Psychological Processes Linking Organizational Commitment and Change-Supportive Intentions

Abstract

Purpose - With employees' support of organizational changes being vital for today's organizations, this study aimed to enhance the understanding of how organizational commitment is linked to change-supportive intentions. Based on the theory of planned behavior (TPB, Ajzen, 1991), mediated effects of affective organizational commitment were empirically tested to explore the underlying psychological processes.

Design/Methodology - The study was conducted in the context of a complex change process at a production facility of a large international manufacturing company (N=667). Data from the change survey were analyzed employing Hayes' (2012) PROCESS macro.

Findings - The results showed that organizational commitment relates to change-supportive intentions directly and, as suggested by the TPB, is mediated via change-related attitudes, subjective norms, and perceived behavioral control (PBC). Furthermore, results suggest additional effects of change recipients' age and occupational status.

Implications - Employing the TPB offers specific insights for tailored interventions to create conditions facilitating organizational changes. The results indicate that commitment lays the ground for employees' change reactions. In addition the psychological processes suggested by the TPB serve as additional levers for explaining change-supportive intentions.

Originality/Value - The study provides valuable information on the relationship between commitment and change-supportive intentions. Specifically, affective organizational commitment is shown to be an important resource in times of change, as it relates to more positive psychological reactions to change.

Keywords: change-supportive intentions; change readiness; change management; organizational commitment; organizational change; theory of planned behavior

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Introduction

In times of globalization, challenging market environments, and rapid technological innovations, an organization's competitiveness is largely based on its ability to constantly adapt and change (e.g., Drzensky et al., 2012). The success of organizational changes, in turn, is largely determined by the reactions and supportive behaviors of the employees, as "organizations only change and act through their members (George & Jones, 2001, p. 420). Indeed, change management research identified employees' change-supportive behaviors as a critical factor for the success of organizational changes (Jimmieson et al., 2008; Rafferty et al., 2013).

By initiating and managing multiple change projects at the same time, organizations are challenged with higher degrees of uncertainty and a lower ability to foresee all consequences and challenges of the changes. To compensate for the increased complexity, even more change support and active contributions of the employees are required in the context of multiple, simultaneous changes (Morin et al., 2016).

Recent research clearly identified behavioral intentions as important and most proximal antecedents of employees' change-supportive behaviors (e.g., Ajzen, 1991; Jimmieson et al., 2008; Kim et al., 2011). Accordingly, it is of high relevance for researchers and practitioners to understand the psychological mechanisms that lead to change-supportive intentions of employees (e.g., Jimmieson et al., 2008). Such knowledge can help to identify potential levers of change support and to proactively manage organizational changes, instead of reactively overcoming change resistance (Armenakis et al., 1993).

Many factors relating to the content, process, and the context of changes have been studied as antecedents of employees' support of or resistance to change (Armenakis et al., 1993). Yet, one factor that has been repeatedly suggested as a general individual attribute that allegedly predisposes positive employee reactions to organizational changes is employees' commitment to their organization (Oreg et al., 2011). Irrespective of the complexity of

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organizational changes, committed employees should be more willing to engage in the extra efforts required by organizational changes, and they should show higher acceptance of changes as they identify strongly with the organization and its values (Mowday et al., 1979; Oreg et al., 2011). Especially, employees' affective commitment has been suggested as an important antecedent for employees' reactions to organizational changes (Peccei et al., 2011). Affective commitment represents an "emotional attachment to the organization such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organization" (Allen & Meyer, 1990, p. 2).

While previous research offers empirical insights into the influence of organizational commitment on reactions of employees to organizational changes (e.g., Kwahk & Kim, 2008; Madsen et al., 2005), the psychological processes underlying this association still remain underspecified. Hence, it is unclear how and to what extent organizational commitment predisposes employees' psychological reactions to specific organizational changes. One exception is a study by Peccei et al. (2011). They showed that attitudes towards change serve as a mediator, partially explaining the relationship between affective organizational commitment and change resistance (Peccei et al., 2011). As such, their study sheds some first light on the underlying psychological processes linking affective organizational commitment and employees' change reactions. However, the partial mediation found in their study also demonstrates the need for further research to more fully understand how employees' commitment influence the formation of change-supportive intentions and hence, into how commitment can assist in fostering change support.

Previous research on how people generally form behavioral intentions offers a compelling theoretical framework for explaining the link between commitment and change-supportive intentions. The theory of planned behavior (TPB; Ajzen, 1991) is a comprehensive and well-established framework, which has already been successfully applied to explain

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behavioral intentions and behaviors in a wide range of fields (e.g. Armitage & Conner, 2001). Recently, the TPB has shown its potential for research on employees' change-supportive intentions in the organizational context (e.g. Jimmieson et al., 2008; Jimmieson et al., 2009; reference omitted for blind review).

The theoretical framework of the TPB helps to systematically differentiate psychological constructs involved in employees' reactions to organizational change. Specifically, the TPB clearly distinguishes employees' behavioral intentions from their attitude toward the behavior. According to the TPB, attitude is an overall evaluative judgement regarding the behavior of interest (Ajzen, 1991). Besides attitude, the perceived social pressure to carry out a behavior of interest (subjective norm), and the perceived behavioral control (PBC) over performing a behavior of interest represent key determinants in the formation of behavioral intentions (Ajzen, 1991).

Conner and Armitage (1998) suggested that the influence of other variables on intentions and behaviors would be mediated via these three suggested determinants. Hence, the TPB has a great potential for explaining the psychological processes by which commitment influences change-supportive intentions. Consequently, the present study takes Peccei et al.'s (2011) valuable research a step further and tests all psychological mechanisms suggested in the TPB (attitude, subjective norms, and PBC) as mediators between commitment and change-supportive intentions.

Accordingly, this study contributes to the literature in several ways: The present study explicitly focuses at investigating the underlying psychological processes linking affective organizational commitment and change-supportive intentions in the context of ongoing and complex organizational changes. Specifically, direct and indirect effects of affective organizational commitment are explicated and analyzed based on the established TPB. Such knowledge advances our understanding of change as it explains how and to what extent organizational commitment as an individual-level variable serves as resource in change

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management and predisposes employees' psychological reactions to specific organizational changes. The high resolution and theoretical foundation of the psychological reactions provided by the TPB can help researchers and practitioners to better identify starting points for long-term and change-specific interventions to enhance change-supportive intentions.

Psychological Processes underlying the Link between Commitment and Change-supportive Intentions

With the high relevance of successful organizational changes at hand, scholars have shown an impressive and enduring interest in factors affecting employee's reactions to change (see Oreg et al., 2011 for a review). Many of these variables directly pertain to the specific organizational change (e.g., factors relating to change content, change process and change context as suggested by Armenakis & Bedeian, 1999). In addition, studies on change recipient characteristics highlight the importance of considering individual-level variables as they predispose employees to certain reactions when confronted with organizational changes (e.g., Oreg et al., 2011). These predispositions appear particularly valuable in the context of complex changes, as they influence employee reactions not only to one specific change initiative, but build a predisposing foundation for various change situations.

