Profiles of Dual Commitment to the Occupation and Organization:

Relations to Wellbeing and Turnover Intentions

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Abstract

Work-relevant commitments have important implications for employee behavior and well-being, but the connections are complicated by the fact that commitments can be characterized by different mindsets and be directed at different targets. Recent developments in person-centered analytic strategies (e.g., latent profile analysis) have helped to address these complexities, particularly as they pertain to the interactions among the mindset of affective, normative, and continuance commitment to the organization. In the present study we extend application of the person-centered approach to identify profiles of commitment to two interrelated targets—the organization and occupation—in a sample of 1,096 Hong Kong teachers. We identified seven distinct profiles reflecting both similarities and differences in the nature of the dual commitments across targets, and demonstrated differing patterns of turnover intentions and well-being across the profiles. Implications for commitment theory, future research, and practice are discussed.

Key Words: Organizational commitment; Occupational commitment; Person-centered; Latent profile analyses; Well-being; Turnover

Employee commitment has long been of interest to academics and practitioners because of its implications for retention (Tett & Meyer, 1993), job performance (Riketta, 2002, 2008), and employee health and well-being (Meyer & Maltin, 2010). To date, most research has taken a variable-centered approach to investigate how commitment to a single target, most often the organization, relates to other variables in a Western (North American or European) context. The present study takes a person-centered approach to examine the nature and implications of dual commitments to the organization and occupation among Hong Kong teachers. This approach affords a more holistic perspective to understanding how employees experience their commitments and allows for the detection of potentially complex interactions among variables (e.g., mindsets and/or targets of commitment) that would be difficult or impossible to identify or describe using a variable-centered approach.

This study contributes to commitment theory and research in three important ways. First, it extends the application of a person-centered approach to the study of occupational commitment. To date, most person-centered research has been conducted to investigate how the three commitment mindsets identified by Allen and Meyer (1990; Meyer & Allen, 1991)—emotional attachment (affective commitment: AC), obligation (normative commitment: NC), and perceived cost (continuance commitment: CC)—combine to form *profiles of organizational commitment*, and how these profiles relate to employee behavior and well-being. To our knowledge, this is the first study to apply this approach to the study of occupational commitment. Although seldom considered within person-centered studies, occupational (professional) commitment has also become a focus of study, on its own (e.g., Snape, Lo, & Redman, 2008) and in combination with organizational commitment (e.g., Meyer, Allen, & Smith, 1993), and has been found to relate to both occupation- and organization-relevant behaviors. For example, in their meta-analysis, Lee, Carswell, and Allen (2000) found that occupational commitment predicted intention to remain in the

occupation/profession, but was also positively related to job performance and organizational turnover intention. Interestingly, these relations appear to be greater for professional as opposed to non-professional employees, presumably because the occupational role has meaning beyond the specific job duties (e.g., Lee et al., 2000).

Second, ours is only the second study to investigate profiles involving all three commitment mindsets simultaneously as they pertain to two distinct targets—in this case, the organization and the occupation—and the first to do so with a sample drawn from a single profession. Most multi-target research to date measured only AC (or a related form of commitment) to test for similarity and conflict among commitments. In the one exception of which we are aware, Tsoumbris and Xenikou (2010) used cluster analysis to identify mindset profiles involving the same two targets using a small sample of Greek employees from mixed (professional and non-professional) occupations. Including multiple mindsets as they pertain to different commitment targets is necessary to test more complex theoretical relationships among commitments (e.g., those created by dependencies among targets: Meyer & Allen, 1997). Thus, we extend Tsoumbris and Xenikou's study by using a larger sample of professional employees and applying more advanced latent profile analyses (LPA: Lazarsfeld & Henry, 1968; Muthén, 2002). We also examine how these profiles relate to employees' intention to remain in an organization and occupation, and to their personal well-being.

Finally, we conducted our study using a sample of teachers from Hong Kong. Thus, it represents one of very few applications of a person-centered approach in a non-Western country involving any target of commitment. Therefore, our findings regarding profiles of organizational commitment mindsets serve as a test of the generalizability of previous research conducted in Western countries (e.g., Meyer, Kam, Bremner, & Goldenberg, 2013a; Meyer, Stanley, & Parfyonova, 2012b; Somers, 2009, 2010). By implication, these findings also allow us to draw inferences about the generalizability of our results pertaining to

occupational and dual commitment mindsets.

Theoretical rationale for a person-centered perspective on commitment

According to the three-component model (TCM: Meyer & Allen, 1991; Meyer & Herscovitch, 2001) of commitment, employees can experience varying degrees of AC, NC, and CC to multiple work-relevant targets simultaneously. Therefore understanding the nature and implications of commitment requires analysis of the potentially complex interactions among the mindsets and targets (Johnson, Groff, & Taing, 2009). Considering mindsets alone, AC, NC, and CC can combine in various ways so that, how any one is experienced or relates to other variables will depend on the strength of the others mindsets. For example, Gellatly, Meyer, and Luchak (2006) proposed that NC might be experienced as a *moral imperative* when combined with strong AC, but be experiences as an *indebted obligation* when AC is weak and CC is strong (cf. Meyer & Parfyonova, 2010). Similarly, Meyer (2012b) proposed that CC can be experienced differently depending on the strength of AC and NC. For example, when AC and NC are weak, strong CC might reflect economic costs, whereas when NC is also strong it might reflect social costs. When AC and NC are both strong, CC could reflect the perceived costs of failing to contribute to the attainment of a moral imperative. Finally, even AC might be experienced differently on its own (e.g., self-focused commitment) than when it combines with strong NC (other- or collective-focused commitment).

A similar logic can be applied to the combination of multiple targets of commitment (Morin, Morizot, Boudrias, & Madore, 2011b). For example, Gouldner (1957) proposed that employees can experience varying degrees of commitment to their organizations and occupations. *Cosmopolitans* are more committed to their occupation than the organization whereas *locals* demonstrate the reverse pattern. Of course, employees can also be committed

to both or neither of the two targets, and their efforts are most likely to be directed at the benefiting the target(s) to which they are committed. Things get more complex when multiple targets and mindsets are combined. Meyer and Allen (1997) proposed that *dependencies* can develop among different targets of commitment and have implications for mindsets pertaining to each of these targets. To illustrate, consider two groups of employees, both of whom have a strong desire to continue working in their chosen occupation (i.e., strong occupational AC). The first group also has very positive work experiences and wants to maintain employment in the organization (strong organizational AC). However, the second group has little desire to remain with the organization (weak organizational AC) due, in part, to organizational values that conflict with their occupational values. The first group would be expected to stay in the organization and occupation and perform up to or beyond the standards of both. The second group could be expected to leave the organization to pursue their occupation elsewhere. But what if few other positions are available and/or the individual has limited mobility due to family or community ties? In this case, employees might stay with the organization despite weak AC because of strong CC. As a consequence, they may be more willing to exert effort to meet occupational responsibilities than to meet organization-specific responsibilities. They could also experience some stress due to their conflicting commitments.

Inherent in the foregoing scenarios is the potential for a number of complex interactions among commitment mindsets and targets. These interactions are likely to exceed the power of traditional variable-centered analytic strategies such as moderated multiple regression or structural equation modeling (Meyer, Stanley, & Vandenberg, 2013b; Morin et al., 2011b; Vandenberg & Stanley, 2009). In contrast, a person-centered approach allows for the detection of homogeneous subgroups of employees with qualitatively and quantitatively distinct combinations, or *profiles* (see Morin & Marsh, 2013), of *commitment components*

(we define "component" as a specific mindset-target combination). In the example above, we might detect two subgroups, one with strong AC to both the organization and occupation and one with strong AC to the occupation and strong CC to the organization. Other combinations varying in the strength of AC, NC, and CC to the organization and occupation are also possible. Once detected, these profiles can be compared with regard to other variables considered to be antecedents or consequences. For example, in the present study we compare profiles with regard to intentions to leave the organization, intentions to leave the occupation, and psychological well-being.

Person-centered studies of commitment

At the most basic level, researchers interested in a person-centered approach have compared subgroups of employees defined by midpoint splits on commitment components (Baugh & Roberts, 1994; Carson, Carson, Roe, Birkenmeier, & Philips, 1999; Gellatly, Hunter, Currie, & Irving, 2009; Gellatly et al., 2006; McNally & Irving, 2010; Somers & Birnbaum, 2000). However, this strategy is limited by its reliance on artificially created subgroups that may not exist naturally, and may conceal other potentially important subgroups. Alternative approaches involve the use of cluster analyses or more flexible model-based mixture analyses such as LPA (Magidson & Vermunt, 2001; Marsh, Lüdtke, Trautwein, & Morin, 2009; Morin et al., 2011b) to detect naturally occurring subgroups. We focus primarily on studies using the latter approaches in the following review.

Person-centered analyses of organizational commitment mindsets

There has been a recent surge in person-centered studies of organizational commitment mindsets (e.g., Kam, Morin, Meyer, & Topolnytsky, 2014; Meyer et al., 2013a; Meyer et al., 2012b; Sinclair, Tucker, Wright, & Cullen, 2005; Somers, 2009, 2010; Stanley, Vandenberghe, Vandenberg, & Bentein, 2013; Wasti, 2005). Among studies including all

three mindsets, five profiles have emerged with considerable regularity: *uncommitted* or *weakly committed* (low scores on all three mindsets), *CC-dominant*, *AC-dominant*, *AC/NC-dominant*, and *fully committed* (high scores on all three mindsets). A few other profiles have occasionally been found, including a *CC/NC-dominant* profile, and it is common to see profiles with moderate scores, with or without elevation of specific mindsets. Based on their associations with work outcomes, the *fully committed*, *AC/NC-dominant*, and *AC-dominant* profiles appear to be superior to the others; the *weakly committed* and *CC-dominant* profiles tend to be associated with lowest levels of intention to stay, performance, and well-being. Interestingly, although Meyer and Herscovitch (2001) initially predicted that employees with strong AC and weak NC and CC (i.e., emotionally-committed) would be most likely to remain, perform effectively, and present higher levels of well-being, studies quite consistently find similar and/or more positive outcomes for employees with *fully committed and AC/NC-dominant* profiles, suggesting synergistic effects (e.g., Meyer et al., 2013a; Meyer et al., 2012b; Somers, 2009).

Most of the studies described above were conducted in Western countries. We are unaware of any person-centered studies of commitment conducted in Asia. Therefore, a first objective in the present study is to determine whether organizational commitment profiles similar to those found previously will be identified among Hong Kong teachers.

Person-centered analyses of occupational commitment mindsets

To our knowledge, only one unpublished study has investigated profiles of occupational commitment mindsets, and it included only AC and CC to the nursing profession (Sears, 2010). On two separate occasions, five distinct profiles were identified using LPA: (1) average AC, low CC; (2) low AC, moderate CC; (3) high AC, high CC; (4) average AC, average CC; (5) high AC, low CC. Thus, even without NC, there is evidence for heterogeneity in the ways occupational commitment mindsets combine among professional

employees. Therefore, a second objective of the present study is to investigate the profile structure of occupational commitment involving all three mindsets. This sets the stage for the investigation of dual commitment.

Person-centered analyses of dual commitment mindsets

Research concerning dual organizational and occupational commitment profiles is also limited, and we are aware of only one study that also included the TCM mindsets (Tsoumbris & Xenikou, 2010). A few early studies conducted to investigate Gouldner's (1957) distinction between *cosmopolitan* and *local* employees used a mid-point split approach (e.g., Baugh & Roberts, 1994; Carson et al., 1999; McNally & Irving, 2010; Somers & Birnbaum, 2000). These studies demonstrated that the *dually committed* (strong commitment to both targets) and *local* profiles were associated with more positive work outcomes than the *cosmopolitan* profile. As such, the findings suggest that commitments to the organization and occupation can be compatible or in conflict, and that the negative consequences of conflict are greater for employees who are committed to their occupation but not to the organization.

We were able to locate only two investigations of dual organizational and occupational commitment that used cluster analysis or mixture modeling to assess naturally occurring subgroups (Morin et al., 2011b; Tsoumbris & Xenikou, 2010). Morin et al. (2011b) measured AC to seven targets, including the organization and occupation, among a sample of non-professional employees and identified five profiles. Although these profiles were quite differentiated with regard to levels of AC to several of the targets, levels of AC to the organization and occupation within profiles were very similar. Thus, in contrast to the earlier midpoint-split studies, there was no evidence of groups with strong commitment to one target and weak commitment to the other. However, a critical limitation of Morin et al.'s (2011b) study is that they considered only AC, providing no insights on the impact of NC and CC. Their investigation was also restricted to non-professionals.

