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An Affective Events Model of the Influence of the Physical Work Environment on Interpersonal Citizenship Behavior

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ABSTRACT

Based on the Affective Events Theory (AET), this paper proposes a model of how the level of organizational citizenship behavior (OCB) directed at individuals (peers) (OCB-I) declines to the extent that physical conditions in offices make employees experience crowding perceptions and privacy invasions from peers. We hypothesize that: 1) crowding perceptions and privacy invasions by peers are related to employees' feelings of relational conflict with peers; 2) relational conflict negatively relates to OCB-I; and 3) this decrease in OCB-I is mediated by the employee's person-organization fit (POF) and empathic concern. A direct path from crowding perceptions and privacy invasions to OCB-I is also postulated. Data were collected from 299 respondents working in open-plan offices at four IT-based companies in Tehran, Iran. Results found significant positive links of relational conflict to privacy invasion, crowding perceptions and OCB-I; and from privacy invasion to OCB-I. Furthermore, POF and empathic concern mediated the link between conflict and OCB-I. The findings suggest that managers can promote OCB-I by regulating not only the psychosocial conditions of the work environment, but also the physical conditions.

Un modelo de acontecimientos afectivos de la influencia del ambiente físico laboral en la conducta cívica de los empleados

RESUMEN

Basándose en la teoría de acontecimientos afectivos (AET), el artículo propone un modelo sobre cómo el nivel de comportamiento cívico organizativo (OCB) hacia individuos (compañeros) (OCB-I) disminuye a medida que las condiciones físicas de la oficina hacen que los empleados perciban aglomeración (o hacinamiento) y la invasión de privacidad por parte de sus compañeros. Se postula: 1) que la aglomeración y la invasión de la privacidad de los empleados están vinculadas a sentimientos de conflicto relacional con sus compañeros; 2) que ese conflicto relacional se relaciona negativamente con su OCB-I y 3) que esta disminución del OCB-I es mediada por el ajuste persona-organización (POF) y la preocupación empática. Igualmente se propone y analiza la relación directa entre la aglomeración e invasión de privacidad y el OCB-I. Se obtuvieron datos de 299 encuestados que trabajaban en oficinas en espacio abierto en cuatro empresas tecnológicas en Teherán, Irán. Los resultados mostraron una vinculación positiva y significativa de la percepción de aglomeración e invasión de la privacidad con el conflicto relacional y del conflicto relacional e invasión de la privacidad con el OCB-I. Además, el POF y la preocupación empática actuaron como mediadores significativos en la relación entre conflicto y OCB-I. Los resultados sugieren que los gerentes pueden promover el OCB-I no sólo regulando las condiciones psicosociales del contexto laboral sino también las condiciones físicas.

To date, theory and research on organizational citizenship behavior (OCB) have largely focused on causes arising from the psychosocial characteristics of work environment (teamwork atmosphere, leadership, perceptions of justice, corporate values; Takeuchi, Bolino, & Lin, 2015), whereas physical labor conditions (lighting, noise, workspace density, temperature, visual privacy, and so on) have received relatively little systematic attention. Despite this

gap, previous studies have suggested that physical labor conditions may lead employees to exhibit emotions, attitudes, and behaviors (for example, Ashkanasy, Ayoko, & Jehn, 2014; Brown, Lawrence, & Robinson, 2005; Horng, Tsai, Yang, & Liu, 2016; Yeh & Huan, 2017). Thus, the main purpose of this study is to examine the relationship between physical labor conditions and organizational citizenship behavior (OCB).

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One type of physical work environment that is prone to the appearance of organizational citizenship behavior (OCB) is open-plan offices. Open-plan offices are increasingly being adopted worldwide (Lynch & Langan, 2013) (e.g., at the end of the last century more than 70 percent of the employees in the US already worked in office settings; Donald, 1994), and because they are workspaces with individual worksites located within an open space (Smith-Jackson & Klein, 2009), some of the arrangements of physical elements in open-plan offices (buildings, furniture, lighting, equipment, air conditioning, and so on) can work favorably for the appearance of organizational citizenship behavior (OCB). Some prior work certainly indicates, for example, that these offices without boundaries improve the communication flow among employees and create closer and more productive employee interactions at work (Chigot, 2003; McElroy & Morrow, 2010), which could favor organizational citizenship behavior (OCB) among peers (OCB-I). This idea also finds support in Ayoko's (2007) finding that open-plan offices are able to lead to bullying behavior. If open-plan offices can elicit the emergence of bullying toward peers, some of their physical labor conditions may also present a relationship to organizational citizenship behavior (OCB) toward peers (OCB-I). Therefore, because this office type is prevalent, and relational aspects in these open offices are especially salient, the context of open-plan offices and organizational citizenship behavior (OCB) directed at peers (hereinafter, OCB-I) will form part of the basis of this study (OCB-I: discretionary behavior of employees directed at their peers that promotes organizational effectiveness; Organ, 1988).

Our model of the role that physical work environment can play in the emergence of OCB-I is based on the Affective Events Theory (AET: Weiss & Cropanzano, 1996). The Affective Events Theory (hereinafter, AET) is a theory of *affect* (emotional experiences that include both emotion and moods) that proposes the existence of two paths (affect-driven and judgment-driven) that staff may take to job behaviors. These two paths are basically influenced by affective reactions (emotions and moods) to *events* (a change in environmental circumstances) at work, but cognitive processes also play an essential role in the creation of these behaviors. Drawing on these theoretical fundamentals, this study posits that crowding perceptions and privacy invasions from peers are negative space-related events at work that may trigger affective reactions (negative emotions and bad moods) among peers in the form of OCB-I. Personal space is the physical area employees preserve around themselves that others cannot invade without producing distress (Hayduk, 1978), whereas crowding perceptions are a "motivational state aroused through the interaction of spatial, social, and personal factors directed towards the alleviation of perceived spatial restriction" (Stokols, 1972, p. 275). One affective reaction of employees to perceptions of crowding and invasion of privacy by their peers may be going into a relational conflict with their peers. Unlike the cognitive or behavioral conflict (Barki & Hartwick, 2004), the relational conflict – also called emotional conflict (Jehn, 1994) – is emotional in nature and captures emotions experienced by staff, such as tension, annoyance, animosity (Barki & Hartwick, 2004; Jehn, 1995, 1997), and even anger (Bodtker, & Jameson, 2001; Jehn, 1994). This study also aims to test, therefore, whether employees' perceptions of crowding and privacy invasion from peers in the physical workspace are affectively negatively related to feelings of relational conflict, and whether relational conflict, in turn, also would discourage OCB-I.

Since the pioneering paper by Pekrun and Frese (1992), the role played by affect and cognition in the emergence of OCB has gradually gained authority (Chen & Chiu, 2008; Lee & Allen, 2002; Spector & Fox, 2002; Zhao, Wayne, Glibkowski, & Bravo, 2007), but it is also equivocal. Organ and Konovsky (1989) found, for instance, that affect did not increase OCB more than cognitions, but other studies found that cognitions play a more powerful role in influencing OCB than affect variables (Moorman, 1993; Williams & Anderson, 1991). Other studies even show that, whereas employees' positive moods predict

OCB above and beyond cognitions (George, 1991), both cognitions and affect predict OCB (Kemery, Bedeian, & Zacur, 1996). Taking sides in this discussion, and based on AET, this study contends that the OCB-I emerging from physical workspaces is both judgmentally and affectively driven. Thus, it examines whether the emotions present in a relational conflict decrease affect-driven OCB-I directly, and judgment-driven OCB-I indirectly, through the cognitions present in person-organization fit (POF). In addition, because AET only proposes a direct path between relational conflict and affect-driven OCB-I, based on Lawler's (2001) affect theory of social exchange, this paper goes deeper into the emotional intricacies underlying this affect-driven link. It analyzes, therefore, whether emotional dynamics link a relational conflict to positive organizational ethics (POE), where care and other-oriented acts and emotions are based. The paper predicts that this link to affect-driven OCB-I is explained and, hence, mediated by empathic concern for peers because, under relational conflict, employees may be less empathically concerned with their peers' needs for help (see Figure 1).

In sum, based on data collected from 299 respondents working in open-plan offices at four IT-based companies, we empirically apply and extend AET to the physical work environment in order to examine whether and how judgment-driven OCB-I and affect-driven OCB-I emerge in such contexts (see Figure 1). We will conclude with a brief discussion of the theoretical and practical implications of the findings.

Literature Review

Perceptions of Crowding and OCB-I

Previous research on perceived crowding and privacy invasions in non-work contexts (Maxwell, 2003; Mowen, Vogelesong, & Graefe, 2002) indicated that crowding can affect individual performance (Regoez, 2003; Saegert, 1978) and antisocial behavior (Gifford & Peacock, 1979). In addition, probably among more intellectual than manual tasks (Bond & Titus, 1983), prior research findings on high-density workspace environments found that trivial, but usually audible, chatting by employees negatively affects peers' performance (e.g., Smith-Jackson & Klein, 2009). In this regard, Altman's (1975) view of privacy proposes that employees who experience invasions of space and privacy by peers might react to this situation by withdrawing interactions with peers.