However, in many cases, individual-level variables, such as personality traits or demographic variables, are of limited use for the active management of organizational changes, because they are by definition relatively stable and only hardly, if at all, changeable (reference omitted for blind review). Against this background, organizational commitment provides a very interesting potential resource in the context of change management. Organizational commitment of the employees also represents an individual-level variable (Elias, 2009), which has often been suggested to predispose positive reactions of employees in the context of organizational changes (Peccei et al., 2011). Yet, unlike many other individual-level variables, commitment can be affected by organizational actions and

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conditions (e.g., Morrow, 2011). Hence, change management can profit from understanding the relationship of organizational commitment and change-supportive behaviors of employees.

From a theoretical perspective, it has been suggested that high levels of organizational commitment are positively related to change-supportive behaviors (e.g., Allen, & Meyer, 1996; Mathieu, & Zajac, 1990; Mowday et al., 1982), because highly committed employees identify with their organization, feel emotionally obliged to it (e.g., Allen, & Meyer, 1990), and aim to help it reach its goals (Brown, 1996). In particular, organizational commitment is argued to be a predictor of employees' explicit change reactions, such as psychological and behavioral reactions, including behavioral intentions (Oreg et al., 2011). Following this line of thought, organizational commitment should have an effect on change-supportive psychological states of employees, which are seen as a prerequisite for change-supportive behaviors (Kim et al., 2011). Change-supportive psychological states are defined as "positive attitudes and evaluations, willingness, or intentions to support organizational change" (Kim et al., 2011, p. 1668) and are reflected in previous research by constructs such as readiness to change (Armenakis et al., 1993) and intentions to support change (Jimmieson et al., 2008).

Indeed, the role of organizational commitment has been addressed in research on change readiness which represents a broader umbrella concept for positive reactions to organizational changes that precede "behaviors of either resistance to, or support for, a change effort" (Armenakis et al., 1993, pp. 681-682). For example, research has found commitment to influence employees' general openness to change (Kwahk & Kim, 2008). Moreover, Madsen and colleagues (2005) also report a highly significant correlation between organizational commitment and employees' change readiness operationalized as willingness and intentions to support a specific change process.

<Insert Table 1 about here>

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While previous research has conceptualized readiness with different foci (see Table 1 for a short overview of different conceptualizations), employees' behavioral intentions have often been conceptualized as one key element of change readiness (e.g., Armenakis et al., 1993; Bouckenooghe et al. , 2009; Madsen et al., 2005). Yet, Rafferty et al. (2013) recently suggested in their review of change readiness research that it would be best to regard behavioral intentions rather as a consequence than as a component of change readiness. Change readiness and change-supportive intentions both represent change-supportive psychological states (Kim et al., 2011), yet Rafferty et al. (2013) argued that behavioral intentions comprise a stronger motivational perspective with close relations to subsequent behaviors. Moreover, viewing change-supportive intentions as a consequence of change readiness takes into account that many definitions of readiness have focused on variables that can be considered potential antecedents of behavioral intentions, such as perceptions of the changes (e.g., Eby et al., 2000; Holt et al., 2007a), self-efficacy (e.g., Weiner, 2009) or a general openness for changes (e.g., Kwahk & Kim, 2008). Following this rationale highlights the relevance of change-supportive intentions, as they then represent the most proximal antecedent to employees' change support, which is also in line with conceptual reasoning of the TPB (Ajzen, 1991; Kim et al., 2011). Thus, understanding how organizational commitment influences the formation of change-supportive intentions is central for researchers and practitioners who try to foster employees' change-supportive behaviors.

In addition, previous research has largely employed broad conceptualizations of organizational commitment. In their meta-analysis Meyer, Stanley, Herscovitch and Topolnytsky (2002) found that affective organizational commitment was the most meaningful form of commitment for a broad range of organization- and employee-relevant outcomes (compared to continuous and normative commitment). Based on Elias' (2009) argument that normative and continuous commitment relate to a larger extent to external factors, Peccei et al. (2011) reasoned that affective organizational commitment is most appropriate when

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studying individual-level psychological reactions to organizational changes. While there are

studies that support the relevance of affective commitment for change management (e.g.,

Iverson & Buttigieg, 1999; Ng et al., 2010), research on affective commitment and

employees' reactions to change is still limited (e.g., McKay et al., 2013).

Taken together, it seems promising to specifically focus on affective organizational

commitment and clarify its role in the formation of change-supportive behavioral intentions.

While knowledge about a direct effect of affective organizational commitment on change-

supportive intentions can already help to manage organizational changes more successfully,

understanding the psychological processes underlying this effect might allow to design more

effective interventions. Following Armenakis et al.'s (1993) line of arguments, practitioners

would benefit from research that investigates such mediations as it could provide

organizations with more levers to proactively foster employees' change support instead of

reactively overcoming change resistance.

In terms of a comprehensive and sound theoretical framework for analyzing the

psychological processes linking commitment and change-supportive intentions, the

established TPB (Ajzen, 1988, 1991) seems to be very promising. At its core, the TPB

postulates three determinants of any behavioral intention: a person's attitude towards the

behavior, subjective norms regarding the behavior, and PBC (Ajzen, 1988, 1991).

Accordingly, employees will be more likely to engage in change-supportive behaviors if they

evaluate the consequences of this behavior positively (change-related attitude), if they

perceive social pressure by significant others to carry out this behavior (change-related

subjective norms), and if they feel able to perform change-supportive behaviors (change-

related PBC).

In fact, there are theoretical as well as empirical reasons to assume that the TPB may

be suited for modelling the psychological processes linking commitment and change-

supportive intentions (as depicted in Figure 1). Empirically, the TPB has been applied

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successfully in the organizational change context to study the use of new technology (Chau &

Hu, 2002; Rai et al., 2002; Taylor & Todd, 1995) and employees' intentions to support

organizational changes, such as the relocation of a company (Jimmieson et al., 2008; Peach et

al., 2005) or as part of a post-merger integration project (reference omitted for blind review).

From a theoretical perspective, Conner and Armitage state that in addition to the assumed

determinants of the TPB "any other influences on behavior are held to have their impact via

influencing components of the TPB" (1998, p. 1432). As previous research on the effects of

organizational commitment in the context of organizational changes shows a good match to

the psychological processes proposed by the TPB, developing hypotheses about underlying

mechanisms can greatly profit from previous findings on other conceptually related reactions

to organizational changes.