Tsoumbris and Xenikou (2010) more specifically investigated dual commitment to the organization and occupation, including measures of AC, NC, and CC to both targets. Using cluster analysis on a small sample of Greek employees from professional and non-professional occupations, Tsoumbris and Xenikou identified four profiles differing according to mindset, but not target (i.e., the mindset configuration within profiles was similar for the organization and occupation). The lack of differentiation between targets is consistent with the findings of Morin et al. (2011b). Furthermore, the mindset configurations included those found in the organizational commitment studies described earlier: *fully committed*, *CC-dominant*, *AC/NC-dominant*, and *weakly committed*. The results also showed that intentions to remain in the organization and occupation, and self-reported citizenship behaviors, were greater for employees with *fully committed* and *AC/NC-dominant* profiles than for those with *CC-dominant* or *weakly committed* profiles.

Although it makes an important contribution, Tsoumbris and Xenikou's (2010) study is limited in several respects, raising questions regarding the generalizability of their findings. First, they included a mix of professional and non-professional employees, which could have diluted a possibly greater differentiation between commitments to both targets as the occupation is known to represent a more meaningful target of commitment for professional employees (Lee et al., 2000). Second, the small sample ($n = 157$) might have restricted the ability to extract a greater number of profiles (i.e., person-centered analyses can become problematic when the within-profile sample size is too small). Finally, Tsoumbris and Xenikou used cluster analysis, which has several disadvantages compared to LPA (e.g., sensitivity to measurement scales and distributions; lack of objective guidelines to determine the number of profiles; more rigid assumptions: see Magidson & Vermunt, 2001; Marsh et al., 2009; Morin et al., 2011b). Therefore, our final objective is to extend Tsoumbris and Xenikou's (2010) study using a larger sample of professional employees and more powerful

model-based LPA.

The present study

To reiterate, our three primary objectives are to investigate (1) the generalizability of

previous findings regarding organizational commitment mindset profiles in an Asian context,

(2) the structure of mindset profiles for occupational commitment, and (3) the structure of

mindset profiles for dual commitment to the organization and occupation. Based on previous

research, we expected that our sample of Hong Kong teachers would be heterogeneous with

regard to organizational, occupational, and dual commitment profiles. Moreover, we expected

that those mindset profiles that have emerged most consistently in previous studies would

also emerge in our sample.

Hypothesis 1 Analyses of organizational, occupational, and dual commitment mindsets will
reveal multiple profiles.

Hypothesis 2 The profiles identified in analyses of organizational, occupational, and dual
commitment mindsets will include: *weakly committed*, *CC-dominant*, *AC-dominant*, *AC/NC-
dominant*, and *fully committed*.

Beyond these basic objectives and hypotheses, there are three additional issues that

require elaboration: relations between the commitment targets, associations with other

variables, and cultural influences. We address each of these in turn.

Relations between targets

As noted earlier, in theory it is possible for commitments to the organization and occupation

to be similar or to conflict (i.e., strong commitment to one and weak commitment to the

other: Gouldner, 1957). Although it was possible to create profile groups with similar or

conflicting commitments using a mid-point split approach (Baugh & Roberts, 1994; Carson

et al., 1999; McNally & Irving, 2010; Somers & Birnbaum, 2000), when Morin et al. (2011b)

used LPA and factor mixture analyses to identify naturally occurring profiles of AC to

multiple targets, they found that the strength of AC to the organization and occupation was similar within all profiles. Similarly, although Meyer and Allen (1997) proposed that dependencies among commitments to the two targets (e.g., having to remain in the occupation to keep working in the organization) can produce a different mindset pattern for organizational and occupational commitment, Tsoumbris and Xenikou (2010) found similar mindset configurations across targets within profiles. In light of these discrepancies, we did not develop hypotheses concerning possible similarity or conflict between mindset profiles across targets. Rather, we left the issue as an open research question.

Links to turnover intentions and well-being

It is critical for applications of person-centered analyses to systematically assess associations between the extracted profiles and covariates (be they correlates, predictors, outcomes, or a combination of those) that might be meaningfully related to the profiles (Marsh et al., 2009; Morin et al., 2011a; Morin et al., 2011b; Muthén, 2003). Demonstrating these associations helps to establish the validity and utility of the extracted profiles. For present purposes, we examined associations with three variables commonly linked to commitment in variable-centered research: intention to leave the organization, intention to leave the occupation, and well-being. Based on commitment theory (Meyer & Herscovitch, 2001; Meyer & Maltin, 2010) and the finding from previous research, we tested the following hypotheses:

Hypothesis 3 Intention to leave the organization will be greatest for employees with low scores on all three organizational commitment mindsets, followed by those with a *CC-dominant* profile. Intention to leave will be weakest for employees who are fully committed to the organization or have an *AC/NC-dominant or AC-dominant profile*.

Hypothesis 4 Intention to leave the occupation will be greatest for employees with low scores on all three occupational commitment mindsets, followed by those with a *CC-dominant* profile. Intention to leave will be weakest for employees who are fully committed to the occupation or have an *AC/NC-dominant or AC-dominant profile*.

Hypothesis 5 Employees will report higher levels of well-being when they are fully committed or have an *AC/NC-dominant* or *AC-dominant* profile to both targets than when they are weakly committed or have a *CC-dominant-profile* for one or both targets.

For purely descriptive purposes, we also examine the degree of association between the dual commitment profiles and key demographic covariates available in this study (school type, gender, age, organizational tenure, occupational tenure). Generally, evidence suggests that relations between such demographic variables and commitment levels (e.g., Meyer et al., 2002) and profiles (Kam et al., 2014; Morin et al., 2010b; Sears, 2010) are weak. Therefore, we did not expect meaningful differences among the profiles.

Cultural influences

Cultures are complex and there are many ways that the culture in Hong Kong differs from that in Western countries where most previous person-centered research has been conducted. The two cultures are most often differentiated with regard to individualism and collectivism (Hofstede, 1980, 2001), with Hong Kong scoring higher on collectivism. In their treatise on culture and commitment, Wasti and Önder (2009) argued that AC is likely to be experienced similarly across cultures, but that NC and CC might be stronger in collectivist countries. In a recent meta-analysis, Meyer et al. (2012a) found that AC strength did not differ meaningfully between studies conducted in Hong Kong and the US. There were too few studies reporting CC and NC in Hong Kong to make comparisons, but studies conducted in China reported higher levels of NC than studies in the US; there was no meaningful difference for CC. Research conducted to examine how cultural values might influence relations between the commitment mindsets and behavior or well-being has yielded mixed results. The few meta-analyses (Fischer & Mansell, 2009; Jaramillo, Mulki, & Marshall, 2005) and cross-national comparisons (e.g., Eisinga, Teelken, & Dooreeward, 2010; Felfe, Yan, & Six, 2008; Kwantes, 2003) conducted to date suggest that cultural values play a weak role at best. Moreover, effects of culture observed so far have been limited to relations between individual organizational commitment mindsets and specific work outcomes, without consideration of

commitment profiles. Looking beyond values, the relative status, pay, and benefits for teaching tend to be higher in Hong Kong than in North America (Carnoy, Brodziak, Luschei, Beteille, & Loyalka, 2009), which could contribute to greater strength and importance of CC to the occupation in Hong Kong (the costs of leaving the profession would be greater). However, in the absence of a strong theoretical rationale and/or consistent empirical evidence, we did not develop specific hypotheses concerning how our findings with Hong Kong teachers might differ from those found in Western countries. Rather, as a starting point in our extension of the person-centered approach to Asia, we expected finding obtained in Western countries to generalize as described in our foregoing hypotheses.

Summary

Our study breaks new ground on several fronts by taking a person-centered approach to the study of dual organizational and occupational commitment mindsets in a sample of professional teachers from Hong Kong. Because this is the first person-centered study of which we are aware to be conducted in an Asian context, as a preliminary step in our investigation we examined profiles for organizational and occupational commitment mindsets separately. By comparing the organizational commitment mindsets with those obtained in Western studies, we will get some indication of whether our sample is unique and, if so, in what ways. The investigation of occupational commitment profiles will be the first of its kind, as will the investigation of dual commitment profiles and their relations with turnover intentions and psychological well-being.

Methods

Participants

A total of 39 Hong Kong schools, including 20 primary schools and 19 secondary schools

located across all educational regions in Hong Kong, agreed to participate in this study. All

teachers from these schools had the possibility to complete the questionnaire and a total of

1,096 (M_{age} = 39.09, SD = 9.41; 67 % female) individually consented and completed at least

part of the questionnaires (corresponding to a response rate of 54.72 %). Of those teachers,

508 (46.4 %) teach in primary schools and 588 (53.6 %) teach in secondary schools. On

average, they have been in the teaching profession for 13.49 years (1 to 40 years, SD = 9.17)

and in their current schools for an average of 9.34 years (1 to 38 years, SD = 7.89). For

readers less familiar with the Hong Kong teaching profession, we now provide some relevant

background information. First, the Hong Kong context presents a highly stable teaching

profession with rates of teacher turnover reported to be lower than in other countries (<10 %;

Education Bureau, 2013). Conversely, the Hong Kong teaching profession is generally

described as highly stressful (Lau, Yuen, & Chan, 2005; Mo, 1991), with heavy teaching

loads, forced downsizing of schools and potential staff redundancies (e.g., Titus & Ora,

2005). Furthermore, the Hong Kong context is characterized by strong inducements to teach

(high status and salary) and strong social obligations (not losing face and not giving-up

because of discontent), making it likely that AC, NC, and CC may work differently than in

Western contexts (e.g., Eisinga et al., 2010) where AC is often dominant (e.g., Glazer,

Daniel, & Short, 2004).

Measures

Commitment Commitment to the organization (school) and occupation (teaching) was

assessed using a shortened version of Meyer et al.'s (1993) instrument, which has been

extensively cross-culturally validated (Meyer et al., 2012a). The version used in this study

utilizes the three items with the highest factor loadings in Meyer et al. (1993), which are rated

on a seven-point Likert scale (1 = strongly disagree, to 7 = strongly agree).These items were

adjusted to refer to school as the organization and teaching as the occupation. This instrument

includes six scales: (1) AC to occupation (3 items; α = .849; e.g., "I am enthusiastic about the teaching profession"); (2) AC to the organization (3 items; α = .803; e.g., "I do not feel like part of the family at my school—reversed item"); (3) NC to the occupation (3 items; α = .807; e.g., "I feel a responsibility to the teaching profession to continue in it"); (4) NC to the organization (3 items; α = .665; e.g., "This school deserves my loyalty"); (5) CC to occupation (3 items; α = .726; e.g., "Changing professions now would be difficult for me to do"); (6) CC to organization (3 items; α = .728; e.g., "Too much in my life would be disrupted if I decided I wanted to leave my school now").

Psychological well-being at work Psychological well-being in a work context was assessed using a measure developed by Dagenais-Desmarais and Savoie (2012) designed using an inductive mixed-method approach. The resulting instrument includes five dimensions very similar to Ryff's (1989; Ryff & Keyes, 1995) theoretical conception of general well-being. These five dimensions are: (1) *Interpersonal fit at work*, or experiences of positive interpersonal relationships within the work context (5 items; α = .894; e.g., "I value the people I work with"); (2) *Thriving at work*, or feelings that one's job is significant, interesting and fulfilling (5 items; α = .914; e.g., "I find my job exciting"); (3) *Feelings of competency*, or the impression of having the aptitudes required to perform efficiently with mastery in one's job (5 items; α = .884; e.g., "I know I am capable of doing my job"); (4) *Perceived recognition at work*, or feelings of being personally appreciated within one's workplace (5 items; α = .880; e.g., "I feel that my work is recognized"); (5) *Desire for involvement at work*, or a desire for increased involvement in, and contribution to, the organization's functioning and success (5 items; α = .806; e.g., "I want to take initiative in my work"). Items were rated on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree).

Turnover intentions Intentions to quit the school (4 items; α = .874; e.g., "I often think about

leaving this school") and occupation (4 items; $\alpha = .815$; e.g., "It would take very little change in my present circumstances to cause me to leave teaching") were assessed with items from Becker and Billings (1993), rated on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree).