Therefore, because employee IT tasks in our sample are more intellectual or decision-making than manual, we argue that perceived crowding and privacy invasions could propitiate constant and annoying chatting, distractions, interruptions, and invasions of territory by peers in employees' worksites, making it more difficult for employees to positively interact with peers and, hence, engage in OCB-I.

H1ab: Higher levels of employee perceptions of (a) crowding and (b) privacy invasion by peers will be associated with lower levels of OCB-I.

Perceptions of Crowding, Privacy Invasion, and Relational Conflict

The first stages of AET link affective events to affective reactions that directly influence feelings, attitudes, and performance of employees (Weiss & Cropanzano, 1996). The question here is whether physical conditions of work environment can be a source of affective events that can lead employees to react affectively. A study by Baron (1990) found, for example, that pleasant artificial scents produced by 2 commercially manufactured air-fresheners can be a source of positive affect that lead employees to be more physically, environmentally induced to handle conflicts with their peers negatively.

Causing incompatibilities between a given level of physical density and individuals' expectations about that specific environment, crowding perceptions, and their inherently attached privacy invasions could also be a source of negative affect in open workspaces that trigger affective reactions (Ashkanasy et al., 2014). Prior work indicates that perceptions of crowding and privacy invasions lead employees to "social interferences" and unwanted interactions (Schmidt & Keating, 1979; Stokols, 1976), thus suggesting that affective reactions to crowding and privacy invasions can take in the workspace the form of socially conflicting issues with emotional consequences (Baron, 1990; Medina, Munduate, Dorado, Martínez, & Guerra, 2005). These issues are especially expected in our sample because jobs mainly comprises IT tasks that are more intellectual or decision-making than manual and, hence, sampled staff are more likely to be recurrently disturbed (Bond & Titus, 1983) due to crowding and invasions of privacy (Schmidt & Keating, 1979; Stokols, 1976). How employees handle these emotions stemming from the workspace affects interactions with peers determine whether task clashes results in relational conflict (Yang & Mossholder, 2004). In this regard, Jehn (1995, 1997) certainly refers to relational conflict as a construct capturing perceptions of disagreement among the members of a group, which would typically include negative emotions such as tension, clashes, and even anger (Barki & Hartwick, 2004; Jehn, 1994).

Social-related affective reaction in the workspace usually targets peers, because they are the most visible face of crowding perceptions and privacy invasion in open-plan offices. Because crowding perceptions and privacy invasion can lead employees to unwanted interactions with peers (Baum, Aiello, & Calesnick, 1978; Maher, & von Hippel, 2005; Park, & Evans, 2016) and behavioral constraints (Kamarulzaman, Saleh, Hashim, Hashim, Abdul-Ghani, 2011; Schopler & Stockdale, 1977; Sundstrom, Herbert, & Brown, 1982), they can likely attribute these events to peers and affectively react against them by entering into a relational conflict (Bond & Titus, 1983). Based on AET, therefore, we hypothesize (see Figure 1) that perceptions of tension, clashes, and anger – closely involved in relational conflict – are affective reactions to affective events in the physical work environment – crowding and privacy invasion – which lead employees to a relational (or emotional) conflict with peers. Therefore,

H2ab: Higher levels of employee perceptions of crowding (a) and privacy invasion (b) by peers will be associated with greater feelings of relational conflict with peers.

Relational Conflict, P-O Fit, Empathic Concern, and OCB-I Directed at Peers

Figure 1 presents the stages of our AET-based model, which suggests that affective reactions in the form of relational conflict are related to employees to experience decreased P-O fit, empathic concern, and OCB-I directed at peers. Classic studies on relational conflict document the negative effects of relational conflict on group satisfaction and commitment (e.g., Gladstein, 1984; Janssen, Van de Vliert, & Veenstra, 1999; Jehn, 1995; Wall & Nolan, 1986), as well as individual anger and frustration, and communication and cooperation (Baron, 1991; Jehn, 1995). Because employees are led to focus on each other rather than on group problems (Evan, 1965; Jehn & Mannix, 2001), relational conflict depletes peers' time and energy and limits the ability to communicate with peers and interact within the group (Brief & Weiss, 2002; Perrewé & Zellars, 1999). These perceived poor relationships between peers suggest that a relational conflict should lack motivation to perform OCBI (Chiu & Tsai, 2006; Cropanzano, Rupp, & Byrne, 2003). In this regard, Medina et al. (2005) found that an escalation of the conflict process from task related to relational conflict may fuel bullying.

In short, a large body of literature indicates that the relational conflict leads to negative outcomes of employee behavior (De Wit,

Greer, & Jehn, 2012), such as loss of enthusiasm and communication or unhealthy interactions between peers, which can encourage employees to withhold OCB-I.

Therefore,

H3: Higher levels of employees' feelings of a relational conflict with peers will be associated with lower levels of OCB-I directed at peers. Therefore:

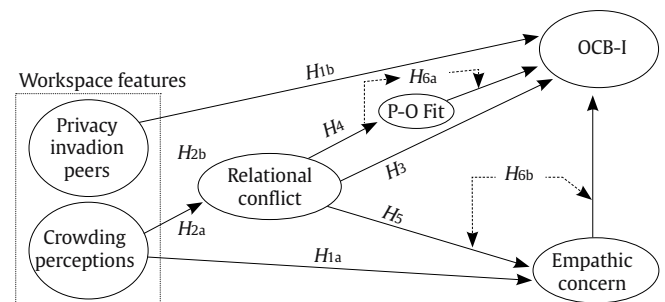


Figure 1. Proposed Model of the Relationship from Privacy Invasion and Crowding Perceptions to Empathic Concern and OCB-I through Relational Conflict.

A relational conflict in response to crowding and privacy invasion could also lead employees to experiencing decreased person-environment fit (P-E fit). The P-E fit theory focuses on the fit employees feel with their work environment (Kristof, 1996). The fundamental ideas of P-E fit (with person-organization fit - POF - or value congruence as the most investigated type of fit) are that: a) employees are better suited for certain work environments than for others and b) they actively wish to fit their work environment, even the physical one (Schneider, 2001). Person-organization fit (hereinafter, POF) captures the degree to which an employee's individual values match the values exhibited by the organization and its members (Kristof, 1996). This paper argues that employees who suffer a relational conflict because of working in a dense open-plan workspace may come to consider that they are unable to fit with their peers (POF). A relational conflict essentially includes tension, annoyance, and animosity among group members (Jehn, 1995, 1997) and provides a 'breeding ground' for discrepant beliefs and principles about how the organization and its members perform. These discrepancies can include cognitive, motivational, and affective states such as intragroup trust or cohesion (Jehn, Greer, Levine, & Szulanski, 2008), and could lead employees in conflict to fitting less the organization and peers. Therefore,

H4: Higher levels of employees' feelings of a relational conflict with peers will be associated with lower levels of POF.

Positive organizational ethics (POE) is an approach upon which positive and other-oriented acts and emotions are based, shifting the focus from rationally self-interested patterns to principles that motivate individuals to behave altruistically toward others (Stansbury & Sonenshein, 2012). Empathic concern captures "other-oriented emotional responses elicited by and congruent with the perceived welfare of a person in need" (Batson & Ahmad, 2009, p. 6). These emotional responses include feelings of tenderness, sympathy, compassion, and soft-heartedness, and so they are not full helping behaviors such as OCB-I. A relational conflict may be negatively related to empathic concern. As Dutton, Workman, and Hardin (2014) state, "most proximate to the sufferer [peers] and the focal actor [employees] are individual differences and role characteristics that affect what a person [employees as bystanders] is likely to notice, feel, and do" (p. 282). A relational conflict has been found to harm proximal group outcomes (Amason, 1996; Jehn, 1995). Disagreements

about personal issues not only can increase peer anxiety (Dijkstra et al., 2005), but often also represent ego threats that likely inhibit an employees' ability to identify themselves with or trust other people (e.g., Jehn et al., 2008; Polzer, Milton, & Swarm, 2002; Rispens, Greer, & Jehn, 2007). This seems to suggest that the relational conflict employees feel towards peers in the physical environment distances them from peers and keeps them from acting in harmony with the perceived welfare of a peer in need. In this regard, appraisal theorists recognize that self-relevant events are related to emotion intensity (Scherer, 2001); therefore, the feeling of being or not being engaged in a relational conflict certainly seems determinant enough to elicit staff's emotions that favor or block "empathizing with" peers. Therefore,

H5: Higher levels of employees' feelings of a relational conflict with peers will be positively associated with lower levels of empathic concern.

The Mediating Role of POF and Empathic Concern

Although (Weiss & Cropanzano, 1996) it is a theory of *affect* (emotion and moods), AET contends that cognitive processes also play an essential role in the creation of judgment-driven behaviors. Thus, when employees experience a relational conflict in response to a dense physical workspace, they might not only withhold affect-driven OCB-I due to negative emotions and bad moods (affective reaction), but they might also engage in judgment-driven behaviors influenced by attitudes or cognitions such as POF. Judgment-driven OCB-I can thus stem from the attitudes and cognitions present in POF (Figure 1), which, in turn, form part of mechanisms underlying the negative relationship between a relational conflict (affective reaction) and judgment-driven OCB-I. Prior work has indicated that emotional reactions shape cognitions (fairness judgments), appraisals (of justice events at work), and behaviors (see Barsky, Kaplan, & Beal, 2011), as well as work perceptions (Schleicher, Watt, & Greguras, 2004). Thus a relational conflict might also be able to elicit the cognitions and attitudes present in fit (POF) because a relational conflict provokes incompatibility and discrepancy (lack POF or P-O misfit) between peers, which may lead them to feeling alienated from the organization and peers, reducing OCB-I.