<Insert Figure 1 about here>

Reasons for assuming an effect of organizational commitment on change-related

attitudes can be derived from conceptualizations of commitment stating that employees with

higher affective commitment are supposed to accept organizational values, and have a greater

willingness to exert efforts serving the organization (Meyer & Allen, 1997; Mowday et al.,

1979). Against this backdrop, committed employees are likely to interpret and evaluate

changes initiated by the organization more positively. Hence, committed employees may

obtain low cognitive dissonance (Festinger, 1957) in times of organizational changes by

developing positive attitudes toward the change (Peccei et al., 2011). Indeed, research found

committed employees to show greater acceptance of organizational changes (e.g., Iverson,

1996; Iverson & Buttigieg, 1999) and have a more positive attitude towards change (Elias,

2009). Moreover, Peccei et al. (2011) showed that commitment´s effects on behavioral

change reactions are partly mediated via attitudes towards change and point out that the

mediated effect of commitment on employees' reactions to change is in line with

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retrospective rationality arguments (cf., Meyer & Allen, 1997). Hence, the following hypothesis will be tested:

Hypothesis 1: The effect of organizational commitment on change-supportive intentions is positively mediated by change-related attitude.

In addition, committed employees may also perceive stronger social norms to support changes, as they are supposed to show more identification with and involvement in the organization (Meyer & Allen, 1997). Employees with higher affective commitment feel more obligated to reciprocate and can also rely on the organization to fulfill their social-emotional needs (e.g. needs for affiliation and needs for approval; Lee & Peccei, 2007). Together, these effects should render committed employees more aware for social processes and norms in the organization. Hence, in the context of change, organizational commitment should provide a fertile ground for stronger perceptions of subjective norms regarding the changes. Thus, the following hypothesis is tested:

Hypothesis 2: The effect of organizational commitment on change-supportive intentions is positively mediated by change-related subjective norms.

Finally, committed employees may also perceive stronger behavioral control regarding change-support. This notion builds on commitment's positive effects on employees' self-efficacy, as identified by meta-analytic results from Meyer et al. (2002). They show that affective commitment is positively related to self-efficacy and negatively related to external locus of control (Meyer et al., 2002). Transferred to the change context, employees with higher organizational commitment will also have greater self-efficacy regarding organizational change and perceive that successfully handling the change is under their control. Indeed, Bandura's concept of self-efficacy (e.g., Bandura, 1991) and PBC are seen as similar concepts, when not conceptualized at a general level but in relation to specific

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behaviors (Ajzen, 2002). Specifically, Visagie and Steyn (2011) suggest that committed employees will have higher levels of change-efficacy as they have more trust in management and feel more confident in taking risks related to organizational change. Accordingly, the following hypothesis is tested:

Hypothesis 3: The effect of organizational commitment on change-supportive intentions is positively mediated by change-related perceived behavioral control (PBC).

Method

Sample and Procedure

The current study was conducted in a German production facility of a large international manufacturing company with headquarters in Germany. The employees of the production facility were in general well interconnected with their colleagues, their leaders and the union members. Moreover, there was a strong identification with the production facility and the company. At the time of the study, the production facility underwent a major change initiative with multiple simultaneous changes qualifying the process to be classified as a complex organizational change (Morin, et al., 2016). The leaders of the production facility and the union members informed about the different changes in meetings, in the production unit´s newsletter and via emails. The goal of the change initiative was to renew the production system and to adapt to the corporate environment in order to become the most effective production facility in the company.

At the core of the change initiative was a large-scale change of production technologies. A large part of the production machinery was being retrofitted or replaced . The changes in production technology were accompanied with changes in the organization of work as maintenance tasks were integrated into the production process. Moreover, previously outsourced repair tasks were reintegrated as part of the in-house maintenance work. In parallel to these technology-related changes, the manufacturing company introduced new teamwork

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procedures and shift schedules, as well as changes in the managerial structure. All of these

changes had either recently been introduced or were still ongoing at the time of the study.

Thus, all employees were assumed to have had a chance to develop beliefs about the changes.

The paper-pencil survey was distributed to all 1,760 employees via their team leaders.

Participation in the survey was voluntary and the employees were permitted to complete the

survey during work hours or at home. To return the questionnaires the employees could either

use a self-addressed envelope or mailboxes that were provided all over the production facility.

During the three weeks of data collection, 744 employees returned the survey, resulting in a

response rate of 42%. As the missing data analysis revealed that no variable had more than

5% missing values, all respondents with missing responses on relevant items were deleted

from the data (Tabachnick & Fidell, 2013). The resulting final data set consisted of complete

data from 667 participants, representing 38% of invited employees.

The final sample consisted of 76.2% blue-collar workers, 8.4% white-collar workers

and 8.2% employees in supervising positions. The remaining 7.2% did not define their

occupational status. Compared to the population in the production facility, the white-collar

workers (4.2%) and employees in supervising positions (4.8%) were overrepresented in

contrast to the blue-collar workers (91%). The majority of the final sample was between 40

and 50 years of age (41.4%), followed by employees over 50 years (24.3%), between 30 and

39 (20.1%), between 25 and 29 (8.2%) and under 25 years old (4.9%). Only 1 % of

participants in the final sample did not indicate their age. The distribution of the different age

groups in the sample was similar to the distribution of the age groups in the population of the

production facility. Gender was not assessed, as the percentage of women in the population

was rather low and could have resulted in a reduction of perceived anonymity.

Measures

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All measures used in this study were part of the same survey and employed a five-point Likert scale (1= strongly disagree; 5= strongly agree). The items to measure change-related attitude, subjective norm, PBC, and change-supportive intentions (see Appendix) were created based on recommendations by Ajzen (2006), as well as by Francis and colleagues (2004). However, as the study context was a complex change initiative, the items were formulated at a more general level instead of focusing on specific behaviors or individual outcomes, similar to the study of Kim et al. (2011). Additionally, participants were asked to indicate the extent to which the specific changes affect them in their daily work with five items corresponding to the major changes (new technologies, changes in the organization of work, changes in the managerial structure, new shift schedules and new teamwork procedures).

Change-related attitude. Four items were used to assess the individual's overall evaluation (Ajzen & Fishbein, 1980; Clegg & Walsh, 2004) of the change. Internal consistency of the scale was Cronbach's alpha .94.

Change-related subjective norms. Four items operationalized the degree to which others support involvement in the organizational change process. In a later factor analysis, the four items were found to load on two factors with two items loading on the attitude factor. Hence, these two items were eliminated from the scale. The remaining two items showed an internal consistency of Cronbach's alpha .67.

Change-related perceived behavioral control (PBC). Four items measured the individual's perceived probability of succeeding at a given task (Ajzen, 1991). The items addressed the personal resources and expectation of success in handling the change process. Factor analysis revealed that one item should be dropped. The internal consistency of the reduced three-item scale was Cronbach's alpha .85.

