Perceptions of Territoriality in Open Office Environment: Impact on Situated Learning

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This study analyzed the effect of territoriality on situated learning in open-plan offices. A cross-sectional study was conducted on 112 professionals from IT and consultancy companies. Results of hierarchical linear regression with bootstrapping indicated that territorial behavior was a significant predictor of situated learning in open office environments. Findings of the study add to the existing literature on facilitators of situated learning by identifying that feelings of control and belonging that territorial behavior invokes allow for greater interaction thereby increasing knowledge sharing and promoting learning that occurs in everyday activities on the job. The results of the study also provide inputs to practitioners, guiding them in the creation of environments that support situated learning.

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Introduction

Changing technologies, expanding markets and fierce competition in the rapidly changing business environments have made learning a process by which organizations develop the ability to face change and gain competitive advantage (Argote, 1999; Stata, 1989). Organizational learning has therefore captured the interest of both researchers and practitioners; researchers attempt to understand the phenomenon and identify what promotes or facilitates learning in organizations; practitioners seek to use this knowledge to identify interventions that would ensure promotion of learning, thereby ensuring sustainability and growth of the organization. The practice based view of organizational learning considers it as a social process, emphasizing its collective and situated nature. According to this perspective, learning occurs during activities and practices that are shared and rooted in multi-dimensional organizational contexts comprising individuals, their actions, relationships, and the physical environment in which the actions take place (Brown &Duguid, 1991; Nova, 2005). Ittelson, Franck and O'Hanlon (1976) argue that individuals

cannot be separated from the environment because they are part of the environmental system that they experience. According to these authors, experience of the environment affects strategies of dealing with the environment and actions that occur within it, which then affects experience, making it a cyclical process where the two aspects, action and experience, cannot be separated (Ittelson et al., 1976; Mehrabian& Russell, 1974). Since experience of the physical environment affects actions within it, it is possible that learning that occurs in the course of activities and practices may also be impacted, which makes the experience of the physical environment crucial for learning rooted in action (Nicolini, Gherardi&Yanow, 2003).

Research on physical environments and behavior in organizations have identified that layouts in open offices influence spatial behavior such as territoriality, perceptions of privacy and crowding, communication and interaction, and outcomes such as creativity and innovation (Allen, 1977; Sundstrom & Sundstrom, 1986; Stokols, Clitheroe&Zmuidzinas, 2002). Studies on territorial behavior in open offices have focused on negative outcomes such as increasing distraction and conflict (Ayoko, Ashkanasy&Jehn, 2009; Danielsson, Bodin, Wulff& Theorell, 2015). However research has also identified that attachment to organizational objects and spaces caused by territorial marking extends to attachment to the organization which has been found to result in greater commitment to the workplace (Brown, Lawrence& Robinson, 2005; Vischer, 2008). Examining this aspect of territorial behavior becomes important in open offices as spaces are shared: territorial attachment would be to the shared space, and resultant attachment, commitment, and sense of community would apply to the organization as a whole. Commitment and sense of community have been found to be key facilitators of situated learning that occurs as a course of daily actions and activity in the workplace (Brown &Duguid, 1991). This paper therefore argues that territorial behavior in open offices supports situated learning.

Territorial behavior in open offices supports situated learning.

The positive impact of territorial behavior in open offices is important to the field of situated learning in organizations for both theoretical and applied reasons. Theoretically, this study extends research on territoriality by identifying that feelings of control and belonging that result from territorial behavior in open office environments are instrumental in creating comfort to perform tasks while also supporting interactions with others, which have positive effect on learning in action and knowledge sharing. Identifying territorial behavior in open offices as a facilitator of situated learning, adds to research that explores supportive learning environments. In terms of practical importance, the study provides input in the design of physical environments that facilitate and encourage learning that occurs in the course of daily activities in the workplace. Using data from a cross-sectional study in knowledge intensive

companies in the IT and consultancy domains, this paper examines the relationship between perceptions of territoriality and of situated learning, and seeks to establish that sense of belonging and control associated with territorial behavior in open office environments facilitate situated learning in organizations.

