ESCUELA DE DOCTORADO DE LA
UNIVERSIDAD DE LAS PALMAS DE GRAN CANARIA

Programa de doctorado de Turismo, Economía y Gestión

TESIS DOCTORAL

THE INFLUENCE OF THE PHYSICAL WORK ENVIRONMENT ON EMPLOYEE PERFORMANCE

A study of perceived crowding in Iranian open-plan offices

Maryamsadat Sharifiatashgah

Las Palmas de Gran Canaria, 2020

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El Director **La Doctoranda**

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The Influence of the Physical Work Environment on Employee Performance

A Study of Perceived Crowding in Iranian Open-Plan Offices

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CHAPTER 0

Doctoral thesis general introduction

Chapter 0

Overall introduction to the doctoral thesis

It is more than 20 years since Donald (1994) pointed out that, at that time, more than 70 percent of the working population in the USA was open-plan office based; and this trend has continued unabated (Elsbach & Pratt, 2007). Despite this level of investment constitutes the second largest financial overhead (after human resources) for most organizations (McCoy, 2005), prior literature on management and organizational behavior has been given very little consideration to how aspects of the physical environment influence the emergence of employee behavior (Davis, Leach, & Clegg, 2011). Paradoxically, the management of organizations is extremely aware that the influence of physical work setting on the meaning and interpretation of the events take place in the workspace (e.g, Ashkanasy et al., 2014; Brown, Lawrence and Robinson, 2005; Horng et al., 2016; Yeh and huan, 2017), thus playing a major role in facilitating and constraining organizational action (Elsbach & Pratt, 2014).

Physical work environment

Physical work environment is distinguished from other types of organizational environments. Unlike the social environment (i.e., the surrounding human social structures and norms) and the purely natural environment (i.e., surroundings that are completely constructed by nature), the physical work environment comprises materials such as buildings, furnishings, equipment, lighting, air quality, and the arrangements of these objects (Elsbach & Pratt, 2014). Davis (1984) interprets in his study the physical work environment as forming part of the climate or structure of the organization. In that regard, Davis (1984) believes that is potentially useful for both research and practice to view the physical environment framework

in organizations as being composed of three main elements: (1) physical structure, (2) physical stimuli, and (3) symbolic artifacts, which explains different classifications of physical environment (see, for instance, Steele, 1973; Pfeffer, 1982; Becker, 1981). According to this explanation, physical structure is defined by Davis (1984) as the architectural design and physical placement of furnishings in buildings that influence or regulate social interaction, physical stimuli, are those aspects of the physical setting that influence organizational behavior. Symbolic artifacts are aspects of the physical setting that individually or collectively guide the interpretation of the social setting (Davis, 1984; Steele, 1973; Pfeffer, 1982; Becker, 1981), such as the type and style of furnishings, the color of the walls, the presence or absence of carpeting, framed certificates or photographs displayed on walls or desks.

Open-plan offices, Organizational citizenship behavior (OCB), and Deviant workplace behavior (DWB)

There are many different types of office designs, ranging from traditional, private offices to open offices. Open-plan offices were designed in the 1950s and have reached their height of popularity in the early 1970s, when many companies adopted these types of designs. Currently, the majority of the working population worldwide is open-plan office based (Elsbach & Pratt, 2007).

Design and allocation of open-plan offices continue to be an unacknowledged, expensive, and an unmanaged risk for many organizations (Davis, Leach, & Clegg, 2011). In fact, there was an estimated 20% savings in costs associated with creating and maintaining this type of office space (Hedge, 1982). Other studies, however, have reported negative findings such as decreased performance (Becker, Gield, Gaylin, & Sayer, 1983; Oldham & Brass, 1979), lower judgments of functional efficiency (Brookes & Kaplan, 1972), lower levels of

psychological privacy (Brookes & Kaplan, 1972; Hedge, 1982; Sundstrom, Town, Brown, Forman, & McGee, 1982; Sundstrom et al., 1980), environmental dissatisfaction (Marans & Yan, 1989; Oldham & Brass, 1979; Spreckelmeyer, 1993), fewer friendship opportunities (Oldham & Brass, 1979), supervisor feedback (Oldham & Brass, 1979), privacy invasion (Brookes & Kaplan, 1972; Hundert & Green- field, 1969), increased noise (Brookes & Kaplan, 1972; Sundstrom, et al., 1980), increased disturbances and distractions (Brookes & Kaplan, 1972; Hedge, 1982; Hundert & Greenfield, 1969; Ives & Ferdinands, 1974; Mercer, 1979; Nemecek & Grandjean, 1973; Oldham & Brass, 1979; Sundstrom, et al., 1980), increased bullying (Ayoko, 2007) and increased feelings of crowding (Sundstrom, et al., 1980).

Those above-mentioned negative and positive results suggest that open-plan offices can influence employees' behavior and their job performance, such as increased communication among coworkers (Allen & Gerstberger, 1973; Hundert & Greenfield, 1969; Ives & Ferdinands, 1974; Zahn, 1991) and supervisors (Sundstrom, Burt, & Kamp, 1980), higher judgments of aesthetic value (Brookes & Kaplan, 1972; Riland, 1970), and more group sociability (Brookes & Kaplan, 1972), which may lead them to increase their interpersonal citizenship behavior directed at peers (OCB-I) (Chigot, 2003; McElroy & Morrow, 2010). In fact, organizational citizenship behavior (OCB) has been previously supported as affected by organization-level variables, such as organizational culture and climate, organizational support, and CEO leadership (Hrebiniak & Alutto, 1972; Morris & Sherman, 1981; Somech & Drach-Zahavy, 2004; Steers, 1977). Moreover, when employees perceive a high level of collective organizational commitment within the firm, they are likely to perform more citizenship behaviors because they know that their extra efforts are not wasted (Gong et al., 2010). Job satisfaction is a predictor of organizational citizenship behavior (OCB) as well (Bateman & Organ, 1983; Lee & Allen, 2002; MacKenzie, Podsakoff, & Ahearne, 1998; Moorman, 1993;

Morrison, 1994; Organ & Konovsky, 1989; Smith et al., 1983; William & Anderson, 1991). Organizational citizenship behavior (OCB) supports task performance by enhancing a social and psychological work environment.

Performance within organizations contains different kind. Job performance is a commonly used performance in the workplace. It most commonly refers to whether a person performs his or her job well and it can be measured by quantity, quality, and accuracy of work; employee's efficiency and standard of work; employees' strive for higher quality work, achievement of work goals, and so on. Therefore, organizational citizenship behavior (OCB) and deviant workplace behaviors (DWBs) are among the measures of job according to the above definitions and according to the fact that they both affect quality of work, efficiency and accuracy. OCB is considered as a measure for employees' job performance. It is an important determinant of an organization's effectiveness, efficiency, productivity and overall performance. It is generally categorized into two types: (a) interpersonally directed OCB (OCB-I) that benefits others, such as helping others who are behind in their work, and (b) organizationally directed OCB (OCB-O) that benefits the organization in general (e.g., obeying the rules of the organization when others are not present; Williams & Anderson, 1991).

Workplace deviance is another frequent issue (Hollinger & Clark, 1983; Murphy, 1993; Robinson & Greenberg, 1998) that harms organizational production and has devastating effects on organizational performance (Robinson & Bennett, 1995; Bennett & Robinson, 2000). Workplace deviance refers to voluntary behavior in that employees either lack motivation to conform to, and/or become motivated to violate, normative expectations of the social context (Kaplan, 1975). Robinson and Bennett (1995) believe that deviant workplace behaviors (DWBs) are those behaviors that focus on violations of norms that threaten the well-being of an organization, its members or both.

Workers participate in deviant workplace behaviors (DWBs) due to a complex interaction between individual and situational factors. the

characteristics of the worker, such as demographics and personality (e.g., Colbert, Mount, Harter, Witt and Barrick, 2004), aspects of the work environment, such as the nature of the work (Fox, Spector, & Miles, 2001) and relationships with others (Robinson and O'Leary-Kelly, 1998), can result to deviant workplace behaviors (DWBs). Deviant workplace behaviors (DWBs) are studied, both directed at the organization as a whole (DWB-O) and at individuals (DWB-I) (Robinson and Bennett, 1995). DWB-I specifically addresses individuals of the organization and can include abuse, rudeness and physical assault (Mulki, Jaramillo, & Locander, 2006; Robinson & Bennett, 1995). DWB-O is rather directed against the organization and includes such actions as stealing and withholding effort (Colbert, Mount, Harter, Witt, & Barrick, 2004). Different researchers have proposed numerous factors causing deviant behavior among employees. Some of these variables are within the organizational work environment: such as abusive supervision (i.e., workplace experiences such as frustration, injustices (Bennett & Robinson, 2003). Reward allocation (i.e, when employees are not justified about the way organization allocates rewards), demographic variables (e.g women are more likely to hold higher values) (Appelbaum et al. 2005, 2007), organizational climate (i.e., when employees do not like their work environment and feel less support from their organization (Wolf et al., 2012), are associated with both interpersonal and organizational deviance (Appelbaum et al. 2007).

Open-plan offices and Cyberloafing

Cyberloafing is a type of DWB that can also be a measure of job performance. Cyberloafing is an intentional use of Internet access for personal purposes during work time, and this counterproductive Internet use is one of the most common ways employees waste time at work (Weatherbee, 2010). Therefore, cyberloafing influence the quality of job, efficiency, being an obstacle for the achievement of job goals. Cyberloafing

is not always a negative factor or a deviant behavior, it can also result in positive effects such as job recovery. In both cases, it affects the quality of job, though it can be assumed as a measure of job performance. So in the following paragraphs, we will talk more about cyberloafing as it is an important variable in our thesis and over some papers, we have studied its relationship with other organizational variables.

Cyberloafing includes a broad range of activities. For example, Li and Chung (2006) described four different functions in which people can use the Internet. They posit four different cyberloafing activities: Social activity; activity involves expressing yourself (e.g. Facebook, Twitter) or share information via blogs (e.g. Blogger). They also suggested that cyberloafing activity might include four different behaviors, namely, development behavior, recovery behavior, deviant behavior, and addiction behavior. As mentioned earlier, cyberloafing has both positive and negative consequences for the work and personal contexts (Van Doorn, 2011). Some of the important consequences of cyberloafing are as: work inefficiency, disciplinary actions, termination or loss of employees, breaches of corporate confidentiality and reputation loss, personal and organizational liability and the associated legal costs, as well as billions of dollars in lost productivity (Weatherbee, 2010), reductions in productivity and an inefficient use of network resources, resulting in an uncompetitive organization (Liberman et al, 2011), problems in the information system's security and general proper functioning (Zoghbi-Manrique-de Lara & Mesa, 2010), violating significant organizational norms and threatening the well-being of an organization as a result (Beugre and Kim, 2006:834) are other negative consequences of Cyberloafing in work context.

Cyberloafing can also play a positive role as well. For instance, In situations where job demands are higher than job resources, recovery is needed to prevent exhaustion (Bakker, Demerouti, & Verbeke, 2004), thus Cyberloafing could play a part in this process and can have a positive effect on the well-being of the employee (Oravec, 2002). Stanton found that using

internet frequently leads to higher levels of job satisfaction in comparison to lower internet using (Stanton, 2002). There is also a positive relationship between the expected productivity benefits of the Internet and cyberloafing activity (Vitak et al, 2011; Garrett & Danziger, 2008). Besides, cyberloafing may function as an 'office toy' not only to decrease work stress but also to inspire creativity (Anandarajan and Simmers, 2005). These negative and positive consequences are the reasons why cyberloafing can be a measure of job performance.

Research has been carried out to find the determinants of cyberloafing in line with the recent development in this topic of research (Liberman et al., 2011; Moody, 2011; Moody and Siponen, 2013; Andreassen et al., 2014; Askew et al., 2014; Konig and Guardia, 2014; Baturay and Toker, 2015; Rahimnia and Mazidi, 2015; Taneja et al., 2015; Yılmaz et al., 2015). Some antecedents of cyberloafing have been investigated, which can be placed in different categories such as individual, personal, work and situational categories (Van Doorn, 2011). First, some personal traits (e.g. individuals who are low in self-control) and certain perceptions and attitudes (e.g. people assuming their Internet use to be beneficial to their overall job performance) have been found to have greater possibility in leading employees to engage in cyberloafing (Restubog et al., 2011; Vitak et al, 2011). Habits, Internet addiction (e.g. a high degree of internet addiction may also likely lead individuals to internet abuse behaviors (Chen et al, 2008), alongside demographic factor, social norms, and personal ethical codes, which are also among the individual factors predicting cyberloafing. Other factors are employee perceptions of injustice (Lim, 2002, Lim and Teo, 2005), job satisfaction (Stanton, 2002; Ugrin et al, 2008; Vitak et al, 2011), job commitment (LaRose and Eastin, 2004; Garrett and Danziger, 2008), job characteristics (Vitak et al, 2011) and job burnout (Aghaz and Sheikh, 2016).

Organizational factors, on the other hand, such as, restriction on Internet use (e.g. employees facing stronger penalties for engaging in cyberloafing (Vitak et al, 2011), anticipated outcome (e.g. having the perception of serious negative consequences for organization and hurting their personal interest) can make employees less interested to engage in cyberloafing activities (Lim and Teo 2005, Blanchard and Henle 2008; Lim and Chen, 2012: 346; Vitak et al, 2011: 1758; Woon and Pee, 2004). Perceived coworker cyberloafing norms (e.g. Blau et al. (2006), positing employees to consider other coworkers as potential role models in the organization, are found as influencing factors in order to cyberloafing is learned through behavioral imitation in the organizational environment (Lieberman et al, 2011). In the context of situational factors, Watherbee (2010) believes that cyberdeviant behaviors happening as a result of having access to internet resources at work implies situational triggers mediating or moderating behaviors and outcomes. In this regard, opportunity and access, affordability, anonymity, convenience, escape, disinhibition, social acceptability, longer working hours in the workplace are situational factors contributing to non-work related Internet use (Kay et al, 2009). By contrast, job demands and resources could influence cyberloafing from a work perspective (e.g. high demands combined with low resources could lead to situations where cyberloafing can help to recover).

Perception of crowding as key determinant of the physical workspace

Although different from density, a perceived and subjective state of crowding is related to physical density, and it has been presented as a negative evaluation leading to "social interferences" (Stokols, 1976; Schmidt and Keating, 1979). According to Scotkal (1978), crowding is distinguished from the physical conditions that normally give rise to that state. Scotkal (1978) posited two main theoretical viewpoints focusing on the two man-environment interfaces: input and output viewpoints. Zlutnick and Altman (1972) similarly argue that crowding is a phenomenon of perceived interpersonal constraint, while Esser (1972) suggests that

crowding may be the subjective experience of not being able to “have one’s own way.”

The relation between the potential or actual behavioral interference generated by others and crowding stress has remained pivotal in output analyses of crowding (cf. Schopler & Stockdale, 1977; Stokols, 1972b, 1976; Sundstrom, 1975b) which have focused on the environmental, personal, social, and cultural factors that will determine the extent of the behavioral interference and may modify its effects (Stokols,1978). Both of these approaches define crowding as a psychological state in which one’s demand for physical space exceeds the available supply (Horn, 1994). Group size, group membership and group structure, task activity , resource scarcity, environmental features, interpersonal spacing, territorial behavior, sex differences, personality differences and coping responses are among the variables predicting crowding(stokols,1078).

On the other hand, low performance (Regoeczi, 2003; Saegert, 1978) , increase antisocial behavior (Gifford and Peacock, 1979) and stressful experience (Dunstan, 1979) are the consequences of crowding. It is thus assumed that the physical features of an environment may act as mediating variables as well influencing one’s experience of crowding (Choi, Mirjafari, & Weaver, 1976; Stokols, 1972). This is parallel with findings of Maher and Von Hippel (2005) which suggests that physical work environment can lead office workers to participate in DWBs by eliciting crowding perceptions in them. Crowding elicitation may also influence how employees use or misuse new technologies at work (Maher and von Hippel, 2005), and, therefore, perception of crowding may be a variable affecting cyberloafing which is a defined to be a misuse of Internet at work. It is one the goals of the current study to investigate such relationship.

Goals of the Current Research

Little attention has been paid to physical environment and its effect in organizational settings and employees' behaviors. It seems that even the little results derived from studies relevant to physical environment are ambiguous (Elsbach & Pratt, 2007). In the following thesis we pursue four main goals in term of four papers. Here there is a concise description of each paper.

In this thesis tries to expand the knowledge about physical work environment and its effect of employees' behavior and its intention is covering some of the existing gaps in the literature. Thus, starting from the previous research, we build bridges for its integration with other related topics, such as the cyberloafing, DWBs, OCBs, crowding perception, and so on. Following this objective, we undertook four works that make up the structure of the thesis and we present below. These chapters are based on an analysis of data obtained through 330 questionnaires that were distributed personally among employees of four IT-based companies ranging in size from big to medium, one of them a leading company in the IT sector in Tehran (Iran).

In chapter 1, which includes the paper "The relationship between perceived crowding and cyber-loafing in open offices at Iranian IT-based companies", the very first aim is to investigate is the effect of crowding perception on cyberloafing. Cyberloafing is a form of workplace deviance, and it is still vague that how it can be effected by crowding perception at work. Therefore, we examine how and the extent to which perceived crowding in open-plan offices leads employees to engage in cyberloafing activities.

The Chapter 2 includes the paper entitled "An Affective Events Model of the influence of the physical work environment on interpersonal citizenship behavior," in which we try to examine if crowding perception affects OCBs and its supporting reasons. Because relational aspects in these open offices are especially salient, interpersonal citizenship behavior directed at peers (OCB-I) in an open-plan office context will form part of

the basis in this chapter. Drawing on affective events theory (AET) fundamentals, this study first contends that invasion of employees' personal space by peers and crowding perceptions trigger affective events in the physical workspace that result in affective reactions among employees, with detrimental consequences for the appearance of OCB-I. We specifically believe 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.

In Chapter 3, we present the paper "The emergence of deviant behaviors in the physical work environment: A study of workers in open offices". In this paper we come to deviant workplace behaviors (DWBs) suggesting that workers with the experience of crowding at work will commit deviant work behavior (DWB). Indeed, dense open-plan offices can be related to DWBs among peers (DWB-I) and DWBs targeting the organization itself (DWB-O).

Concerning crowding perception and DWB, we also investigate the complexities of the mechanisms underlying the relationship between them. This relationship does not seem to be simple and direct and a number of mediators or moderators may be involved. According to the frustration-aggression theory (berkowitz, 1963; Dollard, Doob, Miller and sears, 1939) revised by Berkowitz(1990) proposing that DWBs can be the result of hostile and angry reaction frustrating events employees perceive at work such as invasion of privacy , we proposed that invasion of privacy done by supervisors and peers in the workplace is present in the steps from crowding perception to DWBs.

Finally, the thesis will present succinctly the more important conclusions resulted from the research undertook through its three articles.

References

American Institute of Stress (2012). *Workplace Stress*. http://www.stress.org/ workplace-stress. Acceded el 14-01-14.

American Psychological Association (2009). *Stress in America*. http://www.apa.org./news/press/releases/stress/index.aspx. Accedido el 14-01-14.

Aquino, K. & Reed, A. (2002). The self-importance of moral identity. *Journal of Personality and Social Psychology, 83* (6), 1423-1440.

Barasch, M. I. (2005). *Field notes on the compassionate life: A search for the soul of kindness.* New York: Rodale Press.

Baum, H.S. (1991). Creating a family in the workplace. *Human Relations, 44* (11), 1137-1160.

Blum, L. (1980). Compassion. En A. O. Rorty (Ed.), *Explaining emotions* (pp. 507-517). Berkeley, CA: University of California Press.

Boland, R. & Tenkasi, R. (1995). Perspective making and perspective taking in communities of knowing. *Organization Scienc*e, *6* (4), 350-372.

Brief, A. P. & Motowidlo, S. J. (1986). Prosocial organizational behaviors. *Academy of Management Review*, *11* (4), 710-725.

Brockner, J., Konovsky, M., Cooper-Schneider, R., Folger, R., Martin, C. L. & Bies, R. J. (1994). Interactive effects of procedural justice and outcome negativity on the victims and survivors of job loss. *Academy of Management Journal, 37* (2), 397-409.

Brown, S.L., Brown, R.M. & Penner, L.A. (Eds.) (2012a). *Moving Beyond Self-Interest: Perspectives from Evolutionary Biology, Neuroscience, and the Social Sciences*. New York: Oxford University Press.

Brown, S.L., Brown, R.M. & Preston, S.D. (2012b). The human caregiving system. En Brown, S.L., Brown, R.M. & Penner, L.A. (Eds.) *Moving Beyond Self-Interest: Perspectives from Evolutionary Biology, Neuroscience, and the Social Sciences* (pp. 75-88). New York: Oxford University Press.

Brown, S. L., Nesse, R. M., Vinokur, A. D. & Smith, D. M. (2003). Providing social support may be more beneficial than receiving it:

Results from a prospective study of mortality. *Psychological Science*, *14* (4), 320-327.

Brody, H. (1992). *The Healer´s Power*. New Haven: Yale University Press.

Cameron, K. S. (1994). Strategies for successful organizational downsizing. *Human Resource Management*, *33* (2), 189-211.

Cassell, E. (2002). Compassion. En C. Snyder & S. Lopez (eds.) *Handbook of Positive Psychology* (pp. 434-445). New York: Oxford University Press.

Chodron, P. (1997). *When things fall apart: Heart advice for difficult times.* Boston, MA: Shambhala.

Clair, J., Ladge, J. & Cotton, R. (2010). In search of silver linings: How chronic downsizing agents generate positive self-states in the context of repeatedly harming others. In J. Kanov & J. Lilius (Chairs), *Compassion research incubator: Emerging perspectives on the scholarship and practice of compassion*. Symposium de la Academy of Management, Montreal: Canadá.

Clark, C. (1997). *Misery and company: Sympathy in everyday life.* Chicago: The University of Chicago Press.

Coombs, W. T. (1999). Information and compassion in crisis responses: A test of their effects. *Journal of Public Relations Research, 11* (2), 125-142.

Cosley, B., McCoy, S., Saslow, L. & Epel, E. (2010). Is compassion for others stress buffering? Consequences of compassion and social support for physiological reactivity to stress. *Journal of Experimental Social Psychology, 46* (5), 816-823.

Dalai Lama (1995). *The power of compassion.* London: Thorsons.

Davis, M. H. (1996). *Empathy: A social psychological approach.* Boulder, CO: Westview Press.

De Waal, F. (2009). *Primates and Philosophers: How Morality Evolved.* Princeton, NJ: Princeton University Press.

Dovidio, J. F. & Penner, L. A. (2004). Helping and altruism. En M. B. Brewer, & M. Hewstone (Eds.), *Emotion and Motivation* (pp. 247-280). Malden, MA: Blackwell Publishing.

Driver, M. (2003). Nothing clinical, just business? Reflections on psychoanalytically grounded organizational diagnosis and intervention. *Human Relations, 56* (1), 39-59.

Driver, M. (2007). Meaning and suffering in organizations. *Journal of Organizational Change Management, 20* (5), 611-632.

Dutton, J., Frost, P., Worline, M., Lilius, J., & Kanov, J. (2002). Leading in times of trauma. *Harvard Business Review, 80* (1), 54-61.

Dutton, J., Lilius, J. & Kanov, J. (2007). The transformative potential of compassion at work. En S. Piderit, R. Fry, & D. Cooperrider (Eds), Handbook of Transformative Cooperation. New Designs and Dynamics (pp. 107-126). Stanford: Stanford Business Books.

Dutton, J. E., Spreitzer, G. M., Heaphy, E. & Stephens, J. P. (2010). When and how employees lend a hand: Facilitators of compassion outside of work. En J. Kanov & J. Lilius (Chairs) *Compassion research incubator: Emerging perspectives on the scholarship and practice of compassion.* Simposio de la Academy of Management, Montreal: Canadá.

Dutton, J. & Workman, K. M. (2011). Commentary on "Why compassion counts!": Compassion as a generative force. *Journal of Management Inquiry, 20* (4), 402-406.

Dutton, J., Workman, K. M. & Hardin, A. E. (2014). Compassion at work. *Annual Review of Organizational Psychology and Organizational Behavior, 1,* 277-304. doi:10.1146/annurev-orgpsych-031413-091221

Dutton, J., Worline, M., Frost, P. & Lilius, J. (2006). Explaining compassion organizing. *Administrative Science Quarterly, 51* (1), 59-96.