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Change-supportive intentions. The respondents' intentions to be involved in the changes taking place in the organization were assessed with four items. The internal consistency of the scale was Cronbach's alpha .93.

Affective commitment. Three items from the established Organizational Commitment Questionnaire by Mowday and colleagues (1979) were adapted to measure the affective commitment of the employees. They reflected employees' pride, employees' pleasure, and their general feelings of commitment to the organization. The three items had an internal consistency of Cronbach's alpha .93.

Harman's single-factor test was used as a diagnostic technique for determining if common method variance was a major problem (Podsakoff, 1986; Podsakoff et al., 2003). Instead of applying explorative factor analysis, structural equation models were compared to each other. To evaluate the fit of the model, several authors recommend the use of practical fit indices (Bollen, 1989a; Bollen & Long, 1993). Values of .90 or above for the Comparative Fit Index (CFI; Bentler, 1988) and Incremental Fit Index (IFI; Bollen, 1989b) indicate an adequate model fit (e.g., Diefendorff et al., 2005; Vandenberg & Lance, 2000). For the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990), values lower than 0.08 are considered a good fit (MacCallum et al., 1996).

For the first model, all constructs were modeled as separate, but correlated latent factors. The results showed a good fit of the proposed five-factor model (CFI=.965, IFI=.965, RMSEA=.071). Moreover, the five-factor model was compared to a single factor model with all items loading on one factor. The results of the single factor model showed inferior fit (CFI=.596, IFI=.597, RMSEA=.228). Additionally, a four-factor model was tested which combined the highest correlating variables (attitude and change-supportive intentions) into one factor. The model fit for this four latent factors was not adequate (CFI=.823, IFI=.823, RMSEA=.155) and showed a meaningful decrease in the CFI (ΔCFI=.014) compared to the five-factor model (e.g., Cheung & Rensvold, 2002; Vandenberg & Lance, 2000). Hence, it

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can be assumed that the constructs were sufficiently distinct and common method variance was not a serious problem.

Analysis

The hypotheses were tested using regression analyses in SPSS and the PROCESS macro for SPSS from Hayes (2012). Hypothesis 1, 2 and 3 were tested using the PROCESS macro for SPSS from Hayes (2012), specifically designed for testing complex models of mediation. For testing the hypotheses, Model 4 was selected which allows to simultaneously analyze the mediation of affective organizational commitment via change-related attitude, subjective norm, and PBC on change-supportive intentions. Additionally, occupational status and age groups were entered as covariates in the analysis. As an ANOVA for the three original occupational status groups revealed no significant difference for white-collar employees and employees with supervisory position with regard to any of the relevant variables, occupational status was operationalized as dummy-coded variable which distinguished between blue-collar and non-blue-collar employees,. The PROCESS macro tests the indirect effects using the normal theory-based product of coefficient approach (Sobel test; Sobel, 1982) and reports bootstrapped bias-corrected 95% confidence intervals for each indirect effect. Bootstrapping was set to 5,000 bootstrap samples.

Additionally, Peccei and colleagues (2011) suggestion of a general dampening effect of low commitment on change-related cognitions was explored by using model 74 of the PROCESS macro which allowed calculating the conditional effects for the moderated mediation and determining their bias-corrected 95% confidence intervals, as well as an index of moderated mediation (Hayes, 2015). Again, bootstrapping was set to 5,000 bootstrap samples.

Furthermore, latent profile analysis (LPA; e.g., Collins & Lanza, 2010) was applied to uncover hidden groups of the employees in the data that were differentially affected by the

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complex changes (Oberski, 2016). The number of LPA classes was iteratively increased and evaluated based on the Lo-Mendell-Rubin adjusted likelihood ratio test (LMRT; Lo, Mendell, & Rubin, 2001) and based on entropy (Muthén & Muthén, 2000). The number of LPA classes was determined based on model fit and parsimony. To describe the profiles of the identified classes, mean ratings for each of the five major changes were calculated for each class. In order to explore potential differences in the psychological processes linking affective organizational commitment to change-supportive intentions of the employees across LPA classes, multi-group analysis was carried out in AMOS 23. The multi-group analysis tests whether the model fits of an unconstrained path model and of a constrained path model (in which the structural weights are constrained to be equal across the identified groups) are statistically different. If there is a significant difference in χ^2 and a decrease in CFI greater than .01, when comparing the unconstrained and the constrained model, it can be assumed that the mediating processes are different in the tested groups (e.g., Cheung & Rensvold, 2002; Vandenberg & Lance, 2000).

Results

Table 2 presents the means, standard deviations, and intercorrelations of the observed variables used in the study. As expected, the variables of the TPB were positively related to each other. Moreover, organizational commitment had a significant positive relationships with change-related attitude (r=.35, p<.01), subjective norms (r=.27, p<.01) and PBC (r=.32, p<.01), as well as change-supportive intentions (r=.46; p<.01). Thus, affective organizational commitment alone explained 21% of variance in change-supportive intentions.

<Insert Table 2 about here>

Regarding the control variables, age showed a negative relation to PBC (r=-.13; p<.01) and a positive relation to organizational commitment (r=.16; p<.01). Moreover, non-blue-collar employees (white-collar employees and supervisors) were positively related to

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organizational commitment (r=.21; p<.01), as well as to change-related attitude (r=.36; p<.01), subjective norm (r=.26; p<.01), PBC (r=.25; p<.01) and change-supportive intentions (r=.28; p<.01).

<center><Insert Table 3 about here></center>

Table 3 presents the results of the simultaneous mediation analysis with model 4 of the PROCESS macro (Hayes, 2012), which was carried out to test Hypothesis 1, 2 and 3. Affective organizational commitment had significant positive direct effects on all three psychological determinants suggested by the TPB (change-related attitude: B = .29, p<.01; change-related subjective norms: B = .19, p<.01; change-related PBC: B = .31, p<.01). While occupational status was positively related to change-related attitude (B = .63, p<.01), subjective norms (B = .49, p<.01) and PBC (B = .42, p<.01), age only showed a significant negative effect on PBC (B = -.14, p<.01).

Overall, affective organizational commitment, change-related attitude, subjective norms, PBC and the two covariates (age and occupational status) explained 58.0 % of the variance in change-supportive intentions. Looking at the covariates, age had significant negative effect on change-supportive intentions (B = -.05, p<.05). Change-related attitude (B = .36, p<.01), subjective norms (B = .16, p<.01), and PBC (B = .22, p<.01) were all significantly related to change-supportive intentions. Affective organizational commitment still had a significant positive effect on change-supportive intentions (B = .21, p<.01), when all determinants suggested by the TPB were considered.

With regards to Hypotheses 1, 2 and 3, the results revealed that the effect of commitment was partially mediated by change-related attitudes, subjective norm, and PBC (see lower part of Table 2). Specifically, the bootstrapped 95% bias-corrected confidence intervals were all positive and did not include 0. Moreover, the normal theory-based Sobel tests showed that the indirect effects were all highly significant. Thus, the results lend support to Hypothesis 1, 2, and 3.