Situated Learning

Practice-based theories view learning as a social process that is part of everyday life in organizations. New knowledge is created by learning in action, and through "speech, conversations, bodily gestures, glances, expressions and data exchanges" (Amin &Cohandet, 2004: 67), which result in a common understanding of work processes or practices. Individuals learn while they work through participation in practices or activities in the workplace and they gradually assimilate, adapt, transform, and at times reject these practices in favor of new ones. The new understanding becomes a part of the practice and of knowledge related to it, transforming both the practice and the knowledge (Amin &Cohandet, 2004:67, Brown &Duguid, 1991; Lave & Wenger, 1991). Dialogue and conversations between individuals are a part of activities and actions in the workplace, and knowledge is shared and exchanged through these discussions that occur within the organizational context (Brown &Duguid, 1991; Nova, 2005). Situated learning therefore occurs in action and involves knowledge sharing, resulting in the exchange of tacit knowledge and the development of common or shared understanding which is instrumental in aiding growth and sustainability of the organization (Argote, 1999; Stata, 1989). The process is unplanned, and occurs within the everyday context and not in controlled environment that individuals experience for limited periods of time (Nova, 2005; Suchman, 1996). In order to facilitate this form of learning, it is therefore essential for employees to have an environment supportive of task performance, interaction and communication. Employees need to be engaged with each other and the work they perform, as well as committed to the organization in order to perform their tasks well and be involved in discussion that enables knowledge sharing (Brown &Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998). Since learning occurs as part of everyday activities, and these activities are part of the organizational environment, contexts play an important role in influencing the process (Elkjaer, 2005; Nicolini et al., 2003; Sole & Edmondson, 2002). Although prior research has established the influence of elements in the context such as trust and leadership on learning in organizations, the role of the physical environment, specifically spatial behavior such as territoriality has not been examined in relation to situated learning in organizations.

Situated learning occurs in action and involves knowledge sharing, resulting in the exchange of tacit knowledge and the development of common or shared understanding.

Territoriality

Territorial behavior comprises "self/ other boundary-regulation mechanisms that involve marking of a place and communication that is 'owned by' a person or group" (Altman, 1975:107). This behavior has been linked to controlled access and affective response to the environment (Altman, 1975). One of the ways that territorial behavior in organizations manifests itself is through marking, which involves the use of physical symbols such as photographs or indicators of personal achievement that may help establish identity with the space, or may also imply the creation of boundaries to control territory (Brown et al., 2005). Through marking, individuals satisfy and regulate their need for privacy, establish claim to physical areas and maintain control over them, and regulate boundaries in order to facilitate ideal kinds of interaction (Altman, 1975; Altman &Chemers, 1980). Marking also enables them to communicate their identity and to satisfy the desire for physical and psychological security by having a place of their own (Brown et al., 2005; Wells, 2000; White, 1959).

Regulation of boundaries, privacy and interaction with others which are associated with territorial behavior are influenced by the office design and the amount of personal space that individuals have. With the advent of open-plan offices since the 1960s, research has focused on aspects of this design on behavior in workplaces. Offices with this design are characterized by open spaces where employees across levels are seated together (Brennan, Chugh& Kline, 2002). No formal barriers exist and plants, moveable screens, cabinets, shelving and other furniture may be used to separate areas providing employees the ability to change and adapt the workspace according to their changing needs (Brennan et al., 2002; Davis, Leach & Clegg, 2011). Studies have indicated that these features of the layout give rise to continued co-presence and guide movement leading to increased proximity on the one hand (Sailer, 2010), and reduce privacy and increase distraction on the other (Oldham & Brass, 1979).