We predict, therefore, that a relational conflict is negatively related to judgment-driven OCB-I because a relational conflict propitiates a context of value incongruence with peers (lack of POF or P-O misfit), where discouragement of OCB-I really occurs (Figure 1). Therefore,

H6a: Feelings of POF in employees will mediate the negative relationship between relational conflict and OCB-I.

As we proposed and justified earlier, individuals who experience crowding and privacy invasion from peers can be expected, in a first step, to respond directly to a relational conflict with less empathic concern (see *H3*). However, this study aimed to delve further into the intricacies underlying this link by proposing that staff members who are affectively driven because of suffering an emotional conflict would decrease their affect-driven OCB-I out of empathic concern. Thus, empathic concern would play a mediating role in the relationship between relational conflict and affect-driven OCB-I. We build our argument on the affect theory of social exchange (Lawler, 2001). This theory states that recurrent social exchanges result in positive emotions that strengthen person-to-person bonds. As such, this theory contends that in social exchange processes, emotions such as goodness, satisfaction, relief, excitement, and so forth can also be present (Lawler & Yoon, 1996), which would explain outcomes such as gratitude and kindness directed towards others (Weiner, 1986).

This paper argues that empathic concern may form part of the context where affective responses to a relational conflict in the form of OCB-I occur. As such, empathic concern is a positive emotional reaction that employees in conflict can feel less of, due to the

negative emotions involved, and therefore reciprocate against peers by reducing their affect-driven OCB-I. Therefore,

H6b: Employees' lack of feelings of empathic concern will mediate the negative relationship between relational conflict and OCB-I.

Method

Procedure and Sample

The target population of this study consists of about 10,000 employees working in IT-based companies in Tehran, Iran. Ninety percent of these companies were computer engineering firms, had common organizational teams, such as production, design, and support teams, and were located in the sixth and second districts of Tehran, Iran. Major activities for these companies were software production, troubleshooting, and consulting for presented software. Data were collected using questionnaires in Persian, which were first drafted in English. Once the English questionnaire was ready, the items were translated into Persian and then back into English for verification, i.e., to make sure the original and translated English items matched. In all, in order to control the level of sampling error at about 5%, 330 questionnaires (a sampling error of 5.3% for a confidence interval of 95%) were personally handed out. The surveys were collected from four sampled companies that were contacted personally, comprising about 2,430 employees with 1,000 (120; 12%), 800 (98; 18.6%), 350 (65; 19.7%), and 280 (47; 16.8%) employees in each company. The majority of the tasks of these employees was intellectual or decision making. Distribution was performed by one of the researchers, so that she could resolve any misunderstandings and answer possible questions. Although no particular random sampling method was employed, in order to avoid response biases, the surveyor personally asked random employees to fill out the questionnaires in different places and situations within the office. These employees self-administered the paper-and-pencil questionnaire during a break in their workday. No incentives were offered. Finally, 318 questionnaires were returned, and due to rejections because of incoherent or incomplete completion, 299 questionnaires were ultimately retained for analysis.

Among the respondents, 51.8% were women and 48.2% men, 7.4% were under 25 years of age, 72.6% were 30 to 39 years old, 19.7% were 40 to 49 years old, and 0.3% were over 50 years old. In addition, 1.3% of respondents had high school or an associate degree, 58.5% had a bachelor's degree, 38.8% had a master's degree, and 1.3% had a PhD degree.

Characteristics of Work Tasks

The IT companies included in the sample are leading providers of banking software solutions. Companies are arranged as service chains that follow specific tasks and roles, which can be grouped as follows: a) marketing tasks aimed at achieving an adequate knowledge of the relevant customers of their commercial requirements, as well as being always contacting them face to face. By registering customers' requirements, analyzing them, studying their viability together with the technical team, multiple tasks are established for each requirement to be able to carry out the requested software; b) controlling tasks that maintain and manage the daily schedule, monitoring the status of tasks to verify if they are completed, stuck, or pending; c) front-end or back-end development tasks, which are always present in all phases of a project to verify the status and outcome. For example, a backend developer obtains data to process and then feeds it as services for front-end developers to use in user interfaces; d) quality control, or product checks that guarantee the functionality of the system. For example, testing and guarantying that the finished product covers the

Table 1. Exploratory Factor Analysis of All the Variables in this Study

	F1	F2	F3	F4	F5	F6
(F1) Empathic concern						
<i>(Eigenvalue = 4; explained variance % = 16.8; α = .886)</i>						
Y26...Co-workers' misfortunes usually disturb me a great deal	.894	.141	.025	.011	.014	-.125
Y27... I feel sorry for peers when they are having problems	.860	.094	-.034	-.070	.023	-.126
Y28... I am often quite touched by things that I see happen to my peers	.827	.270	-.014	-.036	-.002	-.037
Y29... I often have tender, concerned feelings for co-workers less fortunate than me	.818	.110	.061	-.147	.046	.041
Y30... I would describe myself as a pretty soft-hearted person	.796	.164	.088	.092	.013	-.133
Y31...When I see peers being treated unfairly, I feel very much pity for them	.775	.156	.075	.073	-.006	.125
Y32...When I see peers being taken advantage of, I feel kind of protective toward them	.764	-.013	-.031	-.157	.155	-.083
(F2) Interpersonal OCBs towards peers (OCB-I)						
<i>(Eigenvalue = 3.9; Explained variance % = 13.5; α = .914)</i>						
Y18... Help peers who have been absent	.058	.799	-.002	-.113	-.002	.028
Y19... Willingly give your time to help peers who have non-work-related problems	.090	.771	-.068	-.151	.011	-.113
Y20... Go out of the way to make newer colleagues feel welcome in the work group	.168	.770	-.144	.082	.108	.056
Y21... Adjust your schedule to accommodate other colleagues' requests for time off	.133	.720	-.025	.061	.104	-.089
Y22... Give up time to help co-workers who have work or non-work problems	.141	.652	.026	.121	.081	-.087
Y23... Assist peers with their duties	.113	.617	-.244	-.216	.043	.138
Y24... Show genuine concern and courtesy toward coworkers	.122	.615	-.007	.063	.026	-.017
Y--... Share personal property with peers to help their wor ¹	-	-	-	-	-	-
(F3) Privacy invasion peers						
<i>(Eigenvalue = 2.8; Explained variance % = 12.8; α = .839)</i>						
X01...My peers took stationery from my desk without later returning it	-.003	-.098	.917	.095	.031	.004
X02...My peers took items from my desk without prior permission	.001	-.100	.887	-.012	.059	.108
X03...My peers interrupted me while I was speaking on the telephone	.034	-.013	.885	.015	-.022	.039
X04...My peers read communications addressed to me, such as e-mails or faxes	.058	-.112	.874	.055	.025	.150
X05...My peers opened my desk drawers without prior permission	.080	-.017	.743	.230	-.051	.112
(F4) Crowding perceptions						
<i>(Eigenvalue = 2.6; Explained variance % = 9.1; α = .778)</i>						
Can you indicate the extent to which you are in agreement with each statement?						
X06...The corridors in the office tend to be very crowded	-.128	.150	.124	.809	-.063	.024
X07...I feel that the living situation in the office is very crowded	.061	-.043	.016	.802	-.016	.134
X08...The noise of people in the office is loud enough and frequent enough to be annoying	-.098	.014	.140	.782	-.064	.098
X---...There are too many people opining on the range of the air temperature that is comfortable ¹	-	-	-	-	-	-
X10...I find myself in conversation with people with whom I would rather not be involved	.013	-.116	.091	.521	-.331	.209
(F5) Person-Organization Fit (POF)						
<i>(Eigenvalue = 2.5; Explained variance % = 8.7; α = .928)</i>						
Y15... My values match those of current employees in my organization	-.010	.085	-.003	-.106	.918	-.069
Y16... The values and "personality" of this organization reflect my own values and personality	.032	.069	.051	-.115	.916	-.045
Y17... I feel my values "match" or fit this organization and the current peers in organization isganization	.180	.147	.012	-.050	.836	-.190
(F6) Relational conflict						
<i>(Eigenvalue = 1.3; Explained variance % = 8.3; α = .914)</i>						
Y11... How much personal friction is there among members in your office?	-.102	-.081	.078	.144	-.109	.862
Y-- ... How much are personality clashes evident in your office? ¹	-	-	-	-	-	-
Y13... How much tension is there among members in your office?	-.116	.033	.208	.113	-.121	.800
Y14... How much emotional conflict is there among members in your office?	-.056	-.055	.084	.037	-.079	.781

Note. ¹These items were dropped because they not load properly in their related factors.

Factor loadings in bold are above the .40 cutoff in absolute value

Total explained variance % = 69.207

Kaiser-Meyer-Olkin = .819

Varimax rotation

Bartlett's sphere test (chi-squared approx. = 6,062.681; $g/1$ = 496; p = .000).

requirement by different means, such as a scenario test, a performance test, an automatic test, and the like.