In an explorative step, an extended moderated mediation model was tested by using model 74 of the PROCESS macro for SPSS (Hayes, 2012). This model additionally included affective commitment as a moderator of the relationships between the psychological determinants of the TPB and change-supportive intentions. Overall, there was no substantial increase of the explained variance compared to the mediation model, as R² only increased by .3%. Looking at the moderation effects, no significant interaction effects were found. The bootstrapped 95% confidence interval of the index of the moderated mediation included zero in all three cases. These results indicate that the moderation of the mediated effects is not statistically significant. The mediating processes are not systematically larger or smaller across different level of affective organizational commitment (Hayes, 2015).

The additional LPA uncovered four classes of employees in the data based on the degree to which they were affected by the various changes in the production facility (entropy=.81; LMRT=186.14, p<.05). The first class consisted of 233 employees who were highly affected by the new technologies, new organization of work, new teamwork procedures and new shift schedules and partly affected by the changes in the managerial structure. The second class contained 177 employees being highly affected by new technologies and by changes in the organization of work, as well as moderately affected by new teamwork procedures and the changes in the managerial structure. The 142 employees in the third class were highly affected by the new shift schedules and moderately affected by the new teamwork procedures and the new technologies. The fourth class consisted of 122 employees who indicated that their daily work is affected moderately by the new technologies and only to a low degree by the other changes. The multi-group comparison of the corresponding path model showed no significant decrease in χ² (unconstrained: χ² (8) = 41.995; constrained: χ² (53) = 88.149; Δχ² (45) =46.154, p>.1) and no meaningful change in CFI (unconstrained: CFI= .967; constrained: CFI=.966; ΔCFI=.001), when the structural weights of the mediation model were constrained to be equal across the four groups.

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Discussion

In today's dynamic business environment, organizations have to rely even more on the change support of the employees to successfully manage the necessary complex change initiatives (Morin et al., 2016). Commitment has often been suggested as a relevant precondition for employees' positive change reactions (Oreg et al., 2011). Therefore, the purpose of this research was to gain a better understanding of the relationship between affective organizational commitment and change-supportive intentions in the context of a complex change initiative.

As expected the results showed that affective commitment to the organization is significantly and positively related to change-supportive intentions, explaining 17.3% of the variance in employees' intention to support the change beyond age and occupational status. These results are in line with findings from previous studies relating commitment to employee´s readiness to change (e.g., Kwahk & Kim, 2008; Madsen et al., 2005), and add further support to commitment being an important individual-level variable in the change context. Knowledge about affective organizational commitment as a potential resource can assist change managers in planning their change projects. Beyond that, understanding the psychological processes that link affective commitment and change-supportive intentions might allow to identify additional levers for fostering change support.

Building on the comprehensive framework of the established TPB and recent work by Peccei and colleagues (2011), the present study proposed a mediation model linking affective commitment to change-supportive intentions via the three psychological determinants suggested by the TPB (namely, change-related attitude, subjective norms, and PBC). This mediation model, which also included age and occupational status as covariates, explained 58.0% of the variance in change-supportive intentions. Hence, the variables in the proposed model are of high relevance for understanding employees' change supportive intentions.

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Similar to the study of Peccei et al. (2011), change-related attitude emerged as mediator of organizational commitment, supporting Hypothesis 1. Additionally, the results of the mediation analyses supported Hypotheses 2 and 3, as change-related subjective norms and PBC served as additional mediators for the effect of affective commitment on change-supportive intentions. Thus, affective organizational commitment is indeed related to more positive evaluations of central psychological variables, which then translate to stronger change-supportive intentions.

However, the mediation is partial, with affective commitment having an additional direct effect on change-supportive intentions. This may suggest that other mediating mechanisms are at work, which are not yet explicitly addressed in the theoretical framework of the TPB. In this context, Rafferty et al. highlighted the need for considering emotional dynamics, as in uncertain times of organizational change "affective reactions to change may be particularly powerful drivers of change outcomes" (2013, p. 127). Following this advice, the inclusion of additional affective mechanisms may be a promising area for future research attempting to explain how affective commitment is linked to change-supportive intentions.

While the link of affective organizational commitment to change resistance via attitudes has been shown in a manager sample (Peccei et al., 2011), the results of the present study suggest that occupational status plays an additional role in the context of psychological change reactions. Entering occupational status (blue-collar and non-blue-collar workers) as a covariate in the mediation analysis revealed that the white-collar workers and supervisors displayed more positive evaluations regarding the three TPB determinants. These results may reflect that white-collar workers and supervisors are often more involved in the planning and implementing of change processes. From this perspective, the results are in line with previous research highlighting the benefits of participation and involvement of employees in change processes (Eby et al., 2000; Jimmieson et al., 2008; Wanberg & Banas, 2000). Based on these

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results, change managers are well advised to focus specific actions on blue-collar workers in order to win their change support, specifically in the context of complex changes.

Furthermore, age had negative relationships with change-related PBC and with change-supportive intentions. While these effects are smaller, they suggest that younger employees perceived more control over implementing the changes and indicated a stronger intention to support the changes. Previous research has also only found few and small relations of age to change-supportive intentions and behaviors and their antecedents (e.g., Jimmieson et al., 2008; Jimmieson, & White, 2011). The high resolution provided by the framework of the TPB allowed identifying specific effects on certain psychological aspects in this study, but again there was no general negative effect of age on all psychological determinants of the TPB.

Beyond testing direct and mediated effects, the study explored moderation effects proposed in the literature (Oreg et al., 2011; Peccei et al., 2011). Specifically, Peccei and colleagues (2011) suggested that low commitment may have a general dampening effect on change-related cognitions, yet the hypothesized interaction with attitude towards the change in predicting change resistance was not significant. The results of the present study also showed only a very slight increase of explained variance for the moderated mediation model and revealed no statistical significant moderation effect, when age and occupational status were considered. These results indicate that the level of affective commitment does not significantly alter the relationships of the variables in the mediation model.

Based on the complex nature of the changes in the production facility, latent profile analysis uncovered four classes of employees that were differentially affected by the complex changes. As these employees experienced the change differently, a multi-group comparison of the mediating processes was carried out to test whether they also react differently to the changes (e.g., Holt et al, 2007b). The results of the multi-group comparison showed no meaningful decrease in model fit, when the relationships between the variables of the model

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were constrained to be equal across the four classes. Hence, the results reveal no difference in the relationships proposed in the mediation model for employees that were differently affected by the complex change process.