Reduction of personal space and privacy in open offices has been seen to give rise to conflict and negative emotions that impact performance (Ayoko et al., 2009). However, personalization helps to increase the sense of control and belonging to the workspace, which lead to a sense of attachment to the workspace and contribute to a sense of psychological comfort in individuals (Brown et al., 2005; Vischer, 2005; 2008; Wells, 2000). Being comfortable in the workplace would enable individuals to work without interference, enabling them to learn while doing their daily work, and would also facilitate discussions and communication between individuals, thereby influencing knowledge sharing that occurs as part of the work process, helping to generate common knowledge (Huang, Robertson & Chang, 2004; MacLaney&Hurrell, 1988; Li et al., 2015; O'Neill, 1994; Lee & Brand, 2005; Martin-Perez & Martin-Cruz, 2015; Vischer, 2008). Therefore

territorial behavior would positively influence learning that happens during practice and discussion in organizations, and it may be hypothesized that:

H1: Territorial behavior positively influences situated learning

H1a: Territorial behavior positively influences learning in action.

H1b: Territorial behavior positively influences knowledge sharing.

H1c: Territorial behavior positively influences common understanding

Participants & Procedure

Data analyzed in the study was collected using a survey questionnaire that was administered online to participants. In order to choose participants, both purposive and snowball sampling was used. Initial contact was established via telephone or e-mail with an individual within companies known to the first author. The purpose and academic nature of the study were explained, and participation of the company was invited. An e-mail was then shared with the contact, providing details of the study, and a request to share details with other contacts in the same domain. On receiving confirmation of participation, a link to a Google form containing the questionnaire was shared with the contact person. It was then shared with all others within the same team, or with all employees in the organization. The questionnaire was accompanied by a brief note that provided the purpose of the survey and assured confidentiality. Informed consent was obtained, and a brief description of an open office was provided, after which participants were asked to indicate whether they worked in an enclosed office or in an open-plan office. Demographic information pertaining to age, gender, role, department, location, and team size was also gathered from respondents through the questionnaire. Responses were collected online and stored directly in an MS Excel worksheet used for subsequent analyses. The Google form was kept active for a period of four weeks. The total number of individuals with whom the link was shared was 160, out of which 146 answered and completed the questionnaire resulting in a response rate of 91.25%. One hundred and twelve of these responses from 70 companies were considered valid.[1] Demographic details of participants are displayed in Table 1.

Measures

Instruments to measure perceptions of territorial behavior and situated learning in the open office environment were developed based on literature review. All items were scored along a 5-point Likert scale ranging from 1 = '*strongly disagree'* to 5 = '*strongly agree'*.

[1] Participants were asked whether their workspace was an open office or they worked in a closed workspace. In case of the latter, then the response was deemed invalid. This was essential because the survey was open to employees across all levels, and it was possible that employees at higher levels had enclosed offices. Final count of valid data was 117 participants. Additionally, since five records were found to have missing data in the designation and age fields, the data was excluded, taking final sample size to 112.

Table 1 Demographic Details of the Sample (N = 112)

Gender			**Age**	
Male	73	65.2%	Mean	29.93
Female	39	34.8%	Min	21
Total	112	100%	Maximum	59
Job Level			**Team Size**	
Entry level	58	51.8%	Mean	29.82
Middle level	37	33.02%	Min	1
Senior level	17	15.18%	Max	200

*Territorial Behavior:*Perceptions of territorial behavior were measured using a 12 item scale of which four items were adapted from Brown (2009), and one item from Wineman and Adhya (2007).[2] Remaining items were developed for the study based on literature review, and related to privacy, personalization, and storage space. Psychometric characteristics of the scale were tested and inter-item and item-total correlations were found satisfactory.[3]Instructions along with the scoring pattern were provided to guide participants on questions regarding the physical aspects of the workspace according to their personal experiences. Examples of items in the scale (α = .80) are "The design of my individual workstation gives me privacy when needed", "I have enough storage space for my personal and official use", and "I can bring personally meaningful photographs and other articles and display them in my work area." Confirmatory factor analysis using maximum likelihood conducted to confirm factor structure indicated that the model fit the data well: χ^2 (df) = 65.26 (47), p = .000; [CFI] = .95; [TLI] = .93; [RMSEA] = .06; [SRMR] = .07.

*Situated Learning:*An earlier scale created by Goel, Johnson, Junglas, and Ives (2010) measured situated learning but was not found to adequately represent the dimensions as visualized in the current study, particularly in relation to common understanding. Therefore a scale was developed in the current study. The 17 item situated learning scale measured perceptions of situated learning across three dimensions: learning in action (7 items), knowledge sharing (5 items), and common understanding (5 items). Altogether four items in the learning in action sub-scale were adapted from various previous scales (Goel et al., 2010; Garvin, Edmondson & Gino, 2008; Marsick& Watkins, 2003). Three items in the knowledge sharing sub-scale were adapted from Singh and Gupta (2013)[4].

[2] Items adapted from Brown 2009 included two related to personalization with photographs and articles, and rearranging the workplace to feel at home, and two related to demarcation of individual workspace from that of others. One item related to privacy of workstation was adapted from Wineman &Adhya (2009)

[3] Inter-item correlations were found to be above 0.2 and item-total correlations above 0.3 (Ferkitich, 1991; Kline, 1993)

[4] Items adapted from Goel et al (2010) related to understanding, articulating and communicating regarding work processes and solving problems with the help of colleagues. One item

Remaining items were developed based on literature review: items related to reflection while learning, problem solving through discussion and common understanding. Psychometric characteristics of the scale were tested and inter-item and item-total correlations were found satisfactory[5]. Scoring patterns of the scale were provided along with instructions where participants were asked to respond based on their perceptions of the work and work practices within their teams and organizations. Sample questions in the scale (α = .89) included "I find ways of improving the task while working", "We willingly share knowledge with each other", and "We are all aware of work done by others in our team". Alpha coefficient of the sub-scales ranged between .78 and .86. Confirmatory factor analysis using maximum likelihood was conducted to confirm factor structure of the scale. The model consisted of three first-order factors (learning in action, knowledge sharing, and common understanding). The model fit the data well[6]: χ^2 (df) = 143.23 (108), p = .013; [CFI] = .96; [TLI] = .95; [RMSEA] = .05; SRMR] = .06.

*Control Variables:*Participants' age, gender, and job level were modeled as control variables in the study. Age was measured as a continuous variable. Gender (Male = 1, Female = 2) and job level (Entry level = 1, Mid-level = 2, and Top level = 3) were modeled as categorical variables.

Common Method Bias

Data in the quantitative study was collected using a questionnaire completed by a single respondent, giving rise to the possibility of measurement error due to common method variance. Podsakoff, MacKenzie, Lee and Podsakoff (2003) noted that when the same individual provides data for both the antecedent and consequent variables, self-report bias may be said to result. Following the recommendation of Podsakoff et al. (2003), antecedents were separated from outcomes in the survey, respondents were ensured anonymity and confidentiality and survey responses were uploaded directly online to an MS Excel file viewed only by the researcher. These steps were followed to reduce common method variance in the quantitative study. To verify whether these procedures were successful, Harman's one factor test was used to test for the presence of common method bias in the study. In this test all the items in the study are entered together into a factor analysis and results of the un-rotated principal component factor analysis are examined to determine the number of factors that are necessary to account for the variance in the variables. The presence of a substantial common method variance is indicated by the emergence of a single factor or one factor would account for most of the cova-

related to learning from mistakes was adapted from Garvin et al. (2008). Three items in knowledge sharing sub-scale that were adapted from Singh and Gupta (2013) related to searching the internet, seeking help from others and sharing information with co-workers

[5]Inter-item correlations were found to be above 0.2 and item-total correlations above 0.3 (Ferkitich, 1991; Kline, 1993)

[6]See note 3

riance in the independent and criterion variables (Podsakoff& Organ, 1986). All 29 items in the study were included in principal factor analysis. Results of the test showed that the variables failed to converge onto a single factor and the unrotated first factor accounted for less than half of the total variance of the data.