Figley, C. R. (1995). Compassion fatigue: Toward a new understanding of the costs of caring. En B.H. Stamm (Ed.) *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators* (pp. 3-28). Baltimore: Sidran Press.

Fineman S. (2000). *Emotion in Organizations*. 2ª edición. London: Sage.

Fredrickson, B. (2003). Positive emotions and upward spirals in organizations. En K. Cameron, J. Dutton, & R. Quinn (Eds.). *Positive organizational scholarship: Foundations of a new discipline* (pp. 163-175). San Francisco: Berrett-Koehler.

Frost, P. (1999). Why compassion counts! *Journal of Management Inquiry, 8* (2), 127-133.

Frost, P. (2003). *Toxic emotions at work: How compassionate managers handle pain and conflict*. Boston: Harvard Business School Press.

Frost, P., Dutton, J., Worline, M. & Wilson, A. (2000) Narratives of compassion in organizations. En S. Finneman (Ed.) *Emotion in organization* (pp. 25-45). Thousand Oaks: Sage.

Frost, P. & Robinson, S. (1999). The toxic handler: organizational hero and casualty. *Harvard Business Review, 77* (4), 97-111.

Gabriel, Y. (1995). The unmanaged organization: stories, fantasies and subjectivity. *Organization Studies, 16* (3), 477-502.

Galinsky, A. D. & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology, 78* (4), 708-724.

Goetz, J. L., Keltner, D. & Simon-Thomas, E. (2010). Compassion: An evolutionary analysis and empirical review. *Psychological Bulletin, 136* (3), 351-374.

Grant, A. M., Dutton, J. E., & Rosso, B. (2008). Giving commitment: Employee support programs and the prosocial sensemaking process. *Academy of Management Journal, 51* (5), 898-918.

Haidt, J. (2003). Elevation and the positive psychology of morality. En C. L. M. Keyes & J. Haidt (Eds.) *Flourishing: Positive psychology and the life well-lived* (pp. 275-289). Washington: American Psychological Association.

Kanov, J., Maitlis, S., Worline, M., Dutton, J., Frost, P. & Lilius, J. (2004). Compassion in Organizational Life. *American Behavioral Scientist, 47* (6), 808-827.

Keltner, D. (2009). *Born to Be Good: The Science of a Meaningful Life*. New York: W.W. Norton.

Kets De Vries, M.F.R. (Ed.) (1991). *Organizations on the Couch*. San Francisco, CA: Jossey-Bass.

Lazarus, R. S. (1991). *Emotion and Adaptation.* New York: Oxford University Press.

Lilius, J., Worline, M., Maitlis, S., Kanov, J., Dutton, J. & Frost, P. (2008). The contours and consequences of compassion at work. *Journal of Organizational Behavior, 29* (2), 193-218.

Lilius, J. M., Kanov, J., Dutton, J. E., Worline, M. C. & Maitlis, S. (2012). Compassion Revealed: What we Know about Compassion at Work (and Where We Need to Know More). En K. Cameron & G. Spreitzer (Eds.), *Handbook of Positive Organizational Scholarship* (pp. 273-287). New York: Oxford University Press.

Margolis, J. & Molinsky, A. (2008). Navigating the bind of necessary evils: Psychological engagement and the production of interpersonally sensitive behavior. *Academy of Management Journal, 51* (5), 847-872.

Mishra, A., Mishra, K, & Spreitzer G. (2009). Downsizing the company without downsizing morale. *Sloan Management Review, 50* (3), 39-44.

Molinsky, A. & Margolis, J. (2005). Necessary evils and interpersonal sensitivity in organizations". *Academy of Management Review, 30* (2), 245-268.

Nussbaum M. C. (1996). Compassion: the basic social emotion. *Social Philosophy and Policy, 13* (1), 27–58.

Nussbaum, M. C. (2001). *Upheavals of thought: The intelligence of emotions.* Cambridge: Cambridge University Press.

Oveis, C., Horberg, E. & Keltner, D. (2010). Compassion, pride, and social intuitions of self-other similarity. *Journal of Personality and Social Psychology, 98* (4), 618-630.

Parker, S. K. & Axtell, C. M. (2001). Seeing another viewpoint: Antecedents and outcomes of employee perspective taking. *Academy of Management Journal*, *44* (6)*,* 1085-1100.

Penner, L. A., Dovidio, J. F., Piliavin, J. A. & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology, 56* (february)*,* 365-392.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B. & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, *26* (3), 513-563.

Pollock, S.E. & Sands, D. (1997). Adaptation to suffering: meaning and implications for nursing. *Clinical Nursing Research, 6* (2), 171-185.

Post, S. G. (2003). *Unlimited love, altruism, compassion and service*. Philadelphia, PA: Templeton Foundation Press.

Reich, W. T. (1989). Speaking of suffering: A moral account of compassion. *Soundings, 72* (1), 83-108.

Rhoades, L. & Eisenberger, R. (2002). Perceived Organizational Support: A review of the literature. *Journal of Applied Psychology, 87* (4), 698-714.

Ryff, D. & Singer, B. (Eds.) (2001). *Emotion, social relationships, and health*. Oxford: Oxford University Press.

Rynes, S.L., Bartunek, J.M., Dutton, J.E., & Margolis, J.D. (2012). Care and compassion through an organizational lens: Opening up news possibilities. *Academy of Management Review, 37* (4), 503-523.

Sievers, B. (1994). *Work, Death, and Life itself*. Berlin: Walter de Gruyter.

Stamm, B. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the compassion satisfaction and fatigue test. En C. Figley (Ed.) *Treating compassion fatigue* (pp. 107-119). New York: Brunner-Routledge.

Solomon, R. C. (1998). The moral psychology of business: Care and compassion in the corporation. *Business Ethics Quarterly, 8*(3), 515-533.

Tsui, A. (2013). On compassion in scholarship: Why should be care? *Academy of Management Review, 38* (2), 167-180.

Van Doorn, O. N. (2011). Cyberloafing: A multi-dimensional construct placed in a theoretical framework. Department Industrial Engineering and Innovation Sciences Eindhoven University of Technology, Unpublished Master Thesis, Eindhoven: Netherlands.

Victor, B. & Cullen, J. B. (1987). A theory and measure of ethical climate in organizations. *Research in corporate social performance and policy, 9*, 51-71.

Victor, B. & Cullen, J. B. (1988). The organizational bases of ethical work climates. *Administrative Science Quarterly, 33* (1), 101-125.

Wuthnow, R. (1991). *Acts of compassion: Caring for others and helping ourselves.* Princeton, NJ: Princeton University Press.

CHAPTER I

The relationship between perceived crowding and cyberloafing in open offices at Iranian IT-based companies

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Abstract: The aim of this chapter is to explore whether aspects of the physical work environment cause employee cyberloafing, which is defined as employee misuse of the company's Internet connection for personal purposes. Drawing on conservation of resources (COR) theory, the paper proposes that perceived crowding arises as a result of scarce physical-space resources, which lead employees to engage in cyberloafing through feelings of stress and emotional conflict, as well as through their experiences of a lack of trust and compassion at work. Data was collected from 299 respondents working in open-plan offices at four IT-based companies in Tehran (Iran). Structural equation modelling (SEM) results showed a significant positive association between crowding and cyberloafing, stress, and emotional conflict, while there was a negative association with trust, and compassion. Only trust and compassion mediated the relationship between crowding and cyberloafing. Findings suggest that crowding is certainly an unlisted cause of cyberloafing and, hence, that not only psychosocial but also physical arrangements at work need to be taken into consideration to guard against its emergence.

Keywords: Perceived crowding, Cyberloafing, Density at work, Physical workspace, Open-plan offices

Introduction

Previous research on information technology and behaviour suggests that immaterial job conditions derived from the psychosocial work environment, such as corporate values (Cooper 1994; Salehan et al. 2018), teamwork atmosphere (Schultz et al. 2007), and leadership (Zoghbi-Manrique-de-Lara and Viera-Armas 2017), among others, influence employees' use of new technologies within organisations. However, the physical aspects of the work environment (noise and lighting, personal space, density of workspaces, temperature, visual privacy, and so on) have received comparatively less systematic attention. In this study, we focus on the role that the physical workspace can play in the way in which employees use the Internet at work.

One common phenomenon associated with the use of Internet facilities at work is employees' engagement in cyberloafing, that is, the use of the company's Internet connection for non-work-related purposes during working hours (Lim 2002). Indeed, cyberloafing has been surveyed as the most frequent way in which employees waste time at work (Malachowski 2005) and is often pointed out as a type of job neglect (Lim 2002; Lim and Teo 2005), that is, as a counterproductive or deviant workplace behaviour (DWB) that harms organisational production (Bennett and Robinson 2000; Robinson and Bennett 1995). In fact, much of management's concern about cyberloafing stems from the idea that it could deplete employees' energy and time (Lim and Teo 2005), particularly at IT-based companies – that is, companies with offices where employees have the Internet as the main tool of their trade and hence interact daily with Internet facilities at their workstations. In this context, companies are particularly exposed to cyberloafing, and because employees are especially 'time-conserving' and usually considered as 'knowledge workers' (Rahman and Abdul-Gader 1993), cyberloafing can be particularly harmful (Malachowski 2005).

One type of physical workspace that may favour employees' cyberloafing activities is an open-plan office; i.e., offices that have individual workstations located within an open space (Smith-Jackson and Klein 2009). The fact that open-plan offices usually lead employees to be very exposed to social interaction may put them at risk of suffering from perceptions of crowding (Maher and von Hippel 2005). Perceived crowding has been conceptualised as a negative psychological evaluation of personal space shortage and excessive social contact (Altman 1975). Perceived crowding may play a role in the occurrence of cyberloafing in the context of open-plan offices. Despite open-plan offices currently being the most common physical work environment for employees (Lynch and Langan 2013), the impact that perceived crowding could exert on cyberloafing within open-plan offices is to date unknown (Kamarulzaman et al. 2011). Previous research indicates that open-plan offices result in negative

attitudes and behaviours that can ultimately be counterproductive. Researchers found, for instance, that open-plan offices provoke bullying (Ayoko, 2007) and poor performance (Regoeczi, 2003); perceived crowding could have a major role in these behaviours. By contrast, however, other studies suggest that perceived crowding is not dysfunctional in itself (for instance, Freedman 1975). Because they could improve communication flow and produce closer and more productive interactions at work (Chigot 2003; McElroy and Morrow 2010), they would perhaps decrease the occurrence of cyberloafing.

Based on Stevan E. Hobfoll's (1989) conservation of resources (COR) theory, the paper posits that crowding may cause employees to perceive likely losses of space-related resources in the physical work environment, which would lead to the engagement in increased cyberloafing as a way to cope with this situation. Furthermore, previous research in non-work contexts offers useful signs as to why this association could occur (Maxwell 2003; Mowen et al. 2002). Because COR theory assumes that resource loss is a frustrating event that leads to an increase in employee job stress and other negative emotions, classical research about crowding and behaviour postulates the experience of stress as a mediator that explains why crowding leads individuals to participate in violent and antisocial behaviour (Dunstan 1979). The extent of perceived control employees have over the situation (Sandler and Lakey 1982), the perception of sharing "similar" or "congruent" values with peers (Kristof 1996), or the diffusion of perceived responsibility of caring for or helping others (Latane and Darley 1968) are also factors related to crowding that might mediate our studied relationship. Therefore, we anticipated that a lack of space-related resources for employees in the workplace due to perceived crowding leads to an increase in employee job stress (H2a) and emotional conflict (H2b), and decreases trust (H2c) and the experience of compassion at work (H2d). In turn, also based on COR theory, we assert that these negative reactions – derived from employees' fear of possible losses of space-related resources in the

workspace – are ultimately mediators for why staff react against crowding by damaging the organisation through engaging in cyberloafing (H3). A recent review (Weissenfeld et al. 2019) shows that emotional conflict, trust, and compassion experienced at work have never been modelled with cyberloafing, nor has work-related stress been explored as a mediator in the link between crowding and cyberloafing.

It is important to address these predictions because they alert managers that making physical arrangements in the workplace and taking control of the emotional factors underlying the effect of perceived crowding on cyberloafing can play a vital role in promoting the proper use of office technology.

Physical workspace as a resource, crowding, and cyberloafing

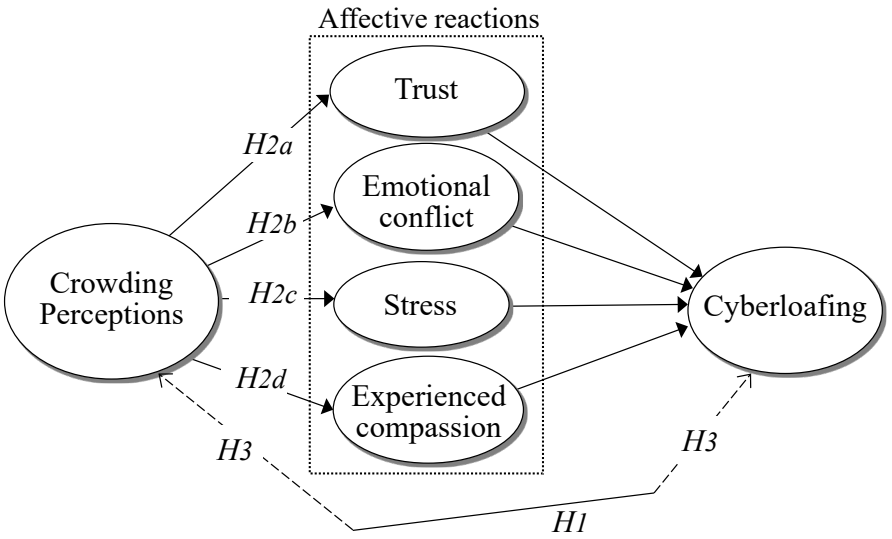
As COR theory states, resource loss is centrally valued by employees, and one way to maintain or defend their personal space is by exhibiting even aggressive behaviour. This study contends that the more employees perceive that space in the physical workspace is scarce, the more they will attempt to obtain, maintain, enhance, and defend their personal space through cyberloafing. Thus, because perceived crowding can be based on space scarcity, which is the responsibility of the organisation and its representatives to address, employees who judge a workspace as too crowded might attribute the ultimate responsibility for this situation as lying with the company or its representatives (Ayoko and Härtel 2003; Shropshire and Kadlec 2012). For instance, a lack of trust between peers has been found to ultimately increase a lack of trust in the organisation itself (Tan and Lim 2009). In the end, they may feel emotionally moved to engage in organisation-motivated aggression (O'Leary-Kelly et al. 1996) one way to cope with perceived crowding.

Increasing the practice of cyberloafing could be one way in which employees cope with perceived crowding (see Figure 1). Previous research

indicates that neglecting the jobs is a way that employees often consider to increase their levels of personal control and controlling territoriality (Ashkanasy et al. 2014), as well as coping with fear of punishment (Zoghbi-Manrique-de-Lara 2006) with withdrawal behaviour (e.g., Connelly and Ayoko 2013). They are ways to cope with dissatisfactory work environments due to crowding or other causes attributable to the organisation or their representatives. Therefore,

H1: *Higher levels of employee perceived crowding will be positively associated with higher levels of cyberloafing.*

Figure 1
Trust, emotional conflict, stress, and compassion at work



In this section, trust, emotional conflict, stress, and compassion at work are presented as being involved in the link between crowding and cyberloafing. Based on the COR theory, this paper first proposes that – under perceived crowding – employees can feel that their personal space is being invaded by other people in the workspace and, thus, that employees

are less prone to showing confidence in them (Ambrose and Alder 2000). Interpersonal trust is described by Boon and Holmes (1991:194) as a "state that involves positive and certain expectations about others' motives toward us in situations of risk." Previous research suggests that crowding causes staff to feel anonymous and to see other people at work in the same way (Pronin 2008); this can lead staff to more readily disconnect from other people and to have negative and uncertain expectations about their motives in future situations (Chung and Jackson 2011). Therefore,

H2a: *Higher levels of employee perceived crowding will be positively associated with lower feelings of trust*

Another likely reaction of employees to perceptions of crowding is engagement in emotional conflict at work. Unlike behavioural or cognitive conflict (Barki and Hartwick 2004), emotional conflict – also called relational conflict (Jehn 1994) – refers to a construct capturing perceptions of disagreement among the members of a group, which includes emotions such as tension, annoyance, animosity (Barki and Hartwick 2004; Jehn 1995 1997), and even anger (Bodtker and Jameson 2001; Jehn 1994). Based on COR theory, we argue (see Figure 1) that perceived crowding is a space-related event in the physical workspace that can lead employees to experience emotional conflict with other people at work. As Walton and McKersie (1991) highlight, the most severe kind of conflict of interest within an organisation occurs "when one group can gain only at the expense of another" (p. 288), and in a crowded physical work environment, personal space is habitually gained at others' expense. Moreover, emotional conflict is especially plausible in our sample because it mainly comprises IT tasks that are more intellectual or decision-making in focus than manual. As such, perceived crowding increases conflict by reducing self-efficacy (Bond and Titus 1983). Therefore,

H2b: *Higher levels of employee perceived crowding will be positively associated with lower feelings of emotional conflict.*

A significant number of previous studies attribute escalating distress and disturbance to open-plan offices (Brennan et al. 2002; Hongisto et al. 2016). Perceived crowding can produce stress because employees can feel that their personal space is invaded, losing physical space resources. Personal space is the physical area staff preserve around themselves that others cannot invade without provoking frustration (Hayduk 1978). Frustration, in turn, is a feeling of stress that occurs when efforts to reach a given goal are blocked. Because COR theory emphasises the objectively stressful nature of resource loss at work and states that resource loss is centrally valued by employees, it is likely that crowding makes them feel stressed at work. Therefore,

H2c: *Higher levels of employee perceived crowding will be positively associated with lower feelings of job stress*

Goetz et al. (2010:351) define compassion as "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help." Unlike simple empathy or pity for another person's suffering, literature on compassion (Latin, com-: together, and -passio: to suffer) indicates that practising compassion implies deeper identification and participation (Clark 1997; Rinpoche 1992). Previous research supports the premise that people are more prone to extend greater compassion to those with whom they perceive a closer relationship (Cialdini et al. 1997). Perceptions of crowding seem to gradually lead employees to feel they can no longer control their personal space and, hence, they drift apart from

other group members in the workplace, thus lacking identification and participation with others (Mayer et al. 1995). As a result, the more group members feel that they are being crowded, the less likely they are to become aware of the possible effects of their actions on the wellbeing of others, or they experience that people at work take action to lessen or relieve the setbacks and misfortunes of others (Schwartz 1968). Therefore,

H2d: *Higher levels of employee perceived crowding will be positively associated with lower experiences of compassion at work.*

The mediating role of trust, emotional conflict, stress, and compassion

In this section, we argue that the physical workspace is perceived as a scarce resource due to feelings of trust, emotional conflict, stress, and compassion at work, rather than as a direct result of perceived crowding itself. Building on COR theory (Hobfoll 1989), we accordingly predict that trust, emotional conflict, stress, and compassion are what actually move employees to maintain or defend their personal space through aggressive behaviour in the form of cyberloafing. In fact, staff engagement in cyberloafing has already been supported as an important defensive reaction when facing fear (Zoghbi-Manrique-de-Lara 2006).

Although the terms crowding and density are commonly used interchangeably, crowding is employees' psychological reaction to density, that is, negative perceptions resulting from being in a densely packed workspace (Crothers et al. 1993; Gove et al. 1979; Jazwinski 1998; Stokols 1972). As Jazwinski (1998) states, "high density does not always lead to crowding perceptions [...] because the same objective density may be uncomfortable or not." Accordingly, because density at work, i.e., the number of employees working in a given space, has no positive or negative connotations per se, we argue that these feelings of trust, emotional conflict,

stress, and compassion at work are what actually lead employees to perceive crowding and, hence, to perform cyberloafing in order to try to conserve the space-related resource loss. Previous research supports this argument (Ayoko and Härtel 2003; Shropshire and Kadlec 2012), suggesting, for instance, that under perceptions of feeling crowded, employees decrease the workplace relationship quality needed to accomplish tasks, preventing them from achieving a good job performance. Additionally, in a survey of prison guards, Neveu (2007) similarly showed that resource loss can result in counterproductive consequences because it increases depression, absence from work, emotional exhaustion, and depersonalisation, and reduces personal achievement. Finally, Koay et al. (2017) found that employees' private demands are related to cyberloafing, with job stress mediating this link.

We therefore argue that employees who judge the workspace as being crowded will not likely react with cyberloafing against the crowding itself, but rather against emotional conflict and stress or a lack of trust and compassion at work, to which employees attribute the negative consequences of crowding. Using these ideas as a guide, the paper posits that trust, emotional conflict, stress, and compassion at work will act as mediators between crowding and cyberloafing. Therefore,

H3: *Employees' trust, emotional conflict, stress, and compassion will mediate the link between perceived crowding and cyberloafing*

Methodology

Procedure and sample

Data was collected using questionnaires in Persian, which were first constructed in English. Once the English questionnaire was ready, the items were translated into Persian and then back into English for verification, i.e.,

to check if the original and translated English items matched. In total, 330 questionnaires were personally distributed to employees of four IT-based companies ranging in size from large to medium, one of them a leading company in the IT sector in Tehran (Iran). The questionnaires were distributed by one of the researchers, so that she could solve any misunderstandings and answer possible questions. Although we did not use a particular random sampling method, in order to avoid response biases research assistants personally requested random employees to fill out the surveys in different areas and situations within the office. The employees agreed to answer the self-administered paper-and-pencil questionnaire during a break in their work. No incentives were proposed other than face-to-face advice when required. A total of 318 questionnaires were returned, and 299 questionnaires were ultimately retained for analysis.

In the sample, 51.8% of the employees 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% of the employees were over 50 years old. Moreover, 1.3% of sampled staff had a high school diploma or an associate degree, 58.5% a bachelor's degree, 38.8% a master's degree, and 1.3% a PhD degree.

Measures

To measure perception of crowding, we drew items of the empirical and theoretical database available in the scale proposed by Kaplan (1982) to assess crowding in students' residences. We selected the five items on Kaplan's scale that focus on the open areas. In this five-item scale constructed, 'dormitory' was replaced by 'office' and 'friends' by 'people'. Items include: "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, 'neighbours' 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"). Finally, the authors replaced the item "It is difficult to get access to the laundry rooms" with a new item they constructed, "There are too many people giving their opinions about the range of air temperature that is comfortable." We observe the suggestions of Schriesheim et al. (1993) for the number of elements per measure (4-6 per scale) and their scaling. Following the recommendations of Hinkin (1998), we checked that loadings of factors were not less than .4, the variance explained by each item was greater than .60, and the percentage of associations between the factor items was greater than .4.

We measured trust using the five-item Likert-type scale (1=Completely disagree to 7=Completely agree) by Simons and Peterson (2000), which replicates features of trust that have been broadly accepted in the previous literature (e.g., Mayer et al. 1995; McAllister 1995). Items included "Staff in this office see each other as trustworthy," and "Among employees in this office, there is complete trust."

We measured employees' perceptions of experienced compassion and their supervisors' adherence to interpersonal justice (IJ) using a scale developed by Colquitt (2001). One item was, "My supervisor treats employees with dignity." Compassion at work was measured with the Lilius et al. (2008) three-item compassion scale, gauging how often they experienced compassion: (a) on the job, (b) from their supervisor, and (c) from their co-workers. Job stress was measured with the two-item Likert-type scale (1=Never to 7=Constantly) by Triplett et al. (1996). Items include, "I frequently feel stressed out on the job."

Finally, based on Lim's (2002) 11-item seven-point scale (1=Never to 7=Constantly), the cyberloafing measure included items referring to e-mail and browsing activities. We chose four browsing activities and one e-mail activity, which combined Lim's 'sending' and 'reading' e-mail items. We omitted Lim's item of 'checking' e-mail as we consider it may overlap with 'reading' e-mail. The scale is anticipated to be one-dimensional.

Statistical analysis

The collected data was analysed using structural equation modelling (SEM) and the Statistical Package for Social Sciences (SPSS) software program. 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 was used to assess the validity of the measures and to test the theorised relationships through the AMOS 22.0 statistical software. Confirmatory factor analysis (CFA) tests of construct validity comprised the comparative-fit (CFI), normed-fit (NFI), incremental-fit (IFI), and Tucker-Lewis (TLI) indices, and the root mean square error of approximation (RMSEA).