Taken together, the results lend support to the often-assumed positive relationship of organizational commitment and employees' change reactions. On the one hand, commitment directly enhances change-supportive intentions. On the other hand, commitment is related to the employees' development of a favorable attitude toward the change, to the perception of change-related subjective norms in the workplace, and to how capable the employees feel of implementing the changes. Moreover, these explicit psychological reactions to the complex changes suggested by the TPB (Ajzen, 1991) increased the explained variance of change-supportive intentions by 32.6 %. This increase highlights that it is worthwhile to consider specific psychological change reactions in addition to affective organizational commitment. Moreover, the explorative analyses showed that the strength of relationships in the mediation model did not differ across different level of affective commitment, nor across groups of employees' that were differently affected by the complex changes.

Practical Implications

As change support of employees becomes of even more importance in complex organizational changes (Morin et al., 2016), the results of the present study offer valuable insights for preparing and motivating employees in the context of such change processes. In particular, long-term and change-specific influencing strategies can be derived from the results of the present study.

The results reveal the relevance of affective organizational commitment in relation to more positive evaluations of the change process and to higher change-supportive intentions. Thus, setting the ground for future change implementations by strengthening commitment is a long-term lever for a more successful change processes. While affective commitment

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represents a valuable resource for organizational changes, organizations need to invest in adequate HR policies and practices, as well as in the organizational culture to foster organizational commitment. According to Lepak and Snell (2002) organizations can achieve a commitment-based HR configuration by designing jobs that enable employees to routinely make changes, to perform a variety of tasks, to make decisions and to perform job rotations. Furthermore, investments in comprehensive and continuous training activities and a development-oriented performance appraisal system characterize a commitment-based HR approach. Building up a commitment-based HR configuration provides organizations with a competitive advantage in today's dynamic and change-intensive context, as the employees will likely show greater change support.

In relation to the change-specific influencing strategies, the results of the mediation analysis provide helpful insights as the TPB variables largely contributed to explaining changes-supportive intentions. While change-related attitude, subjective norms and PBC are influenced by organizational commitment, they are also well suited as additional change-specific levers for designing tailored interventions to foster change support. Specifically, change agents should aim to generate a positive attitude towards the behavior being changed, a perception that significant others support this behavior, and the feeling that employees have control over performing the behavior. In order to foster a positive attitude towards the change, practitioners could launch motivating information and change communications, providing employees with sufficient and appropriate information about the changes and pointing out the benefits of the changes (e.g., Armenakis, & Harris, 2002). To enhance PBC, it is important to provide adequate training and support for the particular behavior (e.g., Armenakis et al., 1993). In order to generate relevant subjective norms, it is necessary that significant others support the specific change (e.g., Armenakis et al., 1993). Executives should overtly advocate the change and be sensitized for their impact on their employees' change support. Additionally, change agents should be chosen who could convince employees of the necessity

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of the change due to their credibility, reliability, and sincerity (Armenakis et al., 1993).

Specifically, selecting respected opinion leaders among employees and winning them as

change agents is specifically promising as they may be more effective in convincing the

employees of the benefits and also may positively affect the perceptions of subjective norms

regarding the desired behaviors (e.g., Lam & Schaumbroeck, 2000).

The additional effects of the age and occupational status indicate that it is important to

design specific interventions based on the characteristics of the change recipients. A

differentiation between blue-collar and non-blue-collar workers is especially important as

white-collar employees and supervisors are often stronger involved in planning and

implementation of the changes, yet more effort is required for building up positive change-

related attitudes, subjective norms and PBC among blue-collar workers. Additionally, specific

interventions and information for older employees seem necessary to enhance their PBC and

change-supportive intentions. For example, providing specific training opportunities and

additional information on offers of support may be helpful to enhance change-support among

older employees.

Finally, the theoretical framework of the TPB has proven its potential for evidence

based change management in the context of complex organizational changes, as it helps to

identify levers for change-specific action to foster change-support. In the present case, the

results of the survey were discussed in workshops and served to derive actions for improving

the change process. Indeed, the survey was considered an important contribution to the

successful implementation of the changes in the production facility.

Limitations

As with all research, there are limitations worth mentioning. In this study, employees

from only one company participated. While this leads to more control in regards to the

organizational context, the results may be specific to the situation in the organization. All

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employees of this sample had an unlimited contract and the general human resource

configuration of the company can be considered as commitment-based. Additionally, the

change initiative in the production facility provides a specific context, as many of the changes

had positive effects for the employees: The investments in technology improved the work

environment for the employees and increased productivity. The changes in the organization of

work lead to work enrichment and were accompanied by trainings and development

opportunities for the employees. Concerning the changes in the work schedule, another survey

showed that the employees were generally happier with the new shift system because an

unpopular shift was dropped. Additionally, there was a clear statement that no one would be

laid off because of the changes. Although the TPB has been applied successfully in a variety

of change contexts (e.g. Chau, & Hu, 2002; Jimmieson et al., 2008; Peach et al., 2005; Taylor,

& Todd, 1995), it is unclear whether the mediation effects of commitment also hold in other

change contexts. For example, affective committed employees may also choose to resist and

not support specific changes, especially when they have the feeling that the changes are not

appropriate. Thus, further research is needed to investigate whether the results are transferable

to less positive and less complex change initiatives in other companies.

Additionally, the response rate was 42 %, which may raise the concern of non-

response bias. However, it is quite common in the organizational change research that the

response rates range around 30 % to 40 % (e.g., Herscovitch & Meyer, 2002; Jimmieson et

al., 2009; Jimmieson & White, 2011; Oreg, 2003, 2006). Moreover, Rogelberg et al. (2003)

indicate that in most organizational surveys non-response bias is not a serious concern. Their

research suggested that most of non-respondents in organizational surveys are passive non-

responders who do not differ from respondents. Furthermore, analysis of the sample's

characteristics showed that the distribution of age in the sample was almost parallel to the

population. In contrast, blue-collar workers were underrepresented in the sample but the

occupational status was controlled as it was entered as a covariate in the mediation model.

When looking at the responses of blue-collar employees, it can be seen that the participants voiced their critical views as the ranges of responses for all constructs of the mediation model also include the most negative answers.

While age and occupational status could be considered as covariates in the analysis, additional information demographic information, such as tenure or gender were not available due to privacy reasons and data security regulations. Specifically, gender was not assessed, as the percentage of women in the production facility was rather low which is not unusual for blue-collar workers in German mechanical engineering production plants (Federal Statistical Office in Germany, 2012).

As mentioned, the study's context was a complex change process with multiple changes differentially affecting the employees. Indeed, LPA helped to identify groups of employees, which were differentially affected by the complex changes. To determine whether these groups of employees who likely had different specific aspects of the complex change processes in mind, differed in regards to the assumed mediating relationships, a multi-group comparisons of the research model was conducted. The results showed that the strength of the mediating processes did not differ across the identified groups. While these results are promising in regard to the generalizability of the results, more research that explicitly addresses the effect of different change contents is clearly needed.