Table 2 Correlations, Means, and Standard Deviations of Territoriality and Dimensions, Situated Learning and Dimensions

Variables		M	SD	1	2	3	4	5
1.	Situated learning	3.99	.58	(0.89)				
2.	Learning in Action	4.10	.61	.91 **	(0.86)			
3.	Knowledge Sharing	4.05	.74	.85**	.67**	(0.80)		
4.	Common Understanding	3.76	.72	.78**	.55**	.53**	(0.70)	
5.	Territoriality	3.52	.70	.37**	.36**	.20*	.36**	(0.78)

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Alpha coefficients of each variable reported in parentheses

Correlations

Pearson correlation coefficients were computed for the relationships between territoriality and situated learning and its dimensions. Results are reported in Table 2. Results revealed a moderate positive relationship between territoriality, situated learning, and its dimensions, learning in action, knowledge sharing and common understanding.

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Regression Analysis

A hierarchical linear regression analysis with bootstrapping was conducted to determine if age, gender, job level, and perceptions of territoriality could predict situated learning in organizations. Data was tested for normality, screened for missing data and for violation of assumptions prior to analysis. Data was found to be normal.

Results of the regression analysis (Table 3) revealed that demographic variables age, gender, and job level entered in step 1 did not significantly affect perceptions of situated learning $R^2 = .03$, $F(3, 109) = .99$, $p = .40$. When all four variables were included in step 2 of the regression, bootstrap intervals for age, gender, and job level were found to include zero, indicating that the demographic variables were not significant predictors of situated learning. Introducing perceptions of territoriality in step 2 resulted in $R^2 = .15$, $F(4, 108) = 4.92$, $p < .01$. $\Delta R^2 = .13$ was significant: $\Delta F(1, 108) = 16.27$, $p < .01$, and perceptions of territoriality were found to have a significant positive effect on perceptions of situated learning, $\beta = .36$, $SE = .08$, $t = 4.03$, $p < .01$ which was supported by bootstrap

Table 3 Summary of Hierarchical Regression of Situated Learning on Demographics and Perceptions of Territoriality

Variable	B	SE	Bootstrap95%CI	R^2	ΔR^2
Step1				.03	.03
Age	-0.02	0.01	(-0.03, 0.01)		
CD	0.16	0.11	(-0.04, 0.37)		
Gender	-0.04	0.11	(-0.27, 0.19)		
Step2				.15	.13**
Age	-0.01	0.01	(-0.03, 0.01)		
Job Level	0.09	0.10	(-0.09, 0.29)		
Gender	-0.04	0.11	(-0.24, 0.18)		
Territoriality	**0.30**	**0.08**	**(0.17, 0.44)**		

** significant at .01

intervals that excluded zero. Power of the test was .99 and effect size was large, $d = .78$ (Cohen, 1988; Field, 2005).These results prove hypothesis H1 that territorial behavior positively influences situated learning.

Table 4 shows results of hierarchical linear regression between age, gender, designation, perceptions of territoriality and dimensions of situated learning. It was revealed that demographic variables age, gender, and job level entered in step 1 did not significantly affect perceptions of learning in action $R^2 = .02$, $F(3, 109) = .80$, $p = .49$. When all four variables were included in step 2 of the regression, bootstrap intervals for age, gender, and job level were found to include zero, indicating that the demographic variables were not significant predictors of learning in action. Introducing perceptions of territoriality in step 2 resulted in $R^2 = .16$, $F(4, 108) = 5.00$, $p < .01$. $\Delta R^2 = .14$ was significant: $\Delta F(1, 108) = 17.24$, $p < .01$, and perceptions of territoriality were found to have a significant positive effect on perceptions of learning in action, $\beta = .37$, $t = 4.15$, $p < .01$, which was supported by bootstrap intervals that excluded zero. The hypothesis (H1a) that territorial behavior has a positive influence on learning in action is accepted.

Perceptions of territoriality were found to have a significant positive effect on perceptions of learning in action.