Table 1

Results of confirmatory factor analysis

	Factor loading	SMC	Composite reliability	AVE
(F1) Perceived crowding (Cronbach's alpha=.778)		----	.789	.515
Can you indicate the extent to which you are in agreement with each statement?				
X01...The corridors in the office tend to be very crowded	.721			
X02...I feel that the living situation in the office is very crowded	.749			
X03...The noise of people in the office is loud enough and frequent enough to be	.770			
X---...There are too many people opining on the range of the air temperature that is comfortable(*)	----			
X05...I find myself in conversation with people with whom I would rather not be involved	.525			
(F2) Trust (Cronbach's alpha=.926)		.020	.930	.768
Y---…The employees of the office respect each other's competence(*)	----			
Y02…Staff of this office see each other as trustworthy	.814			
Y03…Among the employees of this office, there is complete trust	.937			
Y04…We always know we can trust each other	.937			
Y05…Staff in this office trust each other's word	.809			
(F3) Emotional conflict (Cronbach's alpha=.914)		.091	.826	.615
Y06...How much personal friction is there among members in your office?	.693			
Y---...How much are personality clashes evident in your office? (*)	----			
Y08...How much tension is there among members in your office?	.895			

Y09...How much emotional conflict is there among members in your office?	.751			
(F4) Job stress (IJ) (Cronbach's alpha=.920)		.080	.815	.898
Y10...I consider this a very stressful job	.858			
Y11...I frequently feel stressed out on the job	.945			
(F5) Compassion at work (Cronbach's alpha=.681)		.097	.801	.581
How frequently have you experienced…				
Y12…Compassion on the job	.567			
Y13…Compassion from my supervisor	.893			
Y14…Compassion from my co-workers	.790			
(F6) Cyberloafing (Cronbach's alpha=.844)		.118	.863	.562
I acknowledge that I have used my company's Internet at work to...				
Y15…Visit websites and digital newspapers to seek personal (non-work) information	.850			
Y16…Visit the website of my bank to consult my current account	.606			
Y17…Read or send personal (non-work) e-mails	.874			
Y18…Download software or files for personal or family use	.708			
Y19…Surf the Net and so escape a little	.673			
Control variables				
C01…Gender(**)	----	----	----	----
C02…Age(**)	----	----	----	----

(*) Item dropped because its loading was below .5

(**) Control variables were entered in the CFA as observed variables co-varying with all of the six latent factors and indicators

AVE refers to average variance extracted, and SMC to squared multiple correlation.

Cmin=485.765; *df*=217; *p*<.001; Cmin/df=2.239; CFI=.913; IFI=.914; TLI=.898; NFI=.854; PRATIO=.858; PNFI=.733; PCFI=.783; RMSEA=.064

We first undertook a CFA on the six variables in this paper. The control variables were integrated directly into our model as stand-alone factors co-varying with all six latent variables (Hancock and Mueller 2006). The results of the CFA are presented in Table 1. Previously, the crowding item "There are too many people giving their opinions about the range of air temperature that is comfortable" and the trust item "The employees in the office respect each other's competence," with factor loadings of less than .5, were dropped (see Table 1 and Figure 2). Table 1 shows that the composite reliability varied from .930 to .798, which is greater than the standard of .60 (Hair et al. 2006). Table 2 includes the means and standard deviations of the variables used in this paper after factor analysis.

Cronbach's alpha scores were calculated to measure the reliability of the scales, which fluctuated from .926 to .681, over to the suggested alpha of .70 (Nunnally 1978). We then performed a set of customary procedures to check for the convergent validity and discriminant validity of the scales. As the correlations table (Table 2) displays, the researchers assessed discriminant validity by determining the square roots of the average variance extracted (AVE) values (on the main diagonal, from . 947 to .718) and checking whether they were coherently greater than all the corresponding correlations (Fornell and Larcker 1981). The results indicate that each construct in the model shares more variance with its corresponding measures than it shares with other variables in the model, indicating discriminant validity. Finally, convergent validity was supported due to the AVE for each variable being between .515 and .898, which was either close to or higher than .50 (Bagozzi and Yi 1988; Fornell and Larcker 1981).

Results

The results of the CFA reveal that the planned six-factor solution is sufficient (Cmin=485.765; df=217; p<.001; Cmin/df=2.239; CFI=.913; IFI=.914; TLI=.898; NFI=.854; PRATIO=.858; PNFI=.733; PCFI=.783; RMSEA=.064), with two fit indices over .90 and RMSEA below .08 (Hair et al. 2006). In fact, as Byrne (2001) states, RMSEAs between .05 and .08 still indicate an acceptable fit and, hence, can provide support for the uniqueness of all the variables used in this paper (Table 1 shows this new CFA in detail). The results in Table 2 show most of the correlations are in the anticipated directions, thus providing support for our model. We tested our hypothesised model using SEM. Figures 2 and 3 show our tested models. They are path diagrams that illustrate the relations between the survey answers (observed variables) and the latent variables (unobserved). To test our hypotheses, we first considered the SEM model in Figure 2,

which shows the main effects of crowding on cyberloafing. In addition, a second SEM model was proposed that incorporated crowding, trust, emotional conflict, stress, and compassion, with cyberloafing as the criterion variable (Figure 3). This second SEM model in Figure 3 proposed the hypothesized paths, along with a direct path from crowding to cyberloafing. The various fit indices employed reveal a tolerable fit of the models in Figure 2 and 3, with RMSEA below .08 (Hair et al. 2006).

Table 2

Descriptive statistics and correlations

Variables	*M*	*SD*	1	2	3	4	5	6	7	8
1. Gender	1.52	.50	----							
2. Age	2.13	.51	.140*	----						
3. Crowding	3.68	1.33	.008	.060	*(.718)*					
4. Trust	4.76	1.45	.010	–.189*	.222***	*(.876)*				
5. Emot. conflict	3.42	1.18	.033	–.098	.308***	–.382***	*(.784)*			
6. Stress	4.15	1.58	–.052	.037	.255***	–.040	–.203***	*(.947)*		
7. Compassion	4.53	1.24	.004	–.079	–.301***	.265***	–.082	–.013	*(.762)*	
8. Cyberloafing	3.82	1.45	.148**	.057	.127*	.066	.092	.014	–.218***	*(.750)*

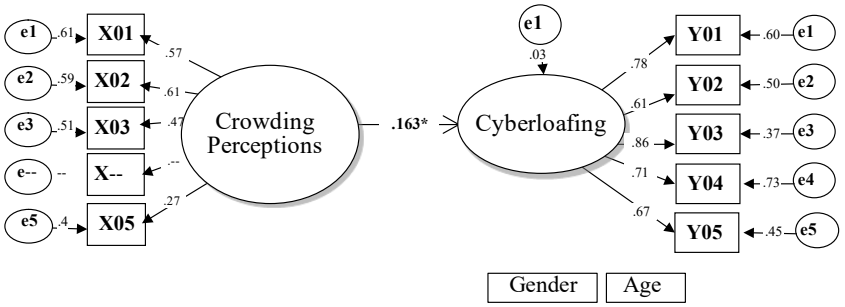
Note. The numbers in parentheses on the main diagonal are the square roots of the average variance extracted (AVE). Gender (1=male, 2=female) and age (1=under 25 years old; 2=25–34 years old; 3=35–44 years old; 4=45–54 years old; 5=55–65 years old, and 6=over 65 years old). N=299. * $p < .05$; ** $p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

Given that crowding is positively and significantly related to cyberloafing (B=.163; p=.022), the results empirically support hypothesis H1 (see Figure 2). Similarly, as Figure 3 shows, H2a and H2d are supported by the negative relationships between crowding and trust (B=–.235; p <.01) and compassion (B=–.410; p <.001), whereas H2b and H2c are supported by the significant positive relationships between crowding and emotional conflict (B=.353; p <.001) and stress (B=.247; p <.001). We then inspected the role that trust, emotional conflict, stress, and compassion play in explaining the basic relationship between crowding and cyberloafing. As we commented earlier, we performed the model in Figure 3 by

incorporating a direct path linking crowding with cyberloafing. As this direct path was insignificant (B=.121; p n.s.), this indicates that when trust, emotional conflict, stress, and compassion at work are added, the main effects of crowding on cyberloafing (B=.163; p=.022) are no longer significant (B=.121; p n.s.). Therefore, trust, emotional conflict, stress, and compassion together significantly carry the weight of the main effects of crowding on cyberloafing (B=.163; p=.022).

Figure 2

Tested SEM model of the main effects of perceived crowding on cyberloafing



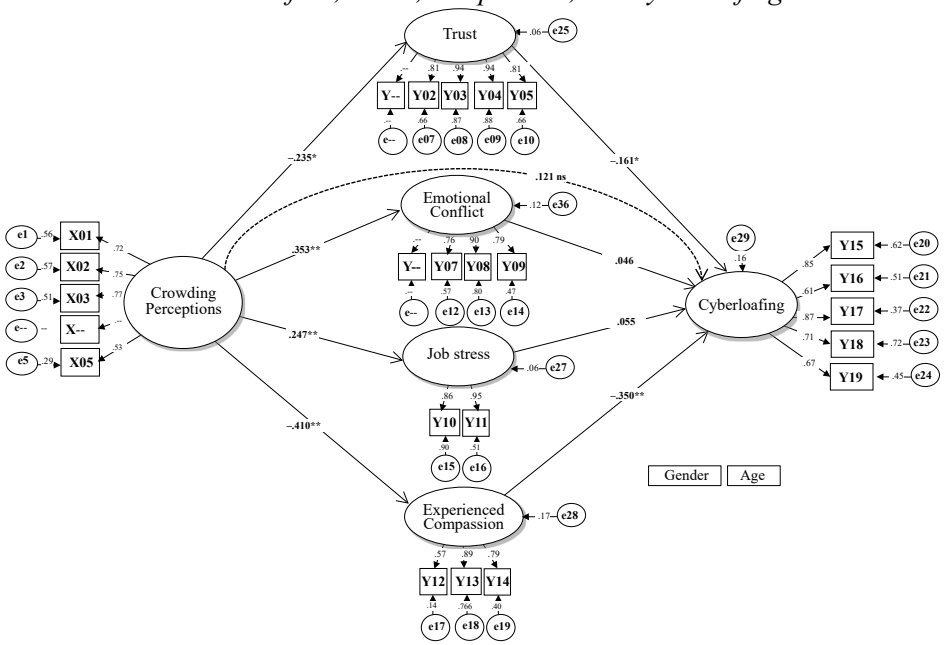
Note. N=299. **p*=.018; Cmin=117.291; df=45; *p*<.001; Cmin/df=2.606; CFI=.927; IFI=.928; TLI=.911; NFI=.888; PRATIO=.818; PNFI=.726; PCFI=.758; RMSEA=.073.

Furthermore, these mediating effects are also supported when comparing the hypothesized model in Figure 3 (Cmin=562.387; df=223; p<.001; Cmin/df=2.522; CFI=.890; IFI=.891; TLI=.875; NFI=.831; PRATIO=.881; PNFI=.733; PCFI=.784; RMSEA=.071) with the direct path from crowding to cyberloafing added to an alternative model in which we deleted this direct path from crowding to cyberloafing (B=.121; p n.s.). Although this alternative model (df=224) is more constrained than the hypothesised model (df=223) with the direct path posited, the fit indices remained equal, revealing that our alternative model (without a direct path)

had a better fit (Cmin=562.451; df=224; p<.001; Cmin/df=2.511; CFI=.890; IFI=.891; TLI=.875; NFI=.831; PRATIO=.885; PNFI=.736; PCFI=.788; RMSEA=.071). This is reflected by the PRATIO, PNFI, and PCFI parsimony-adjusted measures, which were better in the more constrained alternative model (PRATIO=.885; PNFI=.736; PCFI=.788) than in the less constrained model shown in Figure 3 (PRATIO=.881; PNFI=.733; PCFI=.784) where a direct path was added.

Figure 3

Tested SEM model of the relationship between perceived crowding, trust, emotional conflict, stress, compassion, and cyberloafing



Note. N=299. *p<.01; **p<.001; Cmin=562.387; df=223; p<.001; Cmin/df=2.522; CFI=.890; IFI=.891; TLI=.875; NFI=.831; PRATIO=.881; PNFI=.733; PCFI=.784; RMSEA=.071.

Although the above results support H3 as a whole, trust, conflict, stress, and compassion could not act separately as mediators in the link between crowding and cyberloafing. As Baron and Kenny (1986) state, for instance, conflict and stress should only be supported as mediators if

cyberloafing is predicted by conflict (B=.046; p n.s.) and stress (B=.055; p n.s.), a condition that is not fulfilled (see Figure 3). Accordingly, we used the Sobel test and Preacher et al.'s (2007) bootstrapping method with 5,000 bootstrap samples (see Table 3) to examine the significance of the mediating role of trust, emotional conflict, stress, and compassion separately. We first averaged the items of each variable that were supported by the CFA. The Sobel test outputs presented in Table 3 indicate that the Z score is smaller than 1.96 for trust, emotional conflict, and stress, but larger than 1.96 in the case of compassion. Hence, the Sobel test results only support H3 about mediation regarding compassion. We also inspected bootstrap results for indirect effects, with a 90% and 95% confidence interval (CI). Under normal distribution, they reveal that zero is in the 95% CI of either of the three models where trust (95% CI=[–.0630; .0012]), conflict (95% CI=[–.0176; .0637]), and stress (95% CI=[–.0407; .0292]) act as mediators between crowding and cyberloafing. This rejects trust, conflict, and stress as mediators (H3). We finally tested the indirect effects of trust and compassion as mediators with a 90% and 95% CI, that is, whether the indirect effects are significantly different from zero at $p<.10$ and at $p<.05$ (two-tailed), respectively. Indeed, zero was not in the 90% CI of trust (90% CI=[.0520; .0011]), nor in the 95% CI of compassion (95% CI=[.0249; .1186]) (see Table 3). These patterns support trust and compassion as mediators (H3), although they support trust more weakly.

Discussion

The purpose of this paper was to study how perceptions of crowding can influence cyberloafing at work, and to propose action that employees experiencing crowding could take before engaging in cyberloafing. The findings support crowding having significant main effects on cyberloafing, and that trust and compassion form part of the path crowding takes in

relation to cyberloafing. This section aims to provide the implications of these results and, finally, to discuss avenues for future research.

Table 3

Sobel and Preacher et al's, (2007) results with bootstrapping for indirect effects of crowding on cyberloafing through trust, emotional conflict, stress, and compassion

Sobel test Simple Mediation with bootstrapping	Value	Std. Error	Low 95% CI	Up 95% CI	Z	Sig.
Crowding→Trust→Cyberloafing	.0196	.0139	.0464	–.0080	1.3862	.0657
Crowding→Conflict→Cyberloafing	.0192	.0209	–.0214	.0606	.9386	.3479
Crowding→Stress→Cyberloafing	–.0054	.0170	–.0387	.0279	–.3207	.7484
Crowding→Compassion→Cyberloafing	.0648	.0231	.0196	.1101	2.8061	.0005
Preacher et al.'s (2007) bootstrap results for Multiple Mediation	Data	Std. Error	Low 95% CI	Low 90% CI	Up 90% CI	Up 95% CI
Crowding→Trust→Cyberloafing	.0196	.0153	.0630	.0520	.0011	–.0012
Crowding→Conflict→Cyberloafing	.0192	.0201	–.0176	–.0115	.0547	.0637
Crowding→Stress→Cyberloafing	–.0054	.0174	–.0407	–.0343	.0231	.0292
Crowding→Compassion→Cyberloafing	.0648	.0236	.0249	.0319	.1113	.1186

Note. No. of bootstrap resamples=5,000; $Z=(a \times b)/\sqrt{b^2 s_a^2 + a^2 s_b^2}$=Value/ Std. Error; CI=Confidence Index.

First, although trust, stress, emotional conflict, and compassion are significantly related to crowding, unlike trust and compassion, stress and conflict failed to mediate the link between crowding and cyberloafing. An explanation for this can be provided by COR theory (Hobfoll 1989), on which this study rests. As such, while trust and compassion mediate the effects of crowding on cyberloafing by increasing the staff need to engage in, or refrain from engaging in, cyberloafing as ways of obtaining, maintaining, enhancing, and defending their territory (Hobfoll 1989), the reasons why stress and emotional conflict do not relate to cyberloafing in this study are uncertain. In our opinion, an explanation for these results is that stress and emotional conflict play different roles in this relationship compared to trust and compassion. A recent meta-analysis showed that some studies have found emotional conflict to be detrimental to employee

enthusiasm and communication, as well as to healthy peer-to-peer interactions, but others paradoxically also indicate that not all types of conflict (such as task conflict) discourage employee productive behaviour (De Wit et al. 2012). In the physical workspace, the emotions of a conflict may be spread or exacerbated differently when personalities (emotional conflict) or tasks are clashing (task conflict), and even oppositely (De Wit et al. 2012). Therefore, it seems difficult to state categorically where staff anger begins with an emotional conflict and where it ends at seeing threatened space resources. Similarly, while some previous research supported job stress as a significant predictor of cyberloafing (Garrett and Danziger 2008; Blanchard and Henle 2008; Koay et al. 2017; RuningSawitri 2012), other research indicates that cyberloafing may be used by staff to relax their minds and, hence, to reduce job stress (Lim and Teo 2005; Oravec 2002). In our opinion, in order to shed light on the reasons why stress and compassion failed to mediate the occurrence of cyberloafing under perceptions of crowding, it is essential to determine how peers and supervisors interpret stress and emotional conflict in these offices, and the permissiveness or innocuousness of cyberloafing.

Second, regarding theoretical implications, although the impact of open-plan office configurations on employees' attitudes and behavior is supported (e.g., Oldham 1988; Oldham and Rotchford 1983), the study of the emergence of cyberloafing in dense workspaces has been ignored. Thus, because cyberloafing activities are mainly considered as counterproductive (Weissenfeld et al. 2019), this study points that one way in which the physical layout of open-plan offices can produce dysfunction in the workplace is through the production of perceptions of crowding. This finding is consistent with previous work showing that these offices without boundaries lead to the occurrence of poor privacy and performance (Regoeczi 2003), and even bullying (Ayoko 2007). But it seems to challenge other studies that suggest that open offices actually improve the communication flow among employees and produce closer and more

productive interactions (Chigot 2003; McElroy and Morrow 2010). In any event, this study supports links of the physical layout of these open-plan offices to effectiveness, and that perceived crowding could have a major role in this connection. Furthermore, because a lack of trust and compassion form part of the mechanisms leading from crowding to cyberloafing, cultivating a compassionate and trustful workplace enables hotel managers to disable these mechanisms and, hence, to have a major role in preventing staff from harming the organization with cyberloafing. Beyond following a self-interest logic, therefore, this paper makes an important contribution by suggesting that crowding can be related to cyberloafing through employees' uncompassionate and untrusting feelings; that is, unrelated to cognition, crowding leads staff to be unconcerned about the problems of the organization, and to not restrict their desire to participate in cyberloafing even when the organization is damaged.

Third, the findings also offer new insights that can integrate COR theory into the different theories invoked to explain the use of the Internet at work. Hostile to the classic principles of scientific management, the humanists who study 'human relations in personnel administration' have already severely criticized the sole study of material conditions at work for being unable to provide key information regarding the social and psychological factors capable of explaining performance. Drawing on this dominant humanist approach, most subsequent studies on the use of the Internet during the last century have stressed psychosocial aspects of the work environment as vital in affecting employees' adoption, diffusion, and use of new technologies in organizations (Cooper 1994; Salehan et al. 2018, Schultz et al. 2007, Zoghbi-Manrique-de-Lara and Viera-Armas 2017). There is a lack of space-related theories, however, that explain whether or how the physical work environment within organizations has connections with employees' use of the new technologies associated with the Internet at work (Ashkanasy et al. 2014; Horng et al. 2016; Maher and von Hippel 2005; Yeh and Huan 2017). Using COR theory as the framework to

examine trust, emotional conflict, stress, and compassion at work as mediators that explain how crowding leads to cyberloafing, this paper makes a important contribution to the literature by extending the understanding of how physical density at work may combine with psychosocial labor conditions, and together influence employees' cyberloafing within organizations.

Finally, the steps this paper has defined to clarify why perceived crowding influences cyberloafing are vital in developing practical actions to deal with employees' cyberloafing in a densely packed workspace. Therefore, supervisors should pay careful attention to these steps in that they suggest that an untrusting and uncompassionate workplace can activate the main effects of crowding on cyberloafing. Along with supervisors' help, relevant arrangements in the workplace should be put in place (e.g., permitting employees to lock their drawers or put passwords on PCs, and supporting them when they show physical discomfort in reaction to those who violate their territory). In order to avoid stress and conflict, which result from crowding in open-plan offices and cause a deterioration of the physical workspace, it is essential for top and middle managers to discuss how peers and supervisors judge and interpret stress and emotional conflict in these offices (as well as cyberloafing counter-productivity). Lastly, employees' cyberloafing at work cannot only be managed by controlling the perception of crowding, but must also be controlled by arranging their physical basis – that is, the density level in the workplace (Jazwinski 1998).

Limitations and future research

The paper has weaknesses that should be acknowledged. First, although the sampled companies belong to the well-known IT industry sector, the specificities of Iranian IT-based companies and their work processes can differ from those of companies in other environments. For instance, our

Iranian sample has a different culture with specific normative standards. Iran has a relatively highly individualistic society (Hofstede Center 1967–2010) that makes the workforces think of themselves in terms of "I", so that the emphasis on interpersonal relationships takes a back seat. In addition, our data collection method used self-report measures, and, hence, the measures of perceptions of crowding and cyberloafing were obtained from the same source. Furthermore, Iran can be considered as a high power distance society, which indicates a strict hierarchical order in most of its organizations (Hofstede Center 1967–2010). Reactance theory suggests that employees may engage in cyberloafing to maintain or restore personal autonomy (e.g., Zellars et al. 2002).

Future research should examine other industries and global cultures in order to test their generalizability and strengthen the conclusions of this paper. Furthermore, this study was built on conservation of resources (COR) theory by Stevan E. Hobfoll (1989), and the paper argues that employees can perceive the physical workspace as a space-related resource. Personal social capital is a social resource closely linked to the physical workspace, and, hence, this study suggests that it may play a role in how social bonds are built or destroyed in the physical workspace.

References

Altman I (1975) The environment and social behavior. Monterey, CA: Brooks/Cole.

Ambrose M. L., Alder G. S. (2000) Designing, implementing, and utilizing computerized performance monitoring: Enhancing organizational justice. Research in Personnel and Human Resources Management 18: 187–220

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(8): 1169–1184

Ayoko OB (2007) Communication openness, conflict events and reactions to conflict in culturally heterogeneous workgroups. Cross Cultural Management 14:105–124

Ayoko OB, Härtel CEJ (2003) The role of space as both a conflict trigger and a conflict control mechanism in culturally heterogeneous workgroups. Applied Psychology 52(3): 383–412

Bagozzi RP, Yi Y (1988) On the evaluation of structural equation models. Journal of the Academy of Marketing Science 16(1): 74–94

Barki H, Hartwick J (2004) Conceptualizing the construct of interpersonal conflict. International Journal of Conflict Management 15(3): 216–244

Baron RM, Kenny DA (1986) The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology 51(6): 1173–1182

Bennett RJ, Robinson SL (2000) Development of a measure of workplace deviance. Journal of Applied Psychology 85(3): 349–360

Blanchard AL, Henle CA (2008) Correlates of different forms of cyberloafing: The role of norms and external locus of control. Computers in Human Behavior 24(3): 1067–1084

Bodtker AM, Jameson J K (2001) Emotion in conflict formation and its transformation: Application to organizational conflict management. International Journal of Conflict Management 12: 259–275

Bond CF, Titus LJ (1983) Social facilitation: A meta-analysis of 241 studiesPsychological Bulletin 94(2): 265–292

Boon SD, Holmes JG 1991 The dynamics of interpersonal trust: Resolving uncertainty in the face of risk. In R A Hinde, J Groebel (Eds), Cooperation and prosocial behavior (pp. 190–211). Cambridge, England: Cambridge University Press

Brennan A, Chugh JS, Kline T (2002) Traditional versus open office design: A longitudinal field study. Environment and Behavior 34(3): 279–299

Byrne BM (2001) Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument. International Journal of Testing 1(1): 55-86.

Chigot P (2003) Controlled transparency in workplace design: Balancing visual and acoustic interaction in office environments. Journal of Facilities Management 2: 121–130

Chung Y, Jackson SE (2011) Co-worker trust and knowledge creation: A multilevel analysis. Journal of Trust Research 1(1): 65–83

Cialdini RB, Brown SL, Lewis BP, Luce C, Neuberg SL (1997) Reinterpreting the empathy–altruism relationship: When one into one equals oneness. Journal of Personality and Social Psychology 73(3): 481–494

Clark C (1997) Misery and company: Sympathy in everyday life. Chicago: The University of Chicago Press

Colquitt JA (2001) On the dimensionality of organizational justice: A construct validation of a measure. Journal of Applied Psychology 86: 356–400.

Colquitt JA, Conlon DE, Wesson MJ, Porter C, Ng KY (2001) Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. Journal of Applied Psychology 86(3): 425–445

Connelly A, Ayoko O (2013) Territorial behaviours, employee perceptions and conflict in open-plan offices. In Anzam Conference 2013: 27th Australian and New Zealand Academy of Management Conference (pp. 28–28). Anzam

Cooper RB (1994) The inertial impact of culture on IT implementation. Information and Management 27(1): 17–31

Crothers C, Kearns R, Lindsey D (1993) Housing in Manukau City: Overcrowding, poor housing and their consequences. Working Papers in Sociology 27, University of Auckland

De Wit FR, Greer LL, Jehn KA (2012) The paradox of intragroup conflict: A meta-analysis. Journal of Applied Psychology 97(2): 360–390

Dunstan j (1979) The effect of crowding on behaviour: Empirical measures for testing theoretical models. Urban Studies 16(1979): 299–307

Fornell C, Larcker DF (1981) Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research 18(1): 39–50

Freedman JL (1975) Crowding and behavior. Oxford, England:WH Freedman

Garrett RK, Danziger JN (2008) Disaffection or expected outcomes: Understanding personal Internet use during work. Journal of Computer-Mediated Communication 13(4): 937–958

Goetz JL, Keltner D, Simon-Thomas E (2010) Compassion: An evolutionary analysis and empirical review. Psychological Bulletin 136(3): 351–374

Gove W, Hughes M, Galle O (1979) Overcrowding in the home: An empirical investigation of its possible pathological consequences. American Sociological Review 44, February: 59–80

Hair JF, Black WC, Babin BJ, Anderson RE, Tatham RL (2006) Multivariate data analysis (6th ed.). Upper Saddle River, NJ: Prentice Hall

Hancock GR, Mueller RO (2006) Structural equation modeling: A second course. Greenwich, CT: Information Age Publishing

Hayduk LA (1978) Personal space: An evaluative and orienting overview. Psychological Bulletin 85: 117–134

Hinkin TR (1998) A brief tutorial on the development of measures for use in survey questionnaires. Organizational Research Methods 1: 104-121.

Hobfoll SE (1989) Conservation of resources: A new attempt at conceptualizing stress. American Psychologist 44(3): 513–524

Hofstede Center (1967–2010) Geert Hofstede cultural dimensions. Retrieved July 23, 2018, from https://geert-hofstede.com/

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

Horng JS, Tsai CY, Yang TC, Liu CH (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

Jazwinski C (1998) Crowding. Retrieved May 5, 2008, from http://condor.stcloud.msus.edu/~jaz/psy373/7.crowding.html

Jehn KA (1994) Enhancing effectiveness: An investigation of advantages and disadvantages of value-based intragroup conflict. International Journal of Conflict Management 5: 223–238

Jehn KA (1995) A multimethod examination of the benefits and detriments of intragroup conflict. Administrative Science Quarterly 40(2): 256–282

Jehn KA (1997) Qualitative analysis of conflict types and dimensions in organizational groups. Administrative Science Quarterly 42: 538–566

Kamarulzaman N, Saleh AA, Hashim SZ, Hashim H, Abdul-Ghani AA (2011) An overview of the influence of physical office environments towards employee. Procedia Engineering 20: 262–268

Kaplan MM (1982) Effects of adolescent space sharing experience on privacy-related dormitory behaviours (Doctoral dissertation, Boston University Graduate School). Dissertation Abstracts International 43A/01.

Koay KY, Soh PCH, Chew KW (2017) Do employees' private demands lead to cyberloafing? The mediating role of job stress. Management Research Review 40(9):1025–1038

Kristof AL (1996) Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. Personnel Psychology 49(1):1–49

Latane B, Darley JM (1968) Group inhibition of bystander intervention in emergencies. Journal of Personality and Social Psychology 10(3): 215–221

Lilius JM, Worline MC, Maitlis S, Kanov JM, Dutton JE, Frost P (2008) The contours and consequences of compassion at work. Journal of Organizational Behavior 29: 193–218

Lim VKG (2002) The IT way of loafing on the job: Cyberloafing neutralizing and organizational justice. Journal of Organizational Behavior 23(l): 675–694

Lim VKG, Teo TSH (2005) Prevalence, perceived seriousness, justification and regulation of cyberloafing in Singapore. Information and Management 42(8): 1081–1093

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(2): 219–229

Malachowski d (2005) Wasted time at work costing companies billions. Asian Enterprise: 14–16

Maxwell LE (2003) Home and school density effects on elementary school children: The role of spatial density. Environment and Behavior 35(4): 566–578

Mayer RC, Davis JH, Schoorman D (1995) An integrative model of organizational trust. Academy of Management Review 20: 709–734

McAllister DJ (1995) Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. Academy of Management Journal 38: 24–59

McElroy JC, Morrow PC (2010) Employee reactions to office redesign: A naturally occurring quasi-field experiment in a multi-generational setting. Human Relations 63(5): 609–636

Mowen AJ, Vogelesong HG, Graefe AR (2002) Crowding perceptions and its relationship to crowd management practices at park and recreation events. Event Management 8(2): 63–72

Neveu JP (2007) Jailed resources: Conservation of resources theory as applied to burnout among prison guards. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior 28(1): 21–42

Nunnally JC 1978 Psychometric theory, 2nd ed. New York: McGraw-Hill

O'Leary-Kelly AM, Griffin RW, Glew DJ (1996) Organization-motivated aggression: A research framework. Academy of Management Review 21(1): 225–253

Oldham GR (1988) Effects of changes in workspace partitions and spatial density on employee reactions: A quasi-experiment. Journal of Applied Psychology 73(2): 253–258

Oldham GR, Rotchford NL (1983) Relationships between office characteristics and employee reactions: A study of the physical environment. Administrative Science Quarterly 28(4): 542–556

Oravec JA (2002) Constructive approaches to Internet recreation in the workplace. Communications of the ACM 45(1): 60–63

Preacher KJ, Rucker DD, Hayes AF (2007) Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. Multivariate Behavioral Research 42: 185–227

Pronin E (2008) How we see ourselves and how we see others. Science 320(5880): 1177–1180

Rahman M, Abdul-Gader A (1993) Knowledge workers' use of support software in Saudi Arabia. Information & Management 25(6): 303–311

Regoeczi WC (2003) When context matters: A multilevel analysis of household and neighborhood crowding on aggression and withdrawal. Journal of Environmental Psychology 23(4): 457–470

Rinpoche S (1992) The Tibetan book of living and dying. San Francisco: Harper Collins

Robinson SL, Bennett RJ (1995) A typology of deviant workplace behaviors: A multidimensional scaling study. Academy of Management Journal 38(2): 555–572

RuningSawitri HS (2012) Role of internet experience in moderating influence of work stressor on cyberloafing. Procedia-Social and Behavioral Sciences 57: 320–324

Salehan M, Kim DJ, Lee JN (2018) Are there any relationships between technology and cultural values? A country-level trend study of the association between information communication technology and cultural values. Information & Management 55(6): 725–745

Sandler IN, Lakey B (1982) Locus of control as a stress moderator: The role of control perceptions and social support. American Journal of Community Psychology 10(1): 65–80

Schriesheim CA, Powers KJ, Scandura TA, Gardiner CC, Lankau MJ (1993, Improving construct measurement in management research: comments and a quantitative approach for assessing the theoretical content adequacy of paper-and-pencil survey-type instruments. Journal of Management 19(2): 385-417

Schultz N, Sørensen L, Saugstrup D (2007) Participatory design and creativity in development of information and communication technologies. In Designing for networked communications: Strategies and development (pp 75–96). IGI Global

Schwartz SH (1968) Awareness of consequences and the influence of moral norms on interpersonal behavior. Sociometry 31(4): 355–369

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

Simons T, Peterson R (2000) Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. Journal of Applied Psychology 83: 102–111

Smith-Jackson TL, Klein KW (2009) Open-plan offices: Task performance and mental workload. Journal of Environmental Psychology 29(2): 279–289

Stokols D (1972) On the distinction between density and crowding: Some implications for future research. Psychological Review 79(3): 275–277

Tan HH, Lim AK (2009) Trust in coworkers and trust in organizations. The Journal of Psychology 143(1): 45–66

Triplett R, Mullings JL, Scarborough KE (1996) Work-related stress and coping among correctional officers: Implications from organizational literature. Journal of Criminal Justice 24(4): 291–308

Walton RE, McKersie RB (1991) A behavioral theory of labor negotiations, 2nd ed. Ithaca, NY: ILR Press (original edition New York: McGraw-Hill, 1965)

Weissenfeld K, Abramova, O, Krasnova H (2019) Antecedents for cyberloafing: A literature review. 14th International Conference on Wirtschaftsinformatik, February 24–27, 2019, Siegen, Germany

Yeh SS, Huan TC (2017) Assessing the impact of work environment factors on employee creative performance of fine-dining restaurants. Tourism Management 58: 119–131

Zellars KL, Tepper BJ, Duffy MK (2002) Abusive supervision and subordinates' organizational citizenship behaviour. Journal of Applied Psychology 87: 1068–1076

Zoghbi Manrique-de-Lara P (2006) Fear in organizations: Does intimidation by formal punishment mediate the relationship between interactional justice and workplace Internet deviance? Journal of Managerial Psychology 21(6): 580–592

Zoghbi-Manrique-de-Lara P, Viera-Armas M (2017) Corporate culture as a mediator in the relationship between ethical leadership and personal internet use. Journal of Leadership and Organizational Studies 24(3): 357–371

CHAPTER II

An Affective Events Model of the influence of the physical work environment on interpersonal citizenship behavior

CHAPTER II

An Affective Events Model of the influence of the physical work environment on interpersonal citizenship behavior

Based on Affective Events Theory (AET: Weiss & Cropanzano, 1996), this paper proposes a model of how the level of organizational citizenship behavior (OCB) directed at 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.

Keywords- Citizenship behavior; Relational conflict; Privacy invasion; Empathy; Person-organization fit; Crowding perceptions.

Introduction

To date, the theory and research on organizational citizenship behavior (OCB) have largely focused on causes arising from the psychosocial characteristics of the 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 et al., 2014; Brown, Lawrence, & Robinson, 2005; Horng, et al., 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).

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 the physical work environment can play in the emergence of OCB-I is based on Affective Events Theory (AET: Weiss

& Cropanzano, 1996). Affective Events Theory (hereinafter, AET) is a theory of *affect* (emotional experiences that include both emotion and moods), and it 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 the 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 cognitive or behavioral conflict (Barki & Hartwick, 2004), 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 et al., 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 relational conflict decrease affect-driven OCB-I directly, and judgment-driven OCB-I indirectly, through the cognitions present in the person-organization fit (POF). In addition, because AET only proposes a direct path between relational conflict and affect-driven OCB-I, based on Lawler (2001)'s 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 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 the 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, et al., 2003) indicated that crowding can affect individual performance (Regoeczi, 2003; Saegert, 1978) and antisocial behavior (Gifford & Peacock, 1979). In addition, probably among more intellectual than manual takes (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 crowding (a) and privacy invasion (b) 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 the physical conditions of the 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.

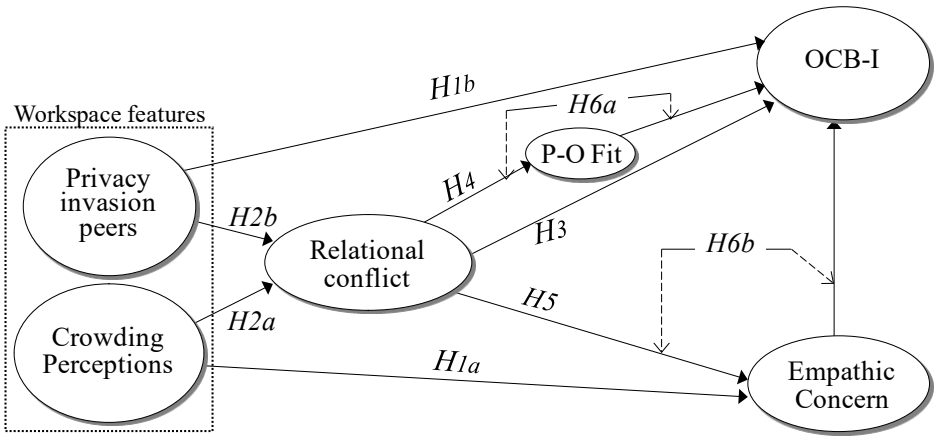
Causing incompatibilities between a given level of physical density and individuals' expectations about that specific environment, crowding perceptions and their inherently attached privacy invasions could also be a source of negative affect in open workspaces that trigger affective reactions (Ashkanasy 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 et al., 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 et al., 2011; Schopler & Stockdale, 1977; Sundstrom et al., 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

Figure 1

Proposed model of the relationship from Privacy invasion and Crowding perceptions to Empathic concern and OCB-I through Relational conflict



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 et al., 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 the 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; Perrewe & Zellars, 1999). These perceived poor relationships between peers suggest that relational conflict should lack of motivation to perform OCBI (Chiu & Tsai, 2006; Cropanzano et al., 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 relational conflict leads to negative outcomes of employee behavior (De Wit et al., 2012), such as loss of enthusiasm and communication or unhealthy interactions between peers s, which can encourage employees to withhold OCB-I.

Therefore,

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

Relational conflict in response to crowding and privacy invasion could also lead employees to experience decreased person-environment fit (P-E fit). 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 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). 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 includes cognitive, motivational, and affective states such as intragroup trust or cohesion (Jehn et al., 2008), and they could lead employees in conflict to fit less with the organization and peers.

Therefore,

H4: *Higher levels of employees' feelings of 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: 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. Relational conflict may be negatively related to empathic concern. As Dutton et al (2014:282) 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." Relational conflict has been found to harm proximal group outcomes (Amason, 1996; Jehn, 1995). Disagreements about personal issues not only can increase

peers anxiety (Dijkstra et al., 2005), but often also represent ego threats that likely inhibit the employees' ability to identificate themselves or trust with the others (e.g., Jehn et al., 2008; Polzer et al., 2002; Rispens et al., 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 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 relational conflict with peers will be positively associated with lower levels of empathic concern.*

The mediating role of POF and empathic concern

Although it (Weiss & Cropanzano, 1996) 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 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 the mechanisms underlying the negative relationship between 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 relational conflict might also be able to elicit the cognitions and attitudes present in fit (POF) because relational conflict provokes incompatibility and discrepancy (lack POF or P-O misfit) between peers, which may lead them to feel alienated from the organization and peers, reducing OCB-I.

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

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 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 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, excitation, 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 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*

Methodology

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). The major activities for these companies were software production, troubleshooting, and consulting for presented software. Data were collected using questionnaires in Persian, which were first constructed 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 distributed. 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 intellective or decision making. One of the researchers performed distribution, 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 .3% were over 50 years old. In addition, 1.3% 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 the customer's 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) *frontend or backend 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 frontend 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 requirement by different means, such as scenario test, performance test, 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").

Table 1

Exploratory Factor Analysis of All the Variables in this Study

	F1	F2	F3	F4	F5	F6
F(1) Empathic concern (Eigenvalue = 4; Explained variance % = 16.8; α =.886)						
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 OCB (Eigenvalue = 3.9; Explained variance % = 13.5; α =.914)						
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 work(*)	–	–	–	–	–	–

(F3) Privacy invasion peers (Eigenvalue = 2.8; Explained % = 12.8; α =.839)						
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(Eigenvalue = 2.6; Explained variance % = 9.1; α =.778)						
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 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(*)	–	–	–	–	–	–
X10...I find myself in conversation with people with whom I am not be involved	.013	–.116	.091	**.521**	–.331	.209
(F5) POF (Eigenvalue = 2.5; Explained variance % = 8.7; α =.928)						
Y15... My values match those of current employees in my organization	–.010	.085	–.003	–.106	**.918**	–.069
Y16... The values and "personality" of this org. reflect my own values and personality	.032	.069	.051	–.115	**.916**	–.045
Y17... I feel my values "match" or fit this org. and the current peers in organization	.180	.147	.012	–.050	**.836**	–.190
(F6) Relational conflic (Eigenvalue = 1.3; Explained variance % = 8.3; α =.914)						
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? (*)	–	–	–	–	–	–
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**
(*) These items were dropped because they not load properly in their related factors.						
Factor loadings in bold are above the cutoff of .4 in absolute value						
Total Explained variance % = 69,207						
Kaiser-Meyer-Olkin = .819 Varimax Rotation						
Bartlett's Sphere Test (Chi-Squared approx. = 6,062.681; gl = 496; Sig. = .000)						

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

The CFA results show that the six-factor solution was insufficient (χ^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 in the expected factors as predicted, confirming six factors with eigenvalues greater than 1 and no cross-loadings over .4 (full details about this EFA without the dropped items are shown in Table 1).

The failure of the OCB-I item "Share personal property with peers to help their work" 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 the relational conflict element 'To what extent are the personality clashes in your office evident?' the influence of the context could be decisive since the 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 et al., 2017).

Lastly, without the failed items, we performed a new CFA for the six variables in this study. Previously, we analyzed the 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

Table 2

Descriptive Statistics and Correlations

Variables	*M*	*SD*	1	2	3	4	5	6	7	8
Gender	1.52	.50	----							
Age	2.13	.51	.140*	----						
Crowding perceptions	3.68	1.33	.008	.060	*(.778)*					
Privacy invasion peers	1.90	1.09	–.022	.069	.410***	*(.839)*				
Relational conflict	3.08	1.31	.032	– .042	.279***	.355***	*(.914)*			
Empathic concern	5.15	1.46	–.176**	.137*	–.097	–.098	–.173***	*(.886)*		
P-O Fit	4.45	1.38	–.050	.023	–.250***	–.139***	–.241***	.146*	*(.928)*	
OCB-I	5.10	0.95	–.100	.071	–.066	–.159**	–.114*	.318***	.192**	*(.914)*

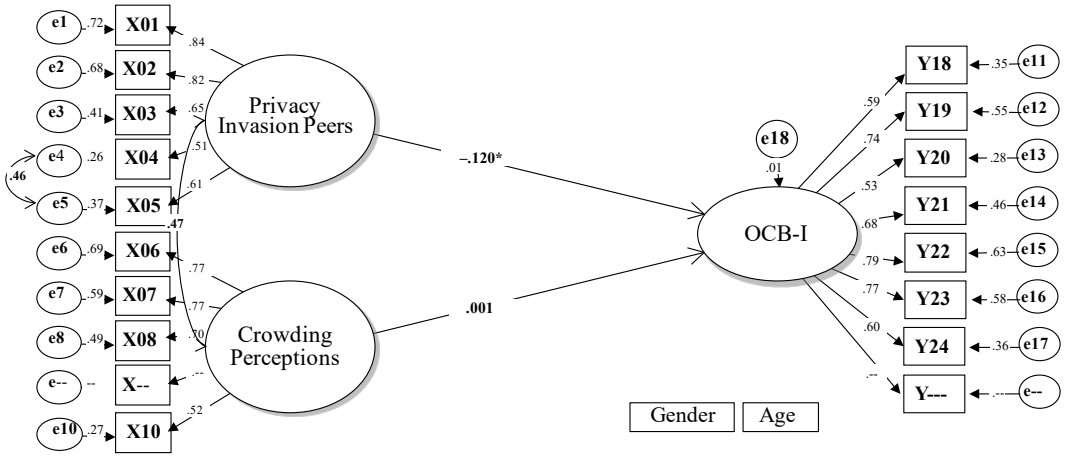
Note. The numbers in parentheses on the main diagonal are alphas. Gender (1 = male, 2 = female) and age (1= under 25 years old; 2 = 25-34 years old; 3 =35-44 years old; 4 = 45-54 years old; 5 = 55-65 years old, and 6= over 65 years old). N = 299. * $p < .05$; ** $p < .01$; *** $p < .001$.

correlations between the residual errors of these variables (see Table 1). The fit of the six-factor solution (χ^2=1102.451, *df*=417, *p*<.001; χ^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 (χ^2=3,490.384, *df*=432, *p*<.001; χ^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.

Table 1 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 (β=.001; *p* ns) and privacy invasion (β=–.120; *p*<.05) on OCB-I were supported only in the case of privacy invasion (β=–.120; *p*<.05). Support for H2a and 2b is provided by the significant paths from relational conflict to privacy invasion (β=.304; *p*<.001) and crowding (β=.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 (β=–.134; *p*<.05), the results empirically support H3 (see Figure 3). Finally, the significant paths from relational conflict to POF (β=–.153; *p*<.05) and empathic concern (β=–.224; *p*<.001) in our hypothesized model in Figure 4 also support H4 and H5.

Figure 2

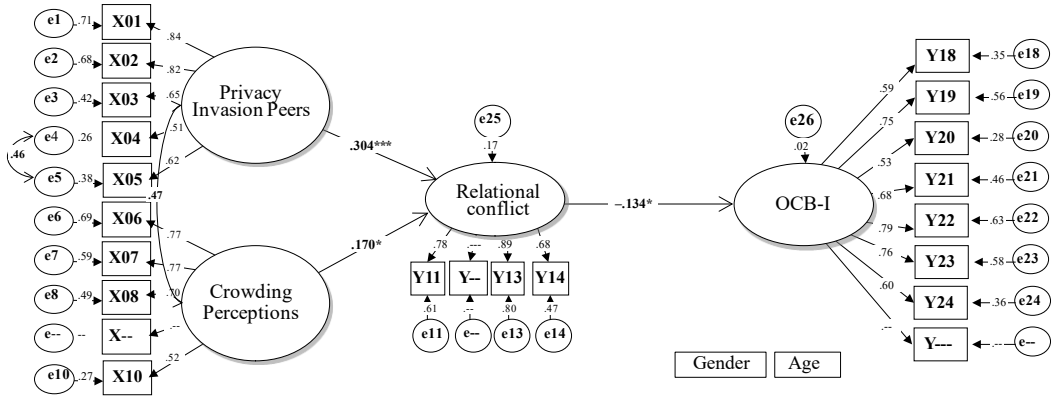
SEM model of the main effects of privacy invasions and crowding perceptions on OCB-I



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

Figure 3

SEM model of the of the relationship from privacy invasions and crowding perceptions to OCB-I



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

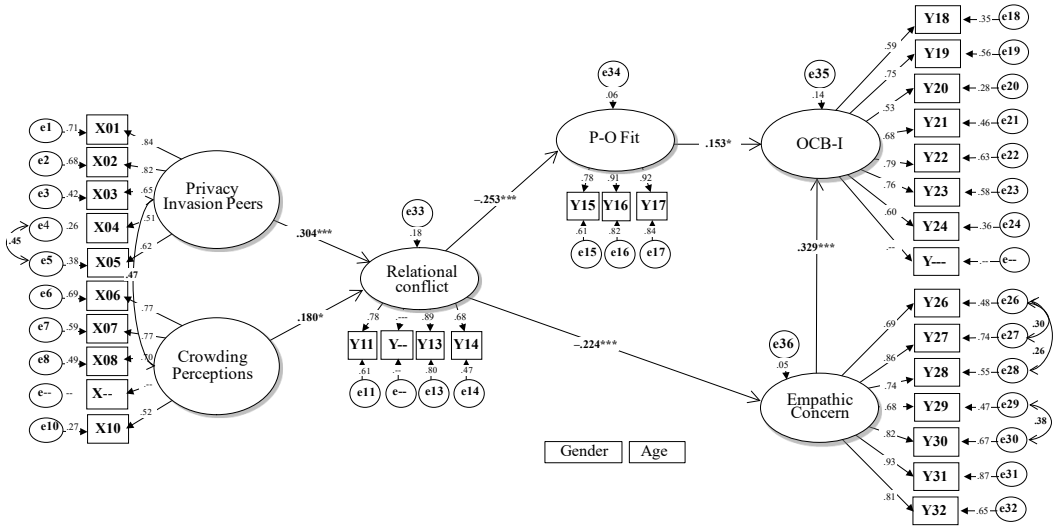
To test H6, nested model comparison was conducted by means of the sequential chi-square difference test (SCDT). Following Anderson and Gerbing's (1988) guidance, we compared our more constrained hypothesized model to the saturated alternative model (less constrained), in which we added a direct path 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 (β=–.134; p<.05). In this regard, we performed a new model in Figure 5 (χ^2=1,113.806; df=424; p<.001; χ^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 (β=–.017; p=.734) indicates that when POF and empathic concern are added, the direct effects of relational conflict on OCB-I (β=–.134; p<.05) are no longer significant (β=–.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 (β=–.134; p<.05) because they lead these effects to no longer be significant (β=–.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 (χ^2=1,113.920; df=425; p<.001; χ^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 (χ^2=1,113.806; df=424; p<.001; χ^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 (χ^2_d[2,299]=0.114; df_d=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

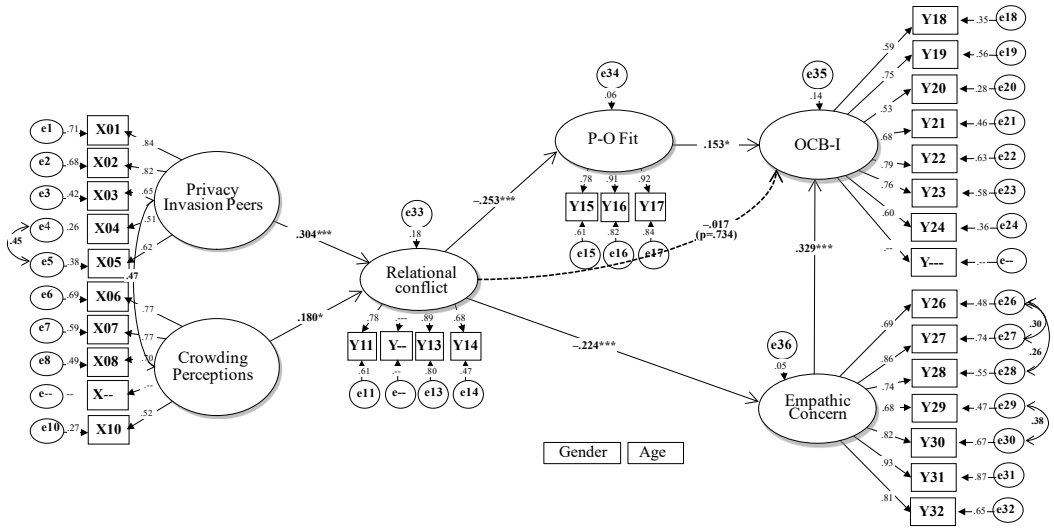
Hypothesized SEM model of the relationship from privacy invasions and crowding perceptions to OCB-I through relational conflict, POF, and Empathic concern



Note. N = 299. *p<.05;**p<.01; **p<.001; χ^2 = 1,113.920; df=425;p<.001; χ^2/df = 2.62; CFI=.889; IFI=.891; TLI=.865; NFI=.818; PRATIO=.914; PNFI=.727; PCFI=.787; RMSEA=.069

Figure 5

Alternative SEM model where a direct path from Relational conflict and OCB-I is added



Note. N=299. *p<.05; **p<.01; **p<.001; χ^2=1,113.806; df=424; p<.001; χ^2/df=2.627; CFI=.889; IFI=.891; TLI=.865; NFI=.818; PRATIO=.912; PNFI=.725; PCFI=.785; RMSEA=.069.

Finally, we used the Sobel test and Preacher et al.'s (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.

Table 3

Sobel's results for indirect effects of emotional conflict on OCB-I through POF, and empathic concern

Indirect effect	Value	Std. Error	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	Std. Error	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 x b)/$\sqrt{b^2s_a^2 + a^2s_b^2}$ = Value/ Std. Error; CI = Confidence Index.

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 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, & Rotchford, 1983; Oldham, 1988). On the one hand, for instance, it has been assumed that open-plan offices be 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 et al., 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, Kaplan, & Beal, 2011), as well as job perceptions (Schleicher, Watt, & Greguras, 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: 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 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 discretional and supererogatory (Organ, 1988), OCB-I is not enforceable and, hence, cannot be balanced

through coercive strategies. Furthermore, although OCB-I is employee behavior that is not involved in the task or job directly, according to the 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. The physical workspace may play a role in building or destroying the social bond that creates and accumulates social capital at the personal level.

In conclusion, the results of this study show that the 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.

References

Altman, I. (1975). *The environment and social behavior*. Monterey, CA: Brooks/Cole.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *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(8), 1169-1184.

Ayoko, O. B. (2007). Communication openness, conflict events and reactions to conflict in culturally heterogeneous workgroups. *Cross Cultural Management*, 14, 105–124.

Barki, H., & Hartwick, J. (2004). Conceptualizing the construct of interpersonal conflict. *International journal of conflict management*, *15*(3), 216-244.

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.

Baron, R. A. (1990). Environmentally induced positive affect: Its impact on self-efficacy, task performance, negotiation, and conflict. *Journal of Applied Social Psychology, 20*(5, Pt 2), 368-384.

Baron, R. A. (1991). Positive effects of conflict: A cognitive perspective. *Employee Responsibilities and Rights Journal*, 2, 25-36.

Batson, C. D. & Ahmad, N. Y. (2009). Using empathy to improve intergroup attitudes and relations. *Social Issues and Policy Review,* 3(1), 141-177.

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(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.

Bond, C. F., & Titus, L. J. (1983). Social facilitation: a meta-analysis of 241 studies. *Psychological bulletin*, *94*(2), 265.

Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional versus Open Office Design: A Longitudinal Field Study. *Environment and Behavior*, 34(3), 279–299.

Brief, A. P., & Weiss, H. M. (2002). Organizational behavior: Affect in the workplace. *Annual Review of Psychology*, 53, 279–307.

Brown, G., Lawrence, T., & Robinson, S. L. (2005). Territoriality in organizations. Academy of Management Review, 30, 577–594.

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*(3), 294-311.

Chen, C. C., & Chiu, S. F. (2008). An integrative model linking supervisor support and organizational citizenship behavior. *Journal of Business and Psychology*, *23*(1-2), 1-10.

Chigot, P. (2003). Controlled transparency in workplace design: Balancing visual and acoustic interaction in office environments. *Journal of Facilities Management*, 2, 121–130.

Chiu, S. F., & Tsai, M. C. (2006). Relationships among burnout, job involvement, and organizational citizenship behavior. *The Journal of Psychology*, *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*(1), 160.

Davis, M. H. (1980). A Multidimensional Approach to Individual Differences in Empathy. JSAS, *Catalog of Selected Documents in Psychology* 10, p. 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*(2), 360.

Donald, I. (1994). Management of change in office environment. *Journal of Environmental Psychology*, 14, 21–30.

Dutton, J. E., Workman, K. M., & Hardin, A. E. (2014). Compassion at work. *Annual Review of Organizational Psychology and Organizational Behav*ior, 1(1), 277-304.

Evan, W. (1965). Conflict and performance in R&D organizations. *Industrial Management Review*, 7, 37-46.

Freedman, J. L. (1975). *Crowding and behavior*. Oxford, England: W. H. Freedman.

Forgas, J. P. & Smith, C. A. (2003). Affect and Emotion, in Hogg, M. and Cooper, J. (eds.), *The Sage Handbook of Social Psychology* (pp. 161–189), Sage, London.

George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology*, 76, 299–307.

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.

Hancock, G. R., & Mueller, R. O. (Eds.). (2006). *Structural Equation Modeling*: A Second Course (Vol. 1). IAP.

Hayduk, L. A. (1978). Personal space: An evaluative and orienting overview. *Psychological Bulletin*, 85, 117–134.

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.

Horng, 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.

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.

Jazwinski, C. (1998). Crowding. Retrieved May 5, 2008, 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.

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative science quarterly*, 256-282.

Jehn, K. A. (1997). Qualitative analysis of conflict types and dimensions in organizational groups. *Administrative Science Quarterly*, 42, 538–566.

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*(2), 238-251.

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.

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.

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*(7), 635-651.

Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49(1), 1–49.

Latane, B., & Darley, J. M. (1968). Group inhibition of bystander intervention in emergencies. *Journal of personality and social psychology*, *10*(3), 215.

Lawler, E. J. (2001). An Affect Theory of Social Exchange. *American Journal of Sociology*, 107, 321-352.

Lawler, E. J., & Yoon, J. (1996). Commitment in exchange relations: Test of a theory of relational cohesion. *American Sociological Review*, 61, 89-108.

Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of applied psychology*, *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(2), 219-229.

Martin, R. J., & Hine, D. W. (2005). Development and validation of the uncivil workplace behavior questionnaire. *Journal of occupational health psychology*, *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(*4*), 566-578.

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.

Medina, F.J. , Munduate, L. , Dorado, M.A. , Martínez, I. and Guerra, J.M. (2005). Types of intragroup conflict and affective reactions, *Journal of Managerial Psychology*, 20(3/4), 219-230.

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.

Mowen, A. J., Vogelesong, H. G., and Graefe, A. R. (2002). Crowding perceptions and its relationship to crowd management practices at park and recreation events. *Event Management*, 8(*2*), 63-72.

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.

Oldham, G. R. (1988). Effects of changes in workspace partitions and spatial density on employee reactions: A quasi-experiment. *Journal of Applied Psychology*, 73(2), 253–258.

Oldham, G. R., & Rotchford, N. L. (1983). Relationships between Office Characteristics and Employee Reactions: A Study of the Physical Environment. *Sage Publications, Inc.*, 28(4), 542–556.

Organ, D. W., & Konovsky, M. A. (1989). Cognitive versus affective determinants of organizational citizenship behavior. *Journal of Applied Psychology*, 74, 157–164.

Organ, D.W. (1988). *Organizational Citizenship Behavior: The Good Soldier Syndrome*. Lexington Books/DC Health and Com.

Park, G., & Evans, G. W. (2016). Environmental stressors, urban design and planning: implications for human behaviour and health. *Journal of Urban Design*, *21*(4), 453-470.

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.

Walz, S. M., & Niehoff, B. P. (2000). Organizational citizenship behaviors: Their relationship to organizational effectiveness. *Journal of Hospitality & Tourism Research*, *24*(3), 301-319.

Polzer, J. T., Milton, L. P., & Swarm Jr, W. B. (2002). Capitalizing on diversity: Interpersonal congruence in small work groups. *Administrative Science Quarterly*, *47*(2), 296-324.

Preacher, K. J., Rucker, D. D. & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, *42*(1), 185–227.

Regoeczi, W. C. (2003). When context matters: a multilevel analysis of household and neighborhood crowding on aggression and withdrawal. *Journal of Environmental Psychology*, 23(4), 457-470.

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*(4), 325-344.

Saegert, S. (1978). High density environments: their personal and social consequences. In A. Baum., and 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.

Schmidt, D. E., & Keating, J. P. (1979). Human crowding and personal control: An integration of the research. *Psychological Bulletin*, *86*(4), 680.

Schneider, B. (2001). Fits about fit. *Applied Psychology*, *50*(1), 141-152.

Schopler, J., & Stockdale, J. E. (1977). An interference analysis of crowding. *Environmental Psychology and Nonverbal Behavior*, 1(2), 81–88.

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(2), 279–289.

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*(2), 269-292.

Stansbury, J., & Sonenshein, S. (2012). Positive Business Ethics: Grounding and Elaborating a Theory of Good Works. In K. S. Cameron and G. M. Spreitzer (Eds.), *Handbook of Positive Organizational Scholarship*. (pp. 340-352) Oxford: Oxford University Press.

Stokols, D. (1972). On the distinction between density and crowding: some implications for future research. *Psychological Review*, 79(3), 275-277.

Stokols, D. (1976). The experience of crowding in primary and secondary environments. *Environment and behavior*, *8*(1), 49-86.

Sundstrom, E., Herbert, R., & Brown, D. (1982). Privacy and communication in an open-plan office: A case study. *Environment & Behavior*, 14, 379–392.

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*(4), 1239.

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 Psicologia Organizações e Trabalho*, *17*(1), 30-38.

Wall, V., & Nolan, L, N. (1986). Perceptions of inequity, satisfaction, and conflict in task-oriented groups. *Human Relations*, 39, 1033-1052.

Weiner, B. (1986). *An Attributional Theory of Motivation and Emotion*. New York: Springer-Verlag.

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.

Worchel, S., & Teddie, C. (1976). The experience of crowding: A two-factor theory. *Journal of Personality and social psychology*, *34*(1), 30.

Yang, J., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: the role of intragroup emotional processing. *Journal of Organizational Behavior*, *25*(5), 589.

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.

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*(3), 647-680.

CHAPTER II

The emergence of deviant behaviors in the physical work environment: A study of workers in open offices

Chapter III

The emergence of deviant behaviors in the physical work environment: A study of workers in open offices

To date, the origin of workplace deviance has mainly been investigated in terms of the psychosocial work environment; however, the physical labor conditions (i.e., the layout of buildings, furniture, workspace, air conditioning, workplace density, and so on) have received little systematic attention. This study examines 1) the relationship between crowding perceptions (i.e., employees' perceptions of insufficient personal space due to offices' physical constraints) and deviant workplace behaviors (DWBs) directed at both the organization as a whole (DWB-O) and individuals (DWB-I); and 2) privacy invasion from supervisors and peers as a mediator. Drawing on conservation of resources (COR) theory, the paper suggests that under crowding conditions employees can perceive the physical workspace as a space-related resource that is threatened, leading them to engage in DWBs out of a conservation strategy. Data were collected from 299 respondents working in open-plan offices at four medium-to-large sized IT-based companies. Structural equation modeling (SEM) results significantly supported main effects of employees' crowding perceptions on the two types of DWBs, with privacy invasion from supervisors and peers as full mediator. The findings indicate that a proper physical office arrangement can be a useful tool for managers in combating employee deviant workplace behavior (DWBs).

Keywords- Crowding perceptions, Workplace deviance, DWBs, Physical work environment, Privacy invasion; Open-plan Offices

Introduction

Employee behavior is often considered a product of the human being and the work environment, and deviant workplace behaviors (DWBs; Robinson and Bennett, 1995) are not an exception. Employees would thus participate in deviant workplace behaviors (DWBs) due to a complex interplay between individual factors, such as demographics and personality, and contextual factors. To date, however, theory and research on the origin of deviant workplace behaviors (DWBs) have tended to focus on the psychosocial work environment (teamwork atmosphere, leadership, justice

perceptions, corporate values, among others), whereas the physical work environment (i.e., buildings, furniture, illumination, equipment, air conditioning, and the layout of these items) has received little systematic attention.

In this study, we aim to redress this situation and clarify the role played by the physical work environment in the occurrence of deviant workplace behaviors (DWBs), specifically focusing on the context of the open-plan office – that is, those with individual workstations located within an open space (Smith-Jackson and Klein, 2009). Indeed, open-plan offices are worthy of consideration because they are a frequent physical environment for employees (Lynch and Langan, 2013). In fact, at the end of the last century, more than 70 percent of the employees in the US already worked in these settings (Donald, 1994).

One physical work condition that could lead employees to commit deviant workplace behaviors (DWBs) is perceived crowding. Perceived crowding has been described as a negative psychological evaluation of excessive social contact (Altman, 1975), which can occur, for instance, in offices that do not provide sufficient personal space or where the space is improperly arranged. Classical theories about crowding and behavior in non-work contexts have posited that crowding perceptions lead to violent and antisocial behavior (Dunstan, 1979). However, the relationship between crowding perceptions and deviant workplace behaviors (DWBs) has not previously been examined. Robinson and Bennet (1995) defined deviant workplace behaviors (hereinafter, DWBs) as negative deviance that significantly violates organizational norms, putting the well-being of the organization, its members, or both, at risk. DWBs are frequently studied directed at the organization as a whole (DWB-O) and at individuals (DWB-I) (Robinson and Bennett, 1995). In the former (DWB-O), DWBs include putting little effort into the work or arriving late to work without notice,

whereas gossiping and blaming peers would be examples of DWBs directed towards individuals (DWB-I).

Workspace as a resource, crowding perceptions, and DWBs

The terms crowding and density are often used interchangeably. However, crowding is the employee's psychological response to density, that is, negative perceptions resulting from being in a dense workplace (Stokols, 1972). Drawing on conservation of resources (COR) theory by Stevan E. Hobfoll (1989), the paper argues that the physical workspace can be perceived by employees as a space-related resource whose benefits, due to crowding conditions, may become scarce or permanently lost to their peers and/or supervisors. Consequently, as COR theory suggests, employees' perceptions of probable losses of space-related resources in certain environmental conditions can encourage them to take action to conserve resources.

COR theory emphasizes the objectively stressful nature of resource loss at work, and it states that if resource loss is centrally valued by employees, it makes them feel frustrated or angry (Berkowitz, 1990) and exhibit aggressive behavior. Frustration is a feeling of stress that occurs when efforts to reach a given goal are blocked. This study argues that the space-related scarcity at work can be centrally valued for workers, and so the more employees perceive that the physical workspace is scarce, they more they will attempt to obtain, maintain, enhance and defend their personal space through DWBs. Personal space is the physical area employees preserve around themselves that others cannot invade without provoking distress (Hayduk, 1978). As Walton and McKersie (1991) noted, the most serious type of conflict of interest within an organization occurs 'when one group can gain only at the expense of another' (p. 288), and certainly, in a crowded physical workspace personal space is mostly gained at the expense of others. Furthermore, in a sample of prison guards, Neveu (2007) also showed that resource loss leads to

counterproductive outcomes because it increases absenteeism, depression, emotional exhaustion, and depersonalization, and it reduces personal accomplishment. Further prior investigation in management also provides evidence that crowding could play a role in the emergence of organization-motivated aggression (O'Leary-Kelly et al, 1996) and, hence, DWBs.

Thus, we hypothesize that under crowding conditions, employees may try to conserve their threatened personal space through aggressive behavior in the form of DWBs. Because crowding perceptions can be perceived as space scarcity in a workplace shared with supervisors, we therefore predict that supervisors, as representatives of the organization, can determine that these DWBs are aimed at the organization as a whole (DWB-O).

Therefore,

H1a: Higher levels of employee crowding perceptions will be positively associated with higher levels of DWB-O.

Crowding perceptions may also emerge from employees' sense of workplace scarcity due to peer-to- peer interactions, thus propitiating an increase in their DWBs aimed at peers (DWB-I). Although some prior studies seem to suggest that open offices can improve the communication flow among employees and produce closer and more productive interactions (McElroy and Morrow, 2010; Chigot, 2003), these offices without boundaries have been found to lead to the appearance of bullying (Ayoko, 2007), as well as poor privacy and performance (Regoeczi, 2003). Moreover, some prior research found that persistent resource scarcity in the common areas especially affects competitive pressure and leads individuals to engage in antisocial behaviors towards their fellow users of these areas (Grossman and Mendoza, 2003). In this regard, Ashkanasy et al. (2014) noted that crowding

perceptions can lead employees to experience confrontations during interactions with other actors in the workplace, elicit frequent irritation, frustration, and workplace disputes among peers, and encourage employees to commit DWBs aimed at their peers (DWB-I).
Therefore,

H1b: Higher levels of employee crowding perceptions will be positively associated with higher levels of DWB-I.

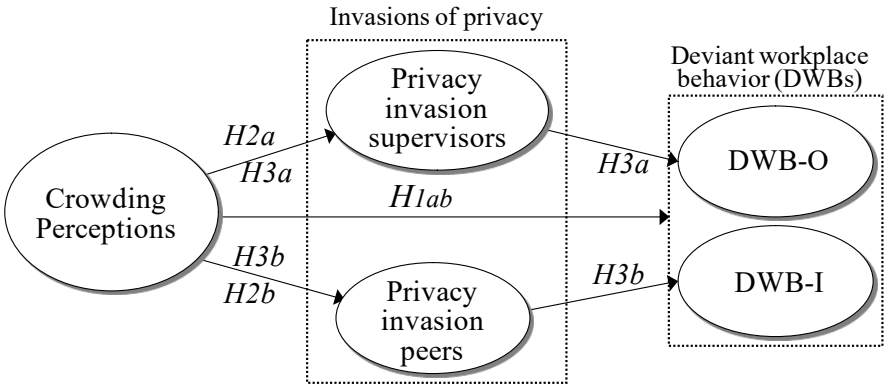
Privacy invasion and crowding perceptions

A second challenge in this study is to analyze why the relationship between crowding perceptions and DWBs can occur. Prior research on perceived crowding in non-work contexts (Maxwell, 2003; Mowen, et al., 2003) certainly indicates that the way crowding perceptions can affect individual performance (Regoeczi, 2003; Saegert, 1978) or antisocial behavior (Gifford and Peacock, 1979) is not simple and direct, thus suggesting that a number of mediators may be involved. Classical theories of crowding provide clues about mediators that might explain why crowding perceptions can affect DWBs, such as stress (Dunstan, 1979), lack of perceived control (Sandler, and Lakey, 1982), person-environment misfit (Kristof, 1996), or responsibility diffusion (Latane and Darley, 1968). Privacy invasion is an important factor in the context of open-plan offices, to the extent that prior work indicates that invasions of personal space/privacy are strongly associated with crowding perceptions (Worchei and Teddlie, 1976). Privacy is interpreted as interpersonal boundary control processes through which an individual or group makes itself more or less accessible and open to others in an interaction (Altman, 1975).

In order to test whether privacy invasion may be a mediator in the relationship between crowding perceptions and DWBs, we must first seek support for the idea that crowding perceptions have positive links to privacy invasion. Given that perceptions of crowding are postulated as an unpleasant experience of unwanted interactions (Stokols, 1972; Saegert, 1978), drawing on COR theory, the paper argued above that crowding perceptions may be experienced by employees as a space-related resource loss. The fact that employees perceive crowding as a loss of space-related resources would probably mean that they more easily lose control over the interpersonal boundary processes related to other actors in the workplace. Because they can come to feel uncontrollably exposed to interacting with others at work, they could react by restricting their privacy boundaries.

Figure 1

Proposed model of the relationship between crowding perceptions and DWBs



In the end, under crowding conditions, it is more likely for both supervisors and peers to cause employees to feel privacy invasions, and so we hypothesize that there are significant links between higher levels of crowding perceptions and greater feelings of invasion of privacy from both supervisors and peers (see Figure 1).

Therefore,

H2a: Higher levels of employee crowding perceptions will be positively associated with greater feelings of invasion of privacy from supervisors.

H2b: Higher levels of employee crowding perceptions will be positively associated with greater feelings of invasion of privacy from peers.

The mediating role of privacy invasion

As discussed above, this study suggests that invasions of privacy from supervisors and peers could be present in the reasons for the effects of crowding on DWBs. As a first step in this prediction, in the last section the paper hypothesized that perceptions of crowding can lead to invasions of privacy from supervisors and peers. In this section, we further hypothesize that, rather than crowding perceptions directly, the invasions of privacy from supervisors and peers are what actually lead employees to take action through DWBs. Building on COR theory (Hobfoll, 1989), we argue that the physical workspace is perceived as scarce due to feelings of privacy invasion, rather than to crowding perceptions. Hence, these feelings of privacy invasion are what motivate employees to perform DWBs in order to try to conserve the space-related resource loss. Prior work supporting this argument (Ayoko and Härtel, 2003; Shropshire and Kadlec, 2012) suggests, for instance, that under crowding perceptions, employees mentioned invasions of privacy by supervisors and peers as the most relevant and harmful events in such conditions. They reported that privacy invasions decreased the quality of the labor relationship needed to accomplish the tasks, keeping them from achieving job performance. Consequently, we contend that if employees judge that the workspace is crowded, they will certainly feel frustration and anger,

not toward the crowding conditions, but rather toward the privacy invasions, to which employees attribute the negative consequences of crowding.

Using these ideas as a guide, the paper posits that privacy invasion will act as a mediator between crowding and DWBs. Furthermore, because supervisors and peers are the 'visible faces' of the crowding perceptions that cause DWBs (see Figure 1), we also hypothesize that invasions of privacy from supervisors will mediate employees' crowding reactions in the form of DWB-O, and privacy invasions from peers will mediate them in the form of DWB-I.

Therefore,

H3a: Employees' invasions of privacy from supervisors will mediate the link between crowding perceptions and DWB-O.

H3b: Employees' invasions of privacy from peers will mediate the link between crowding perceptions and DWB-I.

Methodology

Procedure and Sample

The target population of this study consists of the employees working in IT-based companies in Tehran (Iran). Data were collected using questionnaires in Persian. The questions were constructed in English and translated into Persian, and then back-translated into English for verification. In all, 330 Persian questionnaires were personally distributed to employees of four IT-based companies ranging in size from large to medium, one of which is a leading company in the IT sector in Tehran (Iran). Distribution was carried

out by one of the researchers, so that she could resolve and answer any misunderstandings and possible questions. Although we did not use a specific random sampling method, the surveyor herself randomly asked staff and asked to fill out the questionnaires in different places and situations within the office in order to avoid response biases. After receiving official approval by each company, the employees in the companies who decided to respond self-administered the paper-and-pencil survey during a break in their workday. No incentives were offered, other than face-to-face advice when required. 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 .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.

Measures

Perceptions of crowding were measured with the 10-item seven-point scale (1 = None to 7 = Totally) proposed by Kaplan (1982) to assess crowding in student 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 (bathrooms). We reworded some items to adapt them to the reality of office settings. As such, '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."

We measured deviant workplace behavior (DWBs) by using the 19-item Likert-type scale (1 = totally disagree to 7 = totally agree) by Bennett and Robinson (2000). We selected six DWBO-related items due to special features of the surveyed employees and their organization. Items included, "Put little effort into your work." Similarly, some DWB-I items included in the Bennett and Robinson scale made ethnic, religious, or racial references that were not relevant to the context under study, leading us to select four DWBI-related items. Items included, "Acted rudely toward someone at work."

Finally, invasion of privacy was measured with the 5-item Likert-type scale (1 = Never to 7 = Constantly) by Martin and Hine (2005). The original scale was included twice in the questionnaire with two different actors, i.e., peers and supervisors. As such, although the original item "Took items from my desk without prior permission" was originally impersonal, it is now attributed to both peers and supervisors.

Statistical Analysis

The analysis of the data obtained was conducted using structural equation modeling (SEM) and the statistical package for social sciences (SPSS). All the items and Cronbach's alphas are shown 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) would be used as control variables. The AMOS 22.0 statistical package was used to calculate the validity of the measures and examine the hypothesized relationships through SEM.

We first conducted a CFA for the five variables in this study. CFA tests of construct validity 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). The control variables were incorporated directly into the model as stand-alone variables (Hancock and Mueller, 2006) co-varying with all five latent factors. The first CFA results show that the fit of the seven-factor solution is insufficient (Cmin=934.473; df=291; p<.001; Cmin/df=3.211; CFI=.832; IFI=.833; TLI=.812; NFI=.775; RMSEA=.081), with all fit indexes below .90 and RMSEA over .05 (Hair et al., 2006). Accordingly, we analyzed the modification indices' properties from the SEM package AMOS 22 to try to identify the most strained parts of the SEM model. First, the crowding item "There are too many people giving their opinions about the range of air temperature that is comfortable", with factor loadings of less than .5, was dropped (see Table 1 and Figure 2). Modification index outputs indicated that the greatest drops in model discrepancy occurred when covariances between two item-errors for privacy invasion with peers (e11 and e12), three item-errors for supervisors (e8, e9, and e10), and two item-errors for DWBO (e16 and e19) were involved. Thus, in order to improve the fit of the CFA model, we considered residual correlations between the residual terms of these variables (e11 and e12, e8 and e9, and e9 and e10, and e16 and e19) (see Table 1 and Figure 2).

Table 1
Results of confirmatory factor analysis

	Factor loading	SMC	Composite	AVE
(F1) Crowding perceptions (Cronbach alpha =.778)		----	.808	.515
Can you indicate the extent to which you are in agreement with each statement?				
X01...The corridors in the office tend to be very crowded	.763			
X02...I feel that the living situation in the office is very crowded	.783			
X03...The noise of people in the office is loud enough and frequent enough to be annoying	.690			
X04...There are too many people giving their opinions about the air temperature range comfortable(**)	----			
X05...I find myself in conversation with people with whom I would rather not be involved	.624			

(F2) Privacy invasion supervisors (Cronbach alpha =. 906)		.073	.910	.672
Y01...My supervisor took stationery from my desk without later returning it	.761			
Y02...My supervisor took items from my desk without prior permission	.843			
Y03...My supervisor interrupted me while I was speaking on the telephone	.687			
Y04...My supervisor read communications addressed to me, such as e-mails or faxes	.888			
Y05...My supervisor opened my desk drawers without prior permission	.900			
(F3) Privacy invasion peers (Cronbach alpha =.839)		.228	.835	.509
Y06...My coworkers took stationery from my desk without later returning it	.597			
Y07...My coworkers took items from my desk without prior permission	.629			
Y08...My coworkers interrupted me while I was speaking on the telephone	.648			
Y09...My coworkers read communications addressed to me, such as e-mails or faxes	.748			
Y10...My coworkers opened my desk drawers without prior permission	.902			
(F5) DWB-O (Cronbach alpha =.859)		.127	.857	.547
Y11… Put little effort into my work	.643			
Y12... Intentionally worked slower than I could have	.716			
Y13... Take an additional or longer break than is acceptable at my workplace	.758			
Y14... Spend too much time fantasizing or daydreaming instead of working	.747			
Y15... Neglect to follow my boss' instructions	.823			
Y16... Come in late to work without giving prior notice	.663			
(F4) DWB-I (Cronbach alpha =.777)		.141	.812	.523
Y17... Acted rudely toward coworkers at work	.789			
Y18... Cursed at coworkers at work	.763			
Y19... Made fun of coworkers at work	.773			
Y20... Mistreated coworkers at work	.540			
Control variables				
C01…Gender(*)	----	----	----	----
C02…Age(*)	----	----	----	----

(*) Control variables were entered in the CFA as observed variables co-varying with all of the seven latent factors and indicators: (**) Item rejected because its

AVE refers to average variance extracted, and SMC to Squared Multiple Correlation. SEM suggestions about modification indices include the following co-variances: e11 and e12 (.53), e8 and e9 (.24), and e9 and e10 (.53), and e16 and e19(-.26).

Cmin=769.354; df=287; p<.001; Cmin/df=2.681; CFI=.901; IFI=.902; TLI=.885; NFI=.838; RMSEA=.072

The outputs of the new CFA are shown in Table 1. They reveal that the proposed five-factor solution fit better (Cmin=769.354; df=287; p<.001; Cmin/df=2.681; CFI=.901; IFI=.902; TLI=.885; NFI=.838; RMSEA=.072),

with half of the fit indexes above .90, but RMSEA still above .08. Browne and Cudeck (1993) stated, however, that RMSEAs between .05 and .08 could indicate an adequate fit. Because RMSEA is one of the most informative criteria in covariance structure modeling, and our CFA and IFI indexes are above .90 and RMSEA=.072, which is below .08, all the constructs used in this study can be considered separate (this new CFA is shown in detail in Table 1).

Composite reliability, shown in Table 1, ranged from .931 to .808, which is greater than the standard of .60 (Hair et al., 2006). Cronbach's alphas ranged from .906 to .777, close to the recommended alpha of .70. Table 2 includes the means and standard deviations of these study variables after they are factor analyzed. We then used a set of conventional actions to verify the convergent validity and discriminant validity of our scales. The average variance extracted (AVE) for each construct was between .509 and .672, which is above .50 (Bagozzi and Yi, 1988; Fornell and Larcker, 1981), thus supporting convergent validity. As the correlations table (Table 2) shows, the authors also calculated discriminant validity by using the square roots of the AVE values (from .792 to .713, on the main diagonal) and checking whether they were congruently greater than all the matching correlations (Fornell and Larcker, 1981). The model results show that each construct shares more variance with its corresponding measure than it shares with the others, supporting discriminant validity.

Results

Table 2 shows most of the correlates in the expected direction, thus providing some initial support for our model. We tested our hypothesized model (Figures 2 and 3) using structural equation modeling. Figures 2 and 3 show our tested models. They are path diagrams that illustrate the associations

among the survey answers (observed variables) and the latent variables (unobserved).

Table 2
Descriptive Statistics and Correlations

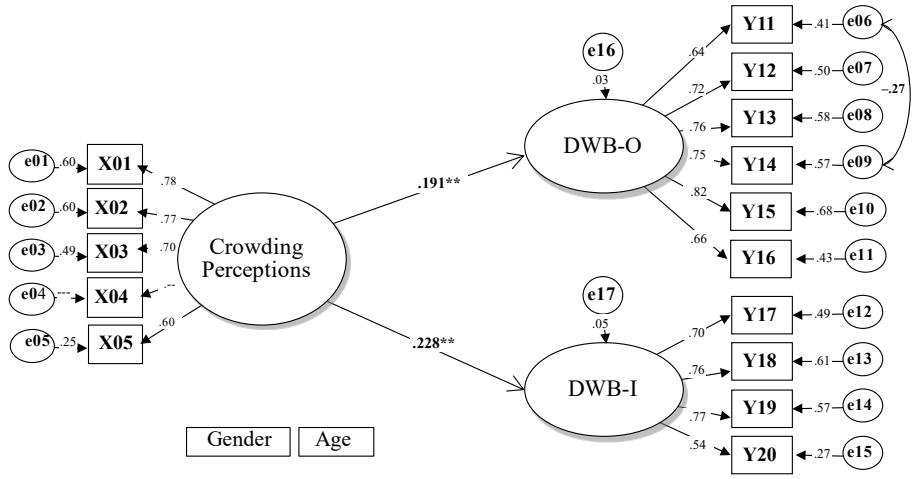
Variables	*M*	*SD*	1	2	3	4	5	6	7
1. Gender	----	----	---						
2. Age	----	----	---	----					
3. Crowding perceptions	3.81	1.69	---	.174**	*(.718)*				
4. Privacy invasion boss	1.58	1.15	---	.121*	.104*	*(.792)*			
5. Privacy invasion peers	1.90	1.09	---	.069	.095	.520***	*(.713)*		
6. DWB-O	1.77	.83	---	–.038	.005	.283***	.297***	*(.740)*	
7. DWB-I	2.22	.97	---	.020	.053	.262***	.308***	.383***	*(.723)*

Note. The numbers in parentheses on the diagonal are the square roots of the average variance extracted (AVE). 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. * $p < .05$; ** $p < .01$; *** $p < .001$.

To test our hypotheses, we first considered the SEM model in Figure 2, which shows the main effects of crowding on DWBO and DWBI (see Figure 2). Control variables were incorporated directly into both models as stand-alone variables (Hancock and Mueller, 2006). In addition, a second SEM model was proposed that incorporated crowding, privacy invasion from supervisors and peers, DWBO, and DWBI. In it, we added a direct path from crowding to DWBO and DWBI. The various fit indices employed reveal a tolerable fit of the models portrayed in Figures 2 and 3 (Hair et al., 2006). Given that crowding is positively and significantly linked to DWBO (B=.191; $p < .01$) and DWBI (B=.228; $p < .01$), the results empirically support H1a and 1b (see Figure 2). Similarly, H2a and H2b are supported by the positive relationship between crowding and privacy invasion by supervisors (B=.286; $p <.001$) and peers (B=.491; $p <.001$).

Figure 2

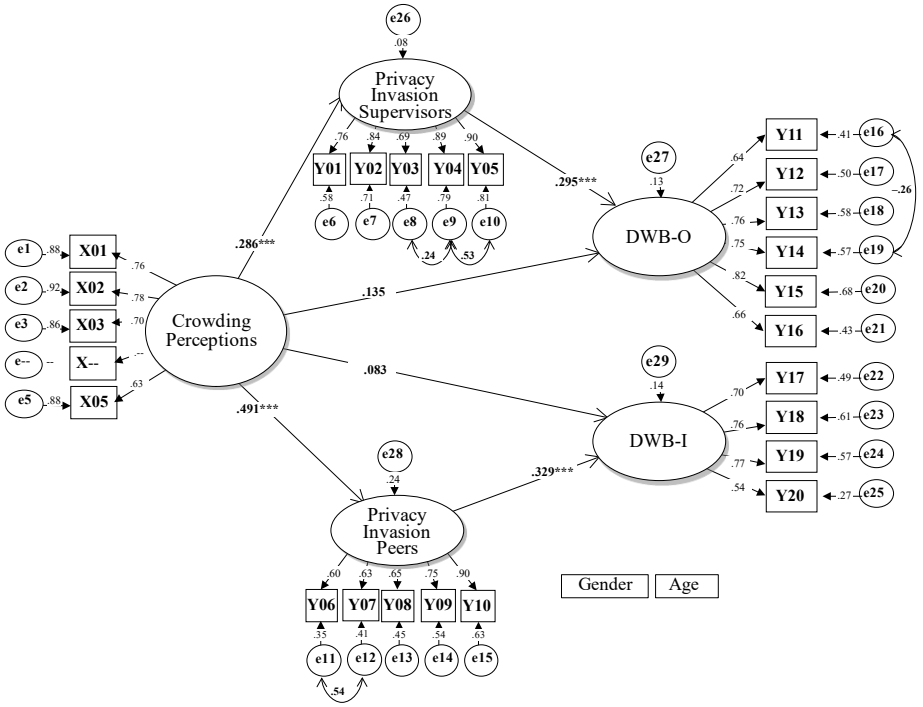
Tested SEM model of the main effects of crowding perceptions on DWBs



Note. N=299. ** p < .01; Cmin=273.590; df=103; p<.001; Cmin/df=2.656; CFI=.917; IFI=.918; TLI=.901; NFI=.889; RMSEA=.068

Figure 3

Tested SEM model of the relationship between crowding perceptions and DWBs with direct paths from crowding to DWBs



Note. N=299. *p<.01; **p<.001; Cmin=872.599; df=291; p<.001; Cmin/df=2.999; CFI=.889; IFI=.890; TLI=.868; NFI=.829; PRATIO=.895; PNFI=.707; PCFI=.759; RMSEA=.077.

In the case of H3 regarding mediation, we inspected the role that privacy invasion plays in explaining the basic relationships between crowding and DWBO (B=.191; p<.01) and DWBI (B=.228; p=.01), as shown in Figure 2. The fact that these direct paths from crowding to DWBO (B=.191; p < .001) and DWBI (B=.228; p=.01) were no longer significant in the whole model in Figure 3 (DWBO: B=.136; p ns, DWBI: B=.085; p ns) indicates that crowding's main effects on DWBO/I are no longer significant when privacy invasions are added as mediators in Figure 2 (Baron, and Kenny, 1986). In other words, because the addition of privacy invasions makes these effects no longer significant (DWBO: B=.136; p n.s., DWBI: B=.085; p n.s.), privacy invasions by supervisors and peers significantly carry the weight of the main effects from crowding to DWBO (B=.191; p < .001) and DWBI (B=.228; p=.01), as shown in Figure 2.

In order to expand support for H3, we built an alternative more constrained model and removed the direct paths linking crowding with DWBO/I from our less constrained model in Figure 3. If this new more constrained model fits the data significantly better, it would show support for the fully mediated role of privacy invasion. Results suggest that the fit of the fully mediated new model (Cmin=877.139; df=293; p<.001; Cmin/df=2.994; CFI=.894; IFI=.892; TLI=.873; NFI=.836; PRATIO=.902; PNFI=.711; PCFI=.764; RMSEA=.075) is better than the fit of our less constrained model in Figure 3 (Cmin=872.599; df=291; p<.001; Cmin/df=2.999; CFI=.889; IFI=.890; TLI=.868; NFI=.829; PRATIO=.895; PNFI=.707; PCFI=.759; RMSEA=.077). In fact, all of the fit indexes of the more constrained new model are better than those of our tested partially-mediated model, in Figure 3, thus supporting privacy invasion as a full mediator in the relationship between crowding and DWBs.

This support is also reflected by the PRATIO, PNFI, and PCFI parsimony-adjusted measures, which were better in the more constrained model (PRATIO=.902; PNFI=.711; PCFI=.764) than in the less constrained model (PRATIO=.895; PNFI=.707; PCFI=.759), and by the results of a comparison of the two models (χ^2d[2,299]=4.54; dfd=2; p=.103). As 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 and Gerbing, 1988). All of these patterns support H3.

Discussion

The aim of this paper was to study whether and how perceptions of crowding influence DWBs, thus proposing the steps that employees in crowding situations could take until engaging in DWBs. The findings support all our hypotheses stating that crowding has significant main effects on DWBs, with invasions of privacy by supervisors and peers forming part of the path from crowding to DWBs. This section aims to offer implications of these results and discuss avenues for future research.

First, the findings offer new insights that can increase the comprehension of the influence of the physical work environment in the context of open-plan offices (position and placement of objects such as buildings, furniture, illumination, equipment, air quality, and so on) on DWBs. Prior research on workspace seems to be isolated in particular fields separate from the usual scope of management and organizational behavior, such as environmental psychology, environmental behavior, architecture, facilities management, and education (Brown et al., 2005). By integrating crowding perceptions and privacy invasion from supervisors and peers to suggest how density in open-plan offices may influence DWBs within organizations, the present study makes a significant contribution to management and organizational behavior

literatures. Given that the impact of open-plan office configurations on employees' attitudes and behaviors has been supported and posited as critical for the success of this office type (Oldham and Rotchford, 1983; Oldham, 1988), the study of DWBs in this context makes a particularly relevant contribution. In effect, this study used sampled employees working in open-plan offices, and crowding was found to lead employees to participate in DWBs. This finding is consistent with prior work showing that these offices without boundaries lead to the appearance of bullying (Ayoko, 2007), as well as poor privacy and performance (Regoeczi, 2003). Thus, this study confirms that the physical layout of open-plan offices can reduce efficiency in these open workspaces, and that crowding perceptions should receive attention. However, our findings also challenge some prior studies that seem to suggest that these open offices should decrease DWBs, rather than increase them, because open offices would improve the communication flow among employees and produce closer and more productive interactions (McElroy and Morrow, 2010; Chigot, 2003).

One way to weigh the role these study results may play in these equivocal indications from the open-plan office research is by pointing out the extent to which the specific context of Iranian IT work environments is representative of a kind of culture that biases our results. Iran has a relatively highly individualistic society (Hofstede Center 1967–2010) that makes the workforce think of themselves as "I", so that the emphasis on interpersonal relationships takes a back seat. This cultural specificity could be at least partly responsible for the higher sensitivity of our sampled employees to experiencing feelings of privacy invasions and, hence, perceiving crowding and engaging in DWBs (Hongisto et al., 2016). Furthermore, Iran can be categorized as a high power distance society, which means that there is a strict hierarchical order in most Iranian organizations (Hofstede Center 1967–2010). Reactance theory suggests that individuals usually struggle to maintain personal control (Brehm and Brehm, 1981), and in dealing with an imposed

hierarchical order, this struggle can easily result in higher levels of DWBs. Indeed, employees may engage in DWB-O to restore personal autonomy (e.g., Zellars et al., 2002), a situation that may be especially present in Iranian IT work environments.

Second, although perceived proximity can exist outside crowding perceptions, both constructs are indisputably closely related. The findings of this study further develop the previous HR management and organizational behavior literatures on the proximity phenomenon in the office and its implications in DWBs. Taking into account that perceived proximity in prior literature has only focused on supervisor-follower relationships, this study contributes to the proximity research on open-plan offices by supporting the emergence of workplace deviance linked not only to crowded relations between supervisors and followers, but also among peers and between supervisors and followers at the same time. However, prior research results seem to be inconsistent with some of our results. On the one hand, by combating impunity, this prior work found that employees seem to interpret proximity in terms of monitoring and control by the company (increasing the risk of being caught). In fact, such proximity in the workspace has arisen as an important factor in deterring (rather than encouraging) some forms of DWBs, such as cyberloafing or Internet abuse (Zoghbi-Manrique-de-Lara and Olivares-Mesa, 2010). Challenging these study findings, our study results show that proximity in terms of crowding or high density in the workspace encourages (rather than deters) DWBs. On the other hand, results from other studies seem to be consistent with our results. They suggest that people are less likely to behave cooperatively when working close together because crowds cause individuals to feel anonymous and see others in the same way (Pronin, 2008).

Finally, this paper shows that the physical workspace leads to DWBs and how this occurs, which undoubtedly has important implications for open-plan

office management. Managers are provided with specific tools to combat the emergence of DWBs in physical work environments in the context of open-plan offices, improving the benefits of this type of office layout. In fact, despite the widespread use of open-plan offices, the proper design and distribution of the space in these offices continues to be a difficult and costly task for managers (Davis et al., 2011). First, our findings mainly focus on a workplace lacking in privacy as a physical work environment where the staff are more likely to react to crowding with DWBs. A dense workplace may therefore be innocuous if crowding perceptions are devoid of the sensation of privacy invasion. Therefore, the results indicate that the association between crowding and DWBs is susceptible to being disabled by promoting a situation in which the actual amount of privacy from peers and supervisors is greater than the desired privacy, that is, by combating a negative perception of being crowded in the workplace (lockable workstations, good manners by supervisors when passing through private areas of followers, etc.). Even through other routes, managers should pay attention to any event that is able to increase privacy in offices because it can disable the mechanisms underlying the link between crowding and DWBs.

In addition, in the present study, proximity perceptions of sampled employees are related to both peers and supervisors. Hence, in order for crowding in open-plan offices to lead to a proximity that increases (rather than decreases) DWBs, it seems essential to inspect how peers and supervisors interpret proximity in these offices. Only a workplace with low permissiveness about the formal and informal rules regulating DWBs can keep peers from viewing the presence of others as a 'license' to ignore responsibilities related to DWBs. Third, although the same objective density does not always lead to crowding because it may or may not be uncomfortable, the greater the workplace density, the higher the crowding perceptions. Therefore, we also have to advocate for direct intervention in tangible conditions at work, i.e., the level of density in the workplace, which

is the ultimate reason for employees' DWBs. These material conditions (space shortage due to workplace density) could combine with immaterial (invasions of privacy from supervisors and peers) job conditions to trigger DWBs. Therefore, managers should highlight that high density at work is not merely an 'occupational risk' because it probably occurs with negative arousals, and both are relevant in affecting DWBs. Top and middle managers must discuss this fact in order to design, along with supervisors, relevant arrangements in the workplace (e.g., allowing followers to lock their drawers or put passwords on computers, and supporting them when showing physical discomfort in response to peers who violate their territory, among others).

Limitations and future research

The paper has weaknesses that should be acknowledged. First, although the sampled companies belong to a well-known industry sector, the contextual influences of Iranian societal culture can question the generalization of the results. 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. In addition, our data collection method used self-report measures, and, hence, the assessments of perceptions of crowding and DWBs were obtained from the same source. Thus, they could present mono-method/source biases to some extent, and it is possible that this affected the accuracy of the responses.

Future research should examine other industries and global cultures, in order to test their universality (or context sensitivity) and strengthen these study conclusions. Furthermore, this study opens up new avenues in investigating social capital as a personal asset of employees. This study was built on conservation of resources (COR) theory by Stevan E. Hobfoll (1989), and the paper argues that the physical workspace can be perceived by employees as a space-related resource. Defined as "the sum of the resources,

actual or virtual, that accrue to an individual [or a group] by virtue of possessing a durable network of […] relationships of mutual acquaintance and recognition" (Bourdieu and Wacquant, 1992: 119), personal social capital is a social resource that is closely linked to the physical workspace, and, hence, this study suggests that it may play a role in building or destroying social bonds. Thus, a healthy workspace in terms of crowding perceptions and privacy invasion may also become a resource that contributes to creating and accumulating personally owned social capital.

References

Altman, I. (1975), "The environment and social behavior", Monterey, CA: Brooks/Cole.

Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychological bulletin, Vol. 103 No. 3, p. 411.

Ashkanasy, N. M., Ayoko, O. B., and Jehn, K. A. (2014), "Understanding the physical environment of work and employee behavior: An affective events perspective", Journal of Organizational Behavior, Vol. 35 No.8, pp. 1169-1184.

Ayoko, O. B. (2007). Communication openness, conflict events and reactions to conflict in culturally heterogeneous workgroups. Cross Cultural Management, 14, 105–124.

Ayoko, O. B., and Härtel, C. E. J. (2003), "The role of space as both a conflict trigger and a conflict control mechanism in culturally heterogeneous workgroups", Applied Psychology, Vol. 52 No.3, pp. 383-412.

Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", Journal of the Academy of Marketing Science, Vol. 16 No. 1, pp. 76-94.

Baron, R. M., and Kenny, D. A. (1986), "The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and

statistical considerations“, Journal of personality and social psychology, Vol. 51 No. 6, pp. 1173.

Baum, A., Aiello, J. R., and Calesnick, L. E. (1978), “Crowding and personal control: Social density and the development of learned helplessness”, Journal of Personality and Social Psychology, Vol. 36 No. 9, p. 1000.

Bennett, R. J., and Robinson, S. L. (2000), “Development of a measure of workplace deviance”, Journal of Applied Psychology, Vol. 85 No. 3, pp. 349–360.

Berkowitz, L. (1990), “On the formation and regulation of anger and aggression: A cognitive-neoassociationistic analysis“, American Psychologist, Vol. 45 No.4, pp. 494.

Bourdieu, P. and Wacquant, L.J.D. (1992), An Invitation to Reflexive Sociology, University of Chicago Press, Chicago.

Brehm, J., and Brehm, S. (1981), Psychological resistance: A theory of freedom and control, New York: Academic Press.

Brown, G., Lawrence, T. B., and Robinson, S. L. (2005), “Territoriality in organizations“, Academy of Management Review, Vol. 30 No. 3, pp. 577-594.

Browne, M.W. and Cudeck, R., (1993), “Alternative ways of assessing model fit,” in Bollen, K.A., Long, J.S. (Eds.), Testing Structural Equations Models, Sage, Newbury Park, CA, pp. 136-162.

Chigot, P. (2003), “Controlled transparency in workplace design: Balancing visual and acoustic interaction in office environments“, Journal of Facilities Management, Vol. 2, pp. 121–130.

Davis, M. C., Leach, D., and Clegg, C. (2011), “The physical environment of the office: Contemporary and emerging issues”, in G. P. Hodgkinson, & J. K. Ford (Eds.), International review of industrial and organizational psychology (pp. 193–237). Chichester, UK: Wiley.

Donald, I. (1994), “Management of change in office environment”, Journal of Environmental Psychology, Vol. 14, pp. 21–30.

Dunstan, J. (1979), "The Effect of Crowding on Behaviour: Empirical Measures for Testing Theoretical Models", Urban Studies, Vol. 16, pp. 299–307.

Fornell, C. and Larcker, D. (1981), "Evaluating structure equations models with unobservable variables and measurement error", Journal of Marketing Research, Vol. 18 No. 1, pp. 39-50.

Gifford, R., Peacock, J. (1979); "Crowding: More fearsome than crime provoking? Comparison of an Asian city and a North American city" Psychologia, Vol. 22, pp. 79-83.

Grossman, H. I. and Mendoza, J. (2003). Scarcity and appropriative competition. European Journal of Political Economy, 19(4), 747-758.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), Multivariate data analysis (6th ed.), Prentice Hall, Upper Saddle River, NJ.

Hancock, G.R. and Mueller, R.O. (2006). Structural equation modeling: A second course. Information Age Publishing, Greenwich, CT.

Hayduk, L. A. (1978); "Personal space: An evaluative and orienting overview", Psychological Bulletin, Vol. 85, pp. 117–134.

Hofstede Center (1967–2010), Geert Hofstede Cultural Dimensions, Retrieved July 23, 2018, from https://geert-hofstede.com/

Hobfoll, S. E. (1989), "Conservation of resources: A new attempt at conceptualizing stress", American psychologist, Vol. 44 No. 3, p. 513.

Hongisto, V., Haapakangas, A., Varjo, J., Helenius, R., and Koskela, H. (2016), "Refurbishment of an open-plan office–Environmental and job satisfaction", Journal of environmental psychology, Vol. 45, pp. 176-191.

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.

Kristof, A. L. (1996), “Person-organization fit: An integrative review of its conceptualizations, measurement, and implications“, Personnel Psychology, Vol. 49 No. 1, pp. 1–49.

Latane, B., and Darley, J. M. (1968), “Group inhibition of bystander intervention in emergencies“, Journal of personality and social psychology, Vol. 10 No. 3, pp. 215.

Lynch, K., & Langan K. (2013). Our space—ANZ’s approach to a new global workplace. FM Magazine, February 22.

Martin, R. J., and Hine, D. W. (2005), “Development and validation of the uncivil workplace behavior questionnaire”, Journal of occupational health psychology, Vol. 25 No. 2, p. 477.

Maxwell, L. E. (2003), “Home and school density effects on elementary school children: The role of spatial density”Environment and Behavior, Vol. 35 No. 4, pp. 566-578.

McElroy, J. C., and Morrow, P. C. (2010), “Employee reactions to office redesign: A naturally occurring quasi-field experiment in a multi-generational setting”, Human relations, Vol. 63 No. 5, pp. 609-636.

Mowen, A. J., Vogelesong, H. G., and Graefe, A. R. (2002), “Crowding perceptions and its relationship to crowd management practices at park and recreation events, Event Management, Vol. 8 No. 2, pp. 63-72.

Neveu, J. P. (2007). Jailed resources: Conservation of resources theory as applied to burnout among prison guards. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 28(1), 21-42.

O’Leary-Kelly, A. M., Griffin, R. W., and Glew, D. J. (1996), “Organization-motivated aggression: A research framework”, Academy of management review, Vol. 21 No. 1, pp. 225-253.

Oldham, G. R. (1988), “Effects of changes in workspace partitions and spatial density on employee reactions: A quasi-experiment”, Journal of Applied Psychology, Vol. 73 No. 2, pp. 253–258.

Oldham, G. R., and Rotchford, N. L. (1983), "Relationships between Office Characteristics and Employee Reactions: A Study of the Physical Environment" Sage Publications, Inc., Vol. 28 No. 4, pp. 542–556.

Pronin, E. (2008), "How we see ourselves and how we see others", Science, Vol. 320 No. 5880, pp. 1177-1180.

Regoeczi, W. C. (2003),"When context matters: a multilevel analysis of household and neighborhood crowding on aggression and withdrawal", Journal of Environmental Psychology, Vol. 23 No. 4, pp. 457-470.

Robinson, S. L., and Bennett, R. J. (1995), "A Typology of Deviant Workplace Behaviors: A Multidimensional Scaling Study", Academy of Management Journal, Vol. 38 No. 2, pp. 555–572.

Saegert, S. (1978), "High density environments: their personal and social consequences", in A. Baum., and Y. Epstein (Eds.), Human response to crowding (pp. 259–282). Hillsdale, NJ: Erlbaum.

Sandler, I. N., and Lakey, B. (1982), "Locus of control as a stress moderator: The role of control perceptions and social support", American journal of community psychology, Vol. 10 No. 1, pp. 65-80.

Shropshire, J., and 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, Vol. 17 No. 2, pp. 1–20.

Smith-Jackson, T. L., and Klein, K. W. (2009), "Open-plan offices: Task performance and mental workload", Journal of Environmental Psychology, Vol. 29 No. 2, pp. 279–289.

Stokols, D. (1972), "On the distinction between density and crowding: some implications for future research", Psychological Review, Vol. 79 No. 3, pp. 275-277.

Walton, R. E. and McKersie, R. B. (1991). A Behavioral Theory of Labor Negotiations, 2nd edn. Ithaca, NY: ILR Press (original edition New York: McGraw-Hill, 1965).

Zellars, K. L., Tepper, B. J., and Duffy, M. K. (2002), “Abusive supervision and subordinates’ organizational citizenship behavior,” Journal of Applied Psychology, Vol. 87, pp. 1068–1076.

Zoghbi-Manrique-de-Lara, P., and Olivares-Mesa, A. (2010), “Bringing cyber loafers back on the right track”, Industrial Management and Data Systems, Vol. 110 No. 7, pp. 1038-1053.

CHAPTER IV

Conclusions and Summary in Spanish

Conclusions

The findings of this doctoral thesis contribute to the discourse on employees' crowding in the open-area offices in IT-based companies, and bear potentially important implications for industries based on open-plan offices. They indicate a lesser inclination to show OCB-I when staff themselves are subjected to space restrictions; as well as to increase workplace deviance in the form of DWBs and cyberloafing. The meaning of the results between personal experiences in the workplace is crucially stressed in this paper in the light of physical work environment. From such a perspective, these interplays seems to mean that staff are affected by physical work environment, and this affection is construed as a common resource loss that lead staff to act improperly for the effective functioning of the organization. Mediators such as privacy invasion, trust, compassion, stress, and so on, may further explain these interplays, fostering organizational-targeted deviance and between-peers rivalry weakening OCB-I. Accordingly, this study concludes that the current array of workplace antecedents of cyberloafing, DWBs, and OCB-I are in need of further development in light of the physical work environment. This implies examining the intricacies of the shared perceptions of crowding and its ramifications in, for instance, the encouragement followers to lock their drawers or put password on computers, support them when showing physical discomfort, and supervisors who show good manners when invading private areas of staff. The findings thus add a new facet to the investigation of organizational behavior in the open-plan offices and, perhaps, in workplaces in general.

Resumen en Español

La Influencia del Entorno Físico Laboral sobre el Rendimiento del Empleado

Un Estudio sobre Percepciones de Hacinamiento en Oficinas Abiertas Iraníes

No existen estudios que examinen si la percepción de los empleados de trabajar en espacios físicos masificados influye en su conducta más o menos eficiente. Esta tesis comprueba si la percepción de masificación en oficinas abiertas con tecnología informática lleva a los empleados a participar en actividades de contraproducentes (DWBs, o *deviant workplace, behavior*) a usar indebidamente la conexión a Internet de la empresa para fines personales esto es, ciber-pereza), o a mostrar conductas cívicas organizativas (OCB, *Organizational citizenhip behavior*) Se recopilaron datos de 299 encuestados que trabajaban en cuatro empresas con tecnología informática. Utilizamos modelos de ecuaciones estructurales. Los resultados indicaron que los empleados que percibieron mayor masificación en las áreas más abiertas de la oficina confesaron practicar más conductas DWBs, la ciber-pereza, mientras que aquéllos que percibieron menos masificación se mostraron más cívicos con sus compañeros (OCB-I, o interpersonal (I) *Organizational citizenship behavior*). Los hallazgos indican que la disposición física de una oficina es una herramienta de gestión útil para combatir la ciber-pereza.

Introducción

Algunos estudios previos sugieren que los aspectos inmateriales del entorno laboral (facilidad de acceso, liderazgo, utilidad percibida, valores

corporativos) influyen en el comportamiento humano dentro de las organizaciones (Burkhardt, 1994; Cooper, 1994; Grote y Baitsch, 1991; Pliskin et al. 1993; Zoghbi-Manrique-de-Lara, y Viera-Armas, 2017). Sin embargo, hay indicios crecientes de que también las condiciones físicas laborales de los empleados (iluminación, niveles de ruido, espacio personal, densidad de los espacios de trabajo, niveles de temperatura, privacidad visual, etc.), al tener conexiones importantes con su comportamiento (Ashkanasy et al., 2014; Horng, et al., 2016; Yeh, & Huan, 2017), pudieran influir en la manera en que los empleados se comportan en su trabajo.

Una forma en que el ambiente físico laboral puede afectar al modo en que los empleados actúan en el trabajo es a través de las percepciones de masificación (Maher, & von Hippel, 2005). La masificación percibida es concebida como una evaluación psicológica negativa del entorno físico según la cual los individuos evalúan su espacio personal y privacidad como insuficientes y/o su contacto social como excesivo (Altman, 1975). Las teorías clásicas sobre masificación y comportamiento sugieren que la experiencia de masificación es un factor estresante que conduce a comportamientos violentos y antisociales (Dunstan, 1979). Estas reacciones a la masificación percibida se han investigado en distintos contextos, como hogares residenciales (Maxwell, 2003), escuelas, prisiones y áreas públicas abiertas, como los espacios recreativos (Mowen, et al., 2004), si bien rara vez en el trabajo. Bennett y Robinson (2003: 87) han alentado el acometimiento de tales estudios en el entorno laboral y, por tanto, que se considere la densidad de población como predictor de algunas formas de conductas disfuncionales en el trabajo (Dietz y Nolan, 2001). Sin embargo, la investigación previa en este campo ha ignorado sistemáticamente cualquier estudio sobre la relación que pueda existir entre la masificación percibida y el uso de las nuevas tecnologías en el trabajo.

Los indicios que la literatura existente proporciona sobre el signo o el sentido positivo o negativo de esta relación parecen ambiguos. Este pudiera ser el caso de los indicios que proporciona la investigación sobre oficinas de planta abierta, es decir, oficinas diáfanas, sin divisiones ni despachos

cerrados (Smith-Jackson y Klein, 2009). Por una parte, las oficinas de planta abierta parecen ser un entorno de trabajo eficiente, que mejora y facilita la comunicación entre los empleados y, por lo tanto, su rendimiento (Smith-Jackson & Klein, 2009). Sin embargo, por el otro, en las oficinas de planta abierta es también probable que se produzca un impacto negativo en el desempeño individual del empleado debido a que un número significativo de estudios previos atribuyen a dicha oficina la aparición mayor estrés, distracciones y conflictos (Brennan , Chugh, y Kline, 2002; Hongisto et al., 2016). Las oficinas de planta abierta son actualmente el entorno físico más frecuente en donde los empleados trabajan (por ejemplo, más del 70 por ciento de los empleados en los EE. UU. trabajan en este tipo de entorno físico) (Elsbach y Pratt, 2007). Para abordar estos indicios contradictorios de la literatura, esta tesis examina el grado en que, en las oficinas de planta abierta, la percepción de masificación conduce o no a los empleados a mostrar conductas disfuncionales de tipo DWBs, a mostrar más ciber-pereza, o a reducir sus conductas de ayuda a sus compañeros, reduciendo sus comportamiento cívicos organizativos (OCB-I) en el trabajo. Así, este estudio sostiene que los empleados que experimentan masificación en el trabajo reaccionan contra ésta dañando a la organización mediante la cuber-pereza, las conductas DWBs, o reduciendo su ayuda a los compañeros.

El interés de la literatura de dirección de las organizaciones por precisar el concepto de *performance* o desempeño de los recursos humanos y, por tanto, de los resortes que permitan su optimización, encuentra en recientes revisiones sobre el comportamiento organizativo un importante avance (Griffin, O'Leary-Kelly y Collins, 1998). Buena prueba de tal aserto lo constituye la aceptación, por parte de investigadores en dicho campo, de que la mejor forma de conceptualizar la performance organizativa sería definiéndola como una función de los comportamientos de los recursos humanos en el ámbito de su puesto de trabajo (e.g., Campbell, McHenry y Wise, 1990; Borman y Motowidlo, 1993). Por ejemplo, Rotundo y Sackett (2002:66) definen la performance como "esas acciones y comportamientos

que están bajo el control del individuo y que contribuyen a la consecución de los objetivos de la organización". Motowidlo y Van Scotter (1994) encuentran que el OCB juega un papel tan importante como el resto de las conductas formales en el puesto de trabajo, en la determinación de la performance total del trabajador en su puesto. Resultados similares aportan Rotundo y Sackett (2002) en lo que se refiere al DWB.

En el Capítulo I, esta tesis examina si forma en que los empleados pueden reaccionar a la masificación en el espacio de trabajo es mediante su participación en actividades de ciber-pereza (o cyber-slacking o -loafing), es decir, haciendo mal uso de la conexión a Internet de la empresa durante la jornada laboral al buscar en dicha conexión fines no relacionados con el trabajo (Lim, 2002). Existen encuestas que señalan a la ciber-pereza como la forma más común en que los empleados pierden tiempo en el trabajo (Malachowski, 2005). Lim (2002) y Lim y Teo (2005) describen la ciber-pereza como un tipo de negligencia laboral, es decir, un comportamiento laboral contraproducente o desviado, o deviant workplace behavior (DWB), que perjudica la producción organizativa (Robinson y Bennett, 1995; Bennett y Robinson, 2000). En este sentido, gran parte de la preocupación de la gerencia por la ciber-pereza se debe a la idea de que la ciber-pereza podría robar energía y tiempo a los empleados para trabajar (Lim & Teo, 2005). Esta preocupación es particularmente plausible en compañías basadas en tecnología informática (TI), donde Internet y los ordenadores son herramientas ineludibles de la actividad diaria de la compañía. Como los empleados en sus puestos de trabajo interactúan diariamente con Internet y sus ordenadores, en dichas oficinas basadas en tecnología informática (TI) los empleados parecen estar particularmente expuestos a participar en la ciber-pereza.

Basándonos en la teoría de acontecimientos afectivos, los autores seguidamente proponen en el Capítulo II un modelo de acontecimientos afectivos sobre la influencia del ambiente físico de trabajo en el comportamiento cívico (OCB) entre empleados (OCB-I), teorizando que un

ambiente físico de trabajo disminuye el OCB-I a medida que las restricciones físicas de la oficina hacen que los empleados experimenten percepciones de aglomeración (o hacinamiento) e invasiones de privacidad por parte de sus compañeros. El modelo postula que: 1) la aglomeración y las invasiones de privacidad conducen a los empleados a expresar un conflicto relacional con sus compañeros; 2) que el conflicto relacional disminuye el OCB-I; y 3) que esta disminución del OCB-I es mediada por el ajuste persona-organización (POF) y la preocupación empática. Una relación directa entre la aglomeración y las invasiones de privacidad y el OCB-I es también examinada. Los datos también se obtuvieron de 299 encuestados que trabajaban en oficinas de espacio abierto, en cuatro empresas tecnológicas. Ecuaciones estructurales (SEM) respaldan el modelo propuesto al encontrar vínculos positivos significativos entre el conflicto relacional y las percepciones de aglomeración y de falta de privacidad, y entre conflicto relacional y OCB-I. Además, POF y preocupación empática actuaron como mediadores significativos en la relación entre conflicto relacional y OCB-I. El estudio entonces predice que este conflicto relacional aminorará el OCB-I dirigido cognitivamente, mediante la reducción del ajuste persona-organización (P-O fit), y el OCB-I dirigido afectivamente, mediante la reducción de la preocupación empática. Los hallazgos sugieren que los gerentes pueden promover el OCB-I no sólo regulando las condiciones psicosociales del entorno laboral, sino también sus condiciones físicas.

En el Capítulo III, este estudio examina por último examinar si las conductas DWBs se relacionan positivamente con las percepciones de masificación, particularmente en oficinas de planta abierta que usan la tecnología informática (TI) como herramienta básica de trabajo. El DWB, o conducta indisciplinada en el trabajo, podría definirse como aquélla que transgrede voluntariamente las normas de la organización y, en consecuencia, pone en peligro el buen desenvolvimiento de dicha institución, de sus miembros, o de ambas cosas a la vez (Robinson y Bennett, 1995). Por ejemplo, McGurn (1988) confirma que, en las organizaciones

estadounidenses, el 75% de los empleados han sustraído material de su organización al menos en una ocasión (DWBO). También Gruber (1990), en el mismo país, constata que el 42% de las mujeres han sido acosadas en su trabajo (DWBI). Podemos extraer dos tipos distintos de DWB, estos son, el DWBO que representa las conductas desviadas directas contra la organización (Organizational Deviance), y el DWBI que hace referencia a las conductas desviadas interpersonales, es decir, entre miembros de la organización (Interpersonal Deviance). Los hallazgos de nuestra tesis en este sentido pudieran resultar de gran utilidad para las organizaciones. Podrían proporcionar a los gerentes de las oficinas de planta abierta nuevas estrategias basadas en el espacio físico, y configurar así dichas oficinas de manera que se pueda evitar las consecuencias negativas de la conductas DWBs. Usaremos la escala de Kaplan (1982) para evaluar las percepciones del masificación. Antes de probar nuestra predicción, realizaremos un análisis factorial confirmatorio (CFA) para proporcionar evidencia empírica sobre la distinción de los ítems y constructos utilizados en este estudio. Finalmente, discutiremos las implicaciones teóricas y prácticas derivadas de los resultados.

Marco teórico

Masificación percibida y oficinas de planta abierta

Worchel y Teddlie (1976) proponen que la experiencia individual de masificación es un sentimiento negativo de estimulación atribuible a la presencia de otras personas en un entorno denso. La estimulación es un primer paso crítico que implica experimentar violaciones del espacio personal. En el segundo paso, la atribución de responsabilidad, los individuos que perciben el masificación señalan a otras personas en su entorno de trabajo como responsables de esta estimulación. Las oficinas abiertas se refiere a oficinas con puestos de trabajo individuales ubicados dentro de un espacio abierto a

veces dividido por paneles, y también incluye oficinas convencionales pero compartidas con varios empleados en un mismo espacio de oficina (Smith-Jackson & Klein, 2009).

Las oficinas de planta abierta han reemplazado cada vez más las configuraciones de oficina convencionales en donde se acentúa la privacidad (Kim & de Dear, 2013; Shropshire & Kadlec, 2012). Es probable que las oficinas de planta abierta propicien las evaluaciones psicológicas negativas que suelen acompañar a las percepciones de masificación. Así, estos espacios de trabajo físicos pueden provocar altos niveles de densidad social (Charles, y Veitch, 2002), interacciones no deseadas (Park, & Evans, 2016; Maher, & von Hippel, 2005; Baum, Aiello, y Calesnick, 1978; Worchel & Teddie, 1976), restricción de comportamiento e interferencias (Kamarulzaman, Saleh, Hashim, Hashim, y Abdul-Ghani, 2011; Sundstrom, E., Herbert, RK y Brown, 1982; Schopler y Stockdale, 1977), y una sobrecarga sensorial (por ejemplo, Baum & Valins, 1977; Misra, & Stokols, 2012). La sensación de trabajar en una oficina sin privacidad es otro sentimiento crítico de las percepciones de masificación. Altman (1975) entiende la privacidad personal como esos procesos de control de límites interpersonales a través de los cuales un grupo o individuo se hace más o menos accesible y abierto a otros en una interacción.

Masificación percibida, densidad física y comportamiento humano

Aunque los términos masificación y densidad se usan indistintamente, a diferencia del masificación, la densidad se define en términos físicos y se entiende como el número de personas existente en relación a un espacio determinado (Stokols, 1972). El masificación es una evaluación más subjetiva, una incomodidad percibida o no, que está relacionada con el estrés resultante de permanecer en un espacio reducido o donde hay un gran número de personas (Six, Martin y Pecher, 1983). Las percepciones de masificación están positivamente relacionadas con la densidad física existente en un

determinado entorno, y se ha postulado que conducen a "interferencias sociales" (Stokols, 1976; Schmidt y Keating, 1979). Las interferencias sociales se centran en la incompatibilidad de los individuos entre un determinado nivel de densidad física y las expectativas que tienen sobre un entorno determinado. Así, Ashkanasy et al. (2014) señalan que las percepciones de masificación podrían provocar conflictos durante las interacciones interpersonales, los cuales pueden provocar irritación, frustración y graves desencuentros en el trabajo. Como forma de hacer frente a estas emociones negativas, los empleados que perciben masificación pueden considerar aumentar sus niveles de control personal, de territorialidad, e incluso sus decisiones de huida o auto-marginación (por ejemplo, Connelly y Ayoko, 2013).

La teoría de los eventos afectivos (AET, por sus siglas en inglés) puede proporcionar un argumento acerca de por qué el masificación y la ciber-pereza podrían relacionarse positivamente. La teoría de los eventos afectivos (AET) sostiene que hay sucesos en el trabajo que conducen a los trabajadores a reaccionar emocionalmente, lo que influiría en sus sentimientos y desempeño (Weiss y Cropanzano, 1996). Las oficinas de planta abierta están expuestas a sufrir espacios físicos de trabajo densos. Ello puede producir conflictos y reacciones emocionales entre los empleados (es decir, eventos afectivos) debidos a interrupciones, distracciones e invasiones de territorio (Ayoko y Härtel, 2003). Por lo tanto, es probable que los contextos de planta abierta sean el origen de eventos afectivos incómodos que generen actitudes negativas y el malestar en los empleados, provocando en última instancia, impotencia, irritación y menor rendimiento (Shropshire y Kadlec, 2012) . Como sugiere la AET, las reacciones a estos eventos afectivos en el trabajo pueden tomar la forma de dos comportamientos diferentes: comportamiento conducido por el afecto y por el razonamiento (Weiss y Cropanzano, 1996), y eta tesis sostiene que las reacciones a las percepciones de la masificación conducen a tres tipos de respuesta (ciber-pereza, DWBs, y reducción del OCB-I).