Analyses

Latent profile analyses (LPA: Lazarsfeld & Henry, 1968; Muthén, 2002) were used to extract latent profiles of teachers on the basis of their commitment levels. These analyses were conducted using Mplus 7.11 (Muthén & Muthén, 2012) robust maximum likelihood estimator, in conjunction with multiple imputation procedures in order to properly analyze the 10 sets of factor scores (plausible values: PVs) saved from preliminary confirmatory measurement models estimated within the Bayesian framework that are fully disclosed (including factor loadings and latent correlations for all variables used in this study) in the online supplements. Using Bayesian PVs allowed us to control for measurement error in the current models without having to rely on more complex fully latent models estimated at the item level in the extraction of the profiles. This was important given that some estimates of scale score reliability were marginal (e.g., NC to the organization with $\alpha = .665$). All models were also estimated while taking into account teachers' nesting within schools with the Mplus design-based correction of standard errors (Asparouhov, 2005). LPA models including 1 to 10 latent profiles of teachers were first estimated separately while taking into account the three mindsets of commitment (AC, NC, CC) associated with a single target of commitment (the organization or the occupation), before moving to models incorporating simultaneously all mindsets and targets of commitment. In all models, the means and variances of the indicators (i.e., the commitment PVs) were freely estimated in all profiles (e.g., Morin et al., 2011a; Peugh & Fan, 2013). To avoid converging on a local solution (i.e., false maximum

likelihood), all models where estimated with 3,000 random sets of start values (Hipp &

Bauer, 2006), each of which was allowed 300 iterations, and the 300 best retained for final

stage optimization. All models converged on a well-replicated solution.

The procedure used to select the optimal number of profiles is fully disclosed in the

online supplements and converged on a 6-profile solution for the organizational commitment

mindsets, a 6-profile solution for the occupational commitment mindsets, and on a 7-profile

solution for the dual commitment mindsets. The seven profiles from the final dual

commitment solution were then contrasted on the basis of demographic covariates (school

type, gender, age, tenure), well-being and turnover intentions. These covariates were not

incorporated directly into the model, since doing so would involve allowing them to influence

the nature of the observed profiles (Morin et al., 2011a; Petras & Masyn, 2010). The profiles

were thus contrasted using Mplus AUXILIARY *(e)* function, which relies on Wald chi-

square test of statistical significance based on pseudo-class draws and tests the equality of

means across profiles (Asparouhov & Muthén, 2007; Bolck, Croon, & Hagenaars, 2004).

Results

Organizational commitment

The results from the retained 6-profile solution are graphically depicted in Fig. 1 (the exact

values for the commitment mindsets in each profile are presented in the top section of Table

S5 in the online supplements). The profiles in Fig. 1 are ordered to correspond as much as

possible to their level of desirability according to previously reviewed studies (e.g., Meyer et

al., 2013a, b; Meyer et al., 2012b). In Profile 1 (*Weak CC-dominant*; 5.44 %) AC and NC are

well below average but combine with CC levels that are just below average. In Profile 2

(*Weakly committed*; 23.08 %), all three mindsets are moderately below average. Profile 3

(*Strong CC dominant*; 9.58 %) is characterized by strong CC, average NC and weak AC. In

Profile 4 (*Moderately committed*; 31.18 %), all three mindsets are approximately average. Profile 5 (*AC-dominant*; 8.64 %) combines strong AC with below average CC and average NC. Finally, Profile 6 (*AC/NC-dominant*; 20.07 %) is characterized by strong AC and NC with CC modestly above average. These profiles present clear qualitative differences and are all similar to those found in previous research (Meyer et al., 2013b), thus supporting Hypotheses 1 and 2. This observation shows that there is nothing particularly unique about our sample of Hong Kong teachers regarding to the nature of their organizational (school) commitment.

[Insert Fig. 1 about here]

Occupational commitment

The results from the retained 6-profile solution are graphically depicted in Fig. 2, ordered as a function of desirability (the exact values for the commitment mindsets in each profile are presented in the middle section of Table S5 in the online supplements). Again, profile labels and sizes are presented in parentheses. In Profile 1 (*Weak CC-dominant*; 3.45 %), AC and NC are well below average and CC is near the mean for the sample, whereas Profile 2 (*Weakly committed*; 21.54 %) is characterized by below-average scores for AC, NC and CC, although CC scores appear slightly stronger than AC and NC. Profile 3 (*Moderately committed*; 26.01 %) has scores near the sample mean for all three mindsets. Profile 4 (*AC-dominant*; 9.01 %) combines slightly above average AC score with average NC and slightly below average CC. Profile 5 (*Firmly committed*; 24.5 %) is characterized by slightly above-average scores on all three mindsets. Finally, Profile 6 (*AC/NC-dominant*; 15.48 %) combines strong AC and NC scores with slightly above average CC. These results generally support Hypotheses 1 and 2. Although we are unaware of previous studies using LPA to identify profiles of occupational commitment involving all three mindsets with which to compare our findings, the profile structure is comparable to that found for organizational commitment mindsets in this and

previous studies.

[Insert Fig. 2 about here]

Dual commitment

The results from the retained 7-profile solution are graphically depicted in Fig. 3, again ordered as a function of desirability (the exact values for the commitment mindsets in each profile are presented at the bottom of Table S5 in the online supplements). To facilitate comparison with the findings reported for the analyses of the organizational and occupational commitment mindsets, we summarize the labels used to describe all profiles in Table 1. Profile 1 (*Weak CC-dominant to both targets*; 7.09 %) presents well below average AC and NC, and higher but still below average levels of CC to the organization and occupation. Profile 2 (*Weakly committed to the organization*; *Weak CC-dominant to the occupation*; 17.27 %) reflects below average mindset scores for both targets, with modest differentiation among the organizational mindsets, but slightly stronger CC than AC and NC scores for occupational commitment. In Profile 3 (*CC-dominant to both targets*; 19.38 %) the slightly above average scores on CC to the organization and occupation are the strongest scores within the profile; NC to the organization is also above average but all other mindsets are average or below average. Profile 4 (*AC-dominant to both targets*; 15.28 %) is characterized by very slightly above average AC and below average NC and CC to both the organization and the occupation. Profile 5 (*NC-dominant to the organization*; *Firmly committed to the occupation*; 20.95 %) is characterized by a dominant above average level of NC to the organization and moderate levels of AC, NC, and CC to the occupation. Profile 6 (*AC-dominant to the organization*; *AC/NC-dominant to the occupation*; 10.43 %) reflects moderate AC and slightly above average NC to the organization, with very strong AC and NC to the occupation; CC to both the organization and occupation are below average. Finally, Profile 7 (*Strong NC-dominant to the organization*; *Fully committed to the occupation*; 9.59

%) is similar to Profile 5, but all mindsets are stronger.

[Insert Fig. 3 about here]
[Insert Table 1 about here]

Overall, these results reveal the presence of distinct profiles reflecting differences in the strength of the commitment mindsets, and provide strong support to Hypotheses 1 and 2. It is noteworthy that Profiles 1 (*Weak CC-dominant to both targets*), 3 (*CC-dominant to both targets*), and 4 (*AC-dominant to both targets*) are characterized by somewhat similar mindset patterns for commitment to both the organization and occupation. This is consistent with previous dual commitment profile studies focusing on AC only (Morin et al., 2011b), or incorporating all three mindsets (Tsoumbris & Xenikou, 2010. In contrast, Profiles 2 (*Weakly committed to the organization*; *Weak CC-dominant to the occupation*), 5 (*NC-dominant to the organization*; *Firmly committed to the occupation*), 6 (*AC-dominant to the organization*; *AC/NC-dominant to the occupation*), and 7 (*Strong NC-dominant to the organization*; *Fully committed to the occupation*) reflect different mindsets patterns for the two targets of commitment. This has not been reported in previous cluster analytic research (Tsoumbris & Xenikou, 2010), but is consistent with theoretical predictions regarding dependencies among nested targets (Meyer & Allen, 1997).

Dual commitment profiles, turnover intentions, and well-being

The levels of turnover intentions and well-being dimensions in the seven dual commitment profiles are reported in Table 2 (and depicted in Fig. 4), together with a summary of the tests of statistical significance for the equality of covariates levels across profiles (also see Table S6 of the online supplements). Interestingly, taken together the covariates allow for a clear differentiation between all estimated profiles, as most profiles were found to differ significantly from one another on most covariates. The observed pattern of differences thus clearly supports the meaningfulness of the profiles, and is in line with expectations from

Hypotheses 3, 4, and 5.

[Insert Table 2 about here]
[Insert Fig. 4 about here]

Intentions to leave the occupation (i.e., teaching) are lowest and approximately equal in Profiles 6 (*AC-Dominant to the organization*; *AC/NC-dominant to the occupation*) and 7 (*strong NC-dominant to the organization*; *Fully committed to the occupation*). These profiles appear to respectively reflect a moral commitment and full commitment to the occupation (combined with moderate emotional commitment the organization in Profile 6 and strong obligation to the organization in Profile 7). Intentions to leave the occupation decrease progressively, and significantly, from Profile 5 (*NC-dominant to the organization*; *Firmly committed to the occupation*) to 1 (*Weak CC-dominant to both targets*) as the nature and strength of teachers' occupational commitment decreases. It is noteworthy that intentions to leave the occupation are weaker in Profile 3 (*CC-dominant to both targets*) than in Profiles 1 (*Weak CC-dominant to both targets*) and 2 (*Weakly committed to the organization*; *Weak CC-dominant to the occupation*). This is likely to be due, in part, to the above average levels of CC observed in Profile 3 in comparison to Profiles 1 and 2. Although these results suggest that an elevated level of CC might be *sufficient* to decrease intentions to leave the occupation, it is not *necessary*. Indeed, intentions to leave the occupation are among the lowest in Profile 6 (*AC-dominant to the organization; AC/NC-dominant to the occupation*) where CC to the occupation is below average.

Intentions to leave the organization (i.e., the school) are lowest in Profile 7 (*Strong NC-dominant to the organization*; *Fully committed to the occupation*) where teachers have a strong obligation (i.e., high NC) to the organization and are fully committed to the occupation. The next lowest levels are for Profiles 5 (*NC-dominant to the organization*; *Firmly committed to the occupation*) and 6 (*AC-dominant to the organization*; *AC/NC-dominant to the occupation*). In these profiles, AC and NC to the organization are at more

moderate levels. Interestingly, teachers with Profile 6 have a stronger moral commitment to the occupation than do those in Profile 5, but their intentions to leave the organization are equal, suggesting that intentions to stay in the current school may be driven more by commitment to the organization than to the occupation. Interestingly, intentions to leave the organization do not differ significantly between Profiles 3 (*CC-dominant to both targets*) and 4 (*AC-dominant to both targets*), the former reflecting a moderate sense of being trapped in the organization and the latter a mild emotional attachment, reinforcing that CC may be sufficient but not necessary for retention. Finally, intentions to leave the organization are greatest in Profile 1 (*Weak CC-dominant to both targets*), followed by Profile 2 (*Weakly committed to the organization*; *Weak CC-dominant to the occupation*)—both reflecting low levels of overall commitment to both targets, with higher levels of CC than AC/NC to both targets in Profile 1 and to the occupation in Profile 2.

The pattern of differences for the well-being measures is essentially the inverse of what was observed for intentions to leave. That is, well-being scores are generally lower in Profiles 1 (*Weak CC-dominant to both targets*) to 4 (*AC-dominant to both targets*) than in Profiles 5 (*NC-dominant to the organization*; *Firmly committed to the occupation*) to 7 (*Strong NC-dominant to the organization*; *Fullly committed to the occupation*). Well-being increases as levels of commitment to the organization and occupation increase in Profiles 1 to 5. Interestingly, all of the well-being measures are stronger in Profile 4 (*AC-dominant to both targets*) than in Profile 3 (*CC-dominant to both targets*), suggesting better adjustment levels when the primary link to the organization and occupation is AC rather than CC. The highest levels of well-being are found in Profiles 6 (*AC-dominant to the organization*; *AC/NC-dominant to the occupation*) and 7 (*Strong NC-dominant to the organization*; *Fully committed to the occupation*), with a slight advantage to Profile 7. Notably, in Profile 7, CC to the occupation is quite strong, and CC to the organization is moderate, suggesting that employees

can experience well-being even when CC is strong as long as it is accompanied by strong AC and/or NC.

