

Towards a holistic assessment of employees' acceptance of innovative workplace designs

Eileen Sim

PhD Candidate, University of Melbourne

esi@student.unimelb.edu.au

Christopher Heywood

Associate Professor, University of Melbourne

c.heywood@unimelb.edu.au

Abstract

Purpose: The existing literature on the Activity Based Working (ABW) office concept and its acceptance is lacking a method to holistically evaluate it as an innovation. The purpose of this paper is to provide a model for evaluating employees' acceptance of an innovation, specifically, an ABW office.

Design/ Methodology/ approach: Research concerning Activity Based Working (ABW) offices tends to inconsistently evaluate individuals' