



Article

Can Different Types of Non-Territorial Working Satisfy Employees' Needs for Autonomy and Belongingness? Insights From Self-Determination Theory

Environment and Behavior
1–34

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DOI: 10.1177/0013916520942603

journals.sagepub.com/home/eab



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Abstract

Organizations are increasingly adopting non-territorial organizational models with unassigned desks. However, previous research has: (1) shown mixed results regarding the impact of non-territorial working on employees, (2) largely examined non-territorial working in its purest sense without considering the nuanced differences in non-territorial working, and (3) not understood the mechanisms underlying the relation between non-territorial working and employee outcomes. To address these research gaps, we apply self-determination theory, which argues that meeting basic psychological needs of autonomy and belonging allows optimal human development, to the physical environment of office spaces. Specifically, we investigated whether the relationship of two types of non-territorial working with employee work engagement, emotional exhaustion, job satisfaction, and affective commitment is mediated via autonomy over office spaces and belongingness. Data were collected from 127 working New Zealanders who have adopted two types of non-territorial working (i.e., work arrangement 1 and work arrangement 2)

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in an organization. We found that although workers with work arrangement 2 did not report higher belongingness than those with work arrangement 1, workers with work arrangement 1 reported higher autonomy over office spaces than those with work arrangement 2. Moreover, belongingness was related to higher work engagement, job satisfaction, and affective commitment but lower emotional exhaustion, while autonomy over office spaces was related to increased job satisfaction and affective commitment but decreased emotional exhaustion. We also found that autonomy over office spaces, but not belongingness, mediated the relationship of non-territorial working with emotional exhaustion and job satisfaction.

Keywords

non-territorial working, autonomy, belongingness, employee well-being, self-determination theory

Faced with intensified global competition, periods of economic recession, and ever-changing technologies, organizations have increasingly engaged in activities to remain competitive. Since office space is typically the second-biggest cost for organizations (McCoy, 2005) and advancement in technology allows employees to work in places other than their office (Khazanchi et al., 2018), organizations are replacing fixed, assigned desks with shared, unassigned facilities. Indeed, two-thirds of 400 surveyed multinational corporations plan to implement shared-desk workstations by 2020, up from the current 30% (Schlesinger, 2017). In another survey of 138 organizations, 25% of those surveyed have already adopted flexible working to some degree, and 52% of those who have not done so plan to implement this new way of working within 3 years (Americas Occupier Survey, 2018).

The physical environment of one's workplace can positively or negatively influence employee job attitudes and wellbeing (Grant et al., 2019; International Well Building Institute, 2018; Vischer, 2008a, 2008b; Wohlers & Hertel, 2017; World Health Organization, 2010). However, the extant literature on the influences of a non-territorial workplace is lagging. On the one hand, research on how the physical work environment (e.g., cellular offices, open-plan offices, shared, unassigned offices) may affect employees is limited and has *mixed* findings (Ashkanasy et al., 2014; Venezia & Allee, 2007). For example, a non-territorial workplace that allows employees to choose where and with whom they work and enhances employee interactions may lead to positive outcomes (e.g., Danielsson & Bodin, 2008; Felstead et al., 2005). However, a non-territorial workplace lacking various features (Kim

et al., 2016) can cause adverse employee consequences (e.g., Elsbach, 2003). Given the mixed findings on the impacts of a non-territorial workplace, more research is needed to have a deeper understanding of the functions of different features in a non-territorial workplace. On the other hand, much of the current literature examines a non-territorial workplace in its *purest* sense where there is no ownership of a desk, no ability to personalize or control spaces, and no functional group boundaries (Elsbach, 2003). In reality, however, the non-territorial workplace in many organizations is more nuanced and varied. For example, without compromising the overall principles of the shared purpose and community spirit, organizations may co-locate functional groups in zones to enhance employees' sense of connection (Felstead et al., 2005). As such, it is crucial to take a more nuanced perspective to understand the impact of different types of non-territorial working.

Building on self-determination theory (SDT; Deci et al., 2017), we focus on two types of non-territorial working in an attempt to understand how and why these two new ways of working may impact employee work engagement, emotional exhaustion, job satisfaction, and affective commitment (via basic psychological needs of autonomy over office spaces or belongingness). Doing so contributes to the extant literature in a number of ways. First, we deepen the understanding of the effects of non-territorial working on employee outcomes by comparing and contrasting two types of new ways of working, thereby extending beyond the traditional, purest perspective on non-territorial working. Second, the literature on autonomy has primarily focused on autonomy over work scheduling, decision making, and work methods (Morgeson & Humphrey, 2006) but largely overlooked the potential impact of flexibility in the choice of the physical work environment (Grant et al., 2019) on employee outcomes. By proposing the factor of autonomy over office spaces and examining its antecedents and outcomes, this study expands upon the conceptualization of autonomy in the existing literature. Third, based on SDT, we attempt to explain why non-territorial working may influence employee outcomes by investigating two theory-driven mediators—autonomy over office spaces and belongingness. As such, by integrating Environmental Psychology and Organizational Behavior, we shed light on the underlying mechanisms of the associations between non-territorial working and employee outcomes. Practically speaking, our study offers valuable suggestions for organizations adopting non-territorial working.

The Non-Territorial Workplace

A non-territorial workplace is a shared, unassigned organizational working model. Specifically, in a non-territorial workplace, the vast majority of

facilities, including workstations, are shared with few exceptions, such as specialized technology or task functions that may require a fixed desk. It is “ours” not “mine.” Workstations are provided on a ratio of less than one per person. This ratio accounts for working away from the desk (e.g., in meetings), working from home, and part-time workers. Furniture and spatial organization are designed to suit activity-based tasks, including varying modes of private, individual work to open space that facilitates collaboration with others (Kim et al., 2016; Vos & van der Voordt, 2001). Individuals are given the opportunity to choose the setting that best suits a task and may move throughout the day depending on their work’s needs. By removing individual ownership and boundaries of functional groups, the organization, aiming to foster a sense of belonging to the wider organization among employees, becomes a shared and equitable workplace (Elsbach, 2003).

A non-territorial workplace has undeniable financial benefits to the organization by reducing occupancy costs and space required (Chigot, 2003; McCoy, 2005; van Ree, 2002). However, it is debatable whether a non-territorial workplace can meet employee needs and enhance their well-being (van Ree, 2002). Indeed, research on employee benefits of a non-territorial workplace has shown mixed findings. For example, a non-territorial workplace may allow employees to choose where and with whom they work, which can result in a great sense of autonomy and high levels of job satisfaction and well-being (Danielsson & Bodin, 2008; Kelliher & Anderson, 2008; Vos & Van der Voordt, 2001). Moreover, a non-territorial workplace may increase effective interactions across different functional groups, thereby reducing isolation, fostering a sense of belonging, and establishing collective organizational goals (Chigot, 2003; Felstead et al., 2005; World Health Organization, 2010). However, a non-territorial workplace does not automatically ensure positive outcomes. Common complaints about a non-territorial workplace include: not having enough desks, the difficulty in locating team members, a lack of opportunities to personalize, discomfort, wasting time moving between work settings, and hygiene issues relating to sharing desks, to name a few (Kim et al., 2016). As a result, negative consequences of a non-territorial workplace include: a lack of perceived control, a diminished sense of belonging, and decreased interpersonal relationships among colleagues (Elsbach, 2003; Felstead et al., 2005; Knight & Haslam, 2010a; Morrison & Macky, 2017). These mixed results suggest that it is necessary to conduct more research in order to better understand the impacts of a non-territorial workplace.

Moreover, the vast majority of existing studies on the non-territorial workplace focus on a *purest* non-territorial workplace that is characterized by a lack of ownership of a desk, inability to personalize or control space, and an absence of functional group boundaries (Elsbach, 2003). In reality, however,

the arrangement of a non-territorial workplace in organizations may vary. Yet, the current literature has not examined the nuanced differences in a non-territorial workplace, thereby limiting our understanding of the unique impacts of different types of non-territorial working. In this study, we focus on two different types of non-territorial work arrangements within one organization. In doing so, we take a first step to shed light on how and why different types of non-territorial working may influence employees differently.

Work Arrangement 1 Versus Work Arrangement 2

Work arrangement 1 allows employees to choose where and with whom they work.¹ Modern technology allows employees to easily work with other business groups in their building, or work away from the office. Employees with this type of work arrangement are offered an informally established area where their team may be working. It is likely that team members will sit in this zone. However, their job may require them to sit in other parts of the building to collaborate with others. In contrast, an organization decides that employees with *work arrangement 2* must sit in a specific area of the building with their functional group. Within this area, all workstations and other settings are shared and they do not “own” a desk. Employees with work arrangement 2 can arrange with the organization to work from home, but are typically expected to be present at work. All employees, regardless of their work arrangements, share facilities, such as printer zones, tea points, and other organizational resources, which are centralized and away from their functional group (Table 1).

There are three key differences between these two groups regarding policies of the non-territorial workplace and the use of office spaces. Firstly, employees with work arrangement 1 have more autonomy to choose where and with whom they work than their counterparts with work arrangement 2. On the contrary, the organization determines the location of employees with work arrangement 2 depending on their functionality. Second, employees with work arrangement 2 are co-located and have more opportunities for repeated interactions with their functional group, compared to employees with work arrangement 1 who may be working across multiple group functions, therefore spending less time with their own functional group. Third, employees with work arrangement 2 have some ability to adapt their spaces to define their group. For example, employees with work arrangement 2 may use signs to signal group boundaries and/or display team members’ achievements and objects that allow them to identify the group. Employees with work arrangement 1, on the other hand, do not typically personalize their team spaces but can adapt shared project spaces to suit work-related needs.

Table 1. A Comparison of Attributes of Flexible Working, Activity-Based Working, and Agile Working With Work Arrangement I and Work Arrangement 2.

Comparison category	Key concepts				
	Flexible working (FW)	Activity based working (ABW)	Agile working (AW)	Work arrangement I	Work arrangement 2
Flexibility in scheduling work hours	Permits flexibility in scheduling of work hours (i.e., flextime or scheduling flexibility)	Permits scheduling of work throughout the day based on the activity required.	Scheduling of work is based around project requirements and teams are expected to be together at defined times to collaborate.	Permits FW as arranged with one's manager. Permits ABW. Project teams may be expected to be together at defined times to collaborate.	Permits FW as arranged with one's manager. Permits ABW
Flexibility in work location	Permits flexibility in where one works, typically in the office or from home (i.e., telecommuting or flexplace).	Permits flexibility in where one works in activity-based office settings.	Permits flexibility in where one works but often requires dedicated project zones.	Permits FW Permits ABW May be required to work in project zones at specified times.	Permits FW but typically work from office. Permits ABW but typically within a nominated zone or floor.
Ability to change or personalize the physical work environment	NA	Individual personalization is not typically allowed. Some organizations may permit expression of functional group identity.	Project/team zones can be modified to suit work needs	Similar to ABW, individual personalization is not allowed. Similar to AW, project/team zones can be modified to suit work needs	Similar to ABW, individual personalization is not allowed. Permits expression of functional group identity.
Allocation of space and work settings	NA	All work settings are shared. An organization can determine a zone or neighborhood where functional groups are co-located.	Project team has a home base that allows them to work closely together when required.	Similar to ABW, workers have a home base where members of their business unit will likely be located. Similar to AW, project zones may also be allocated.	Similar to ABW, all work settings are shared. The organization determines a zone or neighborhood where functional groups are co-located.

For example, whiteboards and workshop sessions can be left in place for the duration of the project and furniture can be moved to suit project needs. We, therefore, argue that these key differences between employees with work arrangement 1 or 2 might cause them to have different levels of work engagement, burnout, and job attitudes via different basic psychological needs (Deci et al., 2017).

Self-Determination Theory

As a macro theory of human motivation, SDT has expanded to research in various life domains from its initial focus on individual intrinsic and extrinsic motivation (Deci et al., 2017). Specifically, SDT distinguishes autonomous motivation from controlled motivation. The former consists of both intrinsic motivation (i.e., the motivation lies in the activity itself) and integrated extrinsic motivation (i.e., the activity has been integrated into one's sense of self). The latter, on the other hand, comprises external regulation (i.e., one's action is contingent upon external reward or punishment), introjected regulation (i.e., one's action has been partially internalized and is energized by factors such as a concern with status and recognition, contingent self-esteem, or ego-involvements), and identified regulation (i.e., one's action is more congruent with one's personal goals and identities and one has greater freedom and volition). Although autonomous motivation allows people to experience volition, controlled motivation pressures people to engage in actions. On the contrary to autonomous and controlled motivation, that are intentional and energize and direct behaviors, amotivation indicates a lack of intention and motivation. To summarize, SDT proposes a self-determination continuum ranging from amotivation, external motivation, introjected motivation, identified motivation, integrated motivation, and intrinsic motivation that are progressively more self-determined (Deci et al., 2017).

Moreover, SDT confirms that it is necessary to satisfy a set of universal, psychological needs for effective functioning and psychological health (Deci et al., 2017). According to SDT, the three basic psychological needs that allow optimal human functioning are: autonomy (i.e., self-determination), belongingness (i.e., relatedness), and competence (i.e., effectance; Deci et al., 2017). The needs for autonomy, belongingness, and competence "provide the basis for categorizing aspects of the environment as supportive versus antagonistic to integrated and vital human functioning" (Deci & Ryan, 2002, p. 6). That is, the environment allowing the satisfaction of the three basic needs can facilitate healthy functioning, whereas the environment thwarting these needs can hinder the realization of healthy functioning (Deci & Ryan, 2002). SDT has been successfully applied in numerous domains, such as education

(Reeve, 2002), health care (Ng et al., 2012), sports and physical activity (Teixeira et al., 2012), organizations (Gagné & Deci, 2005), and environments (Philippe & Vallerand, 2008; see <https://selfdeterminationtheory.org/applications/> for a full list of topics applying SDT).

In the organizational setting, the influence of varied environmental factors on employee motivations, experiences, and well-being is mainly mediated by the three basic psychological needs of autonomy, belongingness, and competence (Deci & Ryan, 2000), a proposition that has been largely supported by empirical evidence (Deci et al., 2017). Additionally, confirmed by a recent meta-analysis (Van den Broeck et al., 2016), each basic psychological need—autonomy, belongingness, competence—can be examined separately and may serve as an *independent* predictor of employee functioning, growth, and well-being (Deci & Ryan, 2000).

