of a short, yet comprehensive measure. The purpose of the present study was to assess the psychometric properties of a newly developed short (24-item) version of the Workplace Affective Commitment Multidimensional Questionnaire (WACMQ-S), covering affective commitment directed at the organization, supervisor, coworkers, customers, tasks, profession, work, and career. Using two independent samples of English- (N = 676, including 648 females) and French- (N = 733, including 593 females) speaking healthcare professionals and the newly developed bifactor-ESEM framework, the present study supported the factor validity, composite reliability, test-retest reliability, linguistic invariance, and criterion-related validity (in relation to turnover intentions, in-role performance, and organizational citizenship behaviors) of the WACMQ-S ratings. The results also demonstrated the superiority of a bifactor-ESEM representation of WACMQ-S ratings, confirming the importance of taking into account employees' global levels of commitment to their work life. Finally, the results also proved to be fully generalizable to subsamples of hospital and community healthcare professionals, as well as of nurses and beneficiary attendants.

Keywords. Workplace affective commitment, WACMQ, short form, ESEM, bifactor, French, English, healthcare.

Highlights

- Employees' workplace affective commitment can be directed at a variety of foci
- We study the short Workplace Affective Commitment Multidimensional Questionnaire
- We use two samples of English and French speaking healthcare professionals
- The results support a bifactor-ESEM representation, and its linguistic invariance
- The results support the reliability, stability, and criterion-related validity of test scores

Introduction

Meyer and Herscovitch (2001, p. 299) defined employees' commitment as a "force that binds an individual to a course of action of relevance to one or more targets". This definition explicitly acknowledges that commitment is multifocal (i.e., directed at a variety of workplace constituencies in addition to the organization itself) (Becker, 1992; Cohen, 2003; Morrow, 1993). Indeed, organizations include multiple social constituencies whose goals and values may conflict and to which employees may be differentially committed (Morin, Morizot, Boudrias, & Madore, 2011; Morrow, 1993; Reichers, 1985). The tripartite model of commitment, initially focused on employee's commitment to their organization (Meyer & Allen, 1991, 1997), further adds that commitment can be characterized by three distinct mindsets: A desire to remain with the organization (affective commitment), an obligation to remain in the organization (normative commitment), and the perceived cost of leaving the organization (continuance commitment). However, affective commitment, hereafter referred to as workplace affective commitment (WAC) to emphasize its multifocal nature, remains the most widely studied mindset of commitment and the most predictive of employee behavior (e.g., Solinger, van Olffen, & Roe, 2008; Somers, 2010), in addition to being, arguably, the most generalizable across foci (Morin, Madore, Morizot, Boudrias, & Tremblay, 2009; Morin, Morizot et al., 2011). In a related way, a disagreement was recently expressed in the literature regarding the utility of considering commitment mindsets. More specifically, Klein et al. (2012) defined commitment as a unidimensional "psychological bond reflecting dedication to and responsibility for a particular target" (p. 137) – a conception that appears closer to WAC than to the other mindsets of commitment. This representation also ties back to Reichers' (1985) seminal definition of commitment as a "process of identification with the goals of an organization's multiple constituencies" (p. 465).

Nowadays, there is a widespread recognition of the importance of considering WAC directed at a variety of foci as a key predictor of job performance and intentions to remain in the organization (Becker, 2009; Becker & Kernan, 2003; Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnystky, 2002; Vandenberghe, Bentein, & Stinglhamber, 2004). Similarly, research generally recognizes at least eight generic foci of WAC: Organization, supervisor, workgroup, customers, work, tasks, career, and profession (Cohen, 2003; Morrow, 1993; Randall & Cote, 1991; Stinglhamber, Bentein, & Vandenberghe, 2002)[1]. Despite this recognition, research considering commitment to foci other than the organization, and particularly simultaneously considering more than two foci of commitment, remains relatively scarce (e.g., Morin, Morizot et al., 2011; Stinglhamber et al., 2002) and is accompanied by relatively little theoretical development (Meyer & Morin, 2016). A possible reason for this lack of true multifocal research on the WAC construct appears to be related to the lack of suitable measure. Indeed, despite the fact that many instruments were developed to separately assess employees' WAC directed at different foci (e.g., Blau, 1985; Cook & Wall, 1980; Lodahl & Kejner, 1965; Meyer & Allen, 1991), very few instruments allow for an integrated (i.e., guided by the same theoretical bases, relying on a similar set of items, and rated using the same response scale) assessment of commitment directed at more than two foci.

Among the very few exceptions to this rule, the tripartite model of commitment (affective, normative, and continuance) is accompanied by an integrated set of measures (including a total of 54 items, 18 of which are related to WAC) of employees' commitment to their organization, occupation, and change (Meyer, Allen, & Smith, 1993). Stinglhamber et al. (2002) proposed an even more comprehensive set of 90 items (30 of which are related to WAC) assessing employee's commitment to their organization, occupation, workgroup, supervisor, and customers. To our knowledge, the only questionnaire specifically designed to systematically assess WAC directed toward the eight aforementioned foci (40 items) is the Workplace Affective Commitment Multidimensional Questionnaire (WACMQ; Morin et al., 2009), which was built as an integrated synthesis of pre-existing instruments focusing on a more limited set of foci.

Although these instruments show great promise as integrative multifocal measures of WAC due to their strong psychometric properties and theoretical bases, their length represents a key limitation to their use in comprehensive projects aiming to assess a variety of constructs due to the typical time-constraints posed on organizational research. Indeed, many organizations require the incorporation of some additional measures to the researcher toolkit in order to cover aspects of organizational reality of current interest to the stakeholders and not necessarily related to the investigator's research questions. Furthermore, in order to maximize return on the investment required to conduct organizational research, researchers often seek to incorporate as many measures as possible into the typically restricted timeframe allocated to data collection (15 to 20 minutes, corresponding to roughly 100 to 150 questions) in order to be able to answer more than one research question from each data collection. Finally, organizational phenomena are complex, and even a single comprehensive study requires the simultaneous consideration of multiple variables. In this context, the length of all of the aforementioned instruments becomes an important restriction to their more widespread utilization and has led some researchers to rely on non-validated short forms of those measures (e.g., Gellatly, Meyer, & Luchak, 2006; Morin, Vandenberghe, Turmel, Madore, & Maïano, 2013). In fact, we are not aware of any published study which has used all of the original tripartite set of measures, nor of any study which has used the complete set of items proposed by Stinglhamber et al. (2002). Finally, we are aware of a single study which has used the integrality of the WACMQ (Morin, Morizot et al., 2011).

A Short Form of the WACMQ

The present study seeks to address this limitation by proposing a short form of the WACMQ, the WACMQ-S, relying on a reduced set of 3 items per subscale. The decision to focus on the WACMQ is based on the fact that it is the shortest, and most comprehensive (in terms of number of foci), multifocal measure of WAC available to date. Although short instruments have clear practical advantages, they also present limitations in terms of construct coverage and often fall short of reasonable psychometric standards when evaluated rigorously. For this reason, guidelines have been proposed to develop psychometrically strong short measures (Maïano et al., 2008; Marsh, Ellis, Parada, Richards, & Heubeck, 2005; Smith, McCarthy, & Anderson, 2000). These guidelines state that test developers should start with a properly validated long form of the instrument and retain items that: (1) Present high factor loadings and low uniquenesses; (2) present low correlated uniquenesses and cross-loadings (as shown by modification indices); (3) are seldom missing; and (4) best retain the content coverage of each factor. Test developers should then strive to demonstrate that: (1) The short form retains the factor structure of the original instrument; (2) scores on the short measure retain a satisfactory level of reliability despite this reduction in length; (3) scores on the short measure demonstrate convergence with scores on the longer parent measure; and (4) scores on the short measure preserve the convergent and discriminant validity of the parent scale, highlighting relations to external criteria that are similar to those found for the longer form.

The WACMQ was developed in both English and French to measure WAC directed at eight work-related targets: The organization, one's work colleagues, one's supervisor, the organization's customers (not all employees have customers, but all employees can be committed to the organization's customers), one's work-related tasks, one's professional group, work in general (reflecting the importance attributed to work in one's life), and one's career advancement and planning (Morin et al., 2009). However, in the initial WACMQ validation study, Morin et al. (2009) found that it was impossible to empirically differentiate employee's commitment to their profession and to their tasks, which rather formed a single underlying factor of affective commitment to the occupation. The authors noted that this unexpected finding could be related to the nature of their sample of technical and operational employees, for whom tasks are typically aligned with professional roles. In contrast, some specific professional groups, such as nurses or teachers, tend to be exposed to a greater degree of disconnection between their expected professional roles and their enacted tasks (Aiken, Clarke, Sloane, & Sochalski, 2001). This interpretation was supported by Cohen (1999) who showed that nurses' affective commitment to tasks and professions could be differentiated. The present study seeks to verify this interpretation in two samples of healthcare professionals.

Hypothesis 1: The results will support the a priori structure of the WACMQ-S, showing that employees' WAC to their tasks and professional groups form two distinct dimensions in the current samples of healthcare professionals.

Hypothesis 2: The composite reliability of WACMQ-S responses, estimated on the basis of the optimal measurement model retained on the basis of Hypothesis 1 will be satisfactory.

The WACMQ-S was developed based on the parameter estimates from Morin et al. (2009) a priori 8-factor (40-item) model estimated separately in samples of English and French speaking employees, rather than from their final 7-factor (35-item) model in which employees' WAC to their tasks and profession were merged into a single factor. These estimates were used to select items based on the first three aforementioned criteria (high loadings, low modification indices, and few missing values). To ensure that the WACMQ-S retained the content coverage of the longer instrument, we also relied on ratings obtained by Morin et al. (2009) from 12 independent judges who initially assessed the content validity of a larger item pool. In addition, the pool of items initially selected for inclusion in the WACMQ-S was also independently assessed by five independent judges (researchers with a track record of peer-review publications in the commitment area) to ensure that the reduced set of items was able to preserve the content coverage of the definitions provided by Morin et al. (2009) for each of the WACMQ subscale. For instance, this assessment process led us to re-assess the content of the career commitment factor to ensure that it referred to both career advancement and career planning. This process resulted in the selection of a total of 24 items (3 items per dimension). If we take into account the fact that typical organizational surveys seldom incorporate more than 100 items, using the full WACMQ implies a willingness to devote 50% of the survey to the measure of commitment and demographics, whereas using the WACMQ-S brings this figure to 25%. This reduction thus liberates 16 item spaces, which can then be used to assess other multidimensional constructs, such as psychological need satisfaction (e.g., 12 items in Sánchez-Oliva et al., 2017), work motivation (19 items in Howard, Gagné, Morin, & Forest 2017), or measures of perceived support received from the organization, colleagues, and supervisor (4 items each in Caessens, Stinglhamber, & Luypaeert, 2014).

Limitations of the WACMQ

Despite Morin et al.'s (2009) promising results, it is important to note that multiple unknowns remain regarding the WACMQ psychometric properties, which we now address in sequence.

Factor Structure and Psychometric Multidimensionality

A critical limitation of Morin et al.'s (2009) results stems from their reliance on confirmatory factor analytic (CFA) models which implicitly assume the complete unidimensionality of the subscales forming the instrument. The adequacy of CFA measurement models has been recently called into question for their failure to take into account for two sources of construct-relevant psychometric multidimensionality when applied to typical measures of complex psychological constructs (Morin, Arens, & Marsh, 2016; Morin, Arens, Tran, & Caci, 2016; Morin, Boudrias, Marsh, Madore, & Desrumaux, 2016; Morin et al., 2017).

Conceptually-Related Constructs. The first source of construct-relevant psychometric multidimensionality occurs when a measure aims to assess conceptually-related constructs. Because typical psychometric ratings are inherently fallible, it is reasonable to expect ratings of specific target constructs to present associations with non-target conceptually-related constructs (Morin, Arens, & Marsh, 2016; Morin, Arens, Tran, & Caci, 2016). In contrast, CFA forces these associations (i.e., cross-loadings) to be zero. This is worrisome given recent statistical evidence showing that whenever cross-loadings (even as small as .100) are present in the population model, forcing them to be zero leads to biased estimates of factor correlations (for a review of this research, see Asparouhov, Muthén, & Morin, 2015). However, this research also shows that the free estimation of all cross-loadings still results in unbiased estimates of factor correlations even when no cross-loadings are present in the population model. Thus, this form of construct-relevant multidimensionality suggests a return to Exploratory Factor Analyses (EFA; e.g., Marsh, Morin, Parker, & Kaur, 2014; Morin, Marsh, & Nagengast, 2013). Fortunately, EFA have recently been integrated with CFA into a global Exploratory Structural Equation Modeling (ESEM) framework (Asparouhov & Muthén, 2009; Morin, Marsh, & Nagengast, 2013). Furthermore, the availability of a new form of rotation (i.e., target rotation) even makes it possible to rely on a fully "confirmatory" approach to the estimation of EFA/ESEM factors by allowing for a confirmatory specification of target loadings, coupled with the free estimation of cross-loadings that are "targeted" to be as close to zero as possible (Asparouhov & Muthén, 2009).

Conceptually-Related WAC Foci. The nature of the various foci of WAC makes them naturally nested within one another (Meyer & Allen, 1997; Meyer & Morin, 2016). For example, commitment to one's colleagues or supervisor is made possible through organizational membership. Commitment to one's customers (or patients) is made possible through membership into a specific professional group. Still, the importance of considering these various foci of commitment as distinct from one another, albeit nested, has long been acknowledged in this field of research (Becker, 1992; Morin, Morizot et al., 2011; Morrow, 1993; Stinglhamber et al., 2002). Employees' ratings of their WAC to a variety of foci all related to their personal lives at work represent a relatively clear case of assessment of conceptually-related constructs, suggesting the importance of adopting an ESEM representation of these ratings. In particular, the inability of Morin et al. (2009) to achieve an empirical differentiation between employees' commitment to their tasks and their profession could possibly be related to an inflation of factor correlations stemming from their failure to take cross-loadings into account.

Hierarchically-Ordered Constructs. The second source of construct-relevant psychometric multidimensionality is related to the assessment of hierarchically-ordered constructs. This source occurs when the ratings are assumed to simultaneously contribute to the assessment of specific (e.g., commitment to the organization, the workgroup, the supervisor) and global (e.g., WAC) constructs. Although the traditional approach to the representation of this source of construct-relevant psychometric multidimensionality involves the specification of higher-order factor models (where first-order factors are themselves used to define higher-order factors), recent statistical evidence suggests that bifactor models tend to provide a more realistic, and more flexible, approach (Gignac, 2016)[2]. Bifactor models allow all items to directly define the global G-factor (e.g., global affective commitment) and their specific S-factor (e.g., commitment to the organization, the workgroup, the supervisor), and all factors are set to be orthogonal (Gignac, 2016; Morin, Arens, & Marsh, 2016; Reise, 2012). This orthogonality is a pre-requisite to the proper disaggregation of the covariance into global (the G-factor) and specific (the S-factors) components.

A Hierarchical Representation of WAC. Morin, Morizot et al. (2011) underscored the need, when adopting a multifocal perspective of employees' WAC, to explicitly represent employees' global *tendencies* to commit affectively (G-factor) to a variety of targets to obtain a more precise estimate of their WAC to each specific foci (S-factors). However, this reference to employees' *tendencies* suggest a dispositional component, which has never been clearly validated in the commitment literature (e.g., Meyer et al., 2002). This G-factor appears much easier to interpret in terms of a "breadth" factor, as commonly used in intelligence research (Gignac, 2016). Such a factor would simply reflect global levels of WAC across all work-related foci: Employees' global levels of affective commitment to their work life represented as a *gestalt* of multiple foci. Importantly, taking into account employees' WAC to their global work life when simultaneously assessing their levels of WAC to specific foci should lead to a more precise estimate of the level of WAC that is specifically due to each foci over and above this global level.

For instance, as a University professor, I might be highly committed to my global work life, that is, to the global *gestalt* of interrelated entities, tasks, and roles that encompass my work activities. Yet, my commitment to my research might be greater than my commitment to my teaching, and my commitment to my students might be greater than my commitment to my colleagues. In contrast, my commitment to my supervisor might be on par with my global level of commitment to my work life, and my commitment to my career and to work in general might be quite low. It is important to note that, within this overall *gestalt* of commitments, my own commitment to my University (as my employer and workplace), remains distinct from my global level of commitment to my work life in general. In fact, a variety of factors (e.g., red tape, human resources policies, conflicts, work schedule) may even contribute to drastically reduce my commitment to my organization, without affecting any of my other commitments, or even my global level of work life commitment. Yet, this profile of commitments remains personal, so that a colleague of mine could present a much lower level of commitment to his/her work life and yet display a very high level of commitment to his/her career and colleagues. Still, failure to control for the global level of commitment to our work life might lead to a biased picture of our commitment to specific work-related foci: Mine as higher than it really is due to my high global level of commitment to my work life, and my colleague as lower than it really is. In contrast, failure to control for our specific level of commitment to our organization itself should not change the rest of the picture as this specific foci of commitment only represents one component of our overall commitment profile. Morin and Marsh (2015) relied on a similar interpretation when considering teaching efficacy, commenting that failing to control for teachers' global level of efficacy would make it much harder to isolate their specific areas of strengths and weaknesses. This lack of control might even explain Morin et al.'s (2009) inability to differentiate WAC to the profession and tasks, especially among participants who seldom experience discrepancies between these two facets of commitment.

Such an interpretation suggests a conceptualization of commitment as a hierarchical construct. Interestingly, commitment has been conceptualized as forming a key part of employees social identities and self-concepts (Bergman & Jean, 2016; Meyer, Becker, & Van Dick, 2006), and as a core component of their work motivation (Gagné & Deci, 2005; Meyer, Becker, & Vandenberghe, 2004), two constructs with a known hierarchical structure (e.g., Shavelson, Hubner, & Stanton, 1976; Vallerand, 1997) that has been found to respond well to a bifactor-ESEM operationalization (e.g., Howard et al., 2017; Morin, Arens, & Marsh, 2016). For instance, since Shavelson et al. (1976), self-concept has been conceptualized as a pyramid, with global self-concept at the apex, domain-specific self-conceptions located at the next lower level (e.g., social, physical, professional), followed by subdomain-specific self-conceptions (e.g., spousal, athletic, leadership). Given the well-established nature of these hierarchical models in these closely related domains, it is surprising that such a conceptualisation has not yet been adopted in commitment research. It is interesting to note that many discussions (van Rossenberg, Breitsohl, Cross, Lapointe, & de Aguiar Rodriguez, 2017; Wasti, Hollensbe, Morin, & Solinger, 2017) and presentations (Cross & Swart, 2017; Klein, Solinger, & Duflot, 2017; Lapointe et al., 2017) which occurred at the 2017 International Conference on Commitment implicitly or explicitly recognized the need to move toward such an approach, in particular by the identification of more specific commitment foci better suited to the changing nature of modern work.

We graphically illustrate this hierarchical representation in Figure 1. The higher level (*Global*) is occupied by WAC to the work life in general, the next lower level (*Target*) is occupied by WAC directed at the various foci covered in the WACMQ, and can easily be expanded to incorporate additional foci such as the union (Gordon et al., 1980), or organizational changes (Herscovitch & Meyer, 2002). Finally, the lowest level (*Sub-Target*) provides a way to consider even more specific commitments, such as individual patients, distinct workgroups, headquarters vs. subsidiary organizations, career planning vs. advancement, etc. This representation can be extended laterally to non-work domains, with the highest level occupied by affective commitment to personal life, the intermediate level occupied by commitments to family, leisure, lifestyle, and peers, and the lowest levels occupied by their commitments to specific individuals or activities.

A Bifactor-ESEM Representation of WAC. ESEM and bifactor modeling have been integrated into a single framework, allowing for the integration of both sources of construct-relevant psychometric multidimensionality (Morin, Arens, & Marsh, 2016; Morin, Arens, Tran, & Caci, 2016). Recent statistical evidence demonstrates the need to systematically contrast these alternative models (CFA, bifactor-CFA, ESEM, and bifactor-ESEM) because they can each absorb unmodelled sources of construct-relevant multidimensionality (Asparouhov et al., 2015; Morin, Arens, & Marsh, 2016; Murray & Johnson, 2013). More precisely: (1) CFA absorbs cross-loadings or G-factors through the inflation of factor correlations; (2) Bifactor-CFA absorbs cross-loadings through the inflation of G-factor loadings; and (3) ESEM absorbs G-factors through the inflation of factor correlations and/or cross-loadings. As noted above, despite the fact that the bifactor-ESEM framework has never been applied to measures of WAC, there are strong theoretical reasons to expect that this approach would be particularly well-suited to responses to the WACMQ-S.

Hypothesis 3: The results will support the superiority of a bifactor-ESEM representation of WACMQ-S responses when compared to alternative CFA, Bifactor-CFA, and ESEM representations of the data.

Generalizability

Attesting to the generalizability of their results and the equivalence of the French and English versions of the WACMQ, Morin et al.'s (2009) results supported the complete measurement invariance of the WACMQ across both linguistic versions. We expect to replicate these results in the present study on the basis of the optimal measurement model that will be retained in response to Hypothesis 2. Furthermore, keeping in mind that Morin et al. (2009) suggested that the WACMQ factor structure could possibly be impacted by employment type, we further test the generalizability of the WACMQ-S factor structure across subgroups of healthcare employees defined based on their work environment (e.g., hospital vs. community) and professional groups (i.e., nurses vs. beneficiary attendants).

Hypothesis 4: The WACMQ-S measurement model will be fully invariant across samples of English- and French-speaking respondents, hospital and community employees, and nurses, auxiliary nurses, and beneficiary attendants.

Test-Retest Reliability

Morin et al. (2009) never evaluated the test-retest reliability of the WACMQ responses. In the present study, we address this limitation by testing the test-retest stability of the WACMQ responses over a one-year period. This time lag was selected on the basis of prior evidence showing that employees' levels of WAC tend to remain quite stable over a one-year period (e.g., Kam, Morin, Meyer, & Topolnytsky, 2016; Morin, Meyer, Bélanger, Boudrias, Gagné, & Parker, 2016).

Hypothesis 5: The one-year test-retest reliability of WACMQ-S responses will be satisfactory.

Criterion-Related Validity

Morin et al. (2009) did not evaluate the criterion-related validity of WACMQ responses. However, additional studies tentatively supported the criterion-related validity of WACMQ ratings with measures of intentions to leave the organization, in-role performance, organizational citizenship behaviors (OCBs), burnout, perceptions of justice, relationships with colleagues and supervisors, and job satisfaction (Morin, Morizot et al., 2011; Morin, Vandenberghe et al., 2011, 2013). However, none of these studies was specifically designed to assess the criterion-related validity of the WACMQ. In the present study, we directly assess the criterion-related validity of the WACMQ ratings in relation to measures of intentions to leave the organization, in-role performance, and OCBs. OCBs reflect discretionary behaviors that are not typically recognized by the organization's reward system, that generally promote effective organizational functioning, and that go beyond the call of duty and task requirements (Organ, 1988).

Turnover and turnover intentions, have long been the key outcomes of interest in commitment research (Mowday, Porter, & Steers, 1982). In their meta-analysis, Meyer et al. (2002) found that WAC directed at the organization presented relatively strong relations with employees' turnover intentions and turnover. Past research also supports the presence of similarly negative relations between WAC directed at a variety of foci and employees' rates of turnover and turnover intentions (e.g., Becker, 1992; Hunt & Morgan, 1994; Vandenberghe & Bentein, 2009; Vandenberghe et al., 2004). Furthermore, Meyer et al.'s (2002) meta-analysis also showed that WAC directed at the organization tended to be positively related to in-role performance and OCBs. Yet, an additional meta-analysis shows that the relation with the latter tends to be stronger than that involving the former (Riketta, 2002) given that OCBs depend to a greater degree on employee's discretion. As for turnover, past research also supports the presence of matching relations between WAC directed at a variety of foci other than the organization and employees' levels of in-role performance and OCBs (e.g., Becker, 1992; Becker & Kernan, 2003; Bishop, Scott, & Burroughs, 2000; Cheng, Jiang, & Riley, 2003; Siders, George, & Dharwadkar, 2001; Snape, Chan, & Redman, 2006; Stinglhamber et al., 2002; Vandenberghe et al., 2004, 2007). These relations are usually explained within the perspective of social exchange theory (Blau, 1964; Lavelle, Rupp, & Brockner, 2007), which states that employees who experience a positive relationship with a specific entity (Cropanzano & Mitchell, 2005) will tend to present higher levels of WAC directed at this entity. In turn, these high levels of WAC should generate a desire to reciprocate through behaviors that benefit the target entity as well as the organization for hosting this relationship (Coyle-Shapiro, Kessler, & Purcell, 2004; Konovsky & Pugh, 1994).

A more complete depiction of these relations involves the recognition that OCBs can also be directed at multiple "beneficiaries" (Bowler & Brass, 2006; Lavelle et al., 2007). Williams and Anderson (1991) first distinguished between OCBs directed at the organization (OCBO) vs. individuals within the organization (OCBI). Recent perspectives noted that OCBOs can themselves be distinguished depending on whether their focus is the improvement of the way one's tasks are realized or whether they target the organization as a whole, whereas OCBIs can be divided into those that benefit supervisors, coworkers, or customers/patients (Becker & Kernan, 2003; Lavelle et al., 2009; Morin, Morizot et al., 2011; Morin, Vandenberghe et al., 2011). Two distinct theoretical perspectives address these *isomorphic* relations among matching foci of WAC and OCBs. The *global* perspective depicts WAC directed at the organization as the converging point for the impact of all other foci of WAC which are nested under it (e.g., Hunt & Morgan, 1994; Yoon, Baker, & Ko, 1994), suggesting that the key determinant of OCBs should be WAC directed at the organization. In contrast, the *target similarity model* (Lavelle et al., 2007, 2009; Rupp & Cropanzano, 2002), anchored on research focusing on attitude-behavior relations (Fishbein & Ajzen, 1975), suggests that WAC-OCB relations should be stronger when they relate to similar foci (i.e., when they are isomorphic). Using the WACMQ, Morin, Vandenberghe et al. (2011) generally found support for the target similarity model, revealing the presence of *isomorphic* relations between WAC and OCBs directed at matching foci. Still, they also found evidence for equally strong *transference* relations through which WAC directed at specific foci also predicted OCBs directed at non-matching foci.

It is not possible to identify matching OCB foci for some of the WAC foci covered in the WACMQ-S, such as the profession or work in general – which is arguably why these specific foci were excluded from Morin, Vandenberghe et al.'s (2011) study. In fact, based on the nature of these WAC foci– which are more related to the employees themselves rather than to their workplace – it would appear unrealistic to expect commitment to these foci to lead to higher levels of OCBs which, by definition, benefit the organization and its constituencies. However, employees' commitment to their career (i.e., careerism), while being a very individual form of commitment, can still be expected to lead to OCBs, albeit in a more diffuse manner than the other foci. Indeed, Morin, Morizot et al. (2011) demonstrated that employees presenting a higher level of commitment to their career tended to rely more frequently on "observable" forms of OCBs. In line with prior research on the relations between careerism and OCBs, this result thus suggests that career-committed employees may use OCBs in a self-serving manner, as an impression management strategy (Bolino, 1999; Penner, Midili, & Kegelmeyer, 1997; Zellars & Tepper, 2003).

Still, the aforementioned lack of support for the *global* perspective could stem from a failure to consider employees' global level of WAC to their work life, rather than to the organization, as the key point of convergence for all of the more specific WAC foci. Indeed, the *global* perspective is anchored in the centrality of the organization as the central focus of WAC, and the idea that WAC directed at all of the more specific foci will build up to generate WAC directed at the organization (e.g., Hunt & Morgan, 1994; Yoon et al., 1994). Such a perspective implicitly suggests that employees view the organization as the entity which provides them with the opportunity to interact with the other WAC foci, and has only received limited empirical support in the scientific literature (e.g., Cohen, 1999, 2003). In contrast, mounting person-centered evidence suggests that disconnections between employees' WAC to the organization, relative to the foci that are nested under it, are rather frequent (Meyer & Morin, 2016; Morin, Morizot et al., 2011), suggesting that employees are very apt at differentiating the organization as a foci of WAC distinct from the others. The hierarchical model of WAC proposed here suggests that this lack of support for the *global* perspective may stem from the erroneous positioning of the organization as the cornerstone of employees' commitment. Rather, it positions the organization on an equal footing as other WAC foci, and suggests that all of these commitments combine to build up employees' global work life WAC.

Hypothesis 6: In line with the target similarity model, and without excluding possible transference relations, we expect stronger relations between matching foci of WAC and of the correlates considered here: (a) WAC directed at the organization with intentions to leave the organization, OCBO, and OCBs directed at the organization; (b) WAC directed at the supervisor with OCBI and OCBs directed at the supervisor; (c) WAC directed at the customers/patients with OCBI and OCBs directed at the customers/patients; (d) WAC directed at the supervisor with OCBI and OCBs directed at the supervisor; and (e) WAC directed at the tasks with OCBO, in-role performance, and OCBs directed at the tasks.

Hypothesis 7: In line with the previous results demonstrating the tendency of career-oriented employees to rely on impression management strategies, we expect a variety of significant relations between WAC directed at the career and the various correlates considered here.

Hypothesis 8: Based on the social exchange theory, on prior research demonstrating widespread relations between WAC directed at various foci and work outcomes, and on the global perspective, we expect to find significant positive relations between employees' global work life WAC *and all of the correlates considered here.*

Material and Methods

Samples and Procedures

Sample 1 (English-Speaking). English-Speaking participants were registered front-line nurses actively working in hospitals, the community, and long-term care settings in the Province of Ontario, Canada. Invitation emails containing a link to the survey were sent to all nurses registered as members of the Registered Nurses' Associations of Ontario who were active members of 25 interest groups at the time of this study (N = 7,364). Participants were informed that their responses would be confidential, and that they could withdraw at any time, prior to consenting to participate. A total of 1,309 email recipients (18%) completed the survey, resulting in 676 participants (51.6%) who met the inclusion criteria for this study (the remaining respondents had to be excluded, mainly due to their occupying leadership, rather than frontline positions). Among those respondents, 304 worked in the community, 279 worked in hospitals, and 93 worked in other settings. This sample included: (a) 28 males and 648 females; (b) 459 full time and 217 part time nurses; (c) 105 nurses aged less than 30 years, 253 nurses aged between 30 and 50, and 308 nurses aged more than 50; and (d) 248 nurses with 5 years or less of tenure in their organization, 284 nurses with 5 to 15 years of tenure into their organization, and 144 nurses with more than 15 years of tenure into their organization. Due to the setup of the online survey, there were no missing data on the questionnaires. Analyses comparing the study sample to statistics provided by the College of Nurses of Ontario confirmed that this sample provided a good representation of the front-line registered nurse population of Ontario.

Sample 2 (French-Speaking). French-Speaking participants were front line health care services providers in a consortium of health care organizations specializing in long-term care and rehabilitation affiliated to a University located in the Province of Quebec, Canada. All measures were completed during working hours, using paper-and-pencil questionnaires. Questionnaires were distributed by members of the research team (or sent by internal mail for employees' who were absent at this time). Participants were informed that their responses would remain strictly confidential, and that they could withdraw from the survey at any time, prior to consenting to participate. Participants returned their completed questionnaire and signed consent form to the researchers in a sealed envelope. A total of 818 email recipients (corresponding to an answering rate of approximately 50% of available employees) completed the survey, resulting in a total of 733 participants (89.6%) who met the inclusion criteria (the remaining occupied leadership, rather than frontline, positions). This sample included: (a) 140 males and 593 females; (b) 299 nurses, 109 auxiliary nurses, and 325 beneficiary attendants; (c) 341 full time and 392 part time nurses; (d) 163 employees aged less than 30 years, 366 employees aged between 30 and 50, and 204 employees aged more than 50; and (e) 282 employees with 5 years or less of tenure in their organization, 236 employees with 5 to 15 years of tenure into their organization, and 215 employees with more than 15 years of tenure into their organization. When compared to the English-Speaking participants, these participants were slightly younger (t = 6.86, df = 1407, $p \leq .01$), equally tenured (t = -1.340, df = 1407, $p \geq .01$), and included a slightly higher proportion of males (χ^2 = 74.77, *df* = 1, $p \leq .01$) and part-time employees (χ^2 = 65.47, *df* = 1, $p \leq .01$). Out of the 733 French-speaking participants, a total of 273 (37.2%; 45 males and 227 females; 134 nurses, 36 auxiliary nurses, and 103 beneficiary attendants) agreed to complete a follow-up questionnaire, including the WACMQ, one year after the initial data collection. When compared to Time 1 participants, retained participants were slightly older (*t* = -2.051, *df* = 731, $p \leq .01$) and tenured (*t* = -2.786, *df* = 731, $p \leq .01$), but equivalent in terms of gender (χ^2 = 1.827, *df* = 1, $p \geq .01$) and employment status (χ^2 = 1.320, *df* = 1, $p \geq .01$). They also presented slightly higher levels of intentions to leave their organization (*t* = -4.062, *df* = 723, $p \leq .01$), OCBs directed at the patients (*t* = -2.207, *df* = 722, $p \leq .05$), as well as WAC directed to their tasks (*t* = -2.829, *df* = 730, $p \leq .01$), patients (*t* = -2.276, *df* = 730, $p \leq .05$), and professions (*t* = -3.517, *df* = 728, $p \leq .01$), but lower levels of WAC directed at their career (*t* = 4.330, *df* = 728, $p \leq .01$).

Measures

WAC. Both samples completed the WACMQ-S (Morin et al., 2009), and French-Speaking participants completed this instrument at both time points. The WACMQ-S measures WAC toward eight foci, with three items per scale: (a) Organization (α = .863 in Sample 1, .769 in Sample 2 at Time 1, and .838 in Sample 2 at Time 2; e.g., "*My organization means a lot to me*"); (b) supervisor (α = .933 in Sample 1, .883 in Sample 2 at Time 1, and .898 in Sample 2 at Time 2; e.g., "*I feel privileged to work with someone like my immediate supervisor*"); (c) coworkers (α = .911 in Sample 1, .870 in Sample 2 at Time 1, and .893 in Sample 2 at Time 2; e.g., "*My coworkers make me feel like going to work*"); (d) customers, modified to patients in the present study (α = .625 in Sample 1, .697 in Sample 2 at Time 1, and .777 in Sample 2 at Time 2; e.g., "*I really care about the satisfaction of my organization's patients*"); (e) work in general (α = .727 in Sample 1, .738 in Sample 2 at Time 1, and .720 in Sample 2 at Time 2; e.g., "*Work is a priority in my life*"); (f) tasks (α = .810 in Sample 1, .764 in Sample 2 at Time 1, and .770 in Sample 2 at Time 2; e.g., "*I find the tasks I perform in my current position stimulating*"); (g) profession (α = .763 in Sample 1, .786 in Sample 2 at Time 1, and .826 in Sample 2 at Time 2; e.g., "*I am proud to say this is my profession*"); and (h) career (α = .678 in Sample 1, .716 in Sample 2 at Time 1, and .724 in Sample 2 at Time 2; e.g., "*It is important for me to move up the ranks or obtain promotions*"). These items underwent minor modifications from the original ones to better fit the healthcare profession, and are reported in the in-text Appendix. All items were rated on a 5-point scale ranging from 1-Totally Disagree to 5-Totally Agree.

Intentions to Leave the Organization. In Samples 1 and 2 (Time 1), participants' intentions to leave their organization were assessed with three items adapted by Morin, Morizot et al. (2011) from items proposed by Becker and Billings (1993). These items (α = .848 in Sample 1 and .832 in Sample 2; ''*I will probably actively look for another job soon*'', ''*I often think about resigning*'', and ''*It would not take much to make me resign"*) were rated on a 5-point scale ranging from 1-Totally Disagree to 5-Totally Agree.

In-Role Performance and OCBs. Employees from Sample 1 completed Lee and Allen's (2002) measures of OCBs directed at fellow employees/individuals in their workplace (OCBI; 8 items; α = .835; e.g., "*Help others who have been absent*") and directed at their organization (OCBO; 8 items; α = .869; e.g., "*Offer ideas to improve the functioning of the organization*"). These items were rated on a 5-point frequency scale ranging from 1-Never to 5-Always. In contrast, employees from Sample 2 (at Time 1) completed the short version of a more extensive measure initially developed in both French and English by Boudrias and Savoie (2006; Boudrias, Gaudreau, Savoie, & Morin, 2009) and extended by Morin et al. (Morin, Morizot et al., 2011; Morin, Vandenberghe et al., 2013). This extended instrument includes a total of six scales, assessing: (a) In-role performance (7 items; α = .925; e.g., "*Adequately carry out the tasks related to my job*"); (b) OCBs directed at the organization (5 items; α = .889; e.g., "*Make suggestions to improve the organization's functioning*"); (c) OCBs directed at the supervisor (4 items; α = .806; e.g., "*Help my supervisor by doing things that are not really part of my regular duties*"); (d) OCBs directed at coworkers (6 items; α = .864; e.g., "*Providing constructive feedback that helps my coworkers*"); (e) OCBs directed at the organizations' customers, modified to patients in the present study (3 items; α = .680; e.g., "*Do everything in my power to satisfy the customer, even when there are problems*"); and (f) OCBs directed at improving the execution of one's tasks (3 items; α = .877; e.g., "*Make changes to improve efficiency in performing my tasks*"). These items were rated on a 5-point frequency scale ranging from 1-Never to 5-Very Often.

Analyses

Model Estimation. In this study, all models were estimated using Mplus 7.4 (Muthén & Muthén, 2016) robust Maximum Likelihood (MLR) estimator, which provides fit indices and standard errors that are robust to non-normality and to ordinal response scales including five response categories or more (e.g., Rhemthulla, Brosseau-Liard, & Savalei, 2012; for a review of statistical research in this area, see Finney &

DiStefano, 2013). The MLR chi-square statistic is asymptotically equivalent to the Yuan-Bentler T2* test statistic (Yuan & Bentler, 2000). The small amount of missing data present in Sample 2 (0% to 3.27% per item, M = .99% at Time 1; .37% to 1.83%, M = .79% at Time 2) were handled with Full Information Maximum Likelihood (FIML) estimation (Enders, 2010; Graham, 2009).

Measurement Models. CFA, bifactor-CFA, ESEM, and bifactor-ESEM representations of participants' responses to the WACMQ-S were separately estimated in each sample following Morin et al.'s (Morin, Arens, & Marsh, 2016; Morin et al., 2017) recommendations. In CFA, each item was only allowed to load on the factor it was assumed to measure and no cross-loadings on other factors were allowed. This model included eight correlated factors representing WAC directed at the organization, supervisor, coworkers, patients, work in general, tasks, profession, and career. In ESEM, the same set of eight factors was represented using a confirmatory oblique target rotation (Asparouhov & Muthén, 2009; Browne, 2001). Target rotation makes it possible to freely estimate all main loadings while targeting cross-loadings to be as close to zero as possible. In bifactor-CFA, all items were allowed to simultaneously load on one G-factor and on eight S-factors corresponding to the WACMQ-S subscales. No cross-loadings were allowed between the S-factors, and all factors were specified as orthogonal in line with bifactor assumptions (e.g., Morin, Arens, & Marsh, 2016; Reise, 2012). Finally, bifactor-ESEM estimated the same set of G- and S-factors as the bifactor-CFA solution, while allowing for the free estimation of cross-loadings between the S-factors using an orthogonal bifactor target rotation (Morin, Arens, & Marsh, 2016; Reise, Moore, & Maydeu-Olivares, 2011). In order to contrast Hypothesis 1 with Morin et al.'s (2009) 7-factor structure, we also estimated a series of similar CFA, bifactor-CFA, ESEM, and bifactor-ESEM models in which the tasks and profession factors are merged into a single factor reflecting WAC to the occupation.

Reliability. To test Hypothesis 2, we report omega coefficients of composite reliability estimated from the alternative models, calculated as $\omega = (\Sigma|\lambda_i|)^2 / ([\Sigma|\lambda_i|]^2 + \Sigma\delta_{ii})$ where λ_i are the factor loadings and δ_{ii} the error variances (McDonald, 1970). The decision to rely on ω, rather than α, is linked to the increasing psychometric recognition of the multiple limitations associated with α, which relies on the assumption that all indicators are equivalent (i.e., have equal factor loadings on the construct of interest) and are fully unidimensional (Dunn et al., 2014; McNeish, 2017; Sijtsma, 2009). This second assumption is particularly problematic when the constructs of interest follow a multidimensional (bifactor, ESEM, or bifactor-ESEM) structure (Morin, Myers, & Lee, 2017). Although it is often complex to locate the exact source of these rough interpretational guidelines (Lance, Butts, & Michels, 2006), there appears to be general consensus that satisfactory reliability coefficients for measures corresponding to first-order (i.e., non-bifactor) models should ideally be higher than .70 or .80, with the minimal level of acceptability being often positioned around .60. Still, there is also recognition that more flexibility is required in the assessment of shorter scales (such as those forming the WACMQ-S) (Streiner, 2003).

However, these guidelines are not suited to bifactor models. To understand why this is so, one needs to go back to Classical Test Theory (CTT) definition of reliability. CTT proposes that any observed score (σ^2_{total}) includes two components, true score variance (σ^2_{true}) and random measurement error (σ^2_{error}), so that $\sigma^2_{total} = \sigma^2_{true} + \sigma^2_{error}$, leading to the definition of reliability (r_{xx}) as the ratio of true score variance on total variance: $r_{xx} = \sigma^2_{true}/\sigma^2_{total}$. It is important to keep in mind that this definition is also associated with the important corollary that $1 - r_{xx} = \sigma^2_{error}$. In a typical measurement model: (a) σ^2_{true} corresponds to λ_i^2 at the item level and to $(\Sigma|\lambda_i|)^2$ at the scale level, (b) σ^2_{error} corresponds to δ_i at the item level and to $\Sigma\delta_i$ at the scale level, and (c) σ^2_{total} corresponds to $\lambda_i^2 + \delta_i$ at the item level and to $([\Sigma|\lambda_i|]^2 + \Sigma\delta_{ii})$ at the scale level. Things are more complex in bifactor models where both the G- and the S- factors are assumed to represent σ^2_{true}, leading to a division of σ^2_{true} across two distinct factors so that σ^2_{total} corresponds to $\lambda_{gi}^2 + \lambda_{si}^2 + \delta_i$ at the item level and to $([\Sigma|\lambda_{gi}|]^2 + [\Sigma|\lambda_{si}|]^2 + \Sigma\delta_{ii})$ at the scale level (Morin, Myers, & Lee, 2017). Despite this, ω remains calculated as $(\Sigma|\lambda_{gi}|)^2 / ([\Sigma|\lambda_{gi}|]^2 + \Sigma\delta_{ii})$ for the G-factor (neglecting λ_{si}^2) and as $(\Sigma|\lambda_{si}|)^2 / ([\Sigma|\lambda_{si}|]^2 + \Sigma\delta_{ii})$ for the S-factors (neglecting λ_{gi}^2). Although alternatives have been proposed (e.g., Rodriguez, Reise, & Haviland, 2016), they fail to solve this issue (rather erroneously considering the omitted source of true score variance as a component of the denominator), leading to the recognition that more flexibility is required in the assessment of reliability for bifactor models (Morin, Myers, & Lee, 2017). For this reason, we consider as satisfactory ω coefficients greater than .50, meaning that the factor under consideration explains at least as much variance as the random measurement error. For greater precision, we also report the proportion of the variance of each item explained by each component: (a) σ^2_{error} (δ_{ii}); (b) σ^2_{true} related to the first-order factors (λ_i^2) in first-order CFA or ESEM solutions, or to the G- (λ_{gi}^2) and S-factors(λ_{sqi}^2) in bifactor-CFA and bifactor-ESEM solutions; and (b) σ^2_{true} related to the cross-loadings in ESEM and bifactor-ESEM solutions.

Model Comparisons. To test Hypothesis 3, these alternative models were contrasted using various goodness-of-fit indices (e.g., Hu & Bentler, 1999; Marsh, Hau, & Grayson, 2005): The comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) with its confidence interval. According to typical interpretation guidelines (e.g., Hu & Bentler, 1999; Marsh, Hau, & Grayson, 2005; Marsh, Hau, & Wen, 2004), values greater than .90 and .95 for both the CFI and TLI are considered to respectively reflect adequate and excellent fit to the data, while values smaller than .08 and .06 for the RMSEA respectively reflect acceptable and excellent model fit. In the comparison of nested models, similar guidelines suggest that models differing by less than .01 on the CFI and TLI, or .015 on the RMSEA, can be considered to provide an equivalent level of fit to the data (e.g., Chen, 2007; Cheung & Rensvold, 2002). It is important to keep in mind that goodness-of-fit indices including a correction for parsimony (TLI, RMSEA) can improve with the addition of model constraints and have been recommended as particularly important to consider in the comparisons of ESEM and CFA models given the important differences in degrees of freedom present across these two types of models (e.g., Marsh et al., 2009, 2010; Morin, Arens, & Marsh, 2016; Morin et al., 2013). Although the chi square test of exact fit and CFI should be monotonic with model complexity, it is possible for them to improve with added constraints when the MLR scaling correction factors differ importantly across models. These improvements should be considered as random.

We report standardized parameter estimates for all models. As noted by Morin and colleagues (Morin, Arens, & Marsh, 2016; Morin et al., 2017), this comparison of fit indices is not a sufficient basis in the selection of the model providing the optimal representation of the data. Indeed, each of these alternative models is able to absorb sources of construct-relevant multidimensionality left unmodelled, thus hiding sources of misfit behind apparently similarly fitting models (e.g., Asparouhov et al., 2015; Morin, Arens, & Marsh, 2016; Murray & Johnson, 2013). Thus, unmodelled cross-loadings tend to result in inflated factor correlations in CFA, or inflated G-factor loadings in bifactor-CFA. Likewise, an unmodelled G-factor tends to produce inflated factor correlations in CFA, or inflated cross-loadings in ESEM. For this reason, an examination of parameter estimates and theoretical conformity is required to select the best alternative. As suggested by Morin and colleagues (Morin, Arens, & Marsh, 2016; Morin et al., 2017), model comparison should start by contrasting CFA and ESEM solutions. Statistical evidence shows that ESEM provides more exact estimates of factor correlations when cross-loadings are present in the population while remaining unbiased otherwise (Asparouhov et al., 2015). For this reason, as long as the factors remain well-defined, the observation of a distinct pattern of factor correlations should be taken as support for the ESEM solution. The second step involves contrasting the retained CFA or ESEM solution with a bifactor alternative. Here, the key elements supporting the bifactor representation of the data are the observation of: (1) An improved level of fit to the data; (2) a well-defined G-factor; and (3) at least some reasonably well-defined S-factors.

Measurement Invariance. Based on the final retained measurement model, and assuming that the same model would be retained across samples of English- and French-speaking employees, we then proceeded to systematic tests of measurement invariance across samples in order to test Hypothesis 4 (Millsap, 2011): (a) Configural invariance, (b) weak invariance (invariance of the factor loadings), (c) strong invariance (loadings and intercepts), (d) strict invariance (loadings, intercepts, and uniquenesses), (e) invariance of the latent variances-covariances (loadings, intercepts, uniquenesses, and variances-covariances), and (f) latent means invariance (loadings, intercepts, uniquenesses, variances-covariances, and latent means). The initial four steps of this sequence serve to assess possible measurement biases whereby construct definition switches across groups (configural and weak invariance), item ratings tend to differ across groups irrespective of scores in the latent factor (strong invariance), or item level measurement error differs across groups (strict invariance). In contrast, the last two steps serve to assess theoretically meaningful group differences related to within-group variability or average levels on the constructs of interest. Importantly, tests of the invariance of the latent variance-covariance matrix need to be adapted to the orthogonality of bifactor-CFA and bifactor-ESEM models. In bifactor-CFA models, where all factor correlations are constrained to be exactly zero, this step only involves testing the invariance of the latent variance. In contrast, the orthogonality of bifactor-ESEM models is a function of the rotation procedure that is used, so that invariance constraints on the unrotated covariance matrix still need to be imposed for complete tests of invariance of the latent variance-covariance matrix. To further test the generalizability of the solution across subgroups of participants, additional sample-specific tests of invariance were conducted following the same aforementioned sequence. In Sample 1, we tested the measurement invariance of the WACMQ-S solution as a function of the work environment, contrasting nurses working in the community (N = 304) or hospitals (N = 279) settings. The subsample of nurses who responded working in other settings was too small for consideration in these analyses (N = 93). Similar tests were conducted in Sample 2 in order to compare nurses (N = 299) and beneficiary attendants (N = 325). The small group of auxiliary nurses proved too small for consideration in these analyses (N = 109).

Test-Retest. To test Hypothesis 5, we relied on the subsample of respondents from Sample 2 who completed the WACMQ-S again one year later (N = 273). Using this sample, a final longitudinal model was estimated to verify the longitudinal invariance and test-retest reliability of the WACMQ-S factors. Based on recommendations for longitudinal research, correlated residuals between matching indicators utilized at the two time points were included to avoid converging on inflated stability estimates (Marsh, Abduljabbar et al., 2013). More precisely, longitudinal measurement invariance was tested following the same sequence as in tests of multiple-group invariance (configural, weak, strong, strict, latent variance-covariance, and latent means) and the test-retest reliability of each factor was calculated based on the latent correlations estimated between each factor and itself at the second measurement point from the most invariant measurement model. On the basis of our previous discussion of reliability in the context of bifactor modeling, as well as the observation that one-year stability coefficients typically range from .50 to .75 for WAC-related constructs (e.g., Morin, Meyer et al., 2016; Neininger, Lehmann-Willenbrock, Kauffeld, & Henschel, 2010), we consider as "satisfactory" one-year stability coefficients ≥ .50. It is important to keep in mind that these interpretation guidelines are proposed as specific to this research area (WAC) and time interval (one-year) and would be higher (e.g., .70, .80) had we relied on a more typical two-week interval.

Criterion-Related Validity. To test Hypotheses 6 to 8, we assessed the criterion-related validity of the WACMQ-S factors. Starting from the most invariant of measurement models estimated across Samples 1 and 2, one additional CFA latent factor, representing participants' intentions to leave their organization was added to the model. This additional factor was specified as an outcome, and thus allowed to be predicted by all of the WACMQ-S factors as a first step in the assessment of their convergent validity. In this predictive model, we first assessed the measurement invariance of the intentions to leave the organization factor using the previously described sequence, before adding one additional series of constraints to test whether the relations between the WACMQ-S factors and the intentions to leave factor were also invariant across samples. The remaining series of analyses were sample-specific. Starting from the retained model (CFA, bifactor-CFA, ESEM, and bifactor-ESEM), two latent CFA outcome factors representing OCBI and OCBO were first added to the model estimated for Sample 1 in order to conduct further tests of convergent validity for the WACMQ-S factors. Similar analyses were conducted in Sample 2, in which six latent CFA outcome factors were added to represent participants' in-role performance, as well as their OCBs directed toward the organization, their coworkers, their supervisor, the organization's patients, and their tasks. This model further included a set of a priori correlated uniquenesses among the first four items from the in-role performance subscale to reflect the fact that these items are designed to tap into participants' conscientiousness in the execution of their tasks, whereas the remaining items from this subscale rather reflect their desire to meet high quality standards in the execution of their tasks (Boudrias et al., 2009).

Results

Alternative Measurement Models

Table 1 presents the goodness-of-fit indices of the models including the eight *a priori* WAC factors (or S-factors for bifactor models) estimated separately in both samples. In both samples, the CFA and bifactor-CFA achieved an acceptable level of fit to the data according to the CFI, TLI, and RMSEA. However, both the ESEM and bifactor-ESEM resulted in a substantial improvement in model fit, providing an excellent fit to the data in both samples according to the CFI and RMSEA, as well as an acceptable level of fit to the data according to the TLI. Comparison between the ESEM and bifactor-ESEM solutions revealed an important increase in model fit associated with the bifactor-ESEM model according to the TLI (+.011 in Samples 1 and 2). Goodness-of-fit indices from alternative models in which WAC to the tasks and profession were combined into a single factor (or S-factor in bifactor solutions) are reported in Table S1 of the online supplements. These alternative models converged on a substantially lower level of fit to the data than the models reported here, supporting Hypothesis 1 in demonstrating the differentiation between WAC to the tasks and profession for healthcare employees. These alternative models are not considered further.

Based on the statistical information reviewed so far, the bifactor-ESEM solution appears to provide a superior representation of the data, and should be retained unless the G-factor from this solution turns out to be weakly defined through low factor loadings. If this was the case, then the ESEM solution would represent a viable alternative. Standardized factor loadings and uniquenesses for the CFA and ESEM solutions, as well as composite reliability coefficients, are available in Table S2 (Sample 1) and S3 (Sample 2) of the online supplements, and factor correlations obtained in both samples are presented in Table S4 of the online supplements. Finally, parameter estimates for the bifactor-CFA and bifactor-ESEM solutions obtained in Samples 1 and 2 are respectively reported in Table 2 and in Table S5 of the online supplements.

Comparison of CFA and ESEM Solutions. Following Morin et al.'s (Morin, Arens, & Marsh 2016; Morin et al., 2017) recommendations, we first turn our attention to the comparison of the CFA and ESEM solutions. With the exception of a single item (CAR3, which relates to career planning rather than advancement) presenting a slightly lower factor loading on its target factor (Sample 1: λ = .323 and .263 for CFA and ESEM, respectively; Sample 2: λ = .368 and .265 for CFA and ESEM, respectively), the eight *a priori* constructs appear to be well-defined through high target factor loadings in both CFA (Sample 1: λ = .566 to .947, *M* = .783; Sample 2: λ = .523 to .933, *M* = .760) and ESEM (Sample 1: λ = .364 to .739, *M* = .739; Sample 2: λ = .456 to .919, *M* = .707). Supporting the clear definition of the factors and Hypothesis 2, the model-based coefficients of composite reliability remained in an acceptable range for both the CFA (Sample 1: ω = .675 to .933, *M* = .805; Sample 2: ω = .703 to .886, *M* = .789) and ESEM (Sample 1: ω = .639 to .938, *M* = .793; Sample 2: ω = .667 to .892, *M* = .768) solutions. Furthermore, ESEM cross-loadings remained generally small (Sample 1: $|\lambda|$ = 0 to .256, *M* = .048; Sample 2: $|\lambda|$ = .000 to .285, *M* = .046), and often non-significant (out of 168 cross-loadings, 141 are non-significant in Sample 1, and 151 in Sample 2). No cross-loading was large enough to call into question the definition of the factors. However, the observation of an improved fit to the data associated with the ESEM, relative to CFA, solution as well as the observation of reduced factor correlations in ESEM (Sample 1: *r* = .072 to .622, *M* = .295; Sample 2: *r* = .067 to .648, *M* = .346), relative to CFA (Sample 1: *r* = .052 to .693, *M* = .371; Sample 2: *r* = .093 to .749, *M* = .439), support the importance of taking these cross-loadings into account. Indeed, statistical simulation studies show that ESEM tends to provide a better representation of the true factor correlations when cross-loadings as small as .100 are present in the population model (for a review, see Asparouhov et al., 2016). The current results thus support the superiority of an ESEM, relative to a CFA, representation of the data.

It is interesting to note that the factor involved in the greatest number of statistically significant cross-loadings and presenting the strongest correlations to the other factors overall, relates to WAC to the organization, which arguably represents the focus of WAC under which a majority of the other foci are nested (i.e., without organizational membership, it would simply be impossible to commit to the other foci). In contrast, the most distinct form of commitment (with a single significant cross-loading in Sample 2 and zero in Sample 1, and the lowest factor correlations overall) relates to WAC to the career, arguably the most individual out of all foci. Apart from this, it is interesting to note that item PRO1 ("*I am proud to say this is my profession*") presents a noteworthy cross-loading on the patients factor. Finally, the correlation observed between the tasks and profession factors (*r* = .622 to .749) remain high enough to support the idea that these factors are related to one another, yet small enough to support their distinctive nature.

The presence of multiple moderately high ESEM factor correlations supports the interest of pursuing a bifactor-ESEM solution. Others have suggested that the observation of multiple cross-loadings of a reasonable magnitude in the ESEM solution –reduced in the bifactor-ESEM solution – would also support the presence of a global construct (e.g., Morin et al., 2017). However, it is important to keep in mind that, based on principles of error propagation, an unmodelled G-factor is equally likely to be absorbed in ESEM through an inflation of the factor correlation or through an inflation of the cross-loadings (e.g., Morin, Arens, & Marsh, 2016). Unfortunately, due do the orthogonality of bifactor models, it is not possible to directly compare the size of factor correlations between CFA/ESEM solutions and their bifactor counterparts.

A Bifactor-ESEM Solution. The bifactor-ESEM solution reveals a highly reliable G-factor (Sample 1: ω = .939; Sample 2: ω = .936) well-defined by strong and positive target loadings from most items (Sample 1: λ =.344 to .743, *M* = .520; Sample 2: λ =.373 to .751, *M* = .538). The only exceptions include the items related to WAC to the career (Sample 1: λ = .146 to .186, *M* = 161; Sample 2: λ = .123 to .250, *M* = .180), supporting the distinct nature of this focus of WAC. More importantly, although the S-factors estimated as part of this solution might appear slightly weaker than in the ESEM solution due to the fact that variance in item ratings is now utilized in the estimation of two factors (the G-factor and one S-factor), these S-factors still remain strongly defined by large target S-factor loadings and satisfactory estimates of composite reliability, supporting Hypothesis 2 (Sample 1: ω = .547 to .921, *M* = .716; Sample 2: ω = .502 to .854, *M* = .654). When we consider the proportion of the variance in item ratings that can be explained by the factors (σ^2_{true}: see Tables S6 and S7 of the online supplements), the average proportion (across items) was 55.5% in the ESEM solution compared to 62.6% in the bifactor-ESEM solution, supporting the idea that the bifactor solution is not accompanied by any decrease in reliability.

In terms of S-factors, item CAR3 (related to career planning) still presents a weaker level of association with its a priori G- and S-factors (λ = .272 in Sample 1 and .327 in Sample 2), whereas in Sample 1, item TAS3 (i.e., "*I don't like the tasks I perform in my current position"* - reversed-scored item) provides a stronger reflection of the G-factor (λ = .645) than of its *a priori* factor (λ = .197). Apart from these exceptions, the S-factors are well-defined by satisfactory target factor loadings (Sample 1: λ =.314 to .914, *M* = .601; Sample 2: λ =.318 to .861, *M* = .536), and low cross-loadings (Sample 1: λ = 0 to .232, *M* = .055; Sample 2: λ =.001 to .271, *M* = .049). The aforementioned cross-loading between item PRO1 and the patients S-factor remains unaffected by incorporation of a G-factor in the model. However, if we consider cross-loadings higher than .200 in magnitude, six of those were identified across samples in the ESEM solution, relative to three in the bifactor-ESEM solution, arguably due to the incorporation of a G-factor to the solution. It should be kept in mind that, even though S-factors estimated in the context of bifactor models often tend to be weaker than their ESEM counterparts, these factors can be considered to be perfectly reliable in latent variable models such as those used here, and the presence of significant target S-factor loadings supports the idea that these factors reflect meaningful specificity not reflected into the G-factor (e.g., Morin, Arens, & Marsh, 2016; Morin et al., 2017). Overall, these results support Hypothesis 3 in demonstrating the superiority of the bifactor-ESEM solution, which is retained for further analyses.

Tests of Measurement Invariance

Tests of Measurement Invariance across Samples. Starting from the bifactor-ESEM solution, we proceeded to test the measurement invariance of the WACMQ-S ratings across the two samples, which essentially represents tests of linguistic invariance. The results from these tests are reported in the bottom section of Table 1. The model of configural invariance provides an excellent fit to the data (CFI = .986, TLI = .959, and RMSEA = .036). Invariance constraints were then added to the factor loadings (weak invariance) and intercepts (strong invariance). None of these steps resulted in a decrease in model fit exceeding the recommended guidelines (ΔCFI and ΔTLI $\geq$ .01, and ΔRMSEA $\geq$ .015). However, adding invariance constraints on the items' uniquenesses resulted in a substantial decrease in model fit, failing to support the strict invariance of the model. The modification indices associated with the model of strict measurement invariance, as well as of the parameter estimates from the previous model of strong invariance, suggested that the invariance constraints needed to be relaxed on the uniqueness associated with item TAS3 (i.e., "*I don't like the tasks I perform in my current position"* - reversed-scored item). Consistent with the results reported above suggesting the weaker performance of this item in the English sample, this item appeared to be characterized by a slightly higher level of imprecision in this sample (uniqueness = .553) relative to the French sample (uniqueness = .181). An alternative model of partial strict measurement invariance (Model M4 in Table 1), in which the equality constraint on item TAS3 was relaxed, was supported by the data and retained for the next steps of the analyses. However, the models of latent variance-covariance and latent means invariance were not supported by the data, suggesting substantively interesting differences between subsamples. For identification purposes, the latent variances and latent means are respectively fixed to 1 and 0 in Sample 1, allowing latent means and variances of Sample 2 to be expressed as deviations from those observed in Sample 1. Essentially, these results revealed a slightly higher level of inter-individual variability in the French sample (Sample 2), relative to the English sample (Sample 1), which is consistent with the greater professional diversity present in this sample. The results revealed significantly higher levels ($p \leq .01$) of global work life commitment (G-factor: .252 SD) and of WAC to the supervisor (S-factor: .253 SD), but lower levels ($p \leq .05$) of WAC to the tasks (S-factor: -.172 SD) among the French sample (Sample 2), relative to the English sample (Sample 1). Overall, these results support Hypothesis 4.

Sample-Specific Tests of Measurement Invariance. Sample-specific tests of measurement invariance were conducted to investigate the extent to which the bifactor-ESEM model would generalize across subsamples of nurses working in hospital or community settings (Sample 1) and across subsamples of nurses or beneficiary attendants (Sample 2). Results from these tests are reported in Table S8 of the online supplements, and support the complete measurement, latent variance-covariance, and latent means invariance of the WACMQ-S ratings across subsamples of nurses working in hospital or community settings (ΔCFI and ΔTLI $\geq$ .01, and ΔRMSEA $\geq$ .015). The results from the tests conducted across subsamples of nurses and beneficiary attendants closely parallel those from the tests previously conducted across samples in supporting the strong, but not strict, invariance of the WACMQ-S ratings across subsamples. Using a process similar to that described above, the results supported a model of partial strict measurement invariance in which the equality constraints were relaxed across seven items (ORG1, ORG3, PRO1, TAS1, TAS2, CAR2, and CO3). Examination of these items showed mainly consistent differences, and revealed slightly higher levels of measurement errors in the sample of beneficiary attendants (uniquenesses = .252 to .688, *M* = .443) relative to the sample of nurses (uniquenesses = .096 to .241, M = .152). Finally, models of latent variance-covariance and latent means invariance were also not supported by the data. Examination of these results revealed substantially higher levels of inter-individual variability among the subsample of beneficiary attendants, suggesting that this higher level of variability may in fact explain the higher level observed in the French sample (Sample 2) relative to the English sample (Sample 1), which is consistent with the greater professional diversity present in this sample. The results revealed significantly lower levels ($p \leq .05$) of global work life commitment (G-factor: -.386 SD) and of WAC to the supervisor (S-factor: -.673 SD), but higher levels ($p \leq .01$) of WAC to work in general (S-factor: .680 SD) and to the career (S-factor: .554 SD) among beneficiary attendants relative to nurses. Overall, these results support Hypothesis 4.

Test-Retest Reliability. Tests of longitudinal invariance were conducted on the subset of Sample 2 employees who completed the WACMQ-S one year later. These results, reported at the bottom of Table S8 of the online supplements, support the complete measurement, latent variance-covariance, and latent means invariance of the WACMQ-S ratings over a one-year period. They also revealed statistically significant ($p \leq .01$) test-retest reliability coefficients: (a) Global work life WAC (G-factor): r = .794, (b) organization (S-factor): r = .568, (c) supervisor (S-factor): r = .596, (d) coworkers (S-factor): r = .338, (e) patients (S-factor): r = .360, (f) profession (S-factor): r = .801, (g) work in general (S-factor): r = .586, (h) tasks (S-factor): r = .454, and (i) career (S-factor): r = .760. These results partially support Hypothesis 5.

Criterion-Related Validity. To test the criterion-related validity of the WACMQ-S ratings, we assessed their associations with ratings of intention to leave the organization (Combined Sample), OCBI and OCBO (Sample 1), and in-role performance as well as OCBs directed at the organization, supervisor, coworkers, patients, and tasks (Sample 2). For these tests, CFA factors representing these outcome variables were added to the retained bifactor-ESEM solution and predicted by the WACMQ-S factors. Additional tests were conducted to ascertain the invariance of the intentions to leave ratings, as well as of their relations with the WACMQ-S factors, across Samples 1 and 2. The results from these tests are reported in Table S9 of the online supplements and support the invariance of the intentions to leave ratings and of their relations with the WACMQ-S factors. Results from the tests of criterion-related validity are reported in Table 3.

Consistent with the initial representations of WAC as a key predictor of employees' intentions to stay in their organization (e.g., Meyer & Allen, 1991), the results showed significant negative associations between the S-factors representing employees' WAC to their organization, supervisor, profession, and tasks, and their intentions to leave their organization. In accordance with Hypothesis 6, this relation was stronger for WAC to the organization relative to the other foci. Also in accordance with Hypothesis 6, employees' WAC to the organization (S-factor) presented significant positive isomorphic relations with OCBO and OCBs directed at the organization, as well as transference relations to OCBs directed at the tasks. However, employees' WAC to their tasks did not predict OCBs directed at their tasks in an isomorphic manner, whereas WAC to the patients (S-factors) represented a positive predictor of in-role performance, OCBs directed at the tasks, and OCBs directed at the patients. Expectedly, employees' WAC to the patients, together with the S-factors representing their WAC to their coworkers and supervisors, presented isomorphic relations with OCBI. However, it is noteworthy that employees' WAC to their supervisors negatively predicted their levels of OCBI (in the interpretation of this result, it is important to keep in mind that the orthogonality of the bifactor-ESEM solution makes it impossible to attribute this unexpected result to multicollinearity). A final isomorphic positive relation is noted between employees' WAC to their coworkers (S-factors) and their levels of OCBs directed at these coworkers. Still, even though the results are globally consistent with our expectations (i.e., Hypothesis 6) that isomorphic relations between matching foci of WAC and OCB would be identified, it is important to note that no such relation was observed for OCBs directed at the supervisor, which is only predicted by employees' global levels of work life commitment (G-factor). Our results thus provide partial support to Hypothesis 6.

Consistent with Morin, Morizot et al.'s (2011) observations as well as with Hypothesis 7, our results showed widespread positive relations between employees' WAC to their career (S-factor), and OCBI, in-role performance, OCBs directed at the coworkers, OCBs directed at the tasks, and OCBs directed at the organization in Sample 2. However, employees' WAC to their career (S-factor) did not predict their level of intentions to leave, OCBO, or OCBs directed at the supervisor or patients.

In accordance with Hypothesis 8, the results clearly support the importance of achieving a proper representation of employees' global levels of work life commitment in the prediction of desirable workplace behaviors as this G-factor proved to be systematically associated with all of the outcomes considered in this study. More precisely, higher levels on this G-factor predicted lower levels of intentions to leave the organization, as well as higher levels of OCBI, OCBO, in-role performance, and OCBs directed at the organization, supervisor, coworkers, patients, and tasks.

Discussion

The main purpose of this study was to assess the psychometric properties of the WACMQ-S among two distinct samples of English- and French-speaking frontline healthcare employees using the newly developed bifactor-ESEM framework, and to do so while assessing the adequacy of a new hierarchical representation of WAC. The bifactor-ESEM framework is specifically designed to assess two sources of construct-relevant psychometric multidimensionality likely to be present in multidimensional measures commonly used in organizational research and related to the assessment of (1) conceptually-related and (2) hierarchically-ordered constructs (Morin, Arens, & Marsh, 2016; Morin et al., 2017). The first of these sources can be identified by the comparison of first-order CFA and ESEM solutions, whereas the second can be recognized by comparing first-order and bifactor solutions.

In accordance with the conceptually-related nature of employees' WAC directed at a variety of work-related foci (Meyer & Allen, 1997; Meyer & Morin, 2016), the first of these comparisons supported the superiority of an ESEM representation of WACMQ-S ratings, which resulted in a higher level of fit to the data, and in less correlated (i.e., more differentiated) factors relative to a CFA representation. Given statistical research that has shown ESEM to result in more precise estimates of factor correlations whenever cross-loadings are present in the population model, yet to remain unbiased otherwise (Asparouhov et al., 2015), observing reduced factor correlations represents a strong source of support to the superiority of the ESEM solution (e.g., Morin, Arens, & Marsh, 2016; Morin et al., 2017). Additionally, the pattern of cross-loadings and factor correlations was also consistent with the nested nature of the various WAC foci covered in the WACMQ-S, being most pronounced for WAC directed at the organization, and least pronounced for WAC directed at the career. Furthermore, in accordance with Morin, Morizot et al. (2011) and the newly proposed hierarchical model of WAC, the second of these comparisons supported the superiority of the bifactor-ESEM representation of WACMQ-S ratings, which not only resulted in an improved level of fit to the data, but also in the estimation of well-defined G- and S-factors, and small cross-loadings. In accordance with the hierarchical representation of WAC, the G-factor provided a direct representation of employees' global levels of WAC directed at their work life, whereas the S-factors provided a direct estimate of their level of WAC specifically directed at each foci over and above this global level of work life WAC.

Keeping in mind that reliability estimates are typically lower for S-factors than for first-order factors given that bifactor models resulted in the estimation of more than one source of true score variance for all item ratings (e.g., Morin, Arens, Tran, & Caci, 2016; Morin, Myers, & Lee, 2017), it is noteworthy that our results revealed generally acceptable levels of composite reliability, with ω varying from .574 to .939 in Sample 1 (English) and .502 to .936 in Sample 2 (French). Similarly, our results also generally supported the one-year test-retest reliability of most G- and S-factors, with r ranging from .568 to .801, with the exception of WAC directed at coworkers (r = .338), patients (r = .360), and tasks (r = .454), which may themselves refer to less stable constituencies for healthcare employees.

In addition, our results also supported the need to distinguish employees' WAC directed at their tasks and profession. Although initial results reported by Morin et al. (2009) among technical and operational employees suggested that this distinction may not hold for all types of employees, they hypothesized that this distinction should hold among samples of employees, such as healthcare professionals, exposed to greater levels of disconnection between expected professional roles and daily tasks (Aiken et al., 2001; Cohen, 2003). Our results supported this assertion, suggesting that care should be taken to clearly assess how the exact nature of specific professional roles may interact with the structure of employee's WAC directed at multiple foci. In addition, our results suggest that the failure of Morin et al. (2009) to achieve a proper differentiation between these two foci of WAC could also have been due to the inflation of factor correlations (creating the impression of construct overlap) due to the lack of control for the two sources of construct-relevant psychometric multidimensionality present in WACMQ ratings and related to the presence of cross-loadings and of an overarching dimension of work life WAC.

Perhaps even more importantly, all of these results were successfully replicated across samples of French- and English-speaking employees, as well as across subsamples of hospital and community workers, and of nurses and beneficiary attendants. In addition to supporting the generalizability of the current findings and the linguistic equivalence of the English and French versions of the WACMQ-S. Given that a key condition of a successful psychometric validation is the demonstration that the psychometric properties of scores on an instrument generalize to meaningfully distinct subgroups of participants (Millsap, 2011), these results are promising and unlikely to reflect idiosyncratic characteristics of the present samples.

In addition to these main observations, the bifactor-ESEM solution revealed additional noteworthy results. First, item TAS3 (i.e., "*I don't like the tasks I perform in my current position"*) provided a better reflection of the G-factor than of the *a priori* S-factor related to employees' WAC directed at their tasks, in addition to being slightly less reliable in the English-speaking sample. This observation suggests that the English version of this item might be targeted for re-assessment in future studies, although this result might also simply reflect characteristics that are specific to the sample of Ontario nurses considered in this study, or typical difficulties associated with negatively-worded items (e.g., Marsh, Scalas, & Nagengast, 2010). Still, because this difference is limited to the item uniqueness, it should not pose problems in studies relying on latent variables which are naturally controlled for measurement errors. Second, group comparisons revealed that beneficiary attendants tended to present a slightly higher level of within group variability on the various WACMQ-S factors, and a slightly higher level of unreliability in their ratings of seven out of 24 of the items. These results reinforce the need to rely on latent variable models allowing for a proper control of measurement errors when the goal is to compare subgroups presenting important differences in terms of educational background or vocabulary. Third, the results revealed mean-level differences between the English- and French-speaking samples that appeared to be explainable by the substantial number of beneficiary attendants in the French sample. More precisely, when compared to nurses, beneficiary attendants presented lower levels of global work life WAC and WAC to their supervisors, but higher levels of WAC to work in general and to their career. Our results finally suggested that the items designed to assess WAC directed toward the career may in fact reflect two distinct facets, one related to career advancement (careerism: 2 items) and one related to career planning (1 item). As noted in the introduction, the decision to retain both of these components of career commitment was anchored in a desire to maintain the content coverage of the original WACMQ and a clear alignment with the definitions provided by Morin et al. (2009). However, given the typical interpretation of this dimension as reflecting careerism (Morin, Morizot et al., 2011), it would be interesting for future research to verify whether results, especially those concerning relations between the WACMQ-S factors and external variables, can be affected by the reliance on a cleaner measure of careerism or, in accordance with the newly developed hierarchical model of WAC, by the reliance on even more specific measures of WAC directed at career advancement relative to career planning.

A key strength of bifactor-ESEM is that it provides a way to simultaneously assess the criterion-related validity of global and specific constructs (Howard et al., 2017). In accordance with our expectations, social exchange theory (Coyle-Shapiro, Kessler, & Purcell, 2004; Cropanzano & Mitchell, 2005; Lavelle et al., 2007, 2009), the hierarchical representation of WAC proposed here, and prior research showing that WAC represents a key driver for organizational behaviors irrespective of the specific focus that is considered (Becker, 1992; Becker & Kernan, 2003; Bishop et al., 2000; Cheng et al., 2003; Meyer et al., 2002; Siders et al., 2001; Snape et al., 2006; Stinglhamber et al., 2002; Vandenberghe et al., 2004, 2007), our results showed that employees' global level of work life WAC (G-factor) presented the strongest relations with all criterion measures considered here. Interestingly, these observations suggest that the failure of prior research to support the *global* representation of WAC-OCBs relations (e.g., Morin, Vandenberghe et al., 2011) may have been simply due to the erroneous positioning of the organization as the most "global" foci of WAC. Our results show that the organization represents an easily distinguishable WAC foci located on an equal footing as the other foci of WAC, and that this "global" level seems to be rather occupied by a more overarching form of WAC directed at employees' work life in general which appears to be involved as a key component of the relations between WAC and work outcomes. Still, our results also supported the importance of separately considering all specific WAC foci irrespective of this global level of work life commitment (Morin, Morizot et al., 2011) in showing that the various S-factors presented unique relations with the criterion variables over and above the covariance already explained by the G-factor.

In particular, and consistent with Morin, Morizot et al. (2011), employees' levels of WAC directed at their careers presented small yet consistent relations with a variety of criterion-related variables (OCBI, in-role performance, OCBs directed at the coworkers, OCBs directed at the tasks, and OCBs directed at the organization). This observation is consistent with the idea that careerists, who tend to be committed mostly to themselves and to their personal advancement, tend to rely on observable OCBs in a self-serving manner as an impression management strategy aiming to help them to attain advancement opportunities (Bolino, 1999; Penner et al., 1997; Zellars & Tepper, 2003). Still, despite the consistency of these results with our prediction, this impression management interpretation deserves a more careful examination in future studies.

Finally, in accordance with our expectations as well as with the *target similarity* perspective (Lavelle et al., 2007, 2009; Rupp & Cropanzano, 2002), our results revealed isomorphic relations between: (1) WAC to the organization, intentions to leave the organization, OCBO, and OCBs directed at the organization; (2) WAC to the patients, OCBI, and OCBs directed at the patients; and (3) WAC to the coworkers, OCBI, and OCBs directed at the coworkers. Interestingly, employees' WAC to their tasks did not predict OCBs directed at their tasks in an isomorphic manner, which could possibly be related to the previously noted disconnection between one's tasks and one's professional role in the healthcare system (Aiken et al., 2001). Indeed, because participants are frontline healthcare providers, their key work activities are related to the provision of healthcare services to the patients. This interpretation is reinforced by the observation of a significant cross-loading between the first item of the WAC to the profession factor and the WAC to the patients factor, which was not observed in the original Morin et al.'s (2009) study. With this in mind, it is not surprising to note that WAC to the patients also represented a key positive predictor of in-role performance, as well as of OCBs directed at the tasks, in addition to the previously noted isomorphic association with OCBs directed at the patients. Finally, employees' WAC directed at their supervisors negatively predicted their levels of OCBI. Albeit unexpected, this result is not surprising given the broader nature of the OCBI construct, which relates to a wide variety of individuals within the organization. Indeed, Morin, Morizot et al. (2011) previously demonstrated a disconnection between WAC directed at the supervisor relative to other social constituencies, which is consistent with seminal propositions assuming workgroups and supervisors to be in opposition (Polsky, 1978; Roethlisberger & Dickson, 1939/1967; Tajfel & Turner, 1985). This result thus illustrates potential conflicts between WAC foci (Reichers, 1985), which should be more thoroughly investigated in the future. Importantly, our results show that, when relying on a proper representation of the construct-relevant psychometric multidimensionality, it is possible for the *global* and *target similarity* perspectives to co-exist within a hierarchical representation of WAC.

Theoretical and Practical Implications

Our results not only provided evidence for the reliability and validity of scores obtained on the English and French versions of the WACMQ-S, but also provided tentative support to a newly proposed hierarchical representation of WAC. Importantly, when looking at the relations between WAC and work-related outcomes, this new representation of WAC was able to build bridges between two apparently divergent perspectives (e.g., *global vs. target similarity*), in accordance with prior research showing that taking into account this more global level of WAC directed at the work life allowed one to achieve a more precise estimate of WAC directed at more specific foci (Morin, Morizot, et al., 2011). It would be very interesting to see how this new hierarchical representation of WAC holds up in future research focusing on more diverse samples of employees, as well as to see how well it can extend to the more specific sub-target level or to personal lives (e.g., their commitments to their families, friends, leisure, and lifestyle).

At a practical level, our results showed that the bifactor-ESEM framework provided a way to achieve a natural disaggregation of the effects attributable to global work life WAC relative to WAC directed at more specific foci. Based on these results, it appears that future multifocal WAC research would do well to similarly adopt bifactor-ESEM measurement models. Although simple in appearance, this recommandation has many important implications. Thus, for research purposes, our results reinforce prior calls for an increased focus on latent variable models (Marsh & Hau, 2007), which are not only corrected for measurement errors, but also provide a more accurate depiction of the key constructs of interest. In particular, scale scores (i.e., where scores on the items forming a dimension are summed or averaged) are unable to achieve a proper disaggregation of the variance attributed to the G- (work life) and S- (specific foci) factors, as well as to take cross-loadings into account. The good news is that statistical research has demonstrated that these types of models are not as demanding as what was once believed in terms of sample size (e.g., de Winter et al., 2009). Importantly, more complex models can be built in sequence, so that final predictive models could be based on factor scores saved from preliminary measurement models. These factor scores help preserve the underlying nature of the latent constructs, while also incorporating some corrections for measurement errors (e.g., Morin, Boudrias et al., 2016, 2017). Still, recommendations are not as clear, nor as simple, in applied contexts where consultants or organizations need to obtain scores on questionnaires administered to employees. As noted above, scale scores are unable to accommodate an underlying bifactor (or ESEM) structure, and will represent a confusing confounding of the variance attributed to the G-factor, S-factor, and cross-loadings (Brown, Finney, & France, 2011). Does this mean that the applied scoring of instruments following a bifactor-ESEM structure is impossible? No. However, it means that such scoring should be computerized and based on algorithms similar to those used to generate factor scores. Interestingly, the Mplus statistical package can be used in such a manner, relying on an estimation of factor scores conditioned on the exact parameter estimates of the final bifactor-ESEM solution. Given the mounting evidence showing that many psychological constructs do appear to follow similarly complex multidimensional structure (e.g., Howard et al., 2016; Morin, Boudrias et al., 2016, 2017; Sánchez-Oliva et al., 2017), it does appear that more statistical research is needed in this direction.

Limitations and Directions for Future Research

Some limitations should be kept in mind in the interpretation of the results. First, although one of our goals was to provide an improved representation of the underlying structure of the WAC construct that could theoretically be generalized to any employee from any culture, the current study relied on two convenience samples of French- and English-speaking Canadian healthcare workers, which restricts the generalizability of our results. Thus, the next step would be to test the extent to which the present results generalize to more diverse linguistic, cultural, and professional contexts, as well as across samples of full-time and part-time employees. Second, despite the fact that we relied on latent models controlled for measurement errors to assess the criterion-related validity of the WACMQ-S factors, it remains important to keep in mind the fact that the reliability of some of the S-factors was minimal. As such, future research would do well to consider the adoption of latent variable models, such as those used in the present study, to provide a way to obtain unbiased estimates of relations among constructs despite the presence of measurement errors. In particular, the superiority of a bifactor representation of the data when compared to first-order (CFA or ESEM) alternatives clearly suggests that the reliance on scale scores would not be appropriate. A promising alternative, which provides both a partial control for measurement errors and a way to retain the underlying properties of the measurement model, is the reliance on factor scores (see Morin et al., 2017). Third, the current study highlighted that the measurement scale was invariant across linguistic versions, work environments, and professional groups. Future research could also evaluate if the WACMQ-S works equally well in relation to additional variables, like tenure, workload, familial obligations, gender, etc. Fourth, the current study was mainly cross-sectional, precluding tests of the direction of the associations between the WAC factors and the criterion measures. Finally, at the beginning of this article, we highlighted principles aiming to guide the assessment of the psychometric properties of reduced measures. Our results were able to support most of these principles, showing that scores on the WACMQ-S: (1) Followed the a priori factor structure of the WACMQ; (2) retained a satisfactory level of reliability despite this reduction in length; and (3) preserved the convergent and discriminant validity of the WACMQ. However, we did not demonstrate convergence between scores obtained on the WACMQ-S and the WACMQ (only the short measure was administered). This issue should be more thoroughly investigated in future research.

Conclusion

This study investigated the psychometric properties of the newly developed WACMQ-S using the bifactor-ESEM framework. Our results supported the superiority of a bifactor-ESEM representation of scores on the WACMQ-S relative to alternative measurement models (CFA, bifactor-CFA, and ESEM), and provided support for the factor validity, composite reliability, and one-year test-retest reliability of WACMQ-S ratings. Our results also supported the linguistic equivalence of the English and French versions of the WACMQ-S, as well as the measurement invariance of WACMQ-S ratings across subgroups of healthcare employees formed on the basis of their work environment (hospital vs. community) and professional groups (nurses vs. beneficiary attendants). The criterion-related validity of WACMQ-S ratings was also documented through the demonstration of widespread relations between employees' global tendencies to commit affectively to multiple foci and all criterion-related variables, as well as the presence of isomorphic relations between WAC directed at multiple foci and similar criterion-related variables. Finally, these results showed widespread relations between employees' levels of WAC directed at their career and a variety of criterion-related variables, consistent with the utilization of impression management strategies.

Endnotes

[1] Some research has focused on employees' commitment to their unions (Gordon, Philpot, Burt, Thompson, & Spiller, 1980), to external organizations (McElroy, Morrow, & Laczniak, 2001), to organizational change (Herscovitch & Meyer, 2002), and to the implementation of specific programs (Neubert & Cady, 2001). These foci cannot be considered to be "generic" because they only apply to subsets of employees (unionized, boundary-spanners, members of changing organizations, and involved in specific programs).

[2] Higher-order models assume that the relations between the items and the higher-order factor, as well as the relations between the items and the unique part of the first-order factor, are indirect and mediated by the first-order factors. Indirect relations are formed by the product of the coefficients associated with the two paths involved in the relation (i.e., the loading on the first-order factor x the loading of the first-order factor on the higher-order factor; the loading on the first-order factor x the disturbance of the first-order factor). In higher-

order models, the second term of this product is a constant for both variance components, resulting in a ratio of global/specific variance that is the same for all items associated with a first-order factor.

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Appendix

French and English Versions of the Workplace Affective Commitment Multidimensional Questionnaire – Short Form.

Instructions	The following items express what YOU may feel about yourself as a member of your organization:	Les énoncés suivants traduisent la manière dont vous vous sentez en tant que membre de votre organisation :
Response scale	1. Totally Disagree 2. Partly Disagree 3. Neutral 4. Partly Agree 5. Totally Agree	1. Entièrement en désaccord 2. Partiellement en désaccord 3. Indécis 4. Partiellement d'accord 5. Entièrement d'accord
	Affective Commitment to Organization	**Engagement Affectif envers l'Organisation**
ORG1	I am proud to say that I work for my organization	Je suis fier (fière) de dire que je travaille pour mon organisation
ORG2	My organization means a lot to me	Mon organisation a beaucoup d'importance pour moi
ORG3	I don't like working for my organization *(reversed-scored item)*	Je n'aime pas travailler pour mon organisation *(item inversé)*
	Affective Commitment to Supervisor	**Engagement Affectif envers le Superviseur**
SUP1	I like the values conveyed by my immediate supervisor	J'aime les valeurs véhiculées par mon (ma) supérieur(e) immédiat(e)
SUP2	I feel privileged to work with someone like my immediate supervisor	Je me considère privilégié(e) de travailler avec quelqu'un comme mon (ma) supérieur(e) immédiat(e)
SUP3	When I talk to my friends about my immediate supervisor, I describe him/her as a great person to work with	Lorsque je parle de mon (ma) supérieur(e) immédiat(e) à mes amis je le (la) décris comme une personne avec qui il est agréable de travailler
	Affective Commitment to Co-workers	**Engagement Affectif envers les Collègues**
COW1	I'm happy to work with my co-workers	Je suis heureux (heureuse) de travailler avec mes collègues de travail
COW2	My co-workers make me feel like going to work	Mes collègues de travail me donnent le goût d'aller travailler
COW3	When I talk to my friends about my co-workers, I describe them as great people to work with	Lorsque je parle de mes collègues de travail à mes amis, je les décris comme des personnes avec qui il est agréable de travailler
	Affective Commitment to Customers (replaced by patients here)	**Engagement Affectif envers les Clients (remplacé par patients ici)**
CUS1/PAT1	I really care about the satisfaction of my organization's patients (original: I really care about the satisfaction of my organization's customers)	Je me préoccupe vraiment de la satisfaction des patients de mon organisation (original : Je me préoccupe vraiment de la satisfaction des clients de mon organisation)
CUS2/PAT2	Delivering quality care and/or services to my organization's patients is a major source of satisfaction for me (original: Delivering quality products and/or services to my organization's customers is a major source of satisfaction for me)	Offrir aux patients de mon organisation des soins et/ou des services de qualité est pour moi une source de satisfaction importante (original : Offrir aux clients de mon organisation des produits et/ou des services de qualité est pour moi une source de satisfaction importante)
CUS3/PAT3	In my opinion, the satisfaction of my organization's patients is a priority (original: In my opinion, the satisfaction of my organization's customers is a priority)	La satisfaction des patients de mon organisation est prioritaire à mes yeux (original : La satisfaction des clients de mon organisation est prioritaire à mes yeux)

	Affective Commitment to Profession	**Engagement Affectif envers la Profession**
PRO1	I am proud to say this is my profession	Je suis fier (fière) de dire que j'exerce ma profession
PRO2	I would be happy to practice this profession until retirement	Je serais heureux (heureuse) d'exercer ma profession jusqu'à ma retraite
PRO3	I like my profession too much to think about changing	J'aime trop ma profession pour penser à changer
	Affective Commitment to Work	**Engagement Affectif envers le Travail**
WOR1	Work is a priority in my life	Le travail occupe une place prioritaire dans ma vie
WOR2	One of the most satisfying things in my life is the fact that I work	L'une des plus grandes satisfactions dans ma vie vient du fait que je travaille
WOR3	Most of my personal objectives are focused on work	La majorité de mes objectifs personnels sont orientés vers le travail
	Affective Commitment to Tasks	**Engagement Affectif envers les Tâches**
TAS1	I find the tasks I perform in my current position stimulating	Je trouve stimulantes les tâches que j'effectue dans mon poste actuel
TAS2	I find the tasks I perform in my current position rewarding	Je me sens valorisé(e) par les tâches que j'effectue dans mon poste actuel
TAS3	I don't like the tasks I perform in my current position *(reversed-scored item)*	Je n'aime pas les tâches que j'effectue dans mon poste actuel *(item inversé)*
	Affective Commitment to Career	**Engagement Affectif envers la Carrière**
CAR1	I would like to hold increasingly important positions throughout my career	J'aimerais, tout au long de ma carrière, occuper des postes de plus en plus importants
CAR2	It is important for me to move up the ranks or obtain promotions	Il est important pour moi de gravir les échelons ou d'obtenir des promotions
CAR3	I feel it is important to plan one's career	Je considère qu'il est important de planifier sa carrière

Note. These items are available free of charge to researchers.

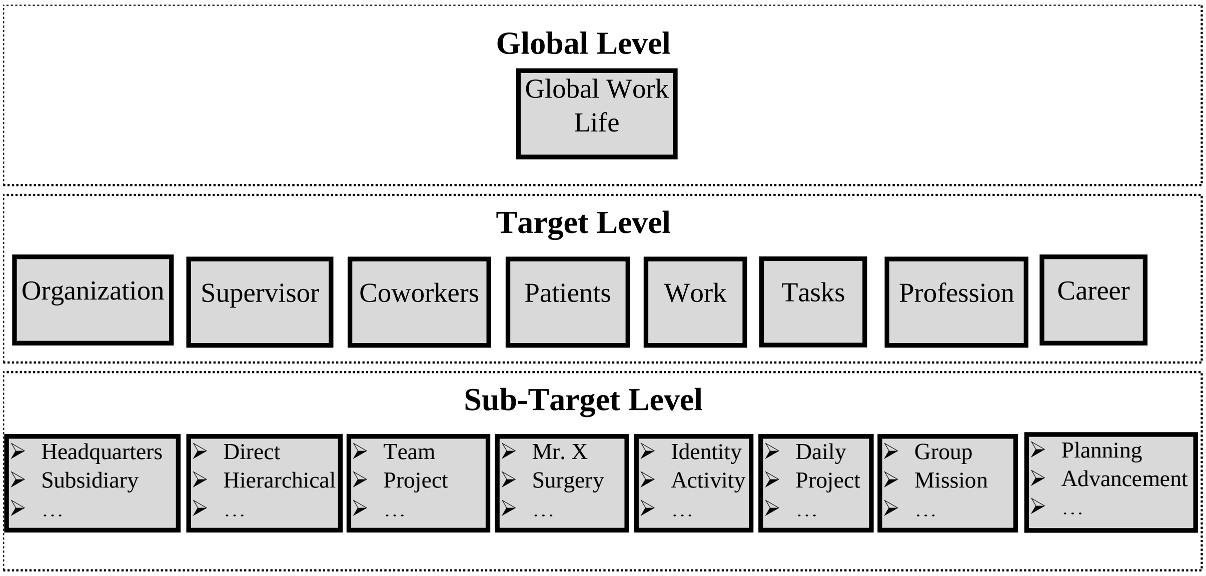

Figure 1. A Hierarchical Representation of Workplace Affective Commitment

Table 1
Goodness-Of-Fit Statistics of the Alternative Measurement Models Estimated in Both Samples

Model	**χ^2**	**df**	**CFI**	**TLI**	**RMSEA**	**90% CI**						
Sample 1 (English)												
CFA	635.338*	224	.936	.921	.052	[.047; .057]						
Bifactor-CFA	720.241*	228	.923	.907	.057	[.052; .061]						
ESEM	217.126*	112	.984	.960	.037	[.030; .045]						
Bifactor-ESEM	160.066*	96	.990	.971	.031	[.023; .040]						
Sample 2 (French)												
CFA	533.411*	224	.947	.935	.043	[.039; .048]						
Bifactor-CFA	589.028*	228	.938	.925	.046	[.042; .051]						
ESEM	270.876*	112	.973	.933	.044	[.037; .051]						
Bifactor-ESEM	209.598*	96	.981	.944	.040	[.033; .048]						
Model	**χ^2**	**df**	**CFI**	**TLI**	**RMSEA**	**90% CI**	**CM**	**$\Delta\chi^2$**	**Δdf**	**ΔCFI**	**ΔTLI**	**ΔRMSEA**
Invariance Across Samples												
M1. Configural invariance	368.015*	192	.986	.959	.036	[.030; .042]	---	---	---	---	---	---
M2. Weak invariance	565.604*	327	.981	.967	.032	[.028; .037]	M1	202.456*	135	-.005	+.008	-.004
M3. Strong invariance	606.283*	342	.978	.965	.033	[.029; .037]	M2	32.956*	15	-.003	-.002	+.001
M4. Strict invariance	793.490*	366	.965	.948	.041	[.037; .045]	M3	149.914*	24	-.013	-.017	+.008
M4’. Partial strict invariance	678.007*	365	.975	.961	.035	[.031; .039]	M3	59.940*	23	-.003	-.004	+.002
M5. Latent v/c invariance	870.504*	410	.963	.950	.040	[.036; .044]	M4’	166.880*	45	-.012	-.011	+.005
M6. Latent means invariance	1034.795*	374	.946	.921	.050	[.046; .054]	M4’	1092.238*	9	-.029	-.040	+.015

Note. CFA = confirmatory factor analytic model; ESEM = exploratory structural equation model; χ^2 = robust chi square test of exact fit; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = RMSEA 90% confidence interval; CM = comparison model; Δ = change in fit indices relative to the CM; v/c = latent variances and covariances; ESEM models were estimated using confirmatory target oblique rotation; bifactor-ESEM models were estimated using confirmatory bifactor target orthogonal rotation; * $p < .01$.

Table 2
Standardized Factor Loadings (λ) and Item Uniquenesses (δ) from the Bifactor Confirmatory Factor Analyses (CFA) and Bifactor Exploratory Structural Equation Modeling (ESEM) Solutions for Sample 1 (English-Speaking).

	Bifactor-CFA			Bifactor-ESEM									
	G-factor (λ)	S-factor (λ)	Uniqueness	G-factor (λ)	Org. (λ)	Sup. (λ)	Cowork. (λ)	Patients (λ)	Prof. (λ)	Work (λ)	Tasks (λ)	Career (λ)	Uniqueness
ORG1	.614	.671	.173	.628	**.595**	.138	*.004*	*-.009*	*-.022*	-.090	*-.025*	*.000*	.223
ORG2	.685	.447	.331	.627	**.541**	.123	*.032*	*.033*	*.009*	.145	*.041*	.078	.267
ORG3	.580	.512	.401	.640	**.441**	.143	*-.005*	-.156	*-.027*	-.172	*-.038*	*-.020*	.319
ω		**.746**			**.755**								
SUP1	.418	.774	.226	.436	.156	**.753**	*-.010*	*-.037*	*-.029*	-.094	-.043	*-.022*	.205
SUP2	.477	.815	.107	.460	.108	**.821**	*.040*	*-.012*	*-.016*	.045	*.003*	*.015*	.098
SUP3	.390	.812	.188	.412	*.007*	**.800**	.039	-.050	*-.012*	*-.030*	-.042	*.026*	.183
ω		**.917**				**.921**							
COW1	.466	.736	.242	.454	*.021*	*-.004*	**.740**	.059	*.017*	-.078	*.029*	*-.019*	.235
COW2	.528	.709	.219	.513	*.053*	.064	**.718**	*-.007*	*-.004*	*-.020*	*.014*	*.000*	.213
COW3	.425	.791	.195	.428	*-.045*	*.017*	**.788**	*-.004*	*-.017*	*-.022*	.055	*-.013*	.190
ω		**.884**					**.888**						
PAT1	.375	.551	.555	.344	*-.062*	-.073	.078	**.557**	*.074*	*.024*	*.011*	*.006*	.550
PAT2	.494	.523	.483	.478	-.111	-.083	*.044*	**.510**	*.059*	.075	*.034*	*.008*	.480
PAT3	.497	.280	.675	.509	*.105*	*.014*	-.094	**.335**	*-.038*	*-.044*	*-.080*	*.036*	.598
ω		**.517**						**.547**					
PRO1	.615	.200	.581	.532	*.077*	*-.014*	*.050*	.232	**.314**	*.082*	*.092*	*.042*	.539
PRO2	.661	.529	.283	.678	*-.038*	-.058	*-.036*	*.018*	**.493**	*.018*	*.018*	-.088	.282
PRO3	.573	.489	.432	.588	*-.055*	*-.025*	*-.005*	*-.050*	**.464**	.167	*-.044*	-.066	.399
ω		**.534**							**.570**				
WOR1	.466	.539	.493	.396	*.040*	*-.018*	*-.019*	.145	*.060*	**.563**	*.036*	.115	.484
WOR2	.485	.508	.507	.455	*.035*	*-.052*	*-.036*	*.014*	*.062*	**.472**	*.034*	.117	.546
WOR3	.331	.572	.564	.365	-.157	*-.041*	-.107	*-.091*	*.086*	**.572**	*-.052*	.176	.453
ω		**.626**								**.635**			
TAS1	.639	.470	.370	.594	*.040*	*-.025*	.121	*.028*	*.058*	*.050*	**.772**	*.007*	*.028*
TAS2	.669	.591	.203	.743	-.095	-.103	*-.025*	*-.013*	*-.022*	*.001*	**.351**	-.106	.292
TAS3	.526	.370	.586	.645	*-.038*	*-.044*	*-.054*	*-.101*	*-.102*	-.164	***.197***	-.102	.481
ω		**.639**									**.685**		
CAR1	.177	.930	.105	.146	*.051*	*.009*	*.026*	*.009*	*.025*	*.076*	*-.005*	**.914**	*.134*
CAR2	.136	.703	.487	.152	*.005*	*.052*	-.070	*-.056*	*-.105*	.156	*-.041*	**.708**	.427
CAR3	.195	.271	.889	.186	*-.062*	-.105	*.006*	.187	*-.030*	.150	*-.067*	**.272**	.813
ω	**.933**	**.710**		**.939**								**.723**	

Note. ω = omega coefficient of composite reliability (reported in bold); G-factor refers to the global factor estimated as part of bifactor models; target B-factor ESEM factor loadings on the various specific factors are indicated in bold; non-significant parameters ($p \geq .05$) are indicated in italics.