Measures

Perception of crowding. Crowding was measured by using the 10-item seven-point scale (1 = *none* to 7 = *totally*) proposed by Kaplan (1982) to assess crowding in students' residences. We used the five items on Kaplan's scale that focus on crowding in open areas, thus rejecting those more related to privacy and crowding in enclosed areas

(e.g., bathrooms). We reworded some items to adapt them to the reality of office settings. Thus, 'dormitory' was replaced by 'office' and 'friends' by 'peers' (i.e., "The corridors in the office tend to be very crowded and noisy", "I find myself in conversation with people with whom I would rather not be involved", and "I feel that the living situation in the office is very crowded"). Furthermore, 'neighbors' was replaced by 'people in the office' (i.e., "The noise of people in the office is loud enough and frequent enough to be annoying"). Lastly, the authors added a new item they constructed: "There are too many people giving their opinions about the range of air temperature that is comfortable."

Invasion of privacy. Privacy invasions from peers was measured with the 5-item Likert-type scale (1 = *never* to 7 = *constantly*) by Martin and Hine (2005). The original scale was included in the questionnaire, but with peers as actors. As such, although the original item “Took items from my desk without prior permission” was originally impersonal, it is now attributed to peers.

Relational conflict. We used a subscale elaborated by Jehn (1995) to measure relational conflict between coworkers. The subscale contained four items (1 = *very low* to 7 = *very high*). An example of an item is “How much personal friction is there among the people in your office?”

Organizational citizenship behavior directed at peers (OCBI). We measured OCB-I by using the 8-item scale (1 = *never* to 7 = *constantly*) developed by Lee and Allen (2002). Items include “Assist peers with their duties” and “Show genuine concern and courtesy toward peers, even under the most trying situations.”

Person-organization fit (POF). Perceived or direct POF ratings were used to assess person-organization (P-O) fit or how similar employees' values were to those of their organization and its members. Perceived fit was measured with the three-item scale (1 = *totally agree* to 7 = *totally disagree*) developed by Cable and Judge (1996). Items include fit with the organization itself as well as fit with members of the organization (e.g., “I feel my values ‘match’ or fit this organization and my current colleagues in this organization”).

Empathic concern. We measured empathic concern by using the 7 items from the empathic concern subscale (1 = *never* to 7 = *constantly*) from the Interpersonal Reactivity Index (Davis, 1980), which gauges feelings of warmth, concern, and sympathy for others (see Table 1). We reworded three items that were measuring empathic concern in the opposed way. Hence, the item “When I see someone being treated unfairly, I sometimes don't feel very much pity for them” resulted in “When I see peers being treated unfairly, I feel a lot of pity for them”; the item “Sometimes I don't feel sorry for others when they are having problems” was changed to “I feel sorry for peers when they are having problems”; and, finally, the item “Others' misfortunes do not usually disturb me much” was changed to “Co-workers' misfortunes usually disturb me a great deal.”

Statistical Analysis

The validity of the measures (CFA) and the hypothesized relationships were analyzed using structural equation modeling (SEM) through the AMOS 22.0. All the items and the Cronbach's alpha values appear in Table 1. Gender (1 = female, 2 = male) and age (1 = under 25 years old; 2 = 25-34 years old; 3 = 35-44 years old; 4 = 45-54 years old; 5 = 55-65 years old; and 6 = over 65 years old) were used as control variables. SEM indices included the comparative-fit (CFI), normed-fit (NFI), Tucker-Lewis (TLI), and incremental-fit (IFI) indices, and the root mean square error of approximation (RMSEA). We first conducted a CFA for the six variables in this study. The

control variables were incorporated directly into the model as stand-alone variables (Hancock & Mueller, 2006), co-varying with all six latent factors.

Results

CFA results show that the six-factor solution was insufficient ($\chi^2 = 1,505.767$, $p < .001$, $df = 514$, CFI = .893, IFI = .894, TLI = .876, NFI = .823, RMSEA = .074), with all fit indexes below .90 and RMSEA over .05. Nevertheless, as Browne and Cudeck (1993) state, RMSEAs below .08 still indicate an adequate fit. Given that RMSEA is one of the most informative criteria in covariance structure modeling, our RMSEA = .074 (below .08) would provide significant support for the distinctiveness of all the variables used in this study. Even so, we decided to inspect the factor structure of the six-factor model further by also performing an exploratory factor analysis (EFA). The EFA results are displayed in Table 1. The crowding item (X09), “There are too many people giving their opinions about the range of air temperature that is comfortable”, the relational conflict item (Y12), “How much are personality clashes evident in your office?”, and the OCB-I item (Y25), “Share personal property with peers to help their work”, were rejected and dropped because they did not load properly in their related factors (see Table 1). However, the remaining items loaded on the expected factors as predicted, confirming six factors with eigenvalues greater than 1 and no cross-loadings over .40 (full details about this EFA without the dropped items are shown in Table 1).

The failure of “Share personal property with peers to help their work” OCB-I item seems to indicate that sharing personal property with peers, rather than OCB-I, could be performing here as territorial behavior. In fact, Brown et al. (2005) define territorial behavior as behavior employees exhibit based on perceived ownership of given physical/social objects (e.g., marking and defending their territory). In the failure of “To what extent are the personality clashes in your office evident?” relational conflict element, the influence of the context could be decisive since open workspaces may be emphasizing unwanted interactions rather than unwanted personalities among peers. This can also support the emotional conflict as an affective reaction, since the failed item could be stressing the affect from a perspective of “status” rather than “trait”, an important distinction in AET but overlooked in previous studies due to the methodological complexity of its analysis (Velasco, Navarro, & Rueff-Lopes, 2017).

Lastly, without the failed items, we performed a new CFA for the six variables in this study. Previously, we analyzed modification indices' properties from the SEM package AMOS 22, in order to try to identify the most strained parts of the SEM model. Results showed that the greatest drops in model discrepancy occurred when covariances between two item-errors for privacy invasion with peers (X04 and X05) and five item-errors for empathic concern (Y26-Y27, Y26-Y28, and Y29-Y30) were involved. Thus, in order to alleviate these strains in the CFA model, we considered correlations between the residual errors of these variables (see Table 1). The fit of the six-factor solution

Table 2. Descriptive Statistics and Correlations

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Gender	1.52	0.50	----							
2. Age	2.13	0.51	.140*	----						
3. Crowding perceptions	3.68	1.33	.008	.060	(.778)					
4. Privacy invasion peers	1.90	1.09	-.022	.069	.410***	(.839)				
5. Relational conflict	3.08	1.31	.032	-.042	.279***	.355***	(.914)			
6. Empathic concern	5.15	1.46	-.176**	.137*	-.097	-.098	-.173***	(.886)		
7. P-O Fit	4.45	1.38	-.050	.023	-.250***	-.139***	-.241***	.146*	(.928)	
8. OCB-I	5.10	0.95	-.100	.071	-.066	-.159**	-.114*	.318***	.192**	(.914)

Note. The numbers in parentheses on the main diagonal are alphas. Gender (1 = male, 2 = female) and age (1 = under 25 years old; 2 = 25-34 years old; 3 = 35-44 years old; 4 = 45-54 years old; 5 = 55-65 years old, and 6 = over 65 years old). $N = 299$. * $p < .05$, ** $p < .01$, *** $p < .001$.

($\chi^2 = 1102.451$, $df = 417$, $p < .001$, $\chi^2/df = 2.621$, CFI = .889, IFI = .891, TLI = .865, NFI = .818, PRATIO = .897, PNFI = .715, PCFI = .773, RMSEA = .069) improved and was significantly better ($\Delta\chi^2_d(15) = 2,387.933$, $p < .001$) than the one-factor model ($\chi^2 = 3,490.384$, $df = 432$, $p < .001$, $\chi^2/df = 8.080$, CFI = .485, IFI = .489, TLI = .438, NFI = .458, PRATIO = .929, PNFI = .333, PCFI = .358, RMSEA = .154). All of the above results provide significant support for the uniqueness of the six variables used in this study.

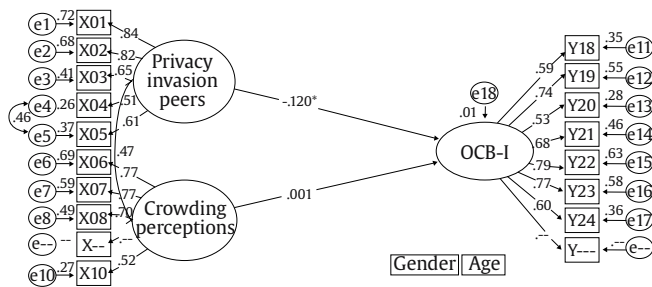


Figure 2. SEM Model of the Main Effects of Privacy Invasions and Crowding Perceptions on OCB-I.

Note. $N = 299$. * $p = .046$; $\chi^2 = 392.555$; $df = 133$; $p < .001$; $\chi^2/df = 2.952$; CFI = .901; IFI = .907; TLI = .880; NFI = .832; RMSEA = .073.