Autonomy and belongingness are particularly relevant to this study because they have been shown to be influenced by non-territorial working (Elsbach, 2003; Felstead et al., 2005; Grant et al., 2019; Hoskins, 2014; Kelliher & Anderson, 2008; Knight & Haslam, 2010a; Morrison, 2004; Morrison & Macky, 2017; Vischer, 2007; Wohlers & Hertel, 2017). It is notable that we did not examine a third basic need of competence because competence, similar to self-efficacy and defined as one's desire to feel capable of mastering the environment (Van den Broeck et al., 2010), is not relevant to non-territorial working (c.f. Wohlers & Hertel, 2017). Indeed, many studies have only focused on one (especially autonomy) or two basic needs that are most pertaining to their research purposes (Deci et al., 2017).

Work Arrangement 1 and Autonomy Over Office Spaces

Autonomy involves experiencing choice and acting with volition and independence (Deci & Ryan, 2000). “An autonomy-supportive environment refers to environmental conditions that promote and facilitate one's possibility for being self-initiating and choosing one's own actions” (Philippe & Vallerand, 2008, p. 81). SDT proposes that exposure to autonomy-supportive environments allows one to fulfill the need for autonomy (Deci & Ryan, 2002). In other words, environments promoting choices and initiatives and supporting the need for autonomy can enhance one's sense of autonomy because freely choosing and adapting one's workstation (i.e., autonomy over office spaces²) enables one to be self-determined (Deci et al., 2001).

We expect that employees with work arrangement 1 will have a higher sense of autonomy over office spaces than those with work arrangement 2 (c.f. Wohlers & Hertel, 2017). Research has shown that when employees have some ability to control and adapt their work spaces (Knight &

Haslam, 2010b) and the flexibility to organize their working day to suit their needs and choose where and with whom they work to best achieve a task (Kelliher & Anderson, 2008), autonomy is enhanced. As above mentioned, the non-territorial workplace policies regarding the use of spaces allow employees with work arrangement 1 to have more environmental autonomy (i.e., autonomy over office spaces). For example, employees with work arrangement 1 can choose where and with whom they work. Employees with work arrangement 2, on the other hand, cannot choose where they work but are confined in the zone dedicated to their functional group. Therefore, we propose that:

Hypothesis 1a: *Employees with work arrangement 1 will report a higher level of autonomy over office spaces than those with work arrangement 2.*

Work Arrangement 2 and Belongingness

Belongingness or “the need to belong” is a fundamental human motivation that drives us to establish and maintain social connections in all aspects of our lives (Baumeister & Leary, 1995). Developing a secure, relational base with others enables an individual to thrive (Ryan & Deci, 2000). Being connected (i.e., belongingness) allows us to affirm our own values in relation to others. This sense of belonging is centrally important for employees to value organizational goals and display organization-expected behaviors (Gagné & Deci, 2005; Tajfel, 1972).

We expect employees with work arrangement 2 to have a higher sense of belonging than employees with work arrangement 1. Belongingness in the workplace can be fostered by the co-location of people, repeated interactions, informal conversations, and the ability to establish friendships with fellow employees (Kraut et al., 2002; Morrison, 2004). A sense of belonging may also be enhanced by the ability to assert distinctiveness as a group, visually defining how one fits into a social context (Elsbach, 2003; Proshansky et al., 1983; Vischer, 2008a). Lastly, belongingness may be fostered through the spatial organization that promotes chance or “bump” encounters when moving from one work setting to another, or socializing at centralized hubs, such as refreshment areas and printer zones (Felstead et al., 2005). As mentioned before, the non-territorial workplace policies support employees in work arrangement 2 to work in these ways. For example, employees in work arrangement 2 must sit in a specific area of the building with their functional group. Employees in work arrangement 1, on the other hand, are more likely to work away from their team and need to arrange a time to meet. However, formally-arranged meetings are insufficient to foster a sense of belonging

(Kraut et al., 1988, 1990). While interactions may happen when moving between work settings and in shared areas, employees with work arrangement 1 have fewer opportunities for repeated encounters that solidify connections to their team and others, compared to those with work arrangement 2. We, therefore, propose that:

Hypothesis 1b: *Employees with work arrangement 2 will report a higher level of belongingness than those with work arrangement 1.*

Self-Determination Theory: Outcomes of Autonomy Over Office Spaces and Belongingness

Based on SDT (Deci et al., 2017; Deci & Ryan, 2000), meeting the basic psychological needs (e.g., autonomy and belongingness) is essential for humans to actualize their potentials, to flourish, and to be protected from maladaptive functioning. Indeed, previous empirical research has demonstrated that both autonomy and belongingness can generate positive outcomes for individuals and organizations (Haslam et al., 2009; Jetten et al., 2009; Morrison, 2004; Spector, 1986; Van den Broeck et al., 2016). In particular, we examine the associations of autonomy over office spaces and belongingness with work engagement, emotional exhaustion, job satisfaction, and affective organizational commitment. Specifically, work engagement is defined as a positive, fulfilling, affective-motivational work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2002, 2006). At the core of burnout is emotional exhaustion. As the most commonly examined dimension of burnout, emotional exhaustion focuses on the extent to which employees feel emotionally “spent” (Maslach et al., 2001; Schaufeli et al., 2009). Job satisfaction refers to a positive emotional state that results from the appraisal that an individual makes about his/her job and job experiences (Locke, 1976), whereas affective organizational commitment refers to how strongly an employee identifies with, is involved in, and has a sense of belonging to an organization (Allen & Meyer, 1990).

According to SDT (Deci et al., 2017; Gagné & Deci, 2005), employees with high levels of autonomy over office spaces in the workplace will experience personal fulfillment and satisfaction and identify with organizational goals. Empirically, autonomy has been shown to predict work engagement, emotional exhaustion, job satisfaction, and affective commitment (Bono & Judge, 2003; Fernet et al., 2013; Gagné et al., 2004; Gagné & Koestner, 2002; Spector, 1986; Van den Broeck et al., 2016). Specific to the use of spaces in the organizational setting, Knight and Haslam (2010b) have shown that a lack

of autonomy was related to decreased job satisfaction and well-being via lowered psychological comfort and organizational identification. We, therefore, propose that:

Hypothesis 2: *A higher level of autonomy over office spaces is associated with increased work engagement (H2a), decreased emotional exhaustion (H2b), enhanced job satisfaction (H2c), and heightened affective commitment (H2d).*

Similarly, SDT (Deci et al., 2017; Gagné & Deci, 2005) also proposes that having a sense of belonging enables employees to feel being part of a team, flourish, and bring about organization-expected attitudes and behaviors. Empirically, belongingness has also been shown to predict higher work engagement, job satisfaction, and affective commitment, as well as lower burnout (Fernet et al., 2013; Jetten et al., 2009; Morrison, 2004; Vansteenkiste et al., 2007; Van den Broeck et al., 2016). For example, in a study of 412 participants, Morrison (2004) found that being connected to one's functional work group has direct and measurable effects on job satisfaction and organizational commitment. We, therefore, propose that:

Hypothesis 3: *A higher level of belongingness is associated with increased work engagement (H3a), decreased emotional exhaustion (H3b), enhanced job satisfaction (H3c), and heightened affective commitment (H3d).*

Autonomy Over Office Spaces and Belongingness as Mediators

The present research aims to extend previous research on the non-territorial workplace by examining whether meeting the needs of autonomy over office spaces and belongingness can explain the relationships of two new ways of working in a non-territorial workplace (i.e., work arrangement 1 vs. 2) with employee work engagement, emotional exhaustion, job satisfaction, and affective commitment.³ Specifically, SDT (Deci et al., 2017; Gagné & Deci, 2005) posits that the environment influences employee functioning, growth, and well-being via satisfying or thwarting their basic psychological needs. Empirical research has supported the mediating role of basic need satisfaction in the relationship between organizational factors and employee well-being (e.g., Adie et al., 2008; Ryan et al., 2008). As such, one's way of working (i.e., work arrangement 1 vs. 2) that meets the basic psychological needs of autonomy over office spaces and belongingness may enhance employee well-being. In other words, autonomy over office spaces and belongingness may mediate the relationship between employee ways of

working (i.e., work arrangement 1 vs. 2) and their well-being and attitudes (Deci et al., 2017; Philippe & Vallerand, 2008).

Previous research has shown that specific types of ways of working and the way in which employees use their physical environment can positively or negatively influence perceived autonomy (Danielsson & Bodin, 2008; Kelliher & Anderson, 2008). Specifically, as aforementioned, certain types of non-territorial working have been shown to influence autonomy with regards to the use of spaces (Knight & Haslam, 2010a, 2010b). On the other hand, a high level of autonomy has been consistently found to predict work engagement, burnout, job satisfaction, and affective commitment (Bono & Judge, 2003; Fernet et al., 2013; Gagné et al., 2004; Gagné & Koestner, 2002; Spector, 1986; Van den Broeck et al., 2016). Together, we predict that the way of working that meets one's need for autonomy over office spaces will enable employees to report positive outcomes. Specifically, we propose that:

Hypothesis 4: The effects of non-territorial working (i.e., work arrangement 1 vs. 2) on employee work engagement (H4a), emotional exhaustion (H4b), job satisfaction (H4c), and affective commitment (H4d) will be mediated by autonomy over office spaces.

Research has also shown that the workspace arrangement plays a role in the establishment of connections with others and fosters a sense of belonging to groups and the organization (Elsbach, 2003; Felstead et al., 2005; Kraut et al., 2002; Morrison, 2004). On the other hand, in line with SDT (Deci et al., 2017; Gagné & Deci, 2005), belongingness has been found to predict work engagement, burnout, job satisfaction, and affective commitment (Fernet et al., 2013; Jetten et al., 2009; Morrison, 2004; Van den Broeck et al., 2016). Together, we predict that the way of working that meets one's need for belonging will enable employees to report positive outcomes. Specifically, we propose that:

Hypothesis 5: The effects of the non-territorial workplace (i.e., work arrangement 1 vs. 2) on employee work engagement (H5a), emotional exhaustion (H5b), job satisfaction (H5c), and affective commitment (H5d) will be mediated by belongingness.

The Aims

As shown in Figure, this study is designed to investigate whether different ways of working (i.e., work arrangement 1 vs. 2) can meet employees' different psychological needs (i.e., autonomy over office spaces vs. belongingness). Additionally, we also aim to examine whether autonomy over office spaces

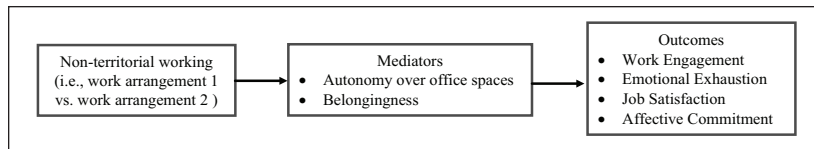


Figure 1. The hypothesized relationships.

and belongingness may explain (i.e., mediate) the relation between ways of working (i.e., work arrangement 1 vs. 2) and employee work engagement, emotional exhaustion, job satisfaction, and affective commitment. In order to do so, we distributed a survey to a New Zealand organization that has adopted the non-territorial working that features either work arrangement 1 or work arrangement 2.

Method

Participants and Procedure

The study was approved by the human participants ethics committee of the second author's university (Reference #021175). A power analysis conducted using G*Power (Faul et al., 2009) identified a minimum sample of 100 to have 80% power (with an $\alpha = .05$) to detect a small effect of 10% variance in outcomes of interest explained by autonomy over office spaces and belongingness. To test our hypotheses, a survey was conducted within a single organization in New Zealand. In this organization, all workers are located in the same building and share the same work and social spaces. The density of occupation is 0.8 ergonomic workstation per person, taking into account the expected peak utilization. Workstations are located in zones that occupy approximately 50% of a typical working floor, surrounded by supporting open collaboration (22%), meeting rooms (6%), quiet and focus spaces (3%), as well as support spaces and circulation (7%). Each floor has a generous amount of shared social spaces, equating to at least 12% of the typical working floor area. A typical working floor is further supported by purpose-built destination spaces, including meeting and conference suites, two centralized cafés, wellbeing facilities with a prayer room, reflection/quiet spaces, a wellness room, parents rooms, games and exercise spaces, as well as an end of trip facility. The overall usable square meter per person is approximately 10.5m².

Participants were selected by the organization to represent all business units. The survey was sent to 482 randomly selected permanent employees in

the organization; 139 responded to our survey. Participants were asked to select their working style, defined as mobile working (i.e., work arrangement 1), flexible working (i.e., work arrangement 2), or fixed-desk working. Employees were familiar with these terms as this organization has frequently used them. Our sample included 44 employees with work arrangement 1, 83 employees with work arrangement 2, and 12 fixed-desk workers, who were excluded from analyses because they did not operate under a non-territorial, shared workplace policy, leaving a final sample size of 127. It is worth noting that employees in work arrangement 1 or 2 differ mainly by the work arrangement that they are assigned to. For example, two employees from the same business unit with the same job level could be assigned into either work arrangement, depending on their level of mobility required and their needs to collaborate across business units.

There were slightly more male participants ($n=66$) than female participants ($n=60$). One participant chose not to answer this question. The age range of participants was between 18 and 74 years old, with the most common age range being 35 to 44 years old (35.5%). The majority of participants were 54 years old or younger (93.7%). The majority of participants (67%) identified themselves as New Zealand European. The next largest ethnicities were Indian (7.9%), Chinese (6.3%), and Māori (5.5%). The remaining participants were from different ethnic backgrounds and represented no more than 2% in any one ethnic group. The participating business units included: Technology (29.9%); Finance (20.5%); Human Resources (15%); Customer operations (12.6%); Consumer (11%); Legal and External Affairs (6.3%); Enterprise (2.4%); and Other (2.4%). On average, employees worked 8.5 hr/day and 43.13 hr/week. During working hours, workers spent on average 34.3 hr in their office (as opposed to working at home or away from the office) and 28.6 hr with members of their business unit. Participants had been with the organization for an average of 8.7 years. Almost all of the participants were full-time employees (93.7%). More than half of the participants (57.5%) had worked in a non-territorial workplace where facilities were shared before.⁴

Measures

Autonomy over office spaces. Because the work-related autonomy scale (Van den Broeck et al., 2010) was specific to job autonomy, we modified this scale to assess perceived autonomy in relation to the use of office spaces ($\alpha = .87$). For example, the statement from the original scale—"I often feel like I have to follow other people's commands"—was changed into "I often feel like

I have to follow other people's commands with regard to the way I use the flexible workplace facilities." Given that the organization we studied has described its non-territorial model as "flexible ways of working", this terminology was used in the questionnaire to ensure that it was familiar and not confusing to participants. Eight items were assessed on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item was "I use the workplace facilities in the way I want to."

Belongingness. Work-related belongingness was measured using the relatedness satisfaction items from the need satisfaction scale (Van den Broeck et al., 2010). Six items were assessed on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example item was "At work, I feel part of a group." Reliability of belongingness was .87.

Work engagement. We measured work engagement with an ultra-short, 3-item version of the Utrecht Work Engagement Scale (UWES-3; Schaufeli et al., 2017), a reliable and valid measure of work engagement (Schaufeli et al., 2017). The three items measuring vigor, dedication, and absorption were "At my work, I feel bursting with energy," "I am enthusiastic about my job," and "I am immersed in my work," respectively. Responses ranged from 1 (*never*) to 7 (*always*). Cronbach's alpha was .83.

Emotional exhaustion. The 5-item Emotional Exhaustion subscale ($\alpha = .89$) of Schaufeli et al.'s (1996) Malsch Burnout Inventory General Survey on a 7-point scale ranging from 0 (*never*) to 6 (*daily*) were used to measure employee emotional exhaustion. One sample item was "I feel emotionally drained from my work."

Job satisfaction. The abridged job in general scale ($\alpha = .85$; Russell et al., 2004) was used to assess overall job satisfaction. Participants were asked to think of their job ("Think of your job in general. All in all, what is it like most of the time?") and respond to eight descriptive items (e.g., "Good") on a three-point scale (yes, don't know, no).

Affective organizational commitment. Affective commitment ($\alpha = .85$) was measured with eight items, anchored on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), from the organizational commitment scale (Allen & Meyer, 1990). An example item was "I would be very happy to spend the rest of my career with this organization."

Analytic Strategies

Prior to examining our hypotheses, we conducted confirmatory factor analysis using *Mplus*. Upon demonstrating the discriminant validity of perceptual constructs, we used structural equation modeling (SEM) to examine our hypotheses. In SEM, items were loaded on their theoretical constructs. We regressed two proposed mediators—autonomy over office spaces and belongingness—on the non-territorial work arrangement (work arrangement 1=1; work arrangement 2=2) to examine Hypotheses 1 and 2. We regressed work engagement, emotional exhaustion, job satisfaction, and affective commitment on autonomy over office spaces and belongingness to examine Hypotheses 2 and 3. We tested the mediation effects—Hypotheses 4 and 5—via the “MODEL INDIRECT” command. To account for common method variance, we used the “controlling for the effects of an unmeasured latent methods factor” statistical remedy suggested by Podsakoff et al. (2003). Specifically, we added a first-order factor with all of the measurement items as indicators to the proposed theoretical model.

Results

Confirmatory Factor Analysis

Because of the relatively small sample size, item parcels were created in SPSS for construct measures with more than three items (Little et al., 2002). Based on Little et al.'s (2002) recommendation, we created three item-parcels per construct by sequentially assigning items per parcel based on the highest to lowest item-to-construct loadings/correlations. We then conducted CFA using *Mplus* to assess the discriminant validity of the six administered perceptual scales (i.e., autonomy over office spaces, belongingness, work engagement, emotional exhaustion, job satisfaction, and affective commitment). The hypothesized six-factor model demonstrated an acceptable fit to the data ($\chi^2[120]=211.49$, $\chi^2/df=1.76$, standardized root-mean-square residual [SRMR]=0.07, root-mean-square error of approximation [RMSEA]=0.08, comparative fit index [CFI]=0.92), and fit the data significantly better than the five-factor model where autonomy over office spaces and belongingness were combined ($\chi^2[5]=167.31$, $p < .001$, $\chi^2/df=3.03$, SRMR=0.15, RMSEA=0.13, CFI=0.77), the five-factor model where work engagement and emotional exhaustion were combined ($\chi^2[5]=100.03$, $p < .001$, $\chi^2/df=2.49$, SRMR=0.08, RMSEA=0.11, CFI=0.83), the five-factor model where job satisfaction and affective commitment were combined ($\chi^2[5]=54.32$,

$p < .001$, $\chi^2/df=2.13$, SRMR=0.07, RMSEA=0.10, CFI=0.87), and a one-factor model ($\chi^2[15]=433.87$, $p < .001$, $\chi^2/df=4.78$, SRMR=0.12, RMSEA=0.18, CFI=0.55), demonstrating the discriminant validity of variables.

Preliminary Analyses and Descriptive Results

Table 2 presents descriptive statistics, Cronbach's alpha, and zero-order correlations among the variables of interest. As can be seen in Table 2, non-territorial working (work arrangement 1=1; work arrangement 2=2) was negatively related to autonomy over office spaces, indicating that employees with work arrangement 1 reported higher autonomy over office spaces than those with work arrangement 2. On the other hand, non-territorial working was positively related to hours spent with business unit members, indicating that employees with work arrangement 2 spent more time with their business unit members than those with work arrangement 1. Moreover, autonomy over office spaces and belongingness were significantly related to work engagement, emotional exhaustion, job satisfaction, and affective commitment.

Hypotheses Testing

Testing Hypothesis 1. We examined whether ways of working (work arrangement 1=1; work arrangement 2=2) influenced employee perceived autonomy over office spaces and belongingness. We found that employees with work arrangement 1 reported a significantly higher level of autonomy over office spaces ($n=41$, $M=5.41$, $SD=1.02$), compared to employees with work arrangement 2 ($n=78$, $M=4.65$, $SD=1.27$), $t=-3.03$, $p=.002$, supporting Hypothesis H1a. Hypothesis 1b, however, was not supported in that employees with work arrangement 2 did not report higher belongingness ($n=64$, $M=5.12$, $SD=1.18$), compared to employees with work arrangement 1 ($n=38$, $M=5.13$, $SD=1.24$), $t=0.60$, *ns*. Taken together, results showed that work arrangement 1 was more likely to meet employees' psychological need for autonomy over office spaces than work arrangement 2, whereas there was no significant difference in belongingness between employees with work arrangement 1 and those with work arrangement 2.

Testing Hypotheses 2 and 3. Autonomy over office spaces was significantly related to lower levels of emotional exhaustion ($b=-0.28$, $SE=0.11$, $p=.010$) and higher levels of job satisfaction ($b=0.39$, $SE=0.09$, $p=.010$) and affective commitment ($b=0.23$, $SE=0.11$, $p=.039$), thus supporting Hypotheses

Table 2. Scale Means, Scale Standard Deviation, Correlations Between Variables and Alpha Coefficients.

Variable	N	M	SD	α	1	2	3	4	5	6	7	8
1. Non-territorial work arrangement	127	—	—	—	—	—	—	—	—	—	—	—
2. Autonomy over office spaces	119	4.91	1.24	.87	-0.29**	—	—	—	—	—	—	—
3. Belongingness	102	5.12	1.20	.87	-0.01	0.33**	—	—	—	—	—	—
4. Work engagement	109	3.69	1.23	.83	0.12	0.28**	0.40**	—	—	—	—	—
5. Emotional exhaustion	102	3.25	1.39	.89	-0.05	-0.28**	-0.27**	-0.40**	—	—	—	—
6. Job satisfaction	108	2.44	0.72	.84	0.09	0.47**	0.53**	0.59**	-0.44**	—	—	—
7. Affective commitment	101	4.34	1.20	.85	0.02	0.40**	0.56**	0.54**	-0.42**	0.60**	—	—
8. Hrs with business unit	122	28.60	10.89	—	0.33**	-0.14	0.06	-0.03	0.04	-0.03	0.08	—
9. Hrs at the office	127	34.31	11.25	—	0.13	-0.19*	-0.05	-0.11	0.18	-0.16	-0.07	0.59**

Note. Non-territorial working styles: 1 = work arrangement 1; 2 = work arrangement 2; Hrs = number of working hours.
* $p < .05$. ** $p < .01$.

2b, 2c, and 2d. However, there was no significant relationship between autonomy over office spaces and work engagement, failing to support Hypothesis 2a. Moreover, belongingness was significantly related to work engagement ($b=0.37$, $SE=0.11$, $p=.001$), emotional exhaustion ($b=-0.28$, $SE=0.11$, $p=.010$), job satisfaction ($b=0.53$, $SE=0.09$, $p<.001$), and affective commitment ($b=0.61$, $SE=0.10$, $p<.001$), supporting Hypotheses 3a to 3d.

Testing Hypotheses 4 and 5. Autonomy over office spaces was found to mediate the relations of non-territorial working (work arrangement 1=1; work arrangement 2=2) with emotional exhaustion (Indirect effect=0.07, $t=1.83$, $p=.054$) and job satisfaction (Indirect effect=-0.11, $t=-2.36$, $p=.018$). However, there was no other significant mediation effect. Thus, we found support for Hypotheses 4b and 4c, but not 4a, 4d, or 5. That is, autonomy over office spaces (but not belongingness) was the underlying mechanism in the relations of non-territorial working with emotional exhaustion and job satisfaction.

Discussion

The current study was designed to investigate whether different non-territorial working (either work arrangement 1 or work arrangement 2) may meet employee needs for autonomy over office spaces or belongingness. It also addressed whether ways of working are related to work engagement, emotional exhaustion, job satisfaction, and affective commitment through autonomy over office spaces or belongingness. Results show that work arrangement 1 (vs. 2) allows employees to experience a higher level of autonomy over office spaces. That is, employees with work arrangement 1 report a significantly higher level of autonomy over office spaces compared to those with work arrangement 2. This supports research that autonomy over office spaces is enhanced when employees are allowed to choose where and with whom they work to best achieve a task (Kelliher & Anderson, 2008) and when employees have some control over workspace facilities (Knight & Haslam, 2010a, 2010b).

However, contrary to our expectation, employees with work arrangement 2 did not report higher levels of belongingness compared to those with work arrangement 1. This finding is surprising because previous research has demonstrated that belongingness in the workplace can be fostered by the collocation of people (Kraut et al., 2002) and the ability to assert distinctiveness as a group (Elsbach, 2003; Vischer, 2008a). We also measured hours spent with one's business unit members to examine whether employees with work arrangement 2 spent more time with their functional group compared to those

with work arrangement 1. Results show that employees with work arrangement 2 indeed spend significantly more time with their business unit members than those with work arrangement 1. However, hours spent with business unit members is not related to belongingness. Indeed, doing individual work in a shared environment that is closed to one's team does not necessarily facilitate connections with others (Morrison & Macky, 2017). What seems to be important in establishing a sense of belonging is collaboration and the quality of interactions with others. On the other hand, Felstead et al. (2005) suggest that belongingness can be fostered through a spatial organization that promotes chance encounters when moving from one work setting to another and socializing at centralized, shared hubs. Employees with both types of work arrangements in our study are able to work and socialize in this way. Therefore, chance encounters and centralized socialization might explain our null findings in terms of the belongingness differences between two different types of non-territorial work arrangements.

Consistent with SDT (Deci et al., 2017; Gagné & Deci, 2005), autonomy over office spaces was related to emotional exhaustion, job satisfaction, and affective commitment (but not work engagement), while belongingness was related to work engagement, emotional exhaustion, job satisfaction, and affective commitment. This is in line with the large body of empirical findings that meeting psychological needs of autonomy and belongingness are important predictors of positive outcomes (Bono & Judge, 2003; Gagné et al., 2004; Gagné & Koestner, 2002; Jetten et al., 2009; Morrison, 2004; Spector, 1986; Van den Broeck et al., 2016).

Finally, results also support the mediation hypotheses in that autonomy over office spaces mediates the relations of non-territorial working with emotional exhaustion and job satisfaction. These interesting findings support the growing body of research that non-territorial working can improve individual wellbeing and lead to important organizational outcomes (Felstead et al., 2005; Knight & Haslam, 2010a, 2010b; Vischer, 2007, 2008a). This study adds to the current literature in that it demonstrates that the particular style of non-territorial working that supports autonomy regarding the use of spaces and allows employees to have choices (i.e., work arrangement 1) may improve employee job-related outcomes, including decreased emotional exhaustion and increased job satisfaction. However, because work arrangement did not predict levels of belongingness, belongingness did not mediate the relationship of ways of working with our outcomes of interest. Future research may examine other mediators in the relation between non-territorial working and employee outcomes to understand why, or by what means, non-territorial working with varied features may affect employee outcomes.

Theoretical Implications

Although previous research has demonstrated the influence of the physical work environment on employee job attitudes, behaviors, and well-being, the extant literature with *mixed* findings is lagging behind because the vast majority of studies have investigated the non-territorial working in its *purest* sense (e.g., activity-based offices) without considering the nuanced and varied work arrangements in the organizational setting. For example, Wohlers and Hertel (2017) compare employee outcomes among those working in cellular, open-plan, and activity-based flexible offices. To fill this research gap, this study takes a first step to examine two different types of work arrangements in a non-territorial workplace, thereby advancing our understanding of the effects of varied forms of non-territorial working on employees.

Moreover, the vast majority of the current literature on autonomy has focused on job autonomy, or autonomy over work scheduling, decision making, or work methods (Morgeson & Humphrey, 2006). However, employees may also have autonomy over other aspects of their employment (e.g., the use of the office spaces). Expanding upon the construct of job autonomy, we conceptualize autonomy as employee autonomy over office spaces and find that certain types of non-territorial work arrangements can enhance one's perceived freedom in the choice of the work spaces. Our results are consistent with previous findings that non-territorial working influences employee perceived autonomy regarding the use of office spaces (Vischer, 2007, 2008a). Establishing the relationship between objective autonomy-supportive office spaces and subjective perceptions of autonomy over office spaces (Philippe & Vallerand, 2008) support SDT's claim that the actual environment plays a crucial role in providing employees with the opportunities to meet their needs (Deci & Ryan, 2002). In doing so, we build on and extend the understanding of workplace autonomy and identify an objective antecedent (i.e., certain types of non-territorial working) of autonomy over office spaces.

Additionally, there are fewer studies on *how and why* the physical workspaces may influence employee work experience and wellbeing (Ashkanasy et al., 2014). Our findings that autonomy over office spaces, but not belongingness, is the underlying mechanism explaining why certain non-territorial working is related to employee emotional exhaustion and job satisfaction support SDT that experiencing autonomy over office spaces typically results in higher fulfilment and satisfaction at work (Deci et al., 2017; Philippe & Vallerand, 2008). Indeed, past research has shown that meeting one's psychological needs for autonomy in the workplace can positively enhance one's work experiences (Van den Broeck et al., 2016). By integrating SDT and research in Environmental Psychology, we are able to reveal an underlying

mechanism (i.e., autonomy regarding the use of spaces) through which ways of working can influence emotional exhaustion and job satisfaction.

Because our study compares and contrasts two types of non-territorial working (i.e., work arrangement 1 and work arrangement 2) and finds a significant difference in experienced autonomy over office spaces between these two types of working, we can suggest potential characteristics of non-territorial working that meet the psychological need for autonomy over office spaces—when employees have the privilege to choose where and with whom they work to best achieve a task and/or when employees have some control over the workplace facilities.

Neither ways of working nor hours spent with one's business unit is related to one's sense of belonging. This is not consistent with previous findings that the co-location of teams results in informal interactions that foster relationships and subsequently enhance belongingness (Elsbach, 2003). One explanation for this may be that different types of positive interactions may occur depending on ways of working. Specifically, Khazanchi et al. (2018) suggest that there are two types of positive interactions that can foster relationships at work. First, instrumental interactions, or the sharing of work-related information, result in increased collaboration and work-related support. Second, expressive interactions, or the sharing of personal information, result in increased emotional support. Proximity is proposed to increase instrumental interactions, while privacy is expected to increase expressive interactions. Therefore, proximity and co-location, as with employees with work arrangement 2, may promote interactions that improve work-related support and collaboration but may sacrifice privacy. On the other hand, the ability to choose where to work, as with employees with work arrangement 1, may allow access to spaces that provide privacy and promote interactions that provide emotional support. Doing so enhances one's trust in others and allows them to develop workplace friendships. On the basis of this argument, employees in these two types of work arrangements may experience different types of relational interactions that can both positively influence one's belongingness.

Practical Implications

The results show that non-territorial working can have significant consequences for employee job attitudes and wellbeing and contribute to positive organizational outcomes. Organizations that are considering moving to a non-territorial workplace model can use these results to assess the best way of working that meets the needs of employees and the organization. Specifically, non-territorial working that supports autonomy over office

spaces through offering mobility and choice can enhance positive work experiences. Given that non-territorial work arrangements can have negative outcomes associated with a reduced sense of autonomy (Knight & Haslam, 2010a), particular attention should be paid to work arrangements that offer mobility and autonomy in terms of the use of spaces in an attempt to avoid negative outcomes. For example, perceived control and ownership of spaces can affect employee perceived autonomy over office spaces (Knight & Haslam, 2010a). Workers who have high mobility may, therefore, benefit from having a shared “home base” (Morrison & Macky, 2017). In our study, employees in work arrangement 1 are offered a shared area where their team may be working, supporting that some sense of ownership may enhance autonomy. As shown in Spector’s (1986) meta-analysis, in order to achieve positive outcomes for employees, support for autonomy must enhance employees’ sense of personal control.

Limitations and Directions for Future Research

Like the vast majority of studies using SDT (Van den Broeck et al., 2016), we used a cross-sectional survey design to investigate our hypotheses. As with all survey studies, our ability to make causal inferences regarding the relations among non-territorial work arrangements, proposed mediators, and outcomes of interest is limited. Meanwhile, whether or not an employee is in work arrangement 1 or 2 is pre-determined by the organization of the investigation, thus serving as an objective measure of the work environment (Philippe & Vallerand, 2008). On the other hand, the relations of autonomy over office spaces and belongingness with work engagement, emotional exhaustion, job satisfaction, and affective commitment are derived from SDT, which are well supported by longitudinal studies (e.g., Olafsen et al., 2017) and meta-analyses (Van den Broeck et al., 2016). As such, we have some confidence in our findings where non-territorial working may influence employee emotional exhaustion and job satisfaction via autonomy over office spaces. Although randomly assigning participants to different ways of working (vs. pre-determined by the employer) may not reflect their real-world experiences, our findings should be replicated by quasi-experiments that strengthen causal inference (Grant & Wall, 2009) and/or a longitudinal study that observes the long-term effects of non-territorial working on employee outcomes. When designing a longitudinal study, it is crucial to have the appropriate time intervals between measurement points (Spector, 2019). However, there is no theoretical guideline regarding the appropriate time-frame that may correspond well with the underlying true relationships among work arrangements, basic psychological needs, and employee outcomes

(Taris & Kompier, 2014). Without appropriate time lags, a longitudinal design may inadvertently fail to capture the true relationships among variables of interest (Spector, 2019). Indeed, when the timeframe is not known (as in our case), Spector (2019) recommends using a cross-sectional design to reveal covariance. Moving forward, we urge scholars to develop theoretical guidelines regarding the appropriate timeframe to understand the long-term effects of the physical work environment on employees.

Moreover, this study uses self-reports that may lead to common method biases. Nonetheless, in many circumstances, self-reports may be the best way to assess mental processes that are not directly observable or may be hidden from others (Baldwin, 2000; Turkkan, 2000). Indeed, research has shown that self-reports of a number of constructs display better discriminant validity than other-reports (e.g., Spector et al., 1999, 2010). This may be particularly true for reports of basic psychological needs and employee job attitudes and well-being outcomes. It is also worth noting that we have used a statistical remedy (Podsakoff et al., 2003) to minimize the potential effects of common method biases on our research findings. Thus, results reported here have controlled for common method biases.

Although the organization has randomly selected and invited potential respondents to participate in order to ensure that a diverse group of employees with a variety of roles and working in different business units are included, we do not know whether the final sample well represents employees of the examined organization as we are unable to obtain the demographics of all employees of the organization. Additionally, although power analysis indicates that our sample size is sufficient, a larger sample is more desirable. Our findings come from a single employer in New Zealand that has adopted varying modes of non-territorial workplace policies for the last 13 years. This may have given the organization time to refine employees' ways of working to best suit employees' needs. An organization that has newly adopted non-territorial working may thus have different results. For organizations that plan to move to non-territorial working, this research may provide important learning experiences from an experienced organization, helping minimize trial and error related to adopting new ways of working.

Although we have used previously-validated scales to assess key variables in our study, future research may use other validated scales to replicate our findings. For example, future research may use a 7-point scale to evaluate employee job satisfaction.