Table 3

Tests of Convergent Validity of Ratings on the Workplace Affective Commitment Multidimensional Questionnaire – Short (WACMQ-S)

	Combined Sample Intentions to Leave			Sample 1 (English) OCBI			Sample 1 (English) OCBO			Sample 2 (French) In-role performance					
Predictors	b	s.e.	β	b	s.e.	β	b	s.e.	β	b	s.e.	β			
Global AC	-.913	.084**	-.672	.336	.069**	.302	.922	.100**	.594	.330	.083**	.282			
Specific AC Organization	-.741	.126**	-.427	.000	.065	.000	.722	.093**	.465	.157	.090	.134			
Specific AC Supervisor	-.443	.083**	-.254	-.107	.049*	-.096	.014	.064	.009	-.010	.055	-.009			
Specific AC Coworkers	-.101	.070	-.063	.166	.055**	.149	-.088	.057	-.056	-.039	.057	-.033			
Specific AC Patients	-.001	.137	-.001	.215	.073**	.193	.084	.097	.054	.457	.097**	.391			
Specific AC Profession	-.439	.089**	-.300	-.081	.100	-.073	.051	.094	.033	-.023	.089	-.020			
Specific AC Work	.116	.113	.082	.093	.071	.083	.092	.071	.059	.083	.080	.071			
Specific AC Tasks	-.372	.110**	-.232	-.078	.062	-.070	-.091	.069	-.058	.031	.095	.027			
Specific AC Career	.054	.057	.038	.142	.047**	.128	.070	.075	.045	.118	.046**	.101			
	Sample 2 (French) OCB-Organization			Sample 2 (French) OCB-Supervisor			Sample 2 (French) OCB-Coworkers			Sample 2 (French) OCB-Patients			Sample 2 (French) OCB-Tasks		
Predictors	b	s.e.	β	b	s.e.	β	b	s.e.	β	b	s.e.	β	b	s.e.	β
Global AC	.118	.053*	.114	.143	.048**	.139	.160	.061**	.154	.490	.079**	.420	.298	.067*	.268
Specific AC Organization	.136	.059*	.131	.104	.060	.101	.042	.070	.040	.159	.083	.137	.154	.074*	.138
Specific AC Supervisor	.027	.050	.026	.070	.050	.068	-.035	.054	-.034	-.059	.059	-.050	.044	.058	.040
Specific AC Coworkers	.002	.049	.002	.014	.048	.014	.099	.032**	.096	.096	.062	.082	-.060	.054	-.054
Specific AC Patients	.055	.061	.053	.078	.054	.076	.101	.074	.098	.282	.081**	.241	.223	.085**	.201
Specific AC Profession	.062	.074	.060	.081	.066	.079	.086	.075	.083	-.060	.087	-.051	.024	.092	.021
Specific AC Work	.144	.083	.140	.041	.066	.040	.051	.108	.049	-.037	.095	-.031	-.001	.103	-.001
Specific AC Tasks	.034	.095	.033	.018	.081	.017	.049	.115	.048	-.038	.116	-.033	.096	.122	.086
Specific AC Career	.099	.042*	.096	.064	.045	.062	.109	.043**	.105	-.009	.053	-.008	.233	.050**	.210

Note. AC = affective commitment; OCB = organizational citizenship behaviors; b = unstandardized regression coefficients; s.e.= standard error of the coefficient; β = standardized regression coefficient; * $p < .05$; ** $p < .01$.

Online Supplements for:

The Short Form of the Workplace Affective Commitment Multidimensional Questionnaire (WACMQ-S): A Bifactor-ESEM Approach among Healthcare Professionals

Authors' note:

These online technical appendices are to be posted on the journal website and hot-linked to the manuscript. If the journal does not offer this possibility, these materials can alternatively be posted on one of our personal websites (we will adjust the in-text reference upon acceptance).

We would also be happy to have some of these materials brought back into the main manuscript, or included as published appendices if you deem it useful. We developed these materials to provide additional technical information and to keep the main manuscript from becoming needlessly long.

Table S1

Goodness-Of-Fit Statistics of the Measurement Models Including One Less Factor (Merging Commitment to the Tasks and Professions) Estimated in Both Samples

Model	**χ^2**	**df**	**CFI**	**TLI**	**RMSEA**	**90% CI**	**$\Delta\chi^2$**	**Δdf**	**ΔCFI**	**ΔTLI**	**ΔRMSEA**
Sample 1											
CFA	831.667*	231	.907	.888	.062	[.058; .067]	160.889*	7	-.029	-.033	+.010
Bifactor-CFA	798.176*	228	.911	.893	.061	[.056; .065]	CBC	0	-.012	-.014	+.004
ESEM	363.876*	129	.963	.922	.052	[.046; .058]	130.789*	17	-.021	-.038	+.015
Bifactor-ESEM	217.126*	112	.984	.960	.037	[.030; .045]	52.477*	16	-.006	-.011	+.006
Sample 2											
CFA	704.301*	231	.919	.904	.053	[.048; .057]	157.752*	7	-.028	-.031	+.010
Bifactor-CFA	649.656*	228	.928	.913	.050	[.046; .055]	CBC	0	-.010	-.012	+.004
ESEM	365.077*	129	.960	.914	.050	[.044; .056]	78.152*	17	-.013	-.019	+.006
Bifactor-ESEM	270.876*	112	.973	.933	.044	[.037; .051]	58.699*	16	-.008	-.011	+.004

Note. CFA = confirmatory factor analytic model; ESEM = exploratory structural equation model; χ^2 = robust chi square test of exact fit; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = RMSEA 90% confidence interval; Δ = change in fit indices relative to the matching model reported in Table 1 of the main manuscript in which separate factors were estimated for commitment to tasks and profession; CBC: the robust chi square difference test could not be calculated as both models had the same numbers of degrees of freedom (in bifactor-CFA models, eliminating one factor while reallocating the items to another factor dimply result in the same number of degrees of freedom due to the orthogonality of the model); ESEM models were estimated using confirmatory target oblique rotation; bifactor-ESEM models were estimated using confirmatory bifactor target orthogonal rotation; * $p < .01$.

Table S2

Standardized Factor Loadings (λ) and Item Uniquenesses from the Confirmatory Factor Analyses (CFA) and Exploratory Structural Equation Modeling (ESEM) Solutions for Sample 1 (English-Speaking)

	CFA λ	Uniqueness	ESEM Organization (λ)	Supervisor (λ)	Coworkers (λ)	Patients (λ)	Profession (λ)	Work (λ)	Tasks (λ)	Career (λ)	Uniqueness
ORG1	.865	.251	**.860**	*.012*	*.020*	*.041*	*.024*	-*.030*	-*.004*	-*.002*	.210
ORG2	.826	.318	**.730**	*.022*	.053	*.043*	-*.045*	.232	*.020*	*.022*	.283
ORG3	.792	.372	**.679**	.068	*.034*	-.094	.128	-.110	.095	*.017*	.343
ω	**.868**		**.860**								
SUP1	.882	.222	.111	**.846**	-*.033*	*.019*	*.006*	-.067	-*.010*	-*.019*	.203
SUP2	.947	.104	*.006*	**.936**	*.020*	*.022*	-*.044*	.086	*.000*	-*.015*	.103
SUP3	.893	.202	-.107	**.941**	*.027*	-*.004*	*.029*	-*.015*	-*.003*	*.027*	.183
ω	**.933**			**.938**							
COW1	.873	.238	*.031*	-*.028*	**.852**	*.046*	*.033*	-*.067*	*.000*	*.007*	.235
COW2	.889	.210	.080	.044	**.838**	-*.028*	*.017*	*.022*	*.003*	*.005*	.215
COW3	.883	.220	-.058	*.010*	**.915**	-*.033*	-*.014*	*.014*	*.028*	-*.006*	.190
ω	**.913**				**.914**						
PAT1	.607	.632	-*.063*	*.008*	*.065*	**.672**	*.054*	-*.007*	-*.038*	-*.003*	.531
PAT2	.740	.453	-*.093*	*.023*	*.037*	**.601**	*.073*	*.058*	.127	*.004*	.488
PAT3	.566	.680	.236	*.066*	-.096	**.436**	*.069*	-*.044*	*.055*	*.054*	.631
ω	**.675**					**.639**					
PRO1	.654	.573	*.090*	*.005*	*.051*	.256	**.364**	*.049*	*.042*	*.056*	.562
PRO2	.821	.326	*.021*	-*.007*	-*.008*	*.046*	**.769**	-*.034*	*.084*	-*.014*	.304
PRO3	.738	.455	-*.008*	*.019*	*.043*	-*.066*	**.776**	.130	-*.067*	-*.034*	.375
ω	**.783**						**.746**				
WOR1	.701	.508	.088	*.020*	*.016*	.116	-*.048*	**.693**	*.000*	-*.028*	.459
WOR2	.705	.503	.128	-*.024*	*.017*	-*.006*	*.074*	**.568**	*.048*	*.023*	.543
WOR3	.653	.573	-.113	*.040*	-*.053*	-.121	.181	**.598**	*.052*	*.106*	.504
ω	**.728**							**.696**			
TAS1	.803	.355	-*.004*	-*.009*	.106	*.020*	-*.076*	*.076*	**.756**	*.035*	.363
TAS2	.874	.237	-*.047*	-*.011*	-*.040*	*.024*	*.017*	*.036*	**.914**	-*.029*	.186
TAS3	.653	.574	.111	*.026*	-*.022*	-*.014*	*.077*	-.109	**.591**	-*.020*	.552
ω	**.823**								**.823**		
CAR1	.844	.288	*.011*	-*.029*	*.040*	-*.007*	*.029*	-*.067*	-*.042*	**.919**	*.198*
CAR2	.800	.361	*.002*	*.053*	-.054	-*.062*	-*.068*	*.049*	*.044*	**.752**	*.405*
CAR3	.323	.895	-*.030*	-*.070*	*.029*	.218	*.006*	*.118*	-*.034*	**.263**	.822
ω	**.715**									**.724**	

Note. ω = omega coefficient of composite reliability (reported in bold); target ESEM factor loadings are indicated in bold; non-significant parameters ($p \geq .05$) are indicated in italics.

Table S3

Standardized Factor Loadings (λ) and Item Uniquenesses from the Confirmatory Factor Analyses (CFA) and Exploratory Structural Equation Modeling (ESEM) Solutions for Sample 2 (French-Speaking).

	CFA λ	Uniqueness	ESEM Organization (λ)	Supervisor (λ)	Coworkers (λ)	Patients (λ)	Profession (λ)	Work (λ)	Tasks (λ)	Career (λ)	Uniqueness
ORG1	.743	.449	**.785**	*.029*	*.005*	*.065*	*.069*	*-.038*	*-.054*	*.000*	.329
ORG2	.802	.357	**.581**	.086	*.010*	*-.057*	*.002*	.198	*.068*	.107	.384
ORG3	.642	.588	**.519**	*-.021*	*.076*	*.018*	*-.069*	*.052*	.164	*-.044*	.581
ω	**.774**		**.733**								
SUP1	.765	.415	.173	**.720**	*-.010*	*.024*	*.043*	*-.072*	*-.028*	*-.046*	.376
SUP2	.933	.130	*-.015*	**.909**	*.021*	*-.014*	*-.020*	*.043*	*.020*	*-.003*	.146
SUP3	.844	.287	-.103	**.898**	*-.004*	*-.002*	*-.011*	*-.001*	*.010*	*.041*	.255
ω	**.886**			**.892**							
COW1	.797	.365	.111	*-.002*	**.788**	*.007*	*.004*	*-.034*	*-.053*	*-.035*	.348
COW2	.878	.229	*-.042*	*.033*	**.821**	*.000*	*.022*	*.022*	*.057*	*.031*	.253
COW3	.822	.325	*-.051*	*-.023*	**.891**	*-.019*	*-.015*	*.004*	*-.010*	*-.004*	.280
ω	**.872**				**.876**						
PAT1	.646	.582	*.020*	*.007*	*.036*	**.692**	*.082*	*-.034*	*-.067*	*-.014*	.482
PAT2	.666	.556	*-.024*	.093	*.037*	**.546**	*-.034*	*.000*	*.142*	*.054*	.581
PAT3	.679	.538	*.045*	*-.058*	*-.041*	**.573**	*.057*	*.055*	*.065*	*-.006*	.575
ω	**.703**					**.667**					
PRO1	.720	.481	.158	*-.013*	*.063*	.224	**.456**	*-.045*	*.039*	*.032*	.458
PRO2	.792	.373	*-.058*	*.009*	*-.003*	*.019*	**.741**	*.025*	*.076*	*.048*	.368
PRO3	.762	.420	*-.042*	*.019*	*.004*	-.084	**.832**	*.098*	*-.008*	*-.047*	.321
ω	**.802**						**.782**				
WOR1	.695	.518	*.099*	.077	*.010*	*.072*	*.121*	**.543**	*-.001*	-.090	.515
WOR2	.687	.528	*.056*	*-.019*	*.004*	*.073*	*.025*	**.590**	*.023*	*.072*	.523
WOR3	.710	.496	*.054*	*-.014*	*.019*	-.100	*.061*	**.660**	*.053*	*.073*	.443
ω	**.739**							**.685**			
TAS1	.844	.288	*.015*	*.025*	*.012*	*.035*	*.016*	*.038*	**.782**	*-.006*	.274
TAS2	.834	.305	*-.002*	*.003*	*.065*	*.034*	*.081*	*.021*	**.704**	*.031*	.326
TAS3	.523	.726	*.094*	*.024*	*-.056*	*.002*	*.011*	*-.046*	**.509**	*-.060*	.699
ω	**.786**								**.754**		
CAR1	.776	.399	*.034*	*-.010*	*-.018*	*-.029*	*-.077*	*-.028*	*.040*	**.811**	.359
CAR2	.921	.152	*.031*	*.005*	*.008*	*-.019*	.107	*-.059*	*-.033*	**.919**	*.173*
CAR3	.368	.865	*-.103*	*.026*	*.015*	.189	*-.102*	.285	*-.076*	**.265**	.787
ω	**.751**									**.751**	

Note. ω = omega coefficient of composite reliability (reported in bold); target ESEM factor loadings are indicated in bold; non-significant parameters ($p \geq .05$) are indicated in italics.

Table S4

Standardized Factor Correlations from the Confirmatory Factor Analyses (CFA: Above Diagonal) and Exploratory Structural Equation Modeling (ESEM: Under Diagonal) Solutions for both Samples

	Organization	Supervisor	Coworkers	Patients	Profession	Work	Tasks	Career
Sample 1								
Organization		.574**	.424**	.423**	.575**	.387**	.578**	.186**
Supervisor	.532**		.308**	.224**	.331**	.227**	.312**	.126**
Coworkers	.331**	.271**		.391**	.418**	.214**	.478**	.069
Patients	.272**	.106**	.308**		.638**	.481**	.563**	.146**
Profession	.451**	.296**	.346**	.427**		.615**	.693**	.074
Work	.189**	.122*	.144*	.331**	.458**		.475**	.412**
Tasks	.513**	.308**	.444**	.401**	.622**	.337**		.052
Career	.166**	.121*	.075	.135*	.079	.400**	.072	
	Organization	Supervisor	Coworkers	Patients	Profession	Work	Tasks	Career
Sample 2								
Organization		.539**	.458**	.560**	.619**	.639**	.737**	.266**
Supervisor	.457**		.445**	.282**	.343**	.374**	.501**	.193**
Coworkers	.394**	.428**		.383**	.453**	.301**	.508**	.093*
Patients	.442**	.211**	.319**		.650**	.437**	.588**	.154**
Profession	.486**	.296**	.400**	.512**		.683**	.749**	.170**
Work	.366**	.274**	.189**	.259**	.511**		.580**	.416**
Tasks	.635**	.473**	.457**	.438**	.648**	.395**		.158**
Career	.142**	.177**	.067	.103	.094	.408**	.116*	

Note. * $p \leq .05$; ** $p \leq .01$.