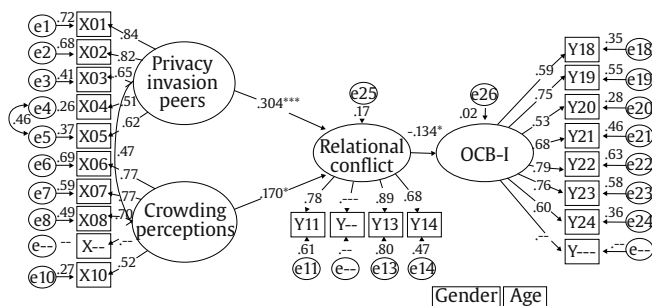


Figure 3. SEM Model of the Relationship from Privacy Invasions and Crowding Perceptions to OCB-I

Note. $N = 299$. * $p = .022$; $\chi^2 = 117.291$; $df = 45$; $p < .001$; $\chi^2/df = 2.606$; CFI = .905; IFI = .907; TLI = .882; NFI = .838; RMSEA = .070.

Table 2 shows the scale means, standard deviations, reliabilities, and correlations (r). Results showed significant inter-correlations in the expected directions, indicating initial support for these study hypotheses. The paper next tests the hypothesized relationships. Figures 2, 3, and 4 are path diagrams that show the relationships between the latent (circles) and observed variables (survey answers, in rectangles). The items provided in Table 1 define the variables in the observed model. The different fit indices used, shown in Figures 2, 3, 4, and 5, generally preserve the acceptable fit of the CFA model. Main effects of crowding ($\beta = .001$, ns) and privacy invasion ($\beta = -.120$, $p < .05$) on OCB-I were supported only in the case of privacy invasion ($\beta = -.120$, $p < .05$). Support for H2a and 2b is provided by the significant paths from relational conflict to privacy invasion ($\beta = .304$, $p < .001$) and crowding ($\beta = .180$, $p < .05$) in our hypothesized model in Figure 4. Additionally, the direct effect of relational conflict on OCB-I was calculated in the context of our hypothesized model, whose details are shown in Figure 3. Given that relational conflict in this model was negatively and significantly related to OCB-I ($\beta = -.134$, $p < .05$), the results empirically support H3 (see Figure 3). Finally, the significant paths from relational conflict to POF ($\beta = -.153$, $p < .05$) and empathic concern ($\beta = -.224$, $p < .001$) in our hypothesized model in Figure 4 also support H4 and H5.

To test H6, nested model comparison was conducted by means of the sequential chi-square difference test (SCDT). Following Anderson

and Gerbing's (1988) guidance, we compared our more constrained hypothesized model to the saturated alternative model (less constrained), in which we added a direct path from relational conflict to OCB-I. This latter model is a partially mediated model of the effects of relational conflict on OCB-I. Thus, we examined the role that POF and empathic concern play in explaining the basic relationship between relational conflict and OCB-I ($\beta = -.134$, $p < .05$). In this regard, we performed a new model in Figure 5 ($\chi^2 = 1,113.806$, $df = 424$, $p < .001$, $\chi^2/df = 2.627$, CFI = .889, IFI = .892, TLI = .865, NFI = .818, PRATIO = .912, PNFI = .725, PCFI = .785, RMSEA = .069), where we incorporated a direct path linking relational conflict and OCB-I into the model (see Figure 5). The fact that this direct path from relational conflict to OCB-I was not significant ($\beta = -.017$, $p = .734$) indicates that when POF and empathic concern are added, the direct effects of relational conflict on OCB-I ($\beta = -.134$, $p < .05$) are no longer significant ($\beta = -.017$, $p = .734$). Therefore, this finding shows that POF and empathic concern significantly carry the weight of the direct effects from relational conflict to OCB-I ($\beta = -.134$, $p < .05$) because they lead these effects to no longer being significant ($\beta = -.017$, $p = .734$). Hence, these results support H6.

In order to expand support for H6, we built an alternative less constrained model by adding a direct path linking relational conflict to OCB-I in our hypothesized model in Figure 5. If our hypothesized model fits the data significantly better than this new less constrained model in Figure 5, it would show support for the fully mediated role of POF and empathic concern. Results suggest that the fit of our more constrained hypothesized model ($\chi^2 = 1,113.920$, $df = 425$, $p < .001$, $\chi^2/df = 2.621$, CFI = .889, IFI = .891, TLI = .865, NFI = .818, PRATIO = .914, PNFI = .727, PCFI = .787, RMSEA = .069) is generally quite similar to the fit of the less constrained alternative model in Figure 4 ($\chi^2 = 1,113.806$, $df = 424$, $p < .001$, $\chi^2/df = 2.627$, CFI = .889, IFI = .891, TLI = .865, NFI = .818, PRATIO = .912, PNFI = .725, PCFI = .785, RMSEA = .069). However, support for our hypothesized model is shown by the PRATIO, PNFI, and PCFI parsimony-adjusted measures, which were better in the more constrained hypothesized model (PRATIO = .914, PNFI = .727, PCFI = .787) than in the less constrained alternative model (PRATIO = .912, PNFI = .725, PCFI = .785), and by the results of a comparison of the two models, $\chi^2_d(2,299) = 0.114$, $df = 1$, $p = .735$. Because the chi-square difference in the comparison was non-significant, both models fit equally well statistically, suggesting that the fully-mediated model should be accepted (Anderson & Gerbing, 1988). All of these patterns support H6.

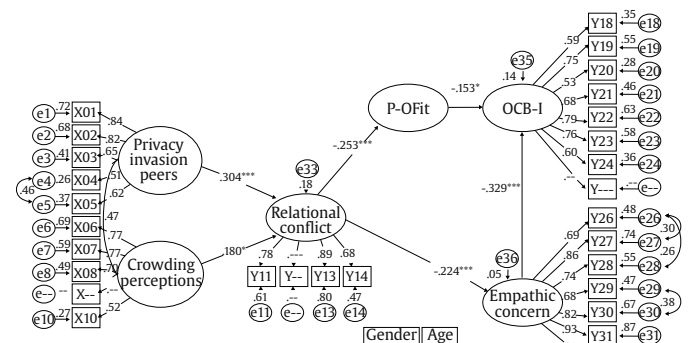


Figure 4. Hypothesized SEM Model of the Relationship from Privacy Invasions and Crowding Perceptions to OCB-I through Relational Conflict, POF, and Empathic Concern.

Note. $N = 299$; $\chi^2 = 1,113.920$; $df = 425$; $p < .001$; $\chi^2/df = 2.621$; CFI = .889; IFI = .891; TLI = .865; NFI = .818; PRATIO = .914; PNFI = .727; PCFI = .787; RMSEA = .069.

* $p < .05$; ** $p < .01$; *** $p < .001$.

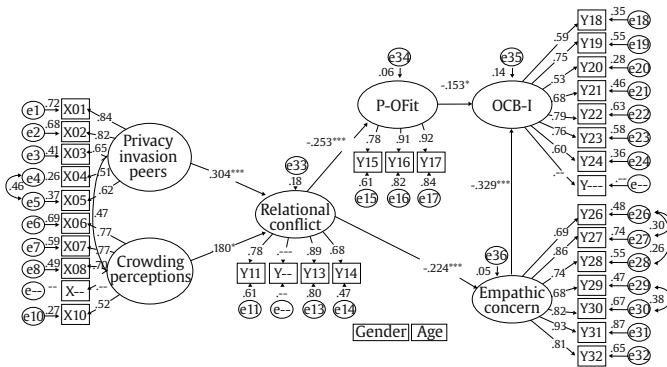


Figure 5. Alternative SEM Model where a Direct Path from Relational Conflict and OCB-I is Added.

Note. $N = 299$; $\chi^2 = 1,113.806$; $df = 424$; $p < .001$; $\chi^2/df = 2.627$; CFI = .889; IFI = .891; TLI = .865; NFI = .818; PRATIO = .912; PNFI = .725; PCFI = .785; RMSEA = .069.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Finally, we used the Sobel test and Preacher, Rucker, & Hayes' (2007) bootstrapping method with 5,000 bootstrap samples (see Table 3) to examine the significance of the mediating role of POF (H6a) and empathic concern (H6b) separately. If zero is not in the 95% confidence interval (CI), using normal distribution, we can conclude that the indirect effect is significantly different from zero at $p < .05$ (two-tailed). The Sobel test outputs shown in Table 3 indeed indicate that the Z score is larger than 1.96 for both POF and empathic concern, and zero is not in the 95% confidence interval (CI). Hence, the Sobel test results support H6 about the indirect effect. In addition, bootstrap results for indirect effects, with a 99% confidence interval (CI), also show that zero is not in the confidence intervals (CI) of either of the two models between relational conflict and OCB-I and mediated by POF (99% CI [-.0720, -.0038]) and empathic concern (.2953 95% CI [-.0851, -.0037]) separately (see Table 3). Because the CIs of indirect effects of relational conflict on OCB-I via POF and empathic concern do not contain zero, these patterns and all the aforementioned patterns support both H6a and H6b regarding full mediation.

Discussion

The aim of this paper was twofold. We first developed a model based on AET to study whether crowding perceptions and privacy invasions are aspects of the physical workspace that are directly related to decreased OCB-I, and to examine the steps employees in relational conflict may take until engaging in judgment- and affect-driven OCB-I. The findings indicate that, unlike crowding, privacy invasion was significantly related to decreased OCB-I. Furthermore, the results show that the relational conflict is significantly related to crowding and privacy invasion and less OCB-I, whereas POF and empathic concern were located on the path from relational conflict to OCB-I. This section will offer implications of these results and, finally, discuss avenues for future research.