Demographic differences

For purely descriptive purposes, we also assessed the degree of association between the dual commitment profiles and some key demographic covariates available in this study (school type, gender, age, organizational tenure, occupational tenure). The results from these analyses are reported in Table 2 (also see Table S6 for tests of significance) and Fig. 4. Overall, there were few significant differences across profiles, consistent with our expectations. Among the few exceptions were that the percentage of female teachers was lower in Profile 7 (*Strong NC-dominant to the organization*; *Fully committed to the occupation*) than all other profiles (55.80 % versus 65.94 % to 70.53 % in the other profiles), suggesting that females may present slightly higher levels of commitment, or at least perceived obligation, than males. Teachers corresponding to Profile 6 (*AC-dominant to the organization*; *AC/NC-dominant to the occupation*) also had longer tenure in the organization (11.83 years versus 8.46 to 9.68 years) and occupation (16.69 years versus 12.76 to 13.68 years) than teachers corresponding to all other profiles except Profile 1 (*Weak CC-dominant to both targets*), which suggests that both a strong sense of entrapment, and an equally strong sense of moral commitment may take more time to develop. Indeed, teachers in Profile 6 also tended to be older (42.69 years) than in Profiles 2 *(Weakly committed to the organization*; *Weak CC-dominant to the occupation*; 38.43 years) and 4 (*AC-dominant to both targets*; 38.73 years).

Discussion

This study advances previous person-centered commitment research in several directions. First, it provides the first evidence that organizational commitment mindset profiles similar to those found in North America also emerge in an Asian context. Second, it is the first study to

identify profiles of occupational commitment involving all three mindsets, and to

demonstrate that they are similar to those obtained for organizational commitment. Finally, it

is only the second study to investigate profiles involving multiple mindsets for organizational

and occupational commitment together, and to compare these profiles with regard to turnover

intention and well-being. Our study advances the one previous study (Tsoumbris & Xenikou,

2010) by using a larger sample and applying more flexible model-based analyses (LPA).

Unlike Tsoumbris and Xenikou, we found evidence for both within-profile similarities and

differences in the configuration of mindsets characterizing commitment to the occupation and

organization. We also found that the profiles differed in meaningful ways with regard to

turnover intentions and well-being.

Implications for commitment theory and research

The greatest contributions of the present study pertain to (1) the nature of dual commitment

mindset profiles and (2) their relations to other important organization- (retention) and

employee-relevant (well-being) variables. A secondary contribution is the evidence we

provide for profile consistency and cross-cultural generalizability. We discuss each of these

contributions in turn.

Profile structure Like previous research using cluster analyses or LPA (Morin et al., 2011b;

Tsoumbris & Xenikou, 2010), we found evidence of similarity in the mindset configurations

for commitment to the organization and occupation. Indeed, in 3 of the 7 profiles, the nature

of teachers' commitment to the teaching profession was mirrored in their commitment to the

organization. Unlike these early studies we also found differences in the mindset

configurations across targets in 4 of the 7 profiles. These differences were more nuanced than

was the case in previous median-split studies (Baugh & Roberts, 1994; Carson et al., 1999;

McNally & Irving, 2010; Somers & Birnbaum, 2000), attesting to the benefits of (1) using

analytic procedures allowing for the detection of naturally occurring profiles rather than artificially creating groups based on the arbitrary categorisation on continuous variables, and (2) simultaneously considering multiple mindsets and targets in a single model. We found little evidence for conflicting commitments (i.e., strong commitment to one target combined with weak commitment to the other). Rather, the discrepancies that we observed were more indicative of the dependencies discussed by Meyer and Allen (1997). It is important to note that our findings do not preclude the possibility of conflicting commitments, but they may be rare and perhaps so intolerable that such individuals leave before they can be surveyed in studies like ours.

Evidence of dependencies among commitment targets was most obvious in Profile 7 where teachers were fully committed to the teaching profession and had a strong NC-dominant profile (obligation) to the organization. A similar, albeit weaker, pattern was observed in Profile 5. Although Meyer and Allen (1997) proposed that employees with strong occupational commitment might feel trapped in the organization in the absence of AC and available alternatives (i.e., such as the CC-dominant profiles 1 and 2), this situation might also be expressed as high levels of NC in a collectivist culture such as Hong Kong. That is, rather than focusing on economic costs of leaving (CC), Hong Kong teachers may be more sensitive to social obligations. Given this preliminary evidence for potential dependency across targets, future research is warranted to establish how these dependencies evolve, their implications for key outcomes, and possible cultural influences on the nature of the dependency.

Relations with intentions to stay and well-being Not surprisingly, intentions to remain with the organization and occupation, as well as personal well-being, increased from Profiles 1 to 7 (which were ordered roughly to reflect increasing profile desirability). The pattern of differences for intention to stay with the organization and with the occupation was quite

similar, with only a few exceptions. This is most likely due to the partial dependency among the two foci discussed previously (e.g., continuing to work as a teacher may require continuing to work in particular school). An interesting exception involved the comparison of Profiles 6 (*AC-dominant to the organization*; *AC/NC-dominant to the occupation*) and 7 (*Strong NC-dominant to the organization*; *fully committed to the occupation*). Intentions to stay in the organization and teaching profession were quite strong for both profiles. However, unlike the intention to continue teaching, which was essentially the same in both profiles, the intention to stay in the organization was significantly greater in Profile 7 than Profile 6. There is no obvious explanation for this pattern of findings, but we can suggest at least two possibilities. The first is that the strong obligation (NC) to the organization in Profile 7 results from the fact that the organization provided teachers with the opportunity to avoid the costs (CC to the organization and occupation) of seeking a teaching position elsewhere (e.g., economic hardship or disruption of family life and community involvement). Alternatively, the strong obligation (NC) to the organization might reflect a collectivist orientation that contributes to the perceived social costs of leaving (e.g., failure to meet others' expectation). We favor the second explanation for two reasons: (1) the study was conducted in a collectivist country where NC is likely to be particularly salient (Wasti & Önder, 2009), and (2) the greater levels of CC to the occupation observed in Profile 7 were not associated with greater intentions to remain in the teaching profession than in Profile 6, suggesting that the elevated NC to the organization may have been an important differentiating factor. Future research could test these and other potential explanations by measuring cultural values at the individual level (e.g., Felfe et al., 2008; Wasti & Önder, 2009) to determine whether they predict profile membership and/or impact relations with turnover intentions.

    For the most part, the findings for the well-being measures were similar and opposite to those observed for intentions to leave. That is, teachers reported higher levels of interpersonal

fit, thriving, competency, recognition, and involvement when they experienced *AC-dominant* (emotional), *AC/NC-dominant* (moral), or *full* commitment to the organization and the occupation. Interestingly, well-being was greatest in Profile 7 (*Strong NC-dominant to the organization; fully committed to the occupation*), despite the fact that CC, particularly to the occupation, and NC to the organization, were very strong. Perceived costs and obligations have been argued to serve as constraining forces (Meyer & Herscovitch, 2001) that might be a source of stress. Indeed, we found the lowest well-being scores in Profiles 1 and 2 where the primary tie to the organization and/or occupation was CC. Thus our findings concerning Profiles 1 (*Weak CC-dominant to both targets*) and 2 (*Weak commitment to the organization; Weak CC-dominant to the occupation*) versus Profile 7 are consistent with previous Western research (e.g., Meyer et al., 2012b), and with Gellatly et al.'s (2006) notion that the individual mindsets are experienced differently depending on the context created by the other mindsets within a commitment profile. When CC is the dominant mindset, it likely reflects recognition that one has little choice but to continue a course of action (e.g., remain in an organization or occupation). In contrast, when combined with strong AC it reflects recognition that leaving would require giving up a desirable situation; importantly, however, the decision remains with the employee—there is no sense of being *trapped*. Thus, interpretation of correlations involving individual mindsets can be misleading, whereas comparison of profiles takes into account the context created by the other mindsets.

Profile consistency and cross-cultural generalizability The utility of a person-centered approach rests on the assumption that there is a common set of profiles that emerge regularly which, in turn, will help practitioners target interventions to foster desirable commitment profiles. We found six profiles of organizational commitment, all of which were similar to those reported in previous research. Thus, in addition to providing some evidence for cross-cultural generalizability, this finding contributes to a growing body of evidence for the

consistency of the organizational commitment profile structure across studies (Meyer et al., 2012b), within samples (Meyer et al., 2013a), and over time (Kam et al., 2014). The similarity regarding organizational commitment profiles also suggests that our findings pertaining to occupational and dual commitment profiles might generalize beyond the current Asian sample. Interestingly, we found six profiles for occupational commitment that were quite similar to those found for organizational commitment. Although the profiles were not completely parallel, all of the profiles found for occupational commitment have previously been identified in organizational commitment studies, suggesting that the differences observed across target are no greater than those observed across studies for a single target.

Although our findings regarding profile structure and relations with turnover intention were generally consistent with Western theory and research, there were a few differences that may be attributable to culture. For example, the relative dominance of NC to the organization in Profiles 5 and 7 is consistent with arguments made previously that NC might be particularly salient in collectivist cultures like Hong Kong (Wasti & Önder, 2009). Even where we found similarities, it is possible that the underlying mechanisms might be different. For example, we found multiple profiles where CC was elevated. Although not unusual, the basis for elevated CC might be different in collectivist (e.g., social costs) compared to individualist (e.g., economic costs) cultures. Still, as noted previously, the relative status, pay, and benefits of teaching tend to be higher in Hong Kong than in North America (Carnoy et al., 2009), which could contribute to stronger CC to the profession in Hong Kong. Therefore, an important direction for future research might be to address the psychological mechanisms underlying profile formation. Some of the theoretical mechanisms currently being used to guide variable-centered research, including social exchange (Meyer & Allen, 1997), need satisfaction (Meyer, Becker, & Vandenberg, 2004), regulatory focus (Johnson, Chang, & Yang, 2010), and social identification (Meyer, Becker, & van Dick, 2006) could serve as a

useful starting point. Once these mechanisms have been shown to operate, they can be used to guide a more systematic investigation of possible cultural differences in the nature, formation, and consequences of commitment profiles.

Limitations and areas for future research

As a starting point for our investigation, we chose to focus on a sample of professional teachers. Of course teaching is only one profession and we cannot be certain that our findings will generalize to other professions. We focused on professionals because of evidence that occupational commitment might be stronger and have more important implications for professionals compared to non-professionals (Lee et al., 2000). However, this comparison has yet to be made using a person-centered approach and is therefore an important direction for future research.

Our study also focused on only two potential targets of commitment. Morin et al. (2011b) found considerable heterogeneity in the way AC to several different targets combine. Our findings suggest that it would be useful to include multiple mindsets in such investigations, but clearly there are limits even in person-centered research to the number of mindsets and targets that can be included. As a starting point, it would be useful to conduct person-centered studies for some of the other target combinations currently being investigated using variable-centered approaches, such as organization and supervisor (e.g., Panaccio & Vandenberghe, 2011) or organization and team (e.g., Bishop, Scott, Goldsby, & Cropanzano, 2005). In doing so, researchers should continue to take advantage of recent statistical advances. For example, in this study, we found it beneficial to incorporate a control for measurement error in the models we tested (see online supplements). This might also help to explain the greater number and/or complexity of the profiles we identified compared to previous research.

All measures used in our study were self-reported at a single point in time. Although

concerns about self-report measures are ubiquitous, these concerns themselves have been questioned, particularly when the constructs are ideally suited to self-report (Chan, 2009). Moreover, it is also the case that the implications of using all self-report measures are mitigated when research questions involve complex interactions as was the case in the present study (Siemsen, Roth, & Oliveira, 2010). More limiting in this study is the use of a cross-sectional design, which precludes any interpretations regarding the directionality of the relations between commitment profiles, turnover intention and well-being. Thus, we are unable to determine whether the nature of teachers' organizational commitment profiles influenced their commitment to the occupation, or vice versa. Similarly, although our treatment of intention to leave and well-being as "outcomes" were based on theoretical considerations (e.g., Lee et al., 2000; Meyer & Maltin, 2010; Tett & Meyer, 1993) our design does not allow us to rule out the possibility of reverse causality, reciprocal influence, or spurious association. However, at this stage, we were most interested in demonstrating the utility of a person-centered approach by providing evidence for heterogeneity within the sample and revealing differential relations with other variables than we were in demonstrating causal effects. As we become more confident in the nature of profiles and their stability over time, it will be important to turn attention to the causal effects and mechanisms involved in both the formation and consequences of these profiles.