When knowledge sharing was regressed on demographic variables and perceptions of territoriality, results (Table 4) showed that demographic variables age, gender, and job level entered in step 1 did not significantly affect perceptions of knowledge sharing $R^2 = .01$, $F(3, 109) = .31$, $p = .82$. When all four variables were included in step 2 of the regression, bootstrap intervals for age, gender, and job level were found to include zero, indicating that the demographic variables were not significant predictors of knowledge sharing. Introducing perceptions of territoriality in step 2 resulted in $R^2 = .05$, $F(4, 108) = 1.53$, $p = .20$, and $\Delta R^2 = .05$, $\Delta F(1, 108) = 5.17$, $p < .05$, which was significant. Perceptions

Table 4 Summary of Hierarchical Regression of Dimensions of Situated Learning on Demographics and Perceptions of Territoriality

	Dimensions of Situated Learning					
	Learning in Action		Knowledge sharing		Common Understanding	
Variable/Stage	B	Bootstrap 95%CI	B	Boot strap 95%CI	B	Boot strap 95%CI
Step1						
Age	-0.01	(-0.03, 0.01)	-0.01	(-0.03, 0.02)	**-0.02**	**(-0.04, -0.01)**
Job Level	0.11	(-0.12, 0.35)	0.04	(-0.21, 0.31)	**0.36**	**(0.13, 0.62)**
Gender	-0.10	(-0.32, 0.13)	-0.08	(-0.31, 0.23)	0.11	(-0.18, 0.40)
Step2						
Age	-0.01	(-0.03, 0.01)	-0.01	(-0.03, 0.02)	**-0.02**	**(-0.04, -0.01)**
Job Level	0.04	(-0.06, 0.25)	-0.01	(-0.26, 0.23)	**0.29**	**(0.08, 0.52)**
Gender	-0.10	(-0.31, 0.12)	-0.08	(-0.36, 0.23)	0.11	(-0.16, 0.39)
Territoriality	**0.33**	**(0.19, 0.48)**	**0.23**	**(0.07, 0.41)**	**0.33**	**(0.15, 0.50)**

of territoriality were found to have a significant positive effect on perceptions of knowledge sharing, $\beta = .22$, $t = 2.28$, $p < .05$, and bootstrap intervals excluded zero. The hypothesis H1b that territorial behavior has a positive influence on knowledge sharing is thus accepted.

Results, however, revealed a significant positive effect of some of the demographic variables on common understanding. Results (Table 4) of the regression analysis between demographic variables, perceptions of territoriality and perceptions of common understanding revealed that some demographic variables age and job level entered in step 1 predicted on perceptions of common understanding, $R^2 = .01$, $F(3, 109) = .31$, $p = .82$. Age was a significant predictor of perceptions of common understanding ($\beta = -.28$, $t = -2.11$, $p < .05$), as was job level ($\beta = .36$, $t = 2.81$, $p < .05$). Boot strap intervals for both variables did not include zero, confirming that they have a significant effect on common understanding. Gender, however, did not have a significant effect, which was confirmed by bootstrap intervals that contained zero.

Introducing perceptions of territoriality in step 2 resulted in $R^2 = .17$, $F(4, 108) = 5.62$, $p < .01$, and $\Delta R^2 = .10$ was significant: $\Delta F(1, 108) = 12.93$, $p < .01$. Age was a significant predictor of perceptions of common understanding, $\beta = .24$, $t = -1.95$, $p < .05$, as was job level, $\beta = .29$, $t = 2.35$, $p < .05$. Gender was not found to be significant, and boot strap intervals were found to include zero. The hypothesis H1c that territorial behavior has a positive influence on common understanding was proved by results that showed that perceptions of territoriality had a significant positive effect on perceptions of common understanding, $\beta = .32$, $t = 3.60$, $p < .01$ which was supported by bootstrap intervals that excluded zero.

Discussion

The study evaluated the impact of perceptions of territorial behavior on perceptions of situated learning in open offices. Results emphasize the positive impact of territorial behavior on situated learning and its three dimensions, learning in action, knowledge sharing, and common understanding. These results have both theoretical and practical importance, adding to theory on situated learning and territorial behavior, while also providing inputs to practitioners in the design of environments that support situated learning. Outcomes of territorial behavior in open offices such as positive impact on situated learning that are seen in the study add to existing research on territorial behavior. Research on situated learning is extended by the identification of territorial behavior and the associated sense of ownership as a predictor, which also provides a guideline to managers enabling them to design environments that promote interaction and communication, thereby facilitating situated and practice-based learning in organizations.