First, using sampled employees working in open-plan offices, these study findings offer new insights that increase the comprehension of the apparently contradictory literature about the influence of the open-plan office layout on employee performance. Indeed, the impact of open-plan office configurations on employees' attitudes and behaviors has been found to be equivocal in past decades (e.g., Oldham, 1988; Oldham & Rotchford, 1983). On the one hand, for instance, it has been assumed that open-plan offices are related to an efficient work environment, enhancing and facilitating communication and, hence, increasing performance (Smith-Jackson & Klein, 2009). In fact, at least 70 percent of employees are currently working in office-based areas (Shropshire & Kadlec, 2012). On the other hand, a significant number of prior studies also attribute escalating distress, distraction, and disturbance to open-plan offices, which can decrease staff performance (Brennan, Chugh, & Kline, 2002; Hongisto, Haapakangas, Varjo, Helenius, & Koskela, 2016). The results of this study support the discouragement of judgmentally and affectively driven OCB-I and, hence, warn us of the possibility that open-plan offices can put performance at risk (Walz & Niehoff, 2000). In addition, the significant link between relational conflict and OCB-I shows that not only affect-driven OCB-I stems from affect (relational conflict), but also judgment-driven OCB-I (POF acted as a mediator in this link). In that respect, these results are coherent with prior work showing that affect can influence cognitions (such as justice perceptions) and their resulting attitudes and behaviors (Barsky et al., 2011), as well as job perceptions (Schleicher et al., 2004). They also respond to Forgas and Smith's (2003) argument that emotional reactions can play a key role in developing the perception of fit. Finally, our results also challenge findings supporting a positive relationship between relational conflict and OCB-I (Nawaz & Gomes, 2017).

The fact that crowding was found to be negatively related to relational conflict, but, unlike privacy invasion, was not related to OCB-I, seems to reflect the complexity of the physical work environment in affecting employees' attitudes and behaviors. These failed results could, nevertheless, shed some light on how these complex environments function. Special attention should be paid to the fact that crowding was not related to OCB-I. An explanation for these results may be found in the leading role that privacy invasion along with crowding may play in our model in discouraging OCB-I. A dense workplace per se may be innocuous if crowding perceptions are devoid of the sensation of privacy invasion. In other words, crowding perceptions would not have an influence on OCB-I, unless they are perceived along with experiences of privacy invasion by peers. This idea matches Freedman's (1975, p. 89) argument that "crowding is neither good nor bad" but intensifies the effects of other conditions. Therefore, the results in the present study seem to suggest that employees may not feel frustrated (and, hence, withhold OCB-I) due to crowding itself, but rather to the extent that crowding intensifies relational conflict. In doing so, crowding perceptions are ultimately able to reduce OCB-I because crowding 'pushes' the negative emotions embedded in relational conflict against OCB-I.

Second, this study of OCB-I in the physical work context also makes other relevant contributions by pointing out that physical job conditions (visual privacy and shortage of space due to workplace

Table 3. Sobel's Results for Indirect Effects of Emotional Conflict on OCB-I through POF, and Empathic Concern

Indirect effect	Value	SE	Low 95% CI	Up 95% CI	Z	Sig.
Conflict→POF→OCBI	-.0312	.0128	-.0563	-.0061	-2.4375	.0148
Conflict→Empathy→OCBI	-.0390	.0148	-.0680	-.0099	-2.6292	.0086
Bootstrap results	Data	SE	Low 99% CI	Low 95% CI	Up 95% CI	Up 99% CI
Conflict→POF→OCBI	-.0312	.0131	-.0720	-.0598	-.0088	-.0038
Conflict→Empathy→OCBI	-.0390	.0156	-.0851	-.0733	-.0116	-.0037

Note. No. of bootstrap resamples = 5,000; $Z = (a \times b) / \sqrt{b^2 s_a^2 + a^2 s_b^2} = \text{Value}/SE$; CI = confidence index.

density) are related to affective reactions (e.g., relational conflict) associated with a decrease in judgment- and affect-driven OCB-I. This contribution could be relevant because the physical layout of open-plan offices leads employees to “voluntarily” abandon peers with problems to their fate or fail to take steps to support their well-being. Because OCB is discretionary and supererogatory (Organ, 1988), OCB-I is not enforceable and, hence, cannot be balanced through coercive strategies. Furthermore, although OCB-I is an employee's behavior that is not involved in the task or job directly, according to OCB definition (Organ, 1988), OCB-I not only can inflict harm on peers, but also on the effective functioning of open offices (Walz & Niehoff, 2000). In addition, our findings match other research suggesting that helping behavior tends to decline as crowding increases. As the classic study by Latane & Darley (1968) suggests, inhibitors such as the presence of others can lead third parties to inaction. Although the results did not support a significant relationship between crowding and OCB-I, this lack of any significant direct relationship between these two constructs suggests that experiencing crowding at work did not lead employees to take action in the form of OCB-I and, hence, alleviate their peers' discomfort due to crowding. This extreme could also shed further light on the controversy about the potential benefits and dysfunctions associated with open-plan office configurations.

Finally, the steps this study has outlined to explain why crowding perceptions are related to OCB-I are essential pillars in developing practical actions to deal with the withdrawal of OCB-I. They suggest that a workplace lacking in privacy and proper density is an environment where the staff are more likely to withdraw OCB-I. Not only in aspects of the physical workspace, but also through other psychosocial routes, managers should pay attention to affective workspace events that, by decreasing relational conflict and increasing the fit and empathy among peers in offices, can disable the negative effects of a dense workspace on OCB-I. They may include, for instance, encouraging followers to lock their drawers or put password on computers and supporting them when they show physical discomfort in response to peers who violate their territory. Moreover, supervisors should show good manners when invading private areas of staff. Second, the same objective density does not always lead to crowding and privacy invasion because it may or may not be uncomfortable. As Jazwinski (1998) states, “high density does not always lead to crowding perceptions [...] because the same objective density may be uncomfortable or not.” However, greater workplace density leads to greater crowding and perceptions of lack of privacy; hence, mere perceptions or true levels of density may ultimately influence employees' OCB-I. Managers should highlight that high density at work is not just an ‘occupational risk’ and rarely occurs without negative arousals, but it is probably relevant in influencing OCB-I. Managers must discuss this fact in order to design, along with supervisors, proper arrangements in the workplace such as those mentioned above.

Limitations, Future Research and Conclusions

The paper has weaknesses that should be acknowledged. First, this study was conducted according to a cross-sectional method and, hence, could present mono-method/source biases that question the generalization of the results. Our data collection method used self-report measures, and hence, the assessments of our constructs were obtained from the same source at the same time. Second, although the sampled companies belong to a well-known industry sector, specificities of Iranian open-based companies and their work processes can differ from those of companies in other environments. Thus, our results might not be directly applicable to other industrial sectors. For instance, our Iranian sample has a different culture with specific normative standards. This societal Iranian culture can influence the way staff experience privacy invasion and the levels

of crowding in open-plan offices (Hongisto et al., 2016). These contextual influences of Iranian societal culture can also question the generalization of the results.

Future research should examine other organizations in order to strengthen these study conclusions. For instance, prior work indicates that trust in peers and supervisors' treatment of followers in terms of interpersonal justice (IJ) have main effects on OCB-I and, hence, could be involved as mediators in the effects of a dense physical workspace on OCB-I. Because crowding and privacy invasion have an effect on employees' affective responses and behaviors, different job-related variables such as the level of job cognitive demands, or personal variables such as conscientiousness, could be moderating those relationships. Finally, this study opens up new avenues to investigate social capital as a personal asset of employees. Physical workspace may play a role in building or destroying the social bond that creates and accumulates social capital at personal level.

In conclusion, the results of this study show that physical workspace can trigger a process that is detrimental to employee relations in terms of OCB-I, a behavior not previously examined in open-plan offices. In addition, the findings reveal that employees' cognitions and attitudes, and not only their affect (as often postulated), are also involved in employee responses to negative events in the workspace, which, therefore, can take the form of both judgment- and affect-driven OCB-I.

Conflict of Interest

The authors of this article declare no conflict of interest.