While we focus on autonomy over office spaces, we do not consider the influence of other types of job autonomy (e.g., autonomy over work scheduling, decision making, work methods; Morgeson & Humphrey, 2006) or alternative explanations (e.g., management practices, job design, technological

advancements) for the relationship between work arrangements and employee outcomes. As such, like other field studies using nonexperimental designs, this research has the issue of omitted variables biases (Mauro, 1990; Meade et al., 2009). Future research may simultaneously examine different types of autonomy (including autonomy over office spaces and other types of job autonomy) in the organizational setting and compare their relative impacts on employee outcomes while controlling for alternative, theory-driven explanations for the relationships between non-territorial working and employee outcomes. On the other hand, the physical work environment, management practices, job design, and modern technologies to name a few in an organization usually work together to support new ways of working. Future research may adopt an experimental design that manipulates one factor at a time to truly understand how a factor may exert its distinctive influences on employees. However, such an experimental design may inevitably lack ecological validity (Spector, 2019).

There is no significant difference in belongingness between the two ways of working, yet prior research has shown that ways of working predict belongingness (Elsbach, 2003; Felstead et al., 2005; Kraut et al., 2002; Morrison, 2004). Meanwhile, the type and quality of interactions have been shown to foster belongingness (Khazanachi et al., 2018; Morrison & Macky, 2017). Future research might examine the types of interactions (e.g., instrumental interactions, expressive interactions; Khazanachi et al., 2018) that different ways of working may support. Understanding how ways of working can support different types and quality of interactions may help refine the characteristics of non-territorial working to further support belongingness.

While we use SDT to develop our hypotheses regarding the mechanisms underlying the relations between two types of non-territorial working and employee outcomes, other theoretical frameworks may also be applicable to shed light on the impacts of non-territorial working. For example, by integrating several theories from Organizational Psychology (including SDT), Wohlers and Hertel (2017) provide a comprehensive, theoretical model comparing activity-based flexible offices with cellular offices and open-plan offices and focusing on the influences of four features of activity-based flexible offices (i.e., the openness of the main work environment, flexible use of activity-related work locations, desk sharing, and information and communication technology) on employee work-related outcomes via territoriality, autonomy, privacy, and proximity and visibility. Moreover, job demands-resources model (Bakker & Demerouti, 2017) emphasizing the interaction effects between job demands and job resources on employee well-being may also be applicable to the physical work environment. Acoustic disturbances, for instance, may be conceptualized as a job demand while the freedom to

choose a quiet working zone may be conceptualized as a job resource (also see Wohlers & Hertel, 2017). Additionally, social interference theory (Oldham et al., 1995) predicts that four office spatial configuration characteristics (i.e., the distance between employee workstations, the number of boundaries surrounding an employee's workstation, the density of the setting, and the overall openness of the setting) affects the number of unexpected or unwanted social interactions that an employee encounters, which, in turn, impact individual perceived personal control and goal attainment, thereby influencing work-related outcomes including work performance, work satisfaction, work setting satisfaction, and withdrawal from the work setting. Although these theories do not suit our research purposes focusing on autonomy over office spaces and belongingness as mediators explaining the relationship between two types of non-territorial working and employee outcomes, future research may employ these theoretical frameworks, where applicable, to unravel the effects of the physical work environment on employees.

Conclusion

More and more organizations are moving to non-territorial working styles. Yet, research on the implications of different types of non-territorial working on employee attitudes and wellbeing remains under-researched. This study is designed to address this research gap by better understanding differences in non-territorial working and revealing the underlying mechanisms of autonomy over office spaces and belongingness that link non-territorial working and employee outcomes, including work engagement, emotional exhaustion, job satisfaction, and affective commitment. We find that ways of working that enhance autonomy over office spaces improve employee outcomes (i.e., decreasing emotional exhaustion and increasing job satisfaction). Given the large number of organizations adopting shared and non-territorial organizational models, understanding the underlying mechanisms that explain the relation between ways of working and employee outcomes has important theoretical and practical implications. Indeed, understanding how ways of working can support autonomy over the use of office spaces has the potential to improve employee job attitudes and well-being.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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Notes

1. There are a number of concepts in the current literature that have similarities with work arrangements described here. For example, activity-based office means that “people, whilst in the office, can choose an activity-based workstation that best suits the activity at hand from a functional perspective and also matches with the employees’ preferences” (Appel-Meulenbroek et al., 2011, p. 123). Flexible work arrangements (often termed as “flexible working”) in *Organizational Behavior and Organizational Psychology* “are generally defined as work options that permit flexibility in terms of ‘where’ work is completed (often referred to as telecommuting or flexplace) and/or ‘when’ work is completed (often referred to as flextime or scheduling flexibility; Rau & Hyland, 2002)” (Allen et al., 2013, p. 345). “‘Agility’ means continuously improving work and the infrastructure that enables it. An agile workplace is one that is constantly transforming, adjusting and responding to organizational learning. Agility requires a dynamic relationship between work and the workplace and the tools of work. In that relationship the workplace becomes an integral part of work itself—enabling work, shaping it and being shaped by it” (Joroff et al., 2003, p. 293). The physical environment of the workplace is one of the tools enabling this agile methodology to be successfully implemented. As such, both types of work arrangements in our study share similarities with activity-based offices, flexible working, and agile methodology because employees in both types of work arrangements can choose the setting that matches their work activities. In particular, employees with work arrangement 1 can also adapt work settings to suit project and work-related needs. Although employees in work arrangement 1 can choose any work setting in the office building, employees in work arrangement 2 usually choose work settings in their assigned neighborhood in order to support team connection. As such, we expect to observe differences in the level of autonomy over office spaces and belongingness between these two types of work arrangements. A detailed comparison among flexible working, activity-based working, agile working, and our two types of work arrangements can be found in Table 1.
2. Autonomy over office spaces indicating the extent to which one has the freedom and discretion to choose and adapt one’s office spaces is different from job autonomy referring to the extent to which a job allows freedom and discretion in terms of work scheduling, decision making, and work methods (Morgeson & Humphrey, 2006).

3. Hypotheses 1a and 1b build a direct relationship between the non-territorial work arrangements (i.e., predictor) and autonomy over office spaces and belongingness (i.e., mediators); Hypotheses 2 and 3 build direct relations of autonomy over office spaces and belongingness (i.e., mediators) with work engagement, emotional exhaustion, job satisfaction, and affective commitment (i.e., outcomes). Building on these hypotheses, Hypotheses 4 and 5 propose that the linkage between the non-territorial work arrangements (i.e., predictor) and employee outcomes (work engagement, emotional exhaustion, job satisfaction, and affective commitment) is channeled through two mediators—autonomy over office spaces and belongingness. Hypotheses 4 and 5 (i.e., mediation hypotheses) are necessary for the purpose of this study, attempting to explain how, or by what means (i.e., via autonomy over office spaces and belongingness), the relationship between the non-territorial work arrangements (i.e., predictor) and employee outcomes may exist.
4. We conducted zero-order correlation analyses to examine the relationships of demographics and job-related variables (i.e., age, gender, organizational tenure, full- vs. part-time employment, working hours in a typical shift per day, working hours in a typical work week, working hours in a typical week spending at the organization, working hours per week sitting with members of one's business group) with outcomes of interest (i.e., work engagement, emotional exhaustion, job satisfaction, and affective commitment). There was no significant relation of these demographics and job-related variables with outcome variables. Based on Becker's (2005) and Bernerth and Aguinis's (2016) recommendations that the inclusion of unnecessary control variables reduces statistical power and yields biased estimates, and that the inclusion of control variables should be theory-driven, we excluded these demographics and job-related variables from following analyses.

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