Implications for practice

The fact that this is the first study to apply LPA to identify dual commitment profiles in a sample of professionals (let alone a unique sample of teachers from Hong Kong) necessarily limits its immediate implications for practice. Nevertheless, considered in the context of commitment theory and existing profile research, a few general guidelines can be offered. First, considered in conjunction with previous variable-centered research (Cooper-Hakim, & Viswesvaran, 2005; Lee et al. 2000), our findings suggest that commitments to the

organization and occupation can be mutually reinforcing. This was demonstrated more explicitly in a study by Chang, Chi, and Miao (2007) who found support for a non-recursive model in which: (1) commitment to the organization influenced intention to stay in the nursing profession indirectly through its effects on intention to stay in the organization, and (2) occupational commitment influenced intention to remain in the organization indirectly through its effects on intention to remain in the profession. Although we were unable to test such reciprocal causation in our study, the fact that we found some profiles with a similar mindset pattern is consistent with Chang et al.'s findings. However, the benefit of taking a person-centered approach is that it allows for the possibility that this reciprocal influence producing similarity is not universal. Indeed, we found several profiles in which the mindset pattern was different across targets, in some cases (e.g., Profiles 5 and 7) suggesting that a firm or full commitment to the profession can contribute to a felt obligation to the organization. The implication for turnover intention might not be noticeably different from the situation where employees are firmly or strongly committed to both targets, but employees with a pattern like that reflected in Profiles 5 and 7 might be more likely to behave in a way that benefits their profession than the organization in cases where objectives are in conflict. It is important, therefore, for organizations employing professionals to monitor commitment to the occupation as well as to the organization.

Second, it is important to note that the lowest levels of turnover intention and the highest levels of employee well-being were obtained in those profiles characterized by strong AC and NC. Although our sample was from Hong Kong, this finding is not unique—it has been observed in other organizational commitment studies, including studies conducted in North America (e.g., Meyer et al., 2012b, 2013a, 2013b; Somers, 2009). Thus, in addition to creating conditions that make employees want to stay, it might be advantageous for organizations to take steps to develop a sense of obligation to the organization and/or

occupation. However, given that obligations can have "two faces"—moral duty and indebted obligation (Meyer & Parfyonova, 2010)—this must be done with caution. Moral duty has the most positive payoff and is most likely to be experienced when employees buy into the vision of the organization and share its goals and values. This might be achieved, in part, through careful selection designed to achieve strong person-organization fit (Kristoff-Brown, Zimmerman, & Johnson, 2005) and authentic transformational leadership (Avolio & Gardner, 2005).

Finally, our findings demonstrate that the implications of CC might also depend on the strength of the other mindsets (Meyer et al., 2012b). Specifically, we found the strongest turnover intentions and lowest well-being among teachers whose primary tie to the organization and occupation was weak to moderate CC. In contrast, the profile with the lowest levels of turnover intention and highest well-being (Profile 7) had the highest levels of CC to both the organization and the occupation, but was combined with moderate to strong AC and NC. Thus, we do not advocate efforts to lock employees into an organization by explicitly making it costly for them to leave. However, we also do not recommend using strong CC alone as a sign that there is a problem. It is important to consider profiles as a whole and whether CC is the primary tie or is combined with strong AC and/or NC.

Conclusions

This study is the first application of a person-centered approach to the study of organizational, occupational, and dual commitment mindset profiles in a non-Western context (Hong Kong). Our findings regarding profiles of organizational commitment were similar to those found in Western research. Although not ruling out cultural influences, this suggests that our sample is in many respects comparable to those in previous studies and that our findings regarding occupation and dual commitment are likely to generalized. Our findings

regarding dual commitment profiles suggest that commitments to the organization and

occupation are largely compatible, but that there potential dependencies that would be missed

in single-target and/or single mindset studies. We also found that profiles differ with regard

to turnover intentions and well-being, with the optimal outcomes associated with a morally

(*AC/NC-dominant*) or fully-committed profile; the worst outcomes were found for those who

felt trapped (*CC-dominant profile*) in the organization and/or occupation.

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Fig. 1 Characteristics of the latent profiles based on organizational commitment mindsets
Note: Each commitment mindset is estimated from Bayesian plausible values of initial measurement models and thus has a mean of 0 and a standard deviation of 1 in the total sample

Fig. 2 Characteristics of the latent profiles based on occupational commitment mindsets
Note: Each commitment mindset is estimated from Bayesian plausible values of initial measurement models and thus has a mean of 0 and a standard deviation of 1 in the total sample
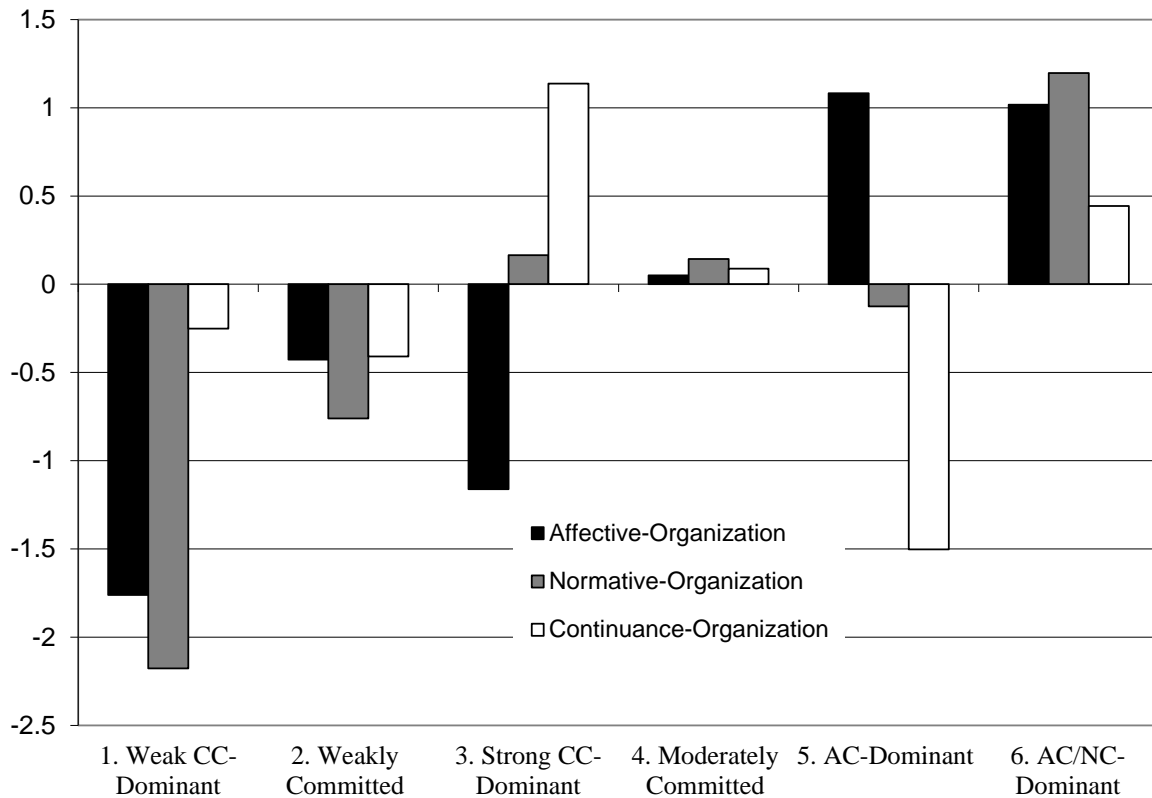
Fig. 3 Characteristics of the latent profiles based on dual commitment mindsets

Note: Each commitment mindset is estimated from Bayesian plausible values of initial measurement models and thus has a mean of 0 and a standard deviation of 1 in the total sample
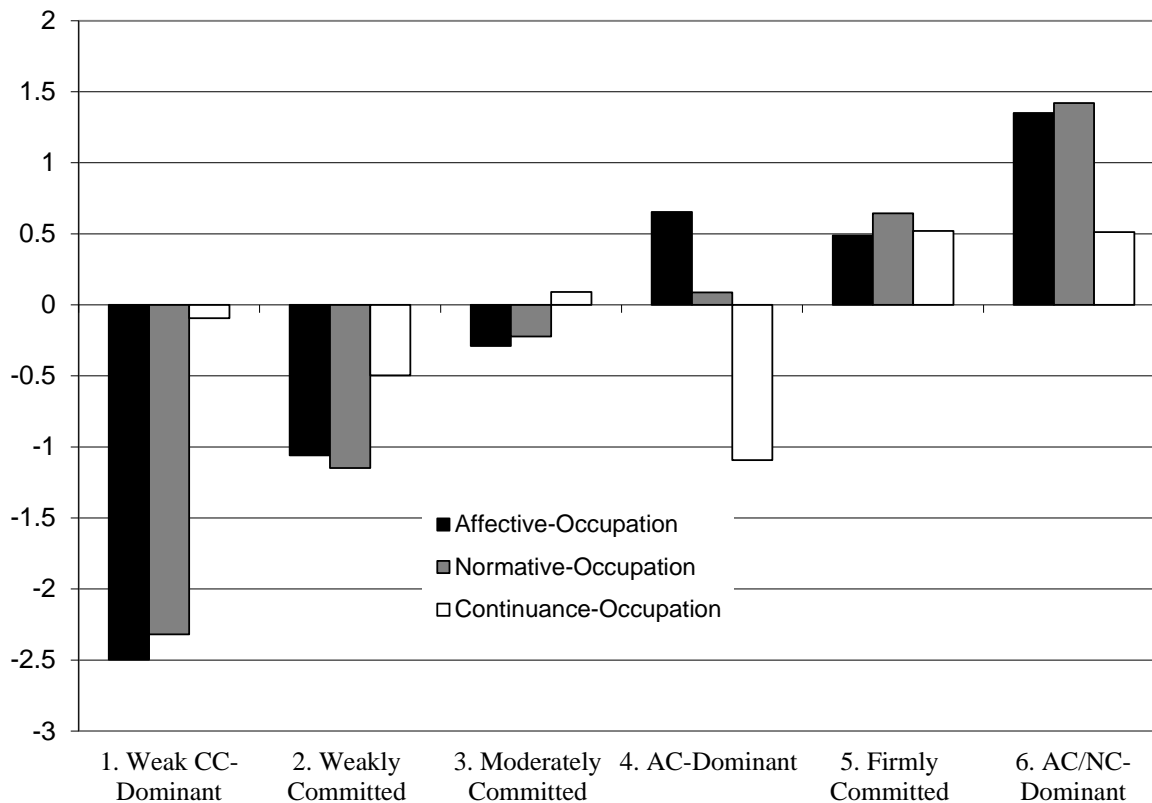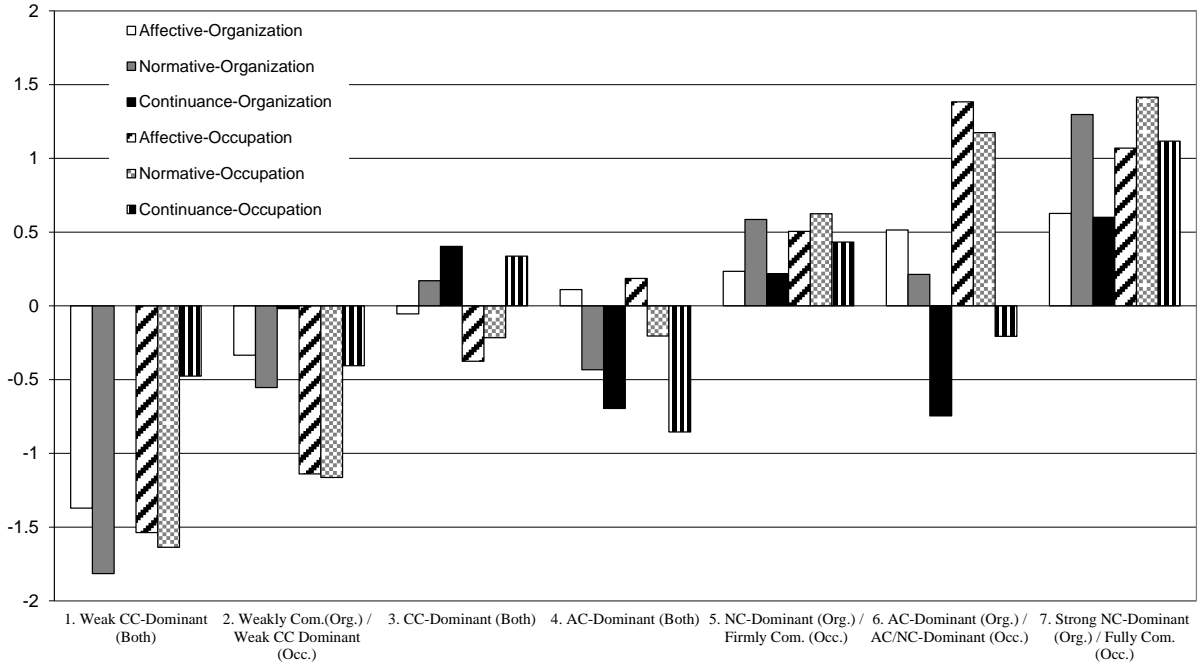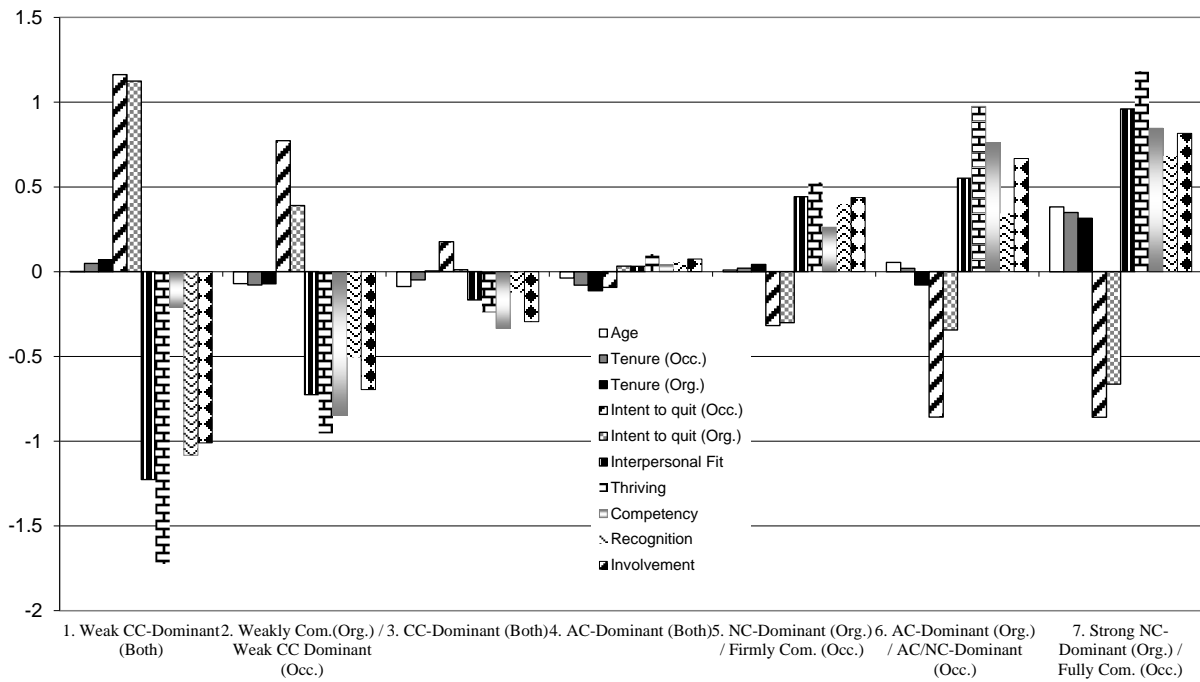