En primer lugar, estos tres tipos de respuesta pueden ser impulsados por el afecto cuando el personal está emocionalmente turbado por la masificación, y como una forma de reaccionar o hacer frente a una multitud incómoda, decide huir o auto-marginarse de su grupo de trabajo, y solitariamente participar en estos comportamientos. En este caso, como afirma Zoghbi-Manrique-de-Lara (2006a: 588), los empleados pueden participar en actividades de ciber-pereza cuando buscan en dichas actividades un "refugio (una burbuja de protección) [...] para enfrentarse al miedo al castigo; o [...] un consuelo para su temor (un círculo vicioso) ". Así, al igual que los empleados son impulsados afectivamente a participar en actividades de ciber-pereza para huir del miedo al castigo (Zoghbi-Manrique-de-Lara, 2006a), este artículo argumenta que los empleados que se enfrentan al masificación podrían también verse emocionalmente impulsados a refugiarse en la ciber-pereza. De hecho, estudios anteriores sobre la ciber-pereza han sugerido que la ciber-pereza es una estrategia individual para hacer frente a experiencias estresantes en el trabajo (por ejemplo, Oravec 2002, 2004, Stanton 2002, Anandarajan & Simmers 2005). Otros autores también han sugerido cuando los individuos están en un flow state o "estado de flujo", mientras navegan por Internet (Csikszentmihalyi, 1990; Trevino y Webster, 1992; Ghani y Deshpande, 1994), están tan absortas en esa actividad que pierden la conciencia de su entorno y sienten que lo controlan más (ver también Rettie, 2001). También, los empleados que experimentan masificación pueden ser impulsados de manera emocional a participar en el DWB a fin de marcar y defender su territorio físico. En otras palabras, los empleados pueden encontrar en el DWBs una estrategia paliativa para poder enfrentarse a las consecuencias estresantes de la masificación, como perder recursos relacionados con espacio físico (Ayoko, Ashkanasy y Jehn, 2009).

Por último, y en base a la AET, este estudio también sugiere que los empleados podrían participar en el OCB-I como una reacción a la masificación impulsada por la razón (Weiss y Cropanzano, 1996). Argumentamos así que los empleados que experimentan masificación pueden

juzgar el entorno físico como injusto y atribuir la responsabilidad de estas condiciones abusivas de masificación a la organización o a sus representantes (Worchel y Teddlie, 1976). Por tanto, se espera que los empleados reaccionen a las percepciones del masificación también siguiendo una lógica *quid pro quo*, y respondan a la empresa responsable del masificación dañándola reduciendo su OCB-I (Blau, 1964). En consecuencia, el modelo postula que: 1) la aglomeración y las invasiones de privacidad conducen a los empleados a expresar un conflicto relacional con sus compañeros; 2) que el conflicto relacional disminuye el OCB-I; y 3) que esta disminución del OCB-I es mediada por el ajuste persona-organización (POF) y la preocupación empática. Una relación directa entre la aglomeración y las invasiones de privacidad y el OCB-I es también examinada.

Metodología

Procedimiento y muestra

La población objetivo de este estudio consiste en los más de 1100 empleados que trabajan en oficinas abiertas de compañías basadas en TI, en la ciudad de Teherán (Irán). Los datos se recopilaron mediante cuestionarios en inglés y en persa. Las preguntas se tradujeron al persa y luego se volvieron a traducir al inglés para su verificación. En total, se distribuyeron personalmente 330 cuestionarios en cuatro empresas basadas en TI de tamaño entre medianas y grandes. El trabajo de campo fue realizado por uno de los investigadores, que resolvió y respondió a cualquier duda y otras posibles preguntas. Finalmente, se devolvieron 318 cuestionarios de los cuales se desecharon 19 por cumplimentación incompleta, por lo que se retuvieron finalmente 299 para su análisis.

Entre los encuestados, el 51.8% eran mujeres y el 48.2% eran hombres; el 7.4% tenía menos de 25 años, el 72.6% tenía entre 30 y 39 años, el 19.7% tenía entre 40 y 49 años y el .3% tenía más de 50 años. Además, el 1.3% de

los encuestados tenía estudios secundarios o un título asociado, el 58.5% tenía una licenciatura, el 38.8% tenía una maestría, y el 1.3% tenía un doctorado.

Medidas

La ciber-pereza se midió utilizando como base la escala Likert de Lim (2002) de once ítems (1 = Nunca a 7 = Constantemente), que incluye ítems que miden actividades de navegación por Internet y gestión del correo electrónico personal de cada empleado. Elegimos cuatro ítems de navegación y un ítem sobre actividades de gestión del correo electrónico, el cual combina la gestión de "envío" y "lectura" del correo electrónico de la escala original de Lim (2002). Omitimos el tercer ítem de Lim, la "comprobación" del correo electrónico, ya que creemos que el "comprobar" es una actividad ya puede estar incluida en la "lectura" del correo electrónico. Se espera que la escala de ciber-pereza sea unidimensional.

Martin y Hine (2005) midieron la invasión de la privacidad con la escala tipo Likert de 5 ítems (1 = Nunca a 7 = Constantemente). Esta escala original se incluyó en el cuestionario pero con compañeros como actores. Así, aunque el ítem original "Coge cosas de mi escritorio sin permiso previo" era originalmente impersonal, ahora se atribuye a sus compañeros. Utilizamos una subescala elaborada por Jehn (1995) para medir el conflicto relacional entre compañeros de trabajo. La subescala contenía cuatro ítems. Un ejemplo de un elemento es: "¿Cuánta fricción personal existe entre las personas en su oficina?". Medimos el comportamiento cívico organizativo (OCBI) dirigido a los compañeros usando la escala de 8 ítems desarrollada por Lee y Allen (2002). Los ítems incluyen, "Asistir a sus compañeros en sus deberes" y "Mostrar preocupación genuina y cortesía hacia sus compañeros, incluso en las situaciones más difíciles". El POF percibido o directo se utilizó para evaluar el ajuste Persona-Organización (P-O) o cuán similares eran los valores de los empleados con los de su organización y sus compañeros. El ajuste percibido (POF) se midió con la escala de tres ítems desarrollada por Cable y

Judge (1996). Los ítems incluyen encajar con la organización misma y con los miembros de la organización (por ejemplo, “Siento que mis valores se ajustan a esta organización y a mis colegas actuales en esta organización”).

Finalmente, medimos la preocupación empática utilizando los 7 ítems de la subescala de preocupación empática del Índice de reactividad interpersonal (Davis, 1980), que evalúa los sentimientos de calidez, preocupación y simpatía por los demás. Reformulamos tres ítems que evaluaban la preocupación empática de la manera opuesta. Por lo tanto, el ítem “Cuando veo que alguien es tratado injustamente, a veces no siento mucha lástima por ellos” resultó en “Cuando veo que sus compañeros son tratados injustamente, siento mucha lástima por ellos”; el elemento “A veces no siento pena por los demás cuando tienen problemas” se cambió a “Siento pena por los compañeros cuando tienen problemas”; y, finalmente, el ítem “Las desgracias de los demás no suelen molestarme mucho” se cambió a “Las desgracias de los compañeros de trabajo usualmente me molestan mucho”.

La percepción del masificación se midió mediante una escala de diez ítems (1 = Ninguno a 7 = Totalmente) propuesta por Kaplan (1982) para evaluar la masificación en residencias de estudiantes. Adaptamos algunos ítems de la escala de Kaplan (1982). En primer lugar, “dormitorio” fue reemplazado por “oficina”, y “amigos” por “compañeros”. Por ejemplo: “Los pasillos en la oficina tienden a ser muy concurridos y ruidosos”, “la disposición física de la oficina es inadecuada para proporcionar la privacidad deseada por mí o por mis compañeros”, y también “siento que la situación en la que hacemos vida en la oficina es muy concurrida”. Además, “vecinos” fue reemplazado por “personas en la oficina” (“El ruido de personas en la oficina es lo suficientemente fuerte y frecuente para llegar a ser molesto”). Finalmente, la “sala de descanso” reemplazó al “área de comedor”, y el ítem “es difícil acceder a las lavanderías” fue rechazado y reemplazado por un nuevo ítem construido por los autores, este es, “hay demasiada gente opinando sobre la temperatura del aire acondicionado que resulta cómoda”.

Los datos demográficos incluidos en la encuesta de empleados, estos son, género (1 = mujer, 2 = hombre) y edad (1 = menos de 25 años, 2 = 25-34 años, 3 = 35-44 años, 4 = 45-54 años, 5 = 55-65 años, 6 = más de 65 años), se utilizaron como variables de control en los análisis.

Resultados y conclusiones

Para examinar la relación entre ciber-pereza y percepciones de masificación, utilizamos modelos de ecuaciones estructurales (SEM). Durante el proceso de análisis, encontramos respaldo para los tres modelos propuestos para las tres conductas estudiadas (ciber-pereza, DWBs, y reducción del OCB-I) y que, por tanto, se relacionan con la medida de masificación utilizada en las direcciones propuestas. Ofrecemos implicaciones teóricas y prácticas de estos hallazgos para teóricos y profesionales en el área de dirección de organizaciones.

Primero, los hallazgos de este estudio permiten desarrollar la literatura sobre la ciber-pereza con respecto al fenómeno de proximidad en la oficina. Al combatir la impunidad, probablemente aumentando el riesgo de ser atrapado, la proximidad en el espacio de trabajo se ha tradicionalmente estudiado como un factor importante para disuadir a la ciber-pereza (Galletta y Polak, 2003). Y ello, fundamentalmente, porque los empleados se entiende interpretan la proximidad en términos de supervisión y control por parte de la empresa (Zoghbi-Manrique-de-Lara et al., 2006, 2010). En este estudio, sin embargo, la proximidad producida por el masificación induce a – más que disuade de - la ciber-pereza. En nuestro estudio la masificación puede estar provocando que la proximidad sea interpretada de forma diferente, quizás como una razón para sentirse más impune. De hecho, hay trabajos previos que sugieren que las multitudes hacen que las personas se sientan anónimas y vean a otros de la misma manera (Pronin, 2008). Por lo tanto, para interpretar correctamente el efecto de la proximidad, parece esencial verificar si la proximidad se produce en multitud o de forma selectiva. Además, la ciber-pereza en nuestra muestra puede ser una práctica inaceptable para los

supervisores. Conocer este extremo parece crucial para que pueda funcionar la proximidad como disuasoria, porque los empleados interpretarían correctamente la ciber-pereza como una actividad no deseada y, por tanto, incluso denunciable (Zoghbi-Manrique-de-Lara et al., 2017). Además, como la proximidad en las oficinas de planta abierta parece estar más relacionada con la proximidad de los compañeros que con la de los supervisores, también parece esencial verificar las actitudes hacia la ciber-pereza de los empleados en la muestra. Algunos estudios han sugerido que las personas tienen menos probabilidades de comportarse cooperativamente cuando están en multitud, porque la presencia de otros les conduce a ignorar la responsabilidad personal (Fischer, Baldassare, y ofshe, 1975). Sin embargo, la existencia de una regla - escrita o no - sobre la permisividad hacia la ciber-pereza, o su inocuidad, podría explicar con mayor precisión cómo la masificación en las principales áreas abiertas de la oficina puede hacer que los empleados aumenten (en lugar de disminuir) su ciber-pereza.

En segundo lugar, cuando se percibe la masificación, dicha masificación conduce a los empleados a participar en niveles más bajos de OCB-I. Un interés teórico del personal de conversar e interactuar en estas áreas más cerradas, puede justificar el menor compromiso con el OCB-I. La masificación es "estresante" y el reducir el OCB-I puede ser una manera de lidiar con la masificación "incómoda" de la oficina principal, donde el OCB-I puede verse comprometido. Ello puede aumentar la atribución de responsabilidad por masificación y, por tanto, el desinterés del personal de participar en actividades de OCB-I. Esta percepción de masificación en áreas más cerradas de la oficina incluso puede ser provocar conductas disfuncionales rediciendo el OCB-I. Cuando sus compañeros van a las salas de la oficina y la perciben abarrotada, el conflicto podría explicar el decremento del OCB-I como una forma de expresar su menor empatía con la organización que lo posibilita.

Finalmente, nuestra encuesta también mostró una relación significativa entre el tercer comportamiento y la masificación detectado, este es el DWBs.

En la invasión de la privacidad, como señala Kaplan (1982), el nivel de privacidad deseado puede diferir en cada persona. Sin embargo, cuando el nivel alcanzado es más bajo que el nivel deseado, los individuos pueden fácilmente enfrentarse a situaciones que otros perciben como hacinadas (Maher, & von Hippel, 2005). Aunque el efecto de la falta de privacidad de la oficina en el DWB no ha sido previamente estudiado por la literatura, nuestros hallazgos no perecen ser coherentes con estudios previos como el de Galletta y Polak (2003), el cual establece que los empleados que trabajan vistos por compañeros - o por supervisores - tienden a participar menos en actividades contraproducentes. Sin embargo, en nuestra muestra de compañías iraníes, los empleados pueden estar bastante acostumbrados a actuar en condiciones de invasión de privacidad. Debido a que el presupuesto del sistema educativo iraní es modesto, las escuelas públicas y las universidades funcionan con muchos estudiantes en aulas abarrotadas, y ello podría aumentar su umbral de percepción de invasión de privacidad y de sus reacciones (Omigbodun, et al., 2006). Este sistema educativo ha seguido en la misma tendencia en las últimas décadas, afectando quizá a la fuerza laboral de nuestra muestra, donde el 80% eran empleados menores de 39 años.

Limitaciones y futuras investigaciones

Esta tesis tiene debilidades que deben ser reconocidas. En primer lugar, aunque las empresas incluidas en la muestra pertenecen al conocido sector de la industria de TI, las características específicas de las empresas basadas en TI y sus procesos de trabajo pueden diferir de otras empresas en otros sectores. Por lo tanto, nuestros resultados pueden no ser directamente aplicables a otros sectores industriales. Además, tal y como se ha discutido, nuestra muestra iraní tiene una cultura con estándares normativos específicos. Esta cultura puede influir en la forma en que el personal experimenta la invasión de su privacidad. Además, los niveles de conversación y las tareas de las oficinas de planta abierta de Irán también pueden verse influidas por la cultura de la

sociedad iraní, cuestionándose la generalización de los resultados (Hongisto et al., 2016). Además, nuestro método de recopilación de datos utilizó un cuestionario de auto-cumplimentación, y las medidas de las percepciones de masificación y ciber-pereza se obtuvieron de una sola fuente, y en un mismo momento. Por lo tanto, dichas medidas y sus relaciones podrían presentar sesgos. Además, los encuestados sufrieron un tiempo muy limitado para completar los cuestionarios, lo que puede haber afectado la precisión de las respuestas. Las investigaciones futuras deben examinar otras organizaciones para fortalecer los hallazgos de este estudio.

En conclusión, no hay estudios que analicen si el masificación en las oficinas abiertas está relacionado con el comportamiento humano en el trabajo. Los resultados de este estudio muestran que las percepciones de masificación en oficinas de planta abierta influyen en la aparición del DWB, de la ciber-pereza, y en la reducción del OCB-I, indicando que el disponer una oficina físicamente adecuada puede ser una herramienta útil para aumentar la *performance* individual en el trabajo.

REFERENCIAS

Altman, I. (1975). The Environment and Social Behavior Privacy, Personal Space, Territory, and Crowding. Monterey, Ca: Brooks/Cole.

Anandarajan, M., & Simmers, C. A. (2005). Developing Human Capital through Personal Web Use In The Workplace: Mapping Employee Perceptions. Communications of The Association For Information Systems, 15(1), 41.

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(8), 1169-1184.

Ayoko, O. B., & Härtel, C. E. J. (2003). The Role of Space As Both A Conflict Trigger And A Conflict Control Mechanism In Culturally Heterogeneous Workgroups. Applied Psychology, 52(3), 383-412.

Ayoko, O. B., Ashkanasy, N. M., & Jehn, K. A. (2009). Workplace Territorial Behaviors: A Conceptual Model of The Impact of Employees' Territorial Behaviors On Conflict And Outcomes In Diverse Teams. In 22nd Annual International Association of Conflict Management Conference (1-29). Social Science Research Network (Ssrn).

Baum, A., & Valins, S. (1977). Architecture and Social Behavior: Psychological Study of Social Density.

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(9), 1000.

Bennett, R. J. And Robinson, S. L. (2003). The Past, Present and Future of Workplace Deviance Research, In J. Greenberg, (Ed.) Organizational Behavior: The State of The Science, 2nd Edition, Mahwah, Nj: Lawrence Erlbaum.

Bennett, R. J., & Robinson, S. L. (2000). Development of a Measure of Workplace Deviance. Journal of Applied Psychology, 85(3), 349–360.

Blau, P. M. (1964). Exchange And Power In Social Life. New York: John Wiley And Sons.

Brennan, A., Chugh, J. S., & Kline, T. (2002). Traditional Versus Open office Design: A Longitudinal Field Study. Environment And Behavior, 34(3), 279–299. Browne, M. W., & Cudeck, R. (1993). Alternative Ways of Assessing Model Fit. Sage Focus Editions, 154, 136-136.

Burkhardt, M. E. (1994). Social Interaction Effects Following A Technological Change: A Longitudinal Investigation. Academy of Management Journal, 37(4), 869-898.

Charles, K. E., & Veitch, J. A. (2002). Environmental Satisfaction In Open-Plan Environments: 2.Effects of Workstation Size, Partition Height And Windows (Report No. Irc-Ir-845). Ottawa,On: National Research Council of Canada, Institute For Research In Construction.

Connelly, A., & Ayoko, O. (2013). Territorial Behaviours, Employee Perceptions And Conflict In Open-Plan offices. In Anzam Conference 2013: 27th Australian And New Zealand Academy of Management Conference (28-28). Anzam.

Cooper, R. B. (1994). The Inertial Impact of Culture on It Implementation. Information & Management, 27(1), 17-31.

Csikszentmihalyi, M. (1990). Flow: The Psychology of Optimal Experience, Harper and Row, New York.

Dietz, J., & Nolan, N. (2001). Workplace Homicides: A State-Level Study. Paper Presented At 2001 Academy of Management Conference, Washington, DC.

Dunstan, J. (1979). The Effect of Crowding On Behaviour: Empirical Measures For Testing Theoretical Models. Urban Studies, 16(1979), 299–307.

Elsbach, K. D. Y Pratt, M. G. (2007), "Physical Environment in Organizations", Academy of Management Annals, 1, 1 81–223.

Galletta, D. F., & Polak, P. (2003). An Empirical Investigation of Antecedents of Internet Abuse In The Workplace. Sighci 2003 Proceedings, 14.

Ghani, J. A., & Deshpande, S. P. (1994). Task Characteristics And The Experience of Optimal Flow In Human—Computer Interaction. The Journal of Psychology, 128(4), 381-391.

Grote, G., & Baitsch, C. (1991). Reciprocal Effects Between Organizational Culture And The Implementation of An office Communication System: A Case Study. Behaviour & Information Technology, 10(3), 207-218.

Haans, A., Kaiser, F. G., & De Kort, Y. A. (2007). Privacy Needs In office Environments: Development of Two Behavior-Based Scales. European Psychologist, 12(2), 93-102.

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.

Horng, 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.

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.

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.

Karlin, R. A., Epstein, Y. M., & Aiello, J. R. (1978). A Setting Specific Analysis of Crowding. Human Responses To Crowding. Hillsdale, Nj: Lawrence Erlbaum Associates

Kim, J., & De Dear, R. (2013). Workspace Satisfaction: The Privacy-Communication Trade- off In Open-Plan offices. Journal of Environmental Psychology, 36, 18-26.

Lim, V. K. G. (2002). The It Way of Loafing On The Job: Cyberloafing, Neutralizing And Organizational Justice. Journal of Organizational Behavior, 23(L), 675–694.

Lim, V. K. G., & Teo, T. S. H. (2005). Prevalence, Perceived Seriousness, Justification And Regulation of Cyberloafing In Singapore. Information & Management, 42(8), 1081–1093.

Maher, A., & Von Hippel, C. (2005). Individual Differences In Employee Reactions To Open-Plan offices. Journal of Environmental Psychology, 25(2), 219-229.

Malachowski, D. (2005). Wasted Time At Work Costing Companies Billions. Asian Enterprise, 14–16.

Maxwell, L. E. (2003). Home And School Density Effects On Elementary School Children: The Role of Spatial Density. Environment And Behavior, 35(4), 566-578.

Misra, S., & Stokols, D. (2012). Psychological And Health Outcomes of Perceived Information Overload. Environment And Behavior, 44(6), 7 37-759.

Mowen, A. J., Vogelesong, H. G., & Graefe, A. R. (2003). Perceived Crowding And Its Relationship To Crowd Management Practices At Park And Recreation Events. Event Management, 8(2), 63-72.

Oldham, G. R. (1988). Effects of Changes In Workspace Partitions And Spatial Density On Employee Reactions: A Quasi-Experiment. Journal of Applied Psychology, 73(2), 253–258.

Oldham, G. R., & Rotchford, N. L. (1983). Relationships Between office Characteristics And Employee Reactions: A Study of The Physical Environment. Sage Publications, Inc., 28(4), 542–556.

Omigbodun, A. O., Yusuf, O. B., Bella, T. T., & Olayemi, O. (2006). Stressors And Psychological Symptoms In Students of Medicine And Allied Health Pr ofessions In Nigeria. Social Psychiatry And Psychiatric Epidemiology, 41(5), 415-421.

Oravec, J. A. (2002). Bookmarking The World: Weblog Applications In Education. Journal of Adolescent & Adult Literacy, 45(7), 616-621.

Oravec, J. A. (2004). The Transparent Knowledge Worker: Weblogs And Reputation Mechanisms In Km Systems. International Journal of Technology Management, 28(7-8), 767-775.

Park, G., & Evans, G. W. (2016). Environmental Stressors, Urban Design And Planning: Implications For Human Behaviour And Health. Journal of Urban Design, 21(4), 4 53-470.

Pliskin, N., Romm, T., Lee, A. S., & Weber, Y. (1993). Presumed Versus Actual Organizational Culture: Managerial Implications For Implementation of Information Systems. The Computer Journal, 36(2), 143-152.

Pronin, E. (2008). How We See Ourselves And How We See Others. Science, 320(5880), 1177-1180.

Regoeczi, W. C. (2003). When Context Matters: A Multilevel Analysis of Household And Neighborhood Crowding On Aggression And Withdrawal. Journal of Environmental Psychology, 23(4), 457-470.

Rettie, R. (2001). An Exploration of Flow During Internet Use. Internet Research, 11(2), 103-113.

Robinson, S. L., & Bennett, R. J. (1995). A Typology of Deviant Workplace Behaviors: A Multidimensional Scaling Study. Academy of Management Journal, 38(2), 555–572.

Schmidt, D. E., & Keating, J. P. (1979). Human Crowding And Personal Control: An Integration of The Research. Psychological Bulletin, 86(4), 680.

Schopler, J., & Stockdale, J. E. (1977). An Interference Analysis of Crowding. Environmental Psychology And Nonverbal Behavior, 1(2), 81–88.

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.

Six, B., Martin, P., & Pecher, M. (1983). A Cultural Comparism of Perceived Crowding And Discomfort: The United States And West Germany. The Journal of Psychology, 114(1), 63–67.

Smith-Jackson, T. L., & Klein, K. W. (2009). Open-Plan offices: Task Performance And Mental Workload. Journal of Environmental Psychology, 29(2), 279–289. Stanton, J. M. (2002). Company Pr ofile of The Frequent Internet User. Communications of The Acm, 45(1), 55-59.

Stokols, D. (1972). On The Distinction Between Density And Crowding: Some Implications For Future Research. Psychological Review, 79(3), 275-277.

Stokols, D. (1976). The Experience of Crowding In Primary And Secondary Environments. Environment And Behavior, 8(1), 49-86.

Sundstrom, E., Herbert, R. K., & Brown, D. W. (1982). Privacy And Communication In An Open-Plan office: A Case Study. Environment And Behavior, 14(3), 379-392.

Trevino, L. K., & Webster, J. (1992). Flow In Computer-Mediated Communication: Electronic Mail And Voice Mail Evaluation And Impacts. Communication Research, 19(5), 539-573.

Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A Theoretical Discussion of The Structure, Causes And Consequences of

Affective Experiences At Work. Research In Organizational Behavior, 18(1), 1–74.

Worchel, S., & Teddie, C. (1976). The Experience of Crowding: A Two-Factor Theory. Journal of Personality And Social Psychology, 34(1), 30.

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.

Zoghbi Manrique De Lara, P. (2006a). Fear In Organizations: Does Intimidation By Formal Punishment Mediate The Relationship Between Interactional Justice And Workplace Internet Deviance?. Journal of Managerial Psychology, 21(6), 580-592.

Zoghbi-Manrique-De-Lara, P., & Olivares-Mesa, A. (2010). Bringing Cyber Loafers Back On The Right Track. Industrial Management & Data Systems, 110(7), 1038-1053.

Zoghbi-Manrique-De-Lara, P., Verano-Tacoronte, D., & Ting-Ding, J. (2006b). Do Current Anti-Cyberloafing Disciplinary Practices Have A Replica In Research Findings? Internet Research, 16(4), 450–467.

Zoghbi-Manrique-De-Lara, P., Viera-Armas, M. (2017). Corporate Culture As A Mediator In The Relationship Between Ethical Leadership And Personal Internet Use. Journal of Leadership & Organizational Studies, 24(3), 357 – 371.