Furthermore, the data collection relied on self-report measures, which is associated with the threat of common-method bias. However, Lance et al. (2010) showed that common method variance (CMV) seems to not pose such a threat to the results as commonly assumed. Nevertheless, different measurement models were tested to estimate whether CMV might have severely affected our results. These results showed that CMV was not a serious problem and the constructs were sufficiently distinct.

Concerning the operationalization of the constructs, it should be mentioned that, taken the complex nature of the changes into account, the TPB items had to be formulated at a more

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general level, instead of focusing on specific behaviors or individual consequences (Ajzen, 1991, 2006). Another limitation concerns the subjective norms scale with only two items and a resulting relatively low Cronbach's alpha of .67. Nonetheless, the Cronbach's Alpha was close to the suggested value of .70. Thus, future research should aim to increase reliability to determine the precise degree of these effects.

Additionally, the study was based on data collected at a single point, similar to most of the studies that examined change reactions (see Oreg et al., 2011). While collecting cross-sectional field data is an economical procedure to first test a newly developed model, future studies should employ longitudinal study designs to take a specific look at the causal mechanisms. Although affective organizational commitment and the other variables were measured at the same time in the present study, external data from the annual employee surveys in the production department was available, showing that the last two years before the study, commitment was as high as it was in this survey. However, based on longitudinal designs future research would be able to explicitly investigate the operating direction of the effects. For example, reciprocal relations between affective organizational commitment and change-supportive intentions might be possible, as commitment is also suggested as an outcome affected by organizational changes (Fedor et al., 2006).

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TABLES

Table 1. Literature overview of change readiness conceptualizations and their

relationship to change-supportive intentions (CSI).

Conceptualization of readiness	Relationship to CSI
"Readiness, which is similar to Lewin's (1951) concept of unfreezing, is reflected in organizational members' beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization's capacity to successfully make those changes. Readiness is the cognitive precursor to the behaviors of either resistance to, or support for, a change effort." (Armenakis, et al., 1993, pp. 681-682)	Intentions are seen as one facet of change readiness.
"Readiness for change is conceptualized in terms of an individual's perception of a specific facet of his or her work environment - the extent to which the organization is perceived to be ready to take on large-scale change." (Eby et al., 2000, p. 422)	Readiness represents a perception of the work environment, likely being an antecedent of intentions.
"Readiness for change was defined as a comprehensive attitude that is influenced simultaneously by the content (i.e., what is being changed), the process (i.e., how the change is being implemented), the context (i.e., circumstances under which the change is occurring), and the individuals (i.e., characteristics of those being asked to change) involved" (Holt et al., 2007b, p. 235) "Readiness collectively reflects the extent to which an individual or individuals are cognitively and emotionally inclined to accept, embrace, and adopt a particular plan to purposefully alter the status quo." (Holt et al., 2007b, p. 235)	Readiness is conceptualized as comprehensive attitude focusing on specific perceptions of the changes. Intentions are addressed implicitly.
"We consider organizational readiness for change as the extent to which organizational members are psychologically and behaviorally prepared to implement organizational change." (Weiner et al. 2008, p. 381)	Readiness is defined as psychological and behavioral preparedness which is conceptually close to intentions.
"Readiness for change is conceived as a multifaceted concept that comprises an emotional dimension of change, a cognitive dimension of change, and an intentional dimension of change. This multifaceted view of readiness for change as a triadic attitude instead of unifaceted operationalization is better at capturing the complexity of the phenomenon." (Bouckenooghe et al., 2009, p. 251)	Intentions are seen as one facet of change readiness.
"Three factors [attitude, subjective norm and PBC] are suggested to determine an individual's readiness to perform the respective behavior (behavioral intention), which, in turn, has been shown to be a strong predictor of actual behavior (e.g., Armitage & Conner, 2000)." (Kim et al., 2011, p.1670)	Readiness and behavioral intentions are seen as similar concepts.
"Readiness to change is conceptualized as a broad construct, reflecting a combination of a number of factors that indicate the likelihood that someone will start or continue being engaged in behaviours associated with change such as support and participation" (Vakola, 2013, p. 97)	Readiness is seen as broad construct which may encompass intentions.
"Change readiness is the most prevalent positive attitude toward change that has been studied in the organizational change literature." (Rafferty et al., 2013, p. 111) "Armenakis et al.'s definition encompasses behavioral intentions. However, intentions are concerned with the motivational factors that influence a behavior and are indicators of how hard a person is willing to try and of how much effort he or she is willing to exert in order to perform the behavior (Ajzen, 1991). We propose that it is not appropriate to include intentions as a component of change readiness" (Rafferty et al., 2013, p. 114)	Change readiness is seen as an attitude toward change. Intentions are suggested to be a consequence of readiness.

Notes: * Armenakis et al.'s (1993) conceptualization is widely used in the change management literature and research (e.g. By, 2007; Chonko et al., 2002; Eby et al., 2000; Kwahk & Kim, 2008; Rafferty & Simons, 2006).

TABLES

Table 2. Descriptives, standard deviations, correlations and Cronbach's alpha for observed scales.

		N	Mean	SD	1	2	3	4	5
1	Affective Commitment	667	4.28	.93	(.93)				
2	Change-related Attitude	667	3.69	.95	.35**	(.94)			
3	Change-related Subjective Norms	667	3.84	.85	.27**	.47**	(.67)		
4	Change-related PBC	667	3.16	.92	.32**	.52**	.49**	(.85)	
5	Change-supportive Intentions	667	4.00	.87	.46**	.66**	.51**	.58**	(.93)
	Age	660			.16**	-.02	.04	-.13**	-.05
	Occupational Status	619			.21**	.31**	.26**	.25**	.28**

Notes: Cronbach's alpha coefficients (Cronbach, 1951) are in parentheses along the main diagonal; * p < .05; ** p<.01. Age was coded in groups: 1 = below 25 years old, 2 = 25 to 29 years old, 3 = 30 to 39 years old, 4 = 40 to 50 years old, 5 = over 50 years old; occupational status was coded as 1 for blue-collar workers and 2 for non-blue-collar workers (white-collar and supervisors).

Table 3. Results of the mediation model and the moderated mediation model for the LPA groups.