Fig. 4 Characteristics of the latent profiles on the covariates and outcomes

Note: The results were standardized to help in the interpretation of this histogram

Table 1 Summary of the profiles estimated in this study

Profile	Organizational commitment	Occupational commitment	Dual commitment
1	Weak CC-dominant (5.44 %)	Weak CC-dominant (3.45 %)	Weak CC-dominant to both targets (7.09 %)
2	Weakly committed (23.08 %)	Weakly committed (21.54 %)	Weakly committed to the organization; Weak CC-dominant to the occupation (17.27 %)
3	Strong CC-dominant (9.58 %)	Moderately committed (26.01 %)	CC-dominant to both targets (19.38 %)
4	Moderately committed (33.18 %)	AC-dominant (9.01 %)	AC-dominant to both targets (15.28 %)
5	AC-dominant (8.64 %)	Firmly committed (24.50 %)	NC-dominant to the organization; Firmly committed to the occupation (20.95 %)
6	AC/NC-dominant (20.07 %)	AC/NC-dominant (15.48 %)	AC-dominant to the organization; AC/NC-dominant to the occupation (10.43 %)
7	–	–	Strong NC-dominant to the organization; Fully committed to the occupation (9.59 %)

Table 2 Characteristics of the profiles of dual commitment on the covariates and outcomes

	Profile 1 *Weak CC-dominant (both)*	Profile 2 *Weakly committed (Org.)/Weak CC-dominant (Occ.)*	Profile 3 *CC-dominant (both)*	Profile 4 *AC-dominant (both)*	Profile 5 *NC-dominant (Org.)/Firmly committed (Occ.)*	Profile 6 *AC-dominant (Org./AC/NC-dominant (Occ.)*	Profile 7 *Strong NC-dominant (Org.)/Fully committed (Occ.)*	Summary of significance tests
School type (% sec.)	52.64 %	54.05 %	53.45 %	58.80 %	51.46 %	56.08 %	49.91 %	1 = 2 = 3 = 4 = 5 = 6 =7
Gender (% female)	70.53 %	69.48 %	67.71 %	69.71 %	65.94 %	67.30 %	55.80 %	7 < 1 = 2 = 3 = 4 = 5; 6 = 7; 1 = 2 = 3 = 4 = 5 = 6
Age	39.104	38.432	38.264	38.734	39.183	39.607	42.688	2 = 4 < 7; 1 = 3 = 5 = 6 =7; 1 = 2 = 3 = 4 = 5 = 6
Tenure (Occ.)	13.938	12.773	13.045	12.760	13.683	13.671	16.690	2 = 3 = 4 = 5 = 6 < 7; 1 = 7; 1 = 2 = 3 = 4 = 5 = 6
Tenure (Org.)	9.902	8.774	9.378	8.455	9.675	8.725	11.829	2 = 3 = 4 = 5 = 6 < 7; 1 = 7; 1 = 2 = 3 = 4 = 5 = 6
Intent to quit (Occ.)	1.162	.773	.177	−.093	−.318	−.858	−.859	6 = 7 < 5 < 4 < 3 < 2 < 1
Intent to quit (Org.)	1.124	.390	.011	.033	−.301	−.344	−.664	7 < 5 = 6 < 3 = 4 < 2 < 1
Interpersonal fit	−1.227	−.726	−.167	.032	.442	.551	.960	1 < 2 < 3 < 4 < 5 < 6 < 7
Thriving	−1.724	−.954	−.240	.104	.526	.975	1.182	1 < 2 < 3 < 4 < 5 < 6 < 7
Competency	−.211	−.847	−.335	.040	.262	.760	.846	2 < 1 = 3 < 4 < 5 < 6 < 7
Recognition	−1.083	−.505	−.124	.056	.399	.344	.683	1 < 2 < 3 < 4 < 5 = 6 < 7
Involvement	−1.010	−.696	−.295	.075	.437	.668	.816	1 < 2 < 3 < 4 < 5 < 6 = 7

Online Supplemental Materials for:

Profiles of Dual Commitment to the Occupation and Organization:

Relations to Wellbeing and Turnover Intentions

Sections

Appendix 1 Preliminary analyses and plausible values

Latent profile analyses are complex and are often associated with estimation or convergence problems. For this reason, most studies conduct such analyses on the basis of scale scores (based on the sum, or average, of the items forming a scale), or factor scores (saved from preliminary measurement models, and taking into account the strength of association of each item to the underlying construct). An alternative approach would be to use fully latent models in which each constructs are directly defined by their items and in which the profiles themselves are estimated from individuals' levels on the latent construct of interest. The advantage of this procedure is that latent constructs are corrected for measurement errors (e.g., Bollen, 1989; Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013). Unfortunately, fully latent procedures often result in improper, or nonconverging, solutions in latent profile analyses, and drastically increase computational time.

However, there is an alternative to these approaches based on the Bayesian estimation framework and involving the estimation of a set of *plausible values* (PVs) from initial factor analytic measurement models (e.g., Asparouhov & Muthén, 2010a; Von Davier, Gonzalez, & Mislevy, 2009). This approach is similar to the factor score approach in that individuals' values are estimated on the latent factors from the preliminary measurement model. However, instead of estimating a single value for each individual on each factor, the Bayesian framework treats the latent factors as missing values and estimates them through multiple imputation procedures (e.g., Asparouhov & Muthén, 2010b; Rubin, 1987) taking into account the uncertainty in the estimation of individuals' most likely value (i.e., PVs) on the factors. These sets of PVs can then be used as the input for the main analyses, as one would do with scale scores or factor scores, while relying on multiple imputation procedures where the model is estimated separately for each set of PVs and then combined into a single estimate. The advantage of using PVs rather than scale/factor scores is that the aggregation of all sets of PVs will perfectly reproduce the latent correlation matrix, and thus similarly control for measurement errors.

In this study, we first estimated an overarching a priori (i.e., confirmatory) Bayesian factor analytic measurement model including three distinct sets of factors representing the six dimensions of commitment, the five dimension of well-being, and the two dimensions of turnover intentions according to Muthén and Asparouhov's (2012a) recommendations and using the Mplus 7.11 statistical package (Muthén & Muthén, 2012). Thus, all a priori factor loadings of the items on their main factors where freely estimated, informative small-variance priors (with the prior distribution specified

as having a mean of 0 and a variance of .01) where used in order to target all possible cross-loadings within a set of factors to be as close to zero as possible, and all cross-loadings between sets of factors were constrained to be exactly zero. All parameters estimates from this model (i.e., standardized loadings of the indicators on their target factors, as well as latent factor correlations) are reported on the next page and were fully proper and in line with a priori expectations. Model-based scale score reliability were computed from these parameter estimates based on McDonald's (1970) omega coefficient [$\omega = (\Sigma|\lambda i|)^2 / ([\Sigma|\lambda i|]^2 + \Sigma\delta ii)$, where λi are the factor loadings and the δii item's uniquenesses]. This method has the advantage of taking into account the strength of associations between items and constructs as well as item-specific measurement errors in the estimation of scale score reliability (e.g., Sijtsma, 2009). These estimates are in line with the alpha coefficients reported in the method section and support both the adequacy of this measurement model: (1) organizational commitment (ω = .78, .69, and .71 respectively for AC, NC and CC); (2) occupational commitment (ω = .78, .71, and .64 respectively for AC, NC and CC); (3) turnover intentions (ω = .78, and .82 respectively for the occupation and the organization); (4) well-being (ω = .87, .87, .85, .72, and .62 respectively for fit, thriving, competency, recognition, and involvement). From this model, 10 sets of PVs were saved and used as inputs to the following analyses. The fact that some of the estimated factor loadings and estimates of scale scores reliability were at the lower bound of acceptability support the importance of using PVs in the current manuscript because these PVs control for the relative strength of association between items and factors and provide an efficient way to control for measurement error. Another advantage of this procedure is that is provides a convenient way to handle the few missing data at the item level (.01 % to .02 %; M = .01 %).

Although Bayesian estimation does not provide indicators of global model fit as are typically available in the context of maximum likelihood or weighted least square estimation, the estimated model is similar (although it includes less estimation constraints and is thus more flexible) to an exploratory structural equation model (e.g., Asparouhov & Muthén, 2009; Morin, Marsh, & Nagengast, 2013; Muthén, & Asparouhov, 2012b), used in a confirmatory manner using target rotation (e.g., Guay, Morin, Litalien, Valois, & Vallerand, 2014; Marsh, Morin, Parker, & Kaur, 2014) to specify all possible cross-loadings within a set of factors to be as close to zero as possible. This similar model provides a satisfactory level of fit to the data according to common fit indices (χ^2= 2842; degrees of freedom = 996; $p \leq$ .001; CFI = .929; TLI = .910; RMSEA = .041).