Territorial marking results in feelings of control and belongingness related to perceptions of ownership that is associated with the organization.

The study showed positive impact of territoriality on situated learning. These results are in line with literature that suggests that territorial marking results in feelings of control and belongingness related to perceptions of ownership that are associated with the organization (Brown et al., 2005; Vischer, 2008). Findings indicate that shared physical spaces are associated with perceptions of control and belongingness that in turn encourage a sense of community and commitment towards the organization that are crucial for situated learning (Brown &Duguid, 1991; Lave & Wenger, 1991; Vischer, 2008).These findings depart from prior research on territorial learning on territorial behavior in open offices that has documented negative outcomes such as conflict and distraction (Ayoko et al., 2009; Danielsson et al., 2015).

Results also showed a positive impact on learning in action. Research has shown that functional comfort provided by the physical environment enables individuals to perform their tasks without distraction, which contributes positively to performance (Vischer, 2008). The sense of ownership and belonging that is associated with territorial behavior also provides a sense of functional comfort to individuals, facilitating task performance, thereby contributing to learning that occurs in action. Further, territoriality was also seen to be positively related to knowledge sharing. Perceptions of control and belonging contribute to psychological comfort (Vischer, 2008), which helps provide an environment where individuals are able to discuss and communicate freely enabling exchange of knowledge and information. Marking behavior in open offices leads to perceptions of control and belongingness to the open and shared spaces in the organization (Brown et al., 2005; Lee & Brand, 2005; Wells, 2000). This contributes to

satisfaction with the environment, well-being of individuals and commitment to the organization (Brown et al., 2005; Vischer, 2008), which further supports task performance and communication, thereby facilitating learning in action, as well as knowledge sharing and transfer occurring as a course of day to day activities in the workspace (Brown &Duguid, 1991; Lave & Wenger, 1991; Li, Yuan, Ning & Li-Ying, 2015; Martin-Perez & Martin-Cruz, 2015; van der Hooff& de Ridder, 2004). The sense of community that is generated as a result of feelings of belonging (Brown et al., 2005; Vischer, 2008) also has a positive impact on communication and dialogue and on learning that occurs in action, thereby contributing also to common understanding.

Demographic variables such as age, gender and job levels did not have a significant impact on situated learning, learning in action or knowledge sharing.

The analysis revealed that demographic variables such as age, gender and job levels did not have a significant impact on situated learning, learning in action or knowledge sharing. However, both age and job levels in organizations emerged as significant predictors of common understanding. Higher job levels predicted higher levels of common understanding, suggesting that higher levels in the organizations are accompanied by greater responsibilities, hence employees at these designations have a greater need to reach a shared understanding with others regarding common norms, work processes, and the direction in which work and the organization is progressing. Age too emerged as a significant predictor, and results indicated that younger individuals had greater common understanding. Although this seems to be contrary to findings that indicate that higher job levels predicted common understanding, it could perhaps be explained by the fact that due to less experience, employees seek to share understanding and learning with each other as a means to perform tasks and grow. However, further exploration into the findings in future research may be warranted.

By highlighting the positive effect of territoriality and associated psychological comfort on unplanned and impromptu learning and knowledge sharing that occur as part of daily tasks in open office environments, the study adds to research on situated learning. Results of the study may form the base for future investigations of open office environments, and also for further research on supportive learning environments. Managers may apply knowledge gained form this study to workspace design, using it to design environments that support learning by providing comfort and thereby encouraging task performance and learning , as well as facilitating knowledge sharing, which contribute positively to growth and sustainability of the organization.

There are limitations of this research that must be noted, and which may be addressed in future research. Limitations of methodology exist, as cross sectional studies provide a snapshot of the phe-

nomenon, and choosing a different timeframe, could possibly yield differing results. Studying territoriality as a multidimensional construct in future research may give greater clarity regarding its effect. Literature on territorial behavior identifies negative outcomes of territorial behavior in open offices, which did not form part of the focus of this paper. Their impact on situated learning cannot be discounted, and future research may focus on examining the result of these outcomes as well.

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