			Mediation Model			
			Coefficient	SE	R²	ΔR²
Direct effects						
Change-related Attitude as DV					9,8%	
Step 1	Age		-.01	.03		
	Occupational Status		.77**	.10		
					16,8%	7%
Step 2	Age		-.05	.03		
	Occupational Status		.63**	.09		
	Affective Commitment		.29**	.04		
Change-related Subjective Norms as DV					7,2%	
Step 1	Age		.05	.03		
	Occupational Status		.59**	.09		
					10,8%	3,6%
Step 2	Age		.02	.03		
	Occupational Status		.49**	.09		
	Affective Commitment		.19**	.04		
Change-related PBC as DV					7,6%	
Step 1	Age		-.09**	.03		
	Occupational Status		.58**	.09		
					16,3%	8,7%
Step 2	Age		-.14**	.03		
	Occupational Status		.42**	.09		
	Affective Commitment		.31**	.04		
Change-supportive Intentions as DV					8%	
Step 1	Age		-.03	.03		
	Occupational Status		.63**	.09		
					25,3%	17,3%
Step 2	Age		-.09**	.03		
	Occupational Status		.42**	.08		
	Affective Commitment		.41**	.04		
					58%	32,6%
Step 3	Age		-.05*	.02		
	Occupational Status		.02	.06		
	Affective Commitment		.21**	.03		
	Change-related Attitude		.36**	.03		
	Change-related Subjective Norms		.16**	.03		
	Change-related PBC		.22**	.03		
Indirect effects on Change-supportive Intentions			Effect	Boot SE	LL 95% CI	UL 95% CI
AC via Change-related Attitude			.10	.02	.07	.15
AC via Change-related Subjective Norms			.03	.01	.01	.06
AC via Change-related PBC			.07	.01	.04	.10
Normal theory tests (Sobel tests)			Effect	SE	Z	p
AC via Change-related Attitude			.10	.02	6,15	.000
AC via Change-related Subjective Norms			.03	.01	3,48	.001
AC via Change-related PBC			.07	.01	5,11	.000

Notes: Mean centering was used for product terms, DV = dependent variable, SE = standard error, AC = Affective Commitment, *=p<0.05; **=p<0.01; number of bootstrap samples: 5000, LL 95% CI = Lower Level 95% confidence interval. UL 95% CI = Upper Level 95% confidence interval.
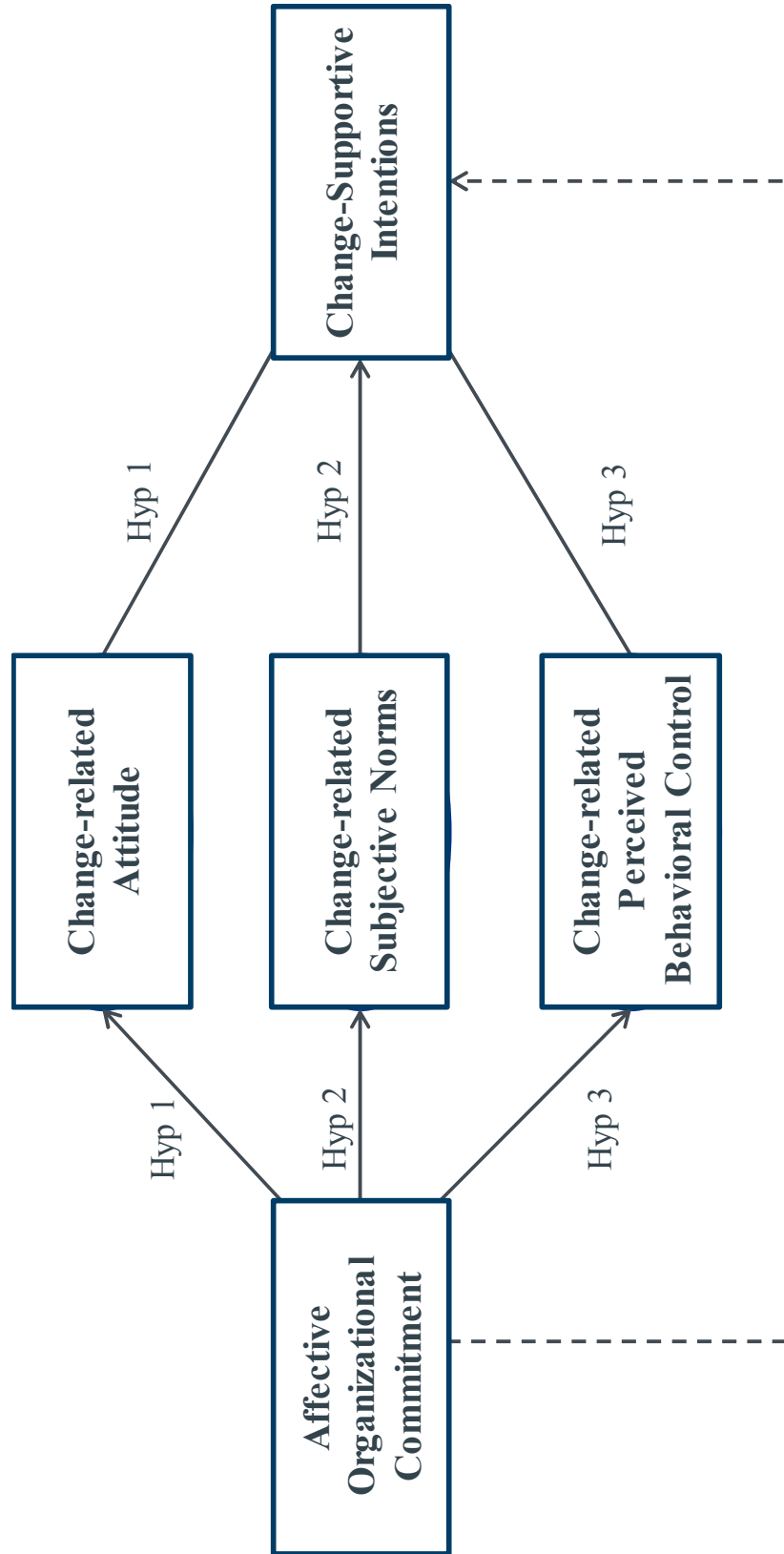
Figures

Figure 1. Linking affective organizational commitment to change-supportive intentions.

Appendix

Study Items

Change-related attitude

1. I think the changes are good.
2. I think the changes are important.
3. I think the changes are beneficial.
4. Overall, I have a positive attitude towards the changes.

Change-related subjective norms

1. Supporting the changes is valued in my department. [a]
2. Most people whose opinions I value, approve of the changes. [a]
3. It is expected of me to support the changes.
4. Overall, I have the feeling that the changes are wanted in my department.

Change-related perceived behavioral control (PBC)

1. I have the competence to implement the changes.
2. I feel sufficiently prepared for the changes. [a]
3. I have enough time and opportunities to implement the intended changes.
4. Overall, I have the impression that I can implement the changes well.

Change-supportive intentions
1. I will make an effort to ensure the changes are met with success.
2. I will actively contribute to the changes.
3. I am willing to actively participate in the changes.
4. Overall, I intend to support the changes.

Affective organizational commitment

1. I am proud to work for the organization.
2. I like working for the organization.
3. I feel committed to the organization.

[a] =not included in the final scale.

1