Appendix 1 Table 1 Standardized factor target factor loadings and latent correlations from the Bayesian measurement model

	Commitment					
Indicators	1. Affective-Org.	2. Normative-Org.	3. Continuance-Org.	4. Affective-Occ.	5. Normative-Occ.	6. Continuance-Occ.
Indicator 1	.805**	.834**	.800**	.806**	.815**	.840**
Indicator 2	.729**	.610**	.650**	.734**	.739**	.449**
Indicator 3	.672**	.466**	.424**	.487**	.666**	.393**

	Intentions to quit the:		*Well-being*				
	7. Occupation	8. Organization	9. Interp. Fit	10. Thriving	11. Competency	12. Recognition	13. Involvement
Indicator 1	.932**	.960**	.837**	.797**	.825**	.718**	.707**
Indicator 2	.783**	.676**	.781**	.768**	.782**	.652**	.572**
Indicator 3	.587**	.590**	.766**	.705**	.702**	.409**	.477**
Indicator 4	.348**	.581**	.707**	.680**	.699**	.383**	.420**
Indicator 5			.567**	.438**	.431**	.353**	.392**

	Latent factor correlations												
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Aff.-Org													
2. Nor.-Org	.495**												
3. Cont.-Org	−.186	.196**											
4. Aff.-Occ.	.388**	.353**	−.102										
5. Nor.- Occ.	.299**	.408**	.056	.838**									
6. Cont.-Occ.	.130	.255**	.507**	.165	.385**								
7. Quit-Occ.	−.615**	−.268**	.156*	−.611**	−.490**	−.139*							
8. Quit-Org.	−.735**	−.472**	.128*	−.294**	−.209**	−.149**	.756**						
9. Interp. Fit	.480**	.441**	−.001	.549**	.467**	.182**	−.397*	−.424*					
10. Thriving	.556**	.535**	−.137	.863**	.672**	.120	−.562**	−.471*	.610*				
11. Compet.	.158**	.018	−.029	.487**	.402**	.107*	−.289*	−.148**	.546**	.487**			
12. Recog.	.349**	.371**	−.128*	.366**	.271**	.127**	−.190**	−.297**	.556**	.511**	.401**		
13. Involv.	.214**	.367**	−.202**	.445**	.488**	.030	−.236**	−.145**	.360**	.516**	.348**	.381**	

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

Appendix 2 Class enumeration procedure

To help in the selection of the optimal number of profiles in the data, multiple sources of information were considered. Clearly, two of the most important criteria in this decision are related to the substantive meaning and theoretical conformity of the profiles (Marsh, Lüdtke, Trautwein, & Morin, 2009; Muthén, 2003) as well as the statistical adequacy of the solution (e.g., absence of negative variance estimates; Bauer & Curran, 2004). Several statistical indicators can also help in this decision: The Akaike information criterion (AIC; Akaike, 1987), the Consistent AIC (CAIC; Bozdogan, 1987), the Bayesian information criterion (BIC; Schwartz, 1978), and the sample-adjusted BIC (SABIC; Sclove, 1987). A lower value on these indicators suggests a better-fitting model. Simulation studies show that the BIC, SABIC, and CAIC are particularly effective in choosing the model which best recovers the sample's true parameters in various forms of mixture models (including LPA) (Henson, Reise, & Kim, 2007; McLachlan & Peel, 2000; Nylund, Asparouhov, & Muthén, 2007; Peugh & Fan, 2013; Tein, Coxe, & Cham, 2013; Tofighi & Enders, 2008; Tolvanen, 2007; Yang, 2006). Furthermore, when these indicators fail to retain the optimal model, the AIC and ABIC tend to overestimate the number of classes, whereas the BIC and CAIC tends to underestimate it. Although these studies also point to some likelihood-ratio based tests (LRT) as being particularly useful (i.e., the Lo-Mendell-Rubin LRT and adjusted LRT [Lo, Mendell, & Rubin, 2001; Vuong, 1989] and the bootstrapped LRT [McLachlan & Peel, 2000]), these tests are not available in conjunction with the multiple imputation procedures, or the design-based correction of standard errors, used in the present study.

Since these tests are all variations of tests of statistical significance, the outcome of the class enumeration procedure can still be heavily influenced by sample size (Marsh et al., 2009). More precisely, this means that with sufficiently large sample sizes, these various indicators may keep on improving without ever reaching a minimal point with the addition of latent profiles to the model. In these cases, information criteria should be graphically presented through "elbow plots" illustrating the gains associated with additional profiles (Morin et al., 2011a; Petras & Masyn, 2010). In these plots, the point after which the slope flattens out indicates the optimal number of profiles in the data. An additional statistical indicator that is typically reported in LPA is the entropy (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). Although the entropy should not in itself be used to determine the model with the optimal number of classes, it is nevertheless important because it summarizes the

extent to which a model generates classification errors (Henson et al., 2007; McLachlan & Peel, 2000).

Organizational commitment solution

The fit indices for the LPA models based on the three mindsets of teachers' commitment to their organization are reported in top section of Table S1. These results show that both the CAIC and BIC reached their lowest levels at for the solution including 6 latent profiles, whereas the ABIC reached its lowest point for the solution including 7 latent profiles. Examination of these solutions revealed that the 7-profile solution was not fully proper due to inclusion of one "empty" profile corresponding to none of the employees, while the 6-profile solution presented a greater level of correspondence to theoretical expectations and the results from previous studies. The 6-profile solution is thus retained as the final model. This model yields a reasonable level of classification accuracy (i.e., reasonably distinct profiles), with an entropy value of .712 and average posterior probabilities of class membership in the dominant profile varying from .701 to .859 and low cross-probabilities (varying from 0 to .159; see Table S2).

Occupational commitment solution

The fit indices for the LPA models based on the three mindsets of teachers' commitment to their occupation are reported in middle section of Table S1. These results show that all fit indices keep on increasing with the addition of latent profiles. However, when these fit indices where used to graph elbow plots (see Fig. S1), the results show that the improvement in fit reaches a plateau around 6 profiles. Examination of adjacent solutions clearly shows that adding a sixth profile to the model result in the addition of a well-defined qualitatively distinct profile to the model, while adding a seventh profile only results in the arbitrary division of one of the existing profile into two distinct profiles differing only quantitatively from one another. The 6-profile solution is thus retained as the final model. This model yields a high level of classification accuracy, with an entropy value of .837 and average posterior probabilities of class membership in the dominant profile varying from .755 to .917 and low cross-probabilities (varying from 0 to .109; see Table S3).

Dual commitments solution

The fit indices for the LPA models based on the three mindsets of teachers' commitment to their

organization and occupation are reported in bottom section of Table S1. These results show that all fit indices keep on increasing with the addition of latent profiles. However, when these fit indices where used to graph elbow plots (see Fig. S2), the results show the improvement in fit to reach a plateau around 7 profiles. Examination of adjacent solutions clearly shows that adding a seventh profile to the model result in the addition of a well-defined qualitatively distinct profile to the model, while adding an eighth profile only results in the arbitrary division of one of the existing profile into two distinct profiles showing differing only quantitatively from one another. The 6-profile solution is thus retained as the final model. This model yields a high level of classification accuracy, with an entropy value of .837 and average posterior probabilities of class membership in the dominant profile varying from .827 to .911 and low cross-probabilities (varying from 0 to .092; see Table S4).

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Table S1 Fit results from the latent profiles analyses

Model	LL	#fp	AIC	CAIC	BIC	ABIC	Entropy
Organizational commitment							
1 Profile	−4704.605	6	9421.211	9457.135	9451.135	9432.078	n/a
2 Profiles	−4586.674	13	9199.347	9274.185	9264.185	9222.894	.556
3 Profiles	−4467.097	20	8974.193	9087.943	9073.943	9010.419	.688
4 Profiles	−4401.543	27	8857.086	9009.748	8991.748	8905.990	.705
5 Profiles	−4364.052	34	8796.105	8987.679	8965.679	8857.688	.681
6 Profiles	−4320.230	41	8722.460	8952.947	8926.947	8796.722	.712
7 Profiles	−4301.966	48	8699.932	8969.331	8939.331	8786.873	.726
8 Profiles	−4292.316	55	8694.632	9002.944	8968.944	8794.253	.753
9 Profiles	−4267.496	62	8658.992	9006.217	8968.217	8771.292	.721
10 Profiles	−4258.751	69	8655.501	9041.638	8999.638	8780.480	.732
Occupational commitment							
1 Profile	−4683.920	6	9379.840	9415.765	9409.765	9390.708	n/a
2 Profiles	−4253.874	13	8533.749	8611.586	8598.586	8557.295	.766
3 Profiles	−4034.520	20	8109.040	8228.790	8208.790	8145.265	.801
4 Profiles	−3897.696	27	7849.392	8011.054	7984.054	7898.296	.820
5 Profiles	−3796.077	34	7660.153	7863.728	7829.728	7721.737	.844
6 Profiles	−3734.114	41	7550.227	7795.715	7754.715	7624.490	.837
7 Profiles	−3687.144	48	7470.288	7757.687	7709.687	7557.229	.829
8 Profiles	−3648.914	55	7407.829	7737.141	7682.141	7507.449	.823
9 Profiles	−3618.118	62	7360.236	7731.460	7669.460	7472.535	.824
10 Profiles	−3587.277	69	7312.553	7725.690	7656.690	7437.532	.820
Dual commitments							
1 Profile	−9388.525	12	18801.051	18872.900	18860.900	18822.786	n/a
2 Profiles	−8729.741	25	17509.481	17659.169	17634.169	17554.763	.787
3 Profiles	−8422.336	38	16920.671	17148.196	17110.196	16989.500	.818
4 Profiles	−8249.090	51	16600.179	16905.541	16854.541	16692.554	.823
5 Profiles	−8079.568	64	16287.136	16670.336	16606.336	16403.058	.844
6 Profiles	−7927.605	77	16009.210	16470.246	16393.246	16148.678	.838
7 Profiles	−7849.254	90	15878.509	16417.383	16327.383	16041.524	.837
8 Profiles	−7776.118	103	15758.235	16374.947	16271.947	15944.797	.840
9 Profiles	−7701.490	116	15634.979	16329.528	16213.528	15845.088	.845
10 Profiles	−7647.653	129	15553.306	16325.692	16196.692	15786.961	.847