References

- Altman, I. (1975). *The environment and social behavior*. Monterey, CA: Brooks/Cole.
- Amason, A. C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. *The Academy of Management Journal*, 39, 123-148. <https://doi.org/10.2307/256633>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411-423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Ashkanasy, N. M., Ayoko, O. B., & Jehn, K. A. (2014). Understanding the physical environment of work and employee behavior: An affective events perspective. *Journal of Organizational Behavior*, 35, 1169-1184. <https://doi.org/10.1002/job.1973>
- Ayoko, O. B. (2007). Communication openness, conflict events and reactions to conflict in culturally heterogeneous workgroups. *Cross Cultural Management*, 14, 105-124. <https://doi.org/10.1108/13527600710745723>
- Barki, H., & Hartwick, J. (2004). Conceptualizing the construct of interpersonal conflict. *International Journal of Conflict Management*, 15, 216-244. <https://doi.org/10.1108/eb022913>
- Barsky, A., Kaplan, S. A., & Beal, D. J. (2011). Just feelings? The role of affect in the formation of organizational fairness judgments. *Journal of Management*, 37, 248-279. <https://doi.org/10.1177/0149206310376325>
- Baron, R. A. (1990). Environmentally induced positive affect: Its impact on self-efficacy, task performance, negotiation, and conflict. *Journal of Applied Social Psychology*, 20, 368-384. <https://doi.org/10.1111/j.1559-1816.1990.tb00417.x>
- Baron, R. A. (1991). Positive effects of conflict: A cognitive perspective. *Employee Responsibilities and Rights Journal*, 2, 25-36. <https://doi.org/10.1007/BF01390436>
- Batson, C. D., & Ahmad, N. Y. (2009). Using empathy to improve intergroup attitudes and relations. *Social Issues and Policy Review*, 3(1), 141-177. <https://doi.org/10.1111/j.1751-2409.2009.01013.x>
- Baum, A., Aiello, J. R., & Calesnick, L. E. (1978). Crowding and personal control: Social density and the development of learned helplessness. *Journal of Personality and Social Psychology*, 36, 1000-1011. <https://doi.org/10.1037/0022-3514.36.9.1000>
- Bodtker, A. M., & Jameson, J. K. (2001). Emotion in conflict formation and its transformation: Application to organizational conflict management. *International Journal of Conflict Management*, 12, 259-275. <https://doi.org/10.1108/eb022858>
- Bond, C. F., & Titus, L. J. (1983). Social facilitation: A meta-analysis of 241 studies. *Psychological Bulletin*, 94, 265.
- Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional versus open office design: A longitudinal field study. *Environment and Behavior*, 34, 279-299. <https://doi.org/10.1037/0033-2909.34.2.265>

- Brief, A. P., & Weiss, H. M. (2002). Organizational behavior: Affect in the workplace. *Annual Review of Psychology*, 53, 279-307. <https://doi.org/10.1146/annurev.psych.53.100901.135156>
- Brown, G., Lawrence, T., & Robinson, S. L. (2005). Territoriality in organizations. *Academy of Management Review*, 30, 577-594. <https://doi.org/10.5465/amr.2005.17293710>
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Thousand Oaks, CA: Sage Publications.
- Cable, D. M., & Judge, T. A. (1996). Person-organization fit, job choice decisions, and organizational entry. *Organizational Behavior and Human Decision Processes*, 67, 294-311. <https://doi.org/10.1006/obhd.1996.0081>
- Chen, C. C., & Chiu, S. F. (2008). An integrative model linking supervisor support and organizational citizenship behavior. *Journal of Business and Psychology*, 23, 1-10. <https://doi.org/10.1007/s10869-008-9084-y>
- Chigot, P. (2003). Controlled transparency in workplace design: Balancing visual and acoustic interaction in office environments. *Journal of Facilities Management*, 2, 121-130. <https://doi.org/10.1108/14725960410808159>
- Chiu, S. F., & Tsai, M. C. (2006). Relationships among burnout, job involvement, and organizational citizenship behavior. *The Journal of Psychology*, 140, 517-530. <https://doi.org/10.3200/JRPL.140.6.517-530>
- Cropanzano, R., Rupp, D. E., & Byrne, Z. S. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. *Journal of Applied Psychology*, 88, 160-169. <https://doi.org/10.1037/0021-9010.88.1.160>
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. JSAS. *Catalog of Selected Documents in Psychology*, 10, 85.
- De Wit, F. R., Greer, L. L., & Jehn, K. A. (2012). The paradox of intragroup conflict: A meta-analysis. *Journal of Applied Psychology*, 97, 360-390. <https://doi.org/10.1037/a0024844>
- Donald, I. (1994). Management of change in office environment. *Journal of Environmental Psychology*, 14, 21-30. [https://doi.org/10.1016/S0272-4944\(05\)80195-1](https://doi.org/10.1016/S0272-4944(05)80195-1)
- Dijkstra, M. T. M., Van Dierendonck D., & Evers A. (2005). Responding to conflict at work and individual well-being: The mediating role of flight behavior and feelings of helplessness. *European Journal of Work and Organizational Psychology*, 14, 119-135. <https://doi.org/10.1080/13594320444000254>
- Dutton, J. E., Workman, K. M., & Hardin, A. E. (2014). Compassion at work. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 277-304. <https://doi.org/10.1146/annurev-orgpsych-031413-091221>
- Evan, W. (1965). Conflict and performance in R&D organizations. *Industrial Management Review*, 7, 37-46.
- Forgas, J. P., & Smith, C. A. (2003). Affect and emotion. In M. Hogg & J. Cooper (Eds.), *The Sage handbook of social psychology* (pp. 161-189). London, UK: Sage.
- Freedman, J. L. (1975). *Crowding and behavior*. Oxford, UK: W. H. Freeman.
- George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology*, 76, 299-307. <https://doi.org/10.1037/0021-9010.76.2.299>
- Gifford, R., Peacock, J. (1979). Crowding: More fearsome than crime provoking? Comparison of an Asian city and a North American city. *Psychologia*, 22, 79-83.
- Gladstein, D. (1984). A model of task group effectiveness. *Administrative Science Quarterly*, 29, 499-517. <https://doi.org/10.2307/2392936>
- Hancock, G. R., & Mueller, R. O. (Eds.). (2006). *Structural equation modeling: A second course* (Vol. 1). Charlotte, VA: IAP.
- Hayduk, L. A. (1978). Personal space: An evaluative and orienting overview. *Psychological Bulletin*, 85, 117-134. <https://doi.org/10.1037/0033-2909.85.1.117>
- Hongisto, V., Haapakangas, A., Varjo, J., Helenius, R., & Koskela, H. (2016). Refurbishment of an open-plan office - Environmental and job satisfaction. *Journal of Environmental Psychology*, 45, 176-191. <https://doi.org/10.1016/j.jenvp.2015.12.004>
- Hong, J. S., Tsai, C. Y., Yang, T. C., & Liu, C. H. (2016). Exploring the relationship between proactive personality, work environment and employee creativity among tourism and hospitality employees. *International Journal of Hospitality Management*, 54, 25-34. <https://doi.org/10.1016/j.ijhm.2016.01.004>
- Janssen, O., Van de Vliert, E., & Veenstra, C. (1999). How task and person conflict shape the role of positive interdependence in management teams. *Journal of Management*, 25, 117-142. <https://doi.org/10.1177/014920639902500201>
- Jazwinski, C. (1998). *Crowding*. Retrieved from <http://condor.stcloud.msus.edu/~jaz/psy373/7.crowding.html> Google Scholar
- Jehn, K. A. (1994). Enhancing effectiveness: An investigation of advantages and disadvantages of value-based intragroup conflict. *International Journal of Conflict Management*, 5, 223-238. <https://doi.org/10.1108/eb022744>
- Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, 40, 256-282. <https://doi.org/10.2307/2393638>
- Jehn, K. A. (1997). Qualitative analysis of conflict types and dimensions in organizational groups. *Administrative Science Quarterly*, 42, 538-566. <https://doi.org/10.2307/2393737>
- Jehn, K. A., Greer, L. L., Levine, S., & Szulanski, G. (2008). The effects of conflict types, dimensions, and emergent states on group outcomes. *Group Decision and Negotiation*, 17, 465-495. <https://doi.org/10.1007/s10726-008-9107-0>
- Jehn, K. A., & Mannix, E. A. (2001). The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance. *Academy of Management Journal*, 44, 238-251. <https://doi.org/10.2307/3069453>
- Kamarulzaman, N., Saleh, A. A., Hashim, S. Z., Hashim, H., & Abdul-Ghani, A. A. (2011). An overview of the influence of physical office environments towards employee. *Procedia Engineering*, 20, 262-268. <https://doi.org/10.1016/j.proeng.2011.11.164>
- Kaplan, M. M. (1982). Effects of adolescent space sharing experience on privacy-related dormitory behaviours (Doctoral dissertation). Boston University Graduate School. *Dissertation Abstracts International*, 43A/01.
- Kemery, E. R., Bedeian, A. G., & Zacur, S. R. (1996). Expectancy-based job cognitions and job affect as predictors of organizational citizenship behaviors 1. *Journal of Applied Social Psychology*, 26, 635-651. <https://doi.org/10.1111/j.1559-1816.1996.tb02735.x>
- Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49, 1-49. <https://doi.org/10.1111/j.1744-6570.1996.tb01790.x>
- Latane, B., & Darley, J. M. (1968). Group inhibition of bystander intervention in emergencies. *Journal of Personality and Social Psychology*, 10, 215-221. <https://doi.org/10.1037/h0026570>
- Lawler, E. J. (2001). An affect theory of social exchange. *American Journal of Sociology*, 107, 321-352. <https://doi.org/10.1086/324071>
- Lawler, E. J., & Yoon, J. (1996). Commitment in exchange relations: Test of a theory of relational cohesion. *American Sociological Review*, 61, 89-108. <https://doi.org/10.2307/2096408>
- Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology*, 87, 131-142. <https://doi.org/10.1037/0021-9010.87.1.131>
- Lynch, K., & Langan K. (2013). Our space—ANZ's approach to a new global workplace. *FM Magazine*, February 22.
- Maher, A., & von Hippel, C. (2005). Individual differences in employee reactions to open-plan offices. *Journal of Environmental Psychology*, 25, 219-229. <https://doi.org/10.1016/j.jenvp.2005.05.002>
- Martin, R. J., & Hine, D. W. (2005). Development and validation of the uncivil workplace behavior questionnaire. *Journal of Occupational Health Psychology*, 10, 477-490. <https://doi.org/10.1037/1076-8998.10.4.477>
- Maxwell, L. E. (2003). Home and school density effects on elementary school children: The role of spatial density. *Environment and Behavior*, 35, 566-578. <https://doi.org/10.1177/0013916503035004007>
- McElroy, J. C., & Morrow, P. C. (2010). Employee reactions to office redesign: A naturally occurring quasi-field experiment in a multi-generational setting. *Human Relations*, 63, 609-636. <https://doi.org/10.1177/0018726709342932>
- Medina, F. J., Munduate, L., Dorado, M. A., Martínez, I., & Guerra, J. M. (2005). Types of intragroup conflict and affective reactions. *Journal of Managerial Psychology*, 20, 219-230. <https://doi.org/10.1108/02683940510589019>
- Moorman, R. H. (1993). The influence of cognitive and affective based job satisfaction measures on the relationship between satisfaction and organizational citizenship behavior. *Human Relations*, 46, 759-776. <https://doi.org/10.1177/001872679304600604>
- Mowen, A. J., Vogelesong, H. G., & Graefe, A. R. (2002). Crowding perceptions and its relationship to crowd management practices at park and recreation events. *Event Management*, 8, 63-72. <https://doi.org/10.3727/152599503108751711>
- Nawaz, N., & Gomes, A. M. (2017). The relationship between organizational citizenship behavior and team performance: The mediating effect of team conflict. *Management and Organizational Studies*, 5(1), 15-22. <https://doi.org/10.5430/mos.v5n1p15>
- Oldham, G. R. (1988). Effects of changes in workspace partitions and spatial density on employee reactions: A quasi-experiment. *Journal of Applied Psychology*, 73, 253-258. <https://doi.org/10.1037/0021-9010.73.2.253>
- Oldham, G. R., & Rotchford, N. L. (1983). Relationships between office characteristics and employee reactions: A study of the physical environment. *Administrative Science Quarterly*, 28, 542-556. <https://doi.org/10.2307/2393008>
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, UK: Lexington Books/DC Health and Com.
- Organ, D. W., & Konovsky, M. A. (1989). Cognitive versus affective determinants of organizational citizenship behavior. *Journal of Applied Psychology*, 74, 157-164. <https://doi.org/10.1037/0021-9010.74.1.157>
- Park, G., & Evans, G. W. (2016). Environmental stressors, urban design and planning: implications for human behaviour and health. *Journal of Urban Design*, 21, 453-470. <https://doi.org/10.1080/13574809.2016.1194189>
- Pekrun, R., & Frese, M. (1992). Emotions in work and achievement. *International Review of Industrial and Organizational Psychology*, 7, 153-200.
- Perrewe, P. L., & Zellars K. L. (1999). An examination of attributions and emotions in the transactional approach to the organizational

- stress process. *Journal of Organization Behavior*, 20, 739-752. [https://doi.org/10.1002/\(SICI\)1099-1379\(199909\)20:5<739::AID-JOB1949>3.0.CO;2-C](https://doi.org/10.1002/(SICI)1099-1379(199909)20:5<739::AID-JOB1949>3.0.CO;2-C)
- Polzer, J. T., Milton, L. P., & Swarm Jr, W. B. (2002). Capitalizing on diversity: Interpersonal congruence in small work groups. *Administrative Science Quarterly*, 47, 296-324. <https://doi.org/10.2307/3094807>
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185-227. <https://doi.org/10.1080/00273170701341316>
- Regoez, W. C. (2003). When context matters: A multilevel analysis of household and neighborhood crowding on aggression and withdrawal. *Journal of Environmental Psychology*, 23, 457-470. [https://doi.org/10.1016/S0272-4944\(02\)00106-8](https://doi.org/10.1016/S0272-4944(02)00106-8)
- Rispens, S., Greer, L. L., & Jehn, K. A. (2007). It could be worse: A study on the alleviating roles of trust and connectedness in intragroup conflicts. *International Journal of Conflict Management*, 18, 325-344. <https://doi.org/10.1108/10444060710833450>
- Saegert, S. (1978). High density environments: Their personal and social consequences. In A. Baum & Y. Epstein (Eds.), *Human response to crowding* (pp. 259-282). Hillsdale, NJ: Erlbaum.
- Scherer, K. R. (2001). Appraisal considered as a process of multi-level sequential checking. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research* (pp. 92-120). New York and Oxford: Oxford University Press.
- Schleicher, D. J., Watt, J. D., & Greguras, G. J. (2004). Reexamining the job satisfaction-performance relationship: The complexity of attitudes. *Journal of Applied Psychology*, 89, 165-177. <https://doi.org/10.1037/0021-9010.89.1.165>
- Schmidt, D. E., & Keating, J. P. (1979). Human crowding and personal control: An integration of the research. *Psychological Bulletin*, 86, 680-700. <https://doi.org/10.1037/0033-2909.86.4.680>
- Schneider, B. (2001). Fits about fit. *Applied Psychology*, 50, 141-152. <https://doi.org/10.1111/1464-0597.00051>
- Schopler, J., & Stockdale, J. E. (1977). An interference analysis of crowding. *Environmental Psychology and Nonverbal Behavior*, 1(2), 81-88. <https://doi.org/10.1007/BF01145457>
- Shropshire, J., & Kadlec, C. (2012). Where are you going? A comparative analysis of job and career change intentions among USA IT workers. *Journal of Internet Banking and Commerce*, 17(2), 1-20.
- Smith-Jackson, T. L., & Klein, K. W. (2009). Open-plan offices: Task performance and mental workload. *Journal of Environmental Psychology*, 29, 279-289. <https://doi.org/10.1016/j.jenvp.2008.09.002>
- Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior and organizational citizenship behavior. *Human Resource Management Review*, 12, 269-292. [https://doi.org/10.1016/S1053-4822\(02\)00049-9](https://doi.org/10.1016/S1053-4822(02)00049-9)
- Stansbury, J., & Sonenshein, S. (2012). Positive business ethics: Grounding and elaborating a theory of good works. In K. S. Cameron & G. M. Spreitzer (Eds.), *Handbook of positive organizational scholarship*. (pp. 340-352) Oxford, UK: Oxford University Press.
- Stokols, D. (1972). On the distinction between density and crowding: some implications for future research. *Psychological Review*, 79, 275-277. <https://doi.org/10.1037/h0032706>
- Stokols, D. (1976). The experience of crowding in primary and secondary environments. *Environment and Behavior*, 8, 49-86. <https://doi.org/10.1177/001391657600800104>
- Sundstrom, E., Herbert, R., & Brown, D. (1982). Privacy and communication in an open-plan office: A case study. *Environment & Behavior*, 14, 379-392. <https://doi.org/10.1177/0013916582143007>
- Takeuchi, R., Bolino, M. C., & Lin, C. C. (2015). Too many motives? The interactive effects of multiple motives on organizational citizenship behavior. *Journal of Applied Psychology*, 100, 1239-1248. <https://doi.org/10.1037/apl0000001>
- Velasco, M., Navarro, J., & Rueff-Lopes, R. (2017). Teoría de los acontecimientos afectivos: revisión de su impacto y desarrollos en el estudio del afecto en las organizaciones. *Revista Psicología Organizaciones e Trabajo*, 17(1), 30-38. <https://doi.org/10.17652/rpot/2017.1.12106>
- Wall, V., & Nolan, L. N. (1986). Perceptions of inequity, satisfaction, and conflict in task-oriented groups. *Human Relations*, 39, 1033-1052. <https://doi.org/10.1177/001872678603901106>
- Walz, S. M., & Niehoff, B. P. (2000). Organizational citizenship behaviors: Their relationship to organizational effectiveness. *Journal of Hospitality & Tourism Research*, 24, 301-319. <https://doi.org/10.1177/109634800002400301>
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag. <https://doi.org/10.1007/978-1-4612-4948-1>
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes, and consequences of affective experiences at work. In B. M. Staw, & L. L. Cummings (Eds.), *Research in organizational behavior* (18, pp. 1-74). Westport, CT: JAI Press.
- Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management*, 17, 601-617. <https://doi.org/10.1177/014920639101700305>
- Yang, J., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: the role of intragroup emotional processing. *Journal of Organizational Behavior*, 25, 589. <https://doi.org/10.1002/job.258>
- Yeh, S. S., & Huan, T. C. (2017). Assessing the impact of work environment factors on employee creative performance of fine-dining restaurants. *Tourism Management*, 58, 119-131. <https://doi.org/10.1016/j.tourman.2016.10.006>
- Zhao, H. A. O., Wayne, S. J., Glibkowski, B. C., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: a meta-analysis. *Personnel Psychology*, 60, 647-680. <https://doi.org/10.1111/j.1744-6570.2007.00087.x>