Table S5

Standardized Factor Loadings (λ) and Item Uniquenesses from the Bifactor Confirmatory Factor Analyses (CFA) and Bifactor Exploratory Structural Equation Modeling (ESEM) Solutions for Sample 2 (French-Speaking)

	CFA			ESEM									
	G-Factor (λ)	S-Factor (λ)	Uniqueness	G-Factor (λ)	Org. (λ)	Sup. (λ)	Cowork. (λ)	Patients (λ)	Prof. (λ)	Work (λ)	Tasks (λ)	Career (λ)	Uniqueness
ORG1	.634	.436	.408	.607	**.540**	*.057*	*.009*	.077	*.015*	*-.024*	*.036*	*-.030*	.328
ORG2	.663	.390	.409	.689	**.340**	*.068*	*-.048*	*-.087*	-.084	*.098*	*-.037*	.110	.365
ORG3	.538	.373	.571	.552	**.318**	*-.003*	*.031*	*-.011*	*-.093*	*-.031*	*.057*	.064	.576
Ω		**.509**			**.531**								
SUP1	.498	.586	.408	.483	.137	**.599**	*.055*	*.003*	*-.018*	*-.062*	*.014*	*-.045*	.380
SUP2	.517	.762	.151	.541	*-.017*	**.742**	.065	-.074	-.085	*-.013*	*-.036*	*.022*	.138
SUP3	.410	.760	.254	.399	*-.022*	**.765**	.080	*-.027*	*-.018*	*.027*	*.057*	.071	.239
Ω		**.845**				**.854**							
COW1	.454	.655	.365	.421	.106	.085	**.674**	*.038*	*.028*	*-.030*	*.034*	-.060	.342
COW2	.533	.679	.255	.569	-.096	*.051*	**.675**	*-.036*	*-.045*	-.079	*-.066*	*-.005*	.196
COW3	.403	.748	.279	.387	*-.011*	.069	**.743**	*.007*	*.019*	*-.007*	*.039*	*-.024*	.291
Ω		**.828**					**.841**						
PAT1	.434	.482	.579	.373	*.079*	*-.017*	*.069*	**.634**	.142	*.020*	*.058*	*-.019*	.424
PAT2	.496	.422	.576	.511	*-.046*	*.013*	*.008*	**.391**	*-.038*	*-.082*	*-.005*	*.034*	.574
PAT3	.449	.536	.510	.506	*-.053*	-.154	-.091	**.440**	*-.021*	*-.063*	*-.102*	*-.029*	.500
Ω		**.555**						**.589**					
PRO1	.668	.231	.501	.599	.130	*-.033*	.073	.227	**.343**	*.024*	.109	*-.014*	.436
PRO2	.625	.571	.284	.639	-.099	-.081	*-.025*	*.021*	**.464**	*.046*	*.019*	*-.010*	.356
PRO3	.597	.482	.411	.618	-.098	-.079	*-.020*	*-.043*	**.496**	.113	*-.016*	-.088	.333
ω		**.580**							**.601**				
WOR1	.565	.396	.524	.572	*.005*	*.007*	*-.056*	*.008*	*.070*	**.377**	*-.080*	*-.003*	.516
WOR2	.469	.508	.522	.470	*.012*	*-.037*	*-.058*	*.023*	*.049*	**.470**	*-.010*	.172	.521
WOR3	.459	.570	.464	.470	*.006*	*-.022*	*-.056*	-.113	*.066*	**.544**	*.004*	.184	.428
ω		**.590**								**.569**			
TAS1	.737	.430	.272	.751	*-.013*	*.016*	*-.007*	*-.021*	*.002*	*-.038*	**.381**	-.055	.286
TAS2	.730	.380	.323	.720	*-.010*	*.008*	*.046*	*-.004*	*.059*	*-.015*	**.403**	*-.020*	.312
TAS3	.430	.314	.716	.417	*.096*	*.046*	*-.025*	*-.001*	*.039*	*-.035*	**.351**	-.094	.680
ω		**.491**									**.502**		
CAR1	.134	.788	.361	.167	*-.001*	*.010*	-.056	*-.058*	-.104	*.028*	*-.045*	**.782**	.340
CAR2	.255	.865	.186	.250	*.022*	*.032*	*-.017*	*-.014*	*.041*	.080	*-.020*	**.861**	*.186*
CAR3	.144	.337	.866	.123	*-.050*	*.025*	*-.006*	.139	*-.021*	.271	*-.028*	**.327**	.780
ω	**.932**	**.737**		**.936**								**.748**	

Note. ω = omega coefficient of composite reliability (reported in bold); G-Factor refers to the global factor estimated as part of bifactor models; target B-factor ESEM factor loadings on the various specific factors are indicated in bold; non-significant parameters ($p \geq .05$) are indicated in italics.

Table S6

Item-Level Variance Components for the Different Measurement Models in the English Sample

	CFA		Bifactor-CFA				ESEM				Bifactor-ESEM				
	σ^2_{error}	$\sigma^2_{true(Total)}$	σ^2_{error}	$\sigma^2_{true(G\text{-}Factor)}$	$\sigma^2_{true(S\text{-}Factor)}$	$\sigma^2_{true(Total)}$	σ^2_{error}	$\sigma^2_{true(Factor)}$	$\sigma^2_{true(cross\text{-}loading)}$	$\sigma^2_{true(Total)}$	σ^2_{error}	$\sigma^2_{true(G\text{-}Factor)}$	$\sigma^2_{true(S\text{-}Factor)}$	$\sigma^2_{true(cross\text{-}loading)}$	$\sigma^2_{true(Total)}$
ORG1	.251	.748	.173	.377	.450	.827	.210	.740	.004	.743	.223	.394	.354	.028	.777
ORG2	.318	.682	.331	.469	.200	.669	.283	.533	.062	.595	.267	.393	.293	.046	.732
ORG3	.372	.627	.401	.336	.262	.599	.343	.461	.052	.513	.319	.410	.194	.077	.681
SUP1	.222	.778	.226	.175	.599	.774	.203	.716	.019	.734	.205	.190	.567	.038	.795
SUP2	.104	.897	.107	.228	.664	.892	.103	.876	.010	.887	.098	.212	.674	.016	.902
SUP3	.202	.797	.188	.152	.659	.811	.183	.885	.014	.899	.183	.170	.640	.008	.817
COW1	.238	.762	.242	.217	.542	.759	.235	.726	.009	.735	.235	.206	.548	.012	.765
COW2	.210	.790	.219	.279	.503	.781	.215	.702	.010	.712	.213	.263	.516	.008	.786
COW3	.220	.780	.195	.181	.626	.806	.190	.837	.006	.843	.190	.183	.621	.006	.810
PAT1	.632	.368	.555	.141	.304	.444	.531	.452	.013	.464	.550	.118	.310	.021	.450
PAT2	.453	.548	.483	.244	.274	.518	.488	.361	.035	.397	.480	.228	.260	.031	.520
PAT3	.680	.320	.675	.247	.078	.325	.631	.190	.082	.272	.598	.259	.112	.031	.402
PRO1	.573	.428	.581	.378	.040	.418	.562	.132	.084	.216	.539	.283	.099	.079	.461
PRO2	.326	.674	.283	.437	.280	.717	.304	.591	.011	.602	.282	.460	.243	.015	.718
PRO3	.455	.545	.432	.328	.239	.567	.375	.602	.029	.631	.399	.346	.215	.040	.601
WOR1	.508	.491	.493	.217	.291	.508	.459	.480	.025	.505	.484	.157	.317	.041	.515
WOR2	.503	.497	.507	.235	.258	.493	.543	.323	.026	.348	.546	.207	.223	.024	.454
WOR3	.573	.426	.564	.110	.327	.437	.504	.358	.079	.436	.453	.133	.327	.087	.548
TAS1	.355	.645	.370	.408	.221	.629	.363	.572	.025	.596	*.028*	.353	.596	.024	.972
TAS2	.237	.764	.203	.448	.349	.797	.186	.835	.007	.842	.292	.552	.123	.032	.707
TAS3	.574	.426	.586	.277	.137	.414	.552	.349	.032	.381	.481	.416	.039	.064	.519
CAR1	.288	.712	.105	.031	.865	.896	*.198*	.845	.010	.854	*.134*	.021	.835	.010	.867
CAR2	.361	.640	.487	.018	.494	.513	*.405*	.566	.019	.584	.427	.023	.501	.048	.572
CAR3	.895	.104	.889	.038	.073	.111	.822	.069	.069	.138	.813	.035	.074	.078	.186

Note. CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; G-Factor and S-Factors refers to the global and specific factors estimated as part of bifactor models; σ^2_{error}: proportion of the variance in item rating due to error variance; σ^2_{true}: proportion of the variance in item rating due to true score variance.

Table S7

Item-Level Variance Components for the Different Measurement Models in the French Sample

	CFA		Bifactor-CFA				ESEM				Bifactor-ESEM				
	σ^2_{error}	$\sigma^2_{true(Total)}$	σ^2_{error}	$\sigma^2_{true(G\text{-}Factor)}$	$\sigma^2_{true(S\text{-}Factor)}$	$\sigma^2_{true(Total)}$	σ^2_{error}	$\sigma^2_{true(Factor)}$	$\sigma^2_{true(cross\text{-}loading)}$	$\sigma^2_{true(Total)}$	σ^2_{error}	$\sigma^2_{true(G\text{-}Factor)}$	$\sigma^2_{true(S\text{-}Factor)}$	$\sigma^2_{true(cross\text{-}loading)}$	$\sigma^2_{true(Total)}$
ORG1	.449	.552	.408	.402	.190	.592	.329	.616	.014	.630	.328	.368	.292	.012	.672
ORG2	.357	.643	.409	.440	.152	.592	.384	.338	.066	.404	.365	.475	.116	.045	.635
ORG3	.588	.412	.571	.289	.139	.429	.581	.269	.043	.312	.576	.305	.101	.018	.424
SUP1	.415	.585	.408	.248	.343	.591	.376	.518	.041	.559	.380	.233	.359	.028	.620
SUP2	.130	.870	.151	.267	.581	.848	.146	.826	.004	.830	.138	.293	.551	.019	.862
SUP3	.287	.712	.254	.168	.578	.746	.255	.806	.013	.819	.239	.159	.585	.017	.761
COW1	.365	.635	.365	.206	.429	.635	.348	.621	.018	.639	.342	.177	.454	.026	.658
COW2	.229	.771	.255	.284	.461	.745	.253	.674	.008	.682	.196	.324	.456	.026	.805
COW3	.325	.676	.279	.162	.560	.722	.280	.794	.004	.798	.291	.150	.552	.007	.709
PAT1	.582	.417	.579	.188	.232	.421	.482	.479	.014	.493	.424	.139	.402	.036	.577
PAT2	.556	.444	.576	.246	.178	.424	.581	.298	.035	.333	.574	.261	.153	.012	.426
PAT3	.538	.461	.510	.202	.287	.489	.575	.328	.018	.346	.500	.256	.194	.050	.500
PRO1	.481	.518	.501	.446	.053	.500	.458	.208	.084	.292	.436	.359	.118	.088	.564
PRO2	.373	.627	.284	.391	.326	.717	.368	.549	.013	.562	.356	.408	.215	.020	.644
PRO3	.420	.581	.411	.356	.232	.589	.321	.692	.021	.713	.333	.382	.246	.039	.667
WOR1	.518	.483	.524	.319	.157	.476	.515	.295	.044	.339	.516	.327	.142	.015	.484
WOR2	.528	.472	.522	.220	.258	.478	.523	.348	.015	.363	.521	.221	.221	.037	.479
WOR3	.496	.504	.464	.211	.325	.536	.443	.436	.025	.461	.428	.221	.296	.055	.571
TAS1	.288	.712	.272	.543	.185	.728	.274	.612	.004	.615	.286	.564	.145	.005	.715
TAS2	.305	.696	.323	.533	.144	.677	.326	.496	.013	.509	.312	.518	.162	.006	.687
TAS3	.726	.274	.716	.185	.099	.283	.699	.259	.018	.277	.680	.174	.123	.024	.321
CAR1	.399	.602	.361	.018	.621	.639	.359	.658	.011	.668	.340	.028	.612	.020	.660
CAR2	.152	.848	.186	.065	.748	.813	*.173*	.845	.017	.862	*.186*	.063	.741	.010	.814
CAR3	.865	.135	.866	.021	.114	.134	.787	.070	.145	.215	.780	.015	.107	.097	.219

Note. CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; G-Factor and S-Factors refers to the global and specific factors estimated as part of bifactor models; σ^2_{error}: proportion of the variance in item rating due to error variance; σ^2_{true}: proportion of the variance in item rating due to true score variance.

Table S8

Goodness-Of-Fit Statistics of the Sample-Specific Measurement Invariance Models

Model	**χ^2**	**df**	**CFI**	**TLI**	**RMSEA**	**90% CI**	**CM**	**$\Delta\chi^2$**	**Δdf**	**ΔCFI**	**ΔTLI**	**ΔRMSEA**
Employer Invariance (Sample 1)												
M1. Configural invariance	572.188*	192	.935	.913	.082	[.075; .090]	---	---	---	---	---	---
M2. Weak invariance	502.772*	327	.970	.949	.043	[.035; .050]	M1	116.439	135	+.035	+.036	-.039
M3. Strong invariance	486.780*	342	.975	.960	.038	[.030; .046]	M2	6.684	15	+.005	+.011	-.005
M4. Strict invariance	500.196*	366	.977	.965	.035	[.027; .043]	M3	22.809	24	+.002	+.005	-.003
M5. Latent v/c invariance	530.828*	411	.979	.972	.032	[.023; .039]	M4	37.354	45	+.002	+.007	-.003
M6. Latent means invariance	561.667*	420	.976	.968	.034	[.026; .041]	M5	59.694*	9	-.003	-.004	+.002
Profession Invariance (Sample 2)												
M1. Configural invariance	307.153*	192	.978	.938	.044	[.034; .053]	---	---	---	---	---	---
M2. Weak invariance	455.371*	327	.976	.959	.035	[.027; .043]	M1	161.797	135	-.002	+.021	-.009
M3. Strong invariance	479.802*	342	.974	.958	.036	[.028; .043]	M2	25.357	15	-.002	-.001	+.001
M4. Strict invariance	778.162*	366	.923	.883	.060	[.054; .066]	M3	213.249*	24	-.051	-.075	+.024
M4’. Partial strict invariance	525.845*	359	.969	.952	.039	[.031; .046]	M3	32.400	17	-.005	-.006	+.003
M5. Latent v/c invariance	701.600*	404	.944	.924	.049	[.043; .055]	M4’	158.107*	45	-.030	-.034	+.013
M6. Latent means invariance	658.722*	368	.945	.918	.050	[.044; .056]	M4’	561.536*	9	-.029	-.040	+.014
Longitudinal Invariance (Sample 2)												
M1. Configural invariance	1060.160*	663	.962	.935	.029	[.025; .032]	---	---	---	---	---	---
M2. Weak invariance	1182.086*	798	.963	.948	.026	[.022; .029]	M1	147.741	135	+.001	+.013	-.003
M3. Strong invariance	1200.047*	813	.963	.948	.025	[.022; .028]	M2	17.046	15	.000	.000	-.001
M4. Strict invariance	1226.705*	837	.962	.949	.025	[.022; .028]	M3	29.623	24	-.001	+.001	.000
M5. Latent v/c invariance	1285.193*	882	.961	.950	.025	[.022; .028]	M4	60.703	45	-.001	+.001	.000
M6. Latent means invariance	1311.239*	891	.959	.949	.025	[.022; .028]	M5	27.435*	9	-.002	-.001	.000

Note. CFA = confirmatory factor analytic model; ESEM = exploratory structural equation model; χ^2 = robust chi square test of exact fit; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = RMSEA 90% confidence interval; CM = comparison model; Δ = change in fit indices relative to the CM; v/c = latent variances and covariances; ESEM models were estimated using confirmatory target oblique rotation; bifactor-ESEM models were estimated using confirmatory bifactor target orthogonal rotation; * $p < .01$.

Table S9

Goodness-Of-Fit Statistics of the Models Including an Additional Outcome Factor Representing Intentions to Leave the Organization

Model	**χ^2**	**df**	**CFI**	**TLI**	**RMSEA**	**90% CI**	**CM**	**$\Delta\chi^2$**	**Δdf**	**ΔCFI**	**ΔTLI**	**ΔRMSEA**
Sample invariance of the intentions to leave factor												
M1. Configural invariance	985.398*	491	.966	.951	.038	[.034; .041]	---	---	---	---	---	---
M2. Weak invariance	995.136*	493	.965	.951	.038	[.035; .041]	M1	8.452	2	-.001	.000	.000
M3. Strong invariance	998.250*	495	.965	.951	.038	[.035; .041]	M2	3.083	2	.000	.000	.000
M4. Strict invariance	1062.719*	498	.961	.945	.040	[.037; .043]	M3	29.407*	3	-.004	-.006	+.002
M5. Latent variance invariance	1057.266*	499	.962	.946	.040	[.037; .043]	M4	.445	1	+.001	+.001	.000
M6. Latent mean invariance	1056.441*	500	.962	.946	.040	[.036; .043]	M5	.078	1	.000	.000	.000
M7. Predictive invariance	1090.029*	509	.960	.945	.040	[.037; .044]	M6	67.138*	9	-.002	-.001	.000

Note. CFA = confirmatory factor analytic model; ESEM = exploratory structural equation model; χ^2 = robust chi square test of exact fit; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = RMSEA 90% confidence interval; CM = comparison model; Δ = change in fit indices relative to the CM; ESEM models were estimated using confirmatory target oblique rotation; bifactor-ESEM models were estimated using confirmatory bifactor target orthogonal rotation; * p < .01.