LL Model loglikelihood; *#fp* Number of free parameters; *AIC* Akaïke information criterion; *CAIC* Consistent AIC; *BIC* Bayesian information criterion; *SABIC* Sample-size adjusted BIC
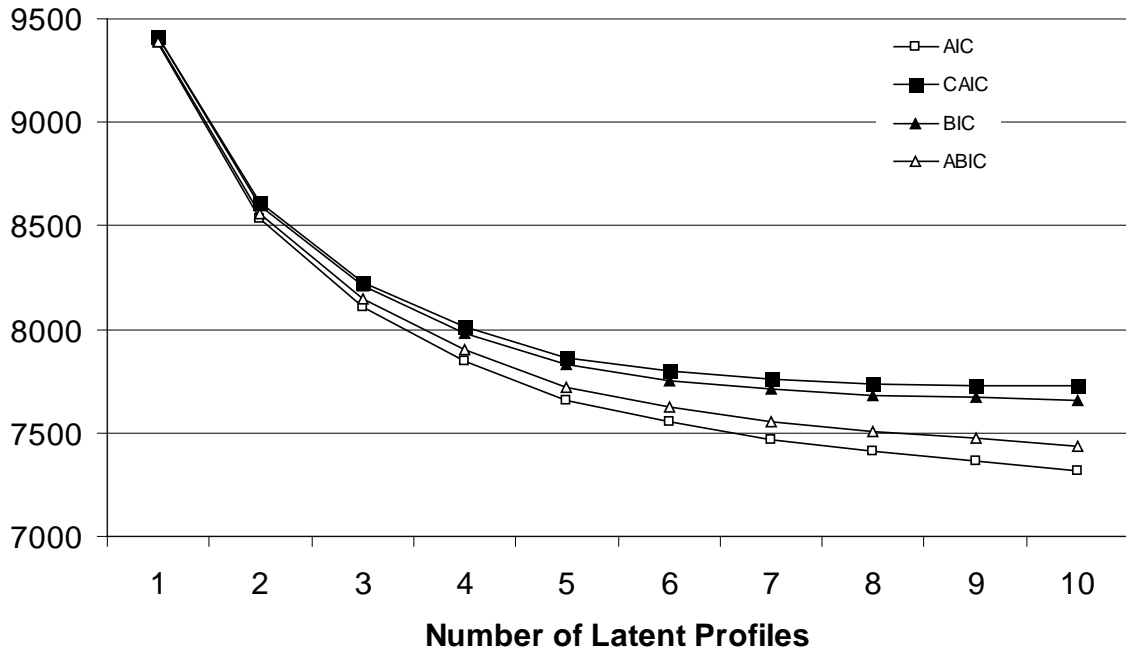
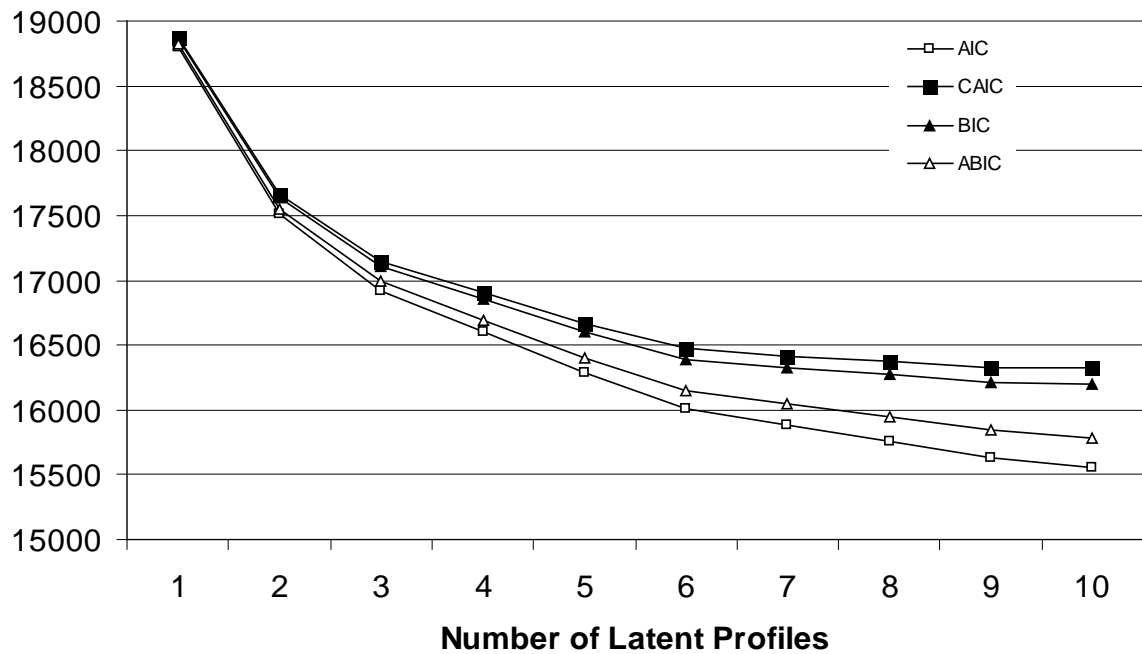**Fig. S1** Elbow plot of the fit indices for the occupational commitment profiles

Fig. S2 Elbow plot of the fit indices for the dual commitment profiles

Table S2 Posterior classification probabilities for most likely latent profile membership (row) by latent profile (column) for the final organizational commitment profiles

Profiles	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5	Profile 6
1	.859	.099	.037	.003	.002	.000
2	.013	.802	.021	.141	.018	.005
3	.026	.070	.701	.159	.000	.043
4	.000	.087	.032	.797	.025	.059
5	.002	.075	.000	.125	.726	.071
6	.000	.004	.011	.119	.025	.840

Table S3 Posterior classification probabilities for most likely latent profile membership (row) by latent profile (column) for the final occupational commitment profiles

Profiles	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5	Profile 6
1	.845	.153	.002	.000	.000	.000
2	.013	.911	.071	.004	.000	.000
3	.000	.048	.882	.029	.041	.000
4	.000	.016	.098	.755	.109	.022
5	.000	.000	.039	.030	.894	.038
6	.000	.000	.000	.011	.071	.917

Table S4 Posterior classification probabilities for most likely latent profile membership (row) by latent profile (column) for the final dual commitment profiles

Profiles	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5	Profile 6	Profile 7
1	.867	.092	.012	.024	.003	.002	.000
2	.021	.911	.041	.027	.000	.000	.000
3	.003	.032	.867	.057	.038	.000	.004
4	.006	.026	.085	.827	.041	.015	.000
5	.000	.000	.032	.024	.894	.021	.029
6	.001	.000	.000	.028	.064	.861	.047
7	.000	.000	.006	.000	.061	.050	.883

Table S5 Mean levels of commitment in the retained latent profile models

	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5	Profile 6	Profile 7	Summary of significance tests
Organizational commitment models								
Affective-Organization (ACOr)	−1.761	−.427	−1.161	.050	1.082	1.018	–	1 = 3 < 4 < 5 = 6; 2 = 3; 2 = 4; 1 < 2 < 5 = 6
Normative-Organization (NCOr)	−2.177	−.760	.165	.143	−.125	1.197	–	6 < 2 = 3 = 5 < 1; 2 < 4; 6 < 3 = 4 = 5 < 1
Continuance-Organization (CCOr)	−.251	−.409	1.137	.088	−1.502	.443	–	3 < 1 = 2 = 4 < 5; 2 < 6; 3 < 1 = 4 = 6 < 5
Occupational commitment models								
Affective-Occupation (ACOc)	−2.498	−1.060	−.290	.654	.489	1.351	–	1 < 2 < 3 < 5 < 6; 4 = 6; 1 < 2 < 3 < 4 = 5
Normative-Occupation (NCOc)	−2.319	−1.148	−.223	.088	.645	1.420	–	1 < 2 < 3 < 5 < 6; 4 = 5; 3 < 4; 1 < 2 < 4 < 6
Continuance-Occupation (CCOc)	−.094	−.497	.090	−1.093	.520	.513	–	2 = 3 < 3 = 5 = 6; 4 < 1 < 5; 1 = 2; 1 = 3; 1 = 6
Dual commitment models								
Affective-Organization (ACOr)	−1.371	−.335	−.054	.110	.234	.627	.514	1 < 3 = 4 = 5 = 6 = 7; 2 = 3 = 4; 1 < 2; 5 = 6 = 7 < 2
Normative-Organization (NCOr	−1.815	−.554	.170	−.433	.586	1.297	.213	1 < 2 < 4 < 3 = 5; 1 < 6 < 7; 1 < 2 < 4 < 3 < 7; 5 = 7; 2 = 6; 4 = 6; 3 = 5 = 6
Continuance-Organization (CCOr)	.000	−.019	.403	−.695	.217	.600	−.746	6 < 3 = 5 = 7; 4 < 3; 5 < 4; 4 = 7; 1 = 2 = 3 = 5 = 7; 1 = 2 = 4 = 6
Affective-Occupation (ACOc)	−1.537	−1.139	−.375	.186	.505	1.069	1.383	1 = 2 < 3 < 4 = 5 < 6 = 7
Normative-Occupation (NCOc)	−1.637	−1.163	−.216	−.204	.625	1.415	1.174	1 = 2 < 3 = 4 < 5 = 6; 5 < 7; 1 = 2 < 3 = 4 < 6 = 7
Continuance-Occupation (CCOc)	−.476	−.406	.337	−.855	.432	1.117	−.206	2 = 4 < 3 = 5 = 7; 6 < 7; 6 = 1= 2 = 4; 6 = 1 = 3= 5; 1 = 7

Table S6 Results from the Wald chi-square (χ^2) tests of mean equality of the auxiliary analyses of covariates and outcomes

	Global	1 vs. 2	1 vs. 3	1 vs. 4	1 vs. 5	1 vs. 6	1 vs. 7	2 vs. 3	2 vs. 4	2 vs. 5	2 vs. 6	2 vs. 7
School type (% sec.)	4.344	.081	.070	.814	.168	.312	.197	.181	.828	.430	.309	.456
Gender (% female)	11.538	.455	.558	.255	.152	.217	5.100*	.186	.426	.926	.951	9.240**
Age	6.078	.336	.320	.099	.578	.401	3.834	.459	.401	.778	.318	4.628*
Tenure (Occ.)	11.987	1.013	.670	.982	.206	.115	3.520	.192	.289	1.255	.678	9.076**
Tenure (Org.)	13.416*	1.157	.331	1.744	.355	1.039	2.083	.714	.317	1.721	.248	6.948**
Intent to quit (Occ.)	79.710**	11.112**	62.629**	99.673**	137.289**	240.227**	184.563**	46.218**	96.731**	153.884**	304.714**	202.090**
Intent to quit (Org.)	65.701**	27.969**	59.411**	55.280**	96.080**	78.992**	110.834**	17.750**	13.698**	52.925**	38.727**	69.623**
Interpersonal fit	97.602**	9.021**	42.070**	58.379**	108.313**	98.626**	154.311**	36.227**	60.886**	170.471**	121.645**	221.798**
Thriving	195.694**	29.263**	108.800**	163.582**	253.149**	315.105**	381.713**	128.724**	239.474**	589.559**	542.209**	775.807**
Competency	85.026**	13.046**	1.212	5.073*	10.673**	34.652**	38.073**	26.230**	77.472**	147.360**	222.603**	219.906**
Recognition	55.436**	13.223**	35.992**	50.137**	92.740**	59.134**	103.407**	17.053**	33.606**	111.926**	43.387**	103.184**
Involvement	69.740**	5.689*	27.482**	61.166**	114.822**	127.123**	137.350**	20.886**	71.900**	176.556**	169.107**	180.081**

	3 vs. 4	3 vs. 5	3 vs. 6	3 vs. 7	4 vs. 5	4 vs. 6	4 vs. 7	5 vs. 6	5 vs. 7	7 vs. 6	Summary
School type (% sec.)	.973	.324	.425	.464	1.944	.485	1.906	.687	.272	.994	$1 = 2 = 3 = 4 = 5 = 6 = 7$.
Gender (% female)	.487	1.046	1.257	10.728**	.722	.613	7.559**	.521	6.612*	3.750	$7 < 1 = 2 = 3 = 4 = 5$; $6 = 7$; $1 = 2 = 3 = 4 = 5 = 6$.
Age	.331	.220	.168	3.422	.711	.600	4.309*	.164	2.622	2.817	$2 = 4 < 7$; $1 = 3 = 5 = 6 = 7$; $1 = 2 = 3 = 4 = 5 = 6$.
Tenure (Occ.)	.346	.632	.455	8.117**	1.198	.708	8.482**	.344	5.682*	4.102*	$2 = 3 = 4 = 5 = 6 < 7$; $1 = 7$; $1 = 2 = 3 = 4 = 5 = 6$.
Tenure (Org.)	1.296	.562	.732	4.755*	2.348	.301	8.057**	1.318	4.096*	5.761*	$2 = 3 = 4 = 5 = 6 < 7$; $1 = 7$; $1 = 2 = 3 = 4 = 5 = 6$.
Intent to quit (Occ.)	11.594**	27.252**	111.577**	74.200**	8.512**	56.913**	48.828**	31.235**	21.067**	3.478	$6 = 7 < 5 < 4 < 3 < 2 < 1$.
Intent to quit (Org.)	1.419	10.349**	9.113**	28.203**	11.109**	9.148**	30.210**	1.989	10.073**	6.238*	$7 < 5 = 6 < 3 = 4 < 2 < 1$.
Interpersonal fit	9.064**	62.898**	47.026**	118.511**	31.311**	24.419**	78.145**	4.214*	27.038**	11.564**	$1 < 2 < 3 < 4 < 5 < 6 < 7$.
Thriving	38.037**	174.672**	235.543**	362.521**	56.156**	107.210**	197.528**	38.041**	82.044**	9.848**	$1 < 2 < 3 < 4 < 5 < 6 < 7$.
Competency	17.823**	50.257**	116.393**	121.713**	9.578**	48.332**	59.855**	28.951**	33.019**	3.667**	$2 < 1 = 3 < 4 < 5 < 6 < 7$.
Recognition	4.686*	34.834**	13.191**	46.433**	16.647**	5.700*	28.008**	1.580	7.006**	5.151*	$1 < 2 < 3 < 4 < 5 = 6 < 7$.
Involvement	18.122**	71.101**	84.306**	95.927**	20.202**	30.874**	45.388**	7.814**	11.917**	3.427	$1 < 2 < 3 < 4 < 5 < 6 = 7$.

The global tests of mean equality are interpreted as a chi-square test with 6 degrees of freedom, whereas the pairwise comparison tests are interpreted as a chi-square with 1 degree of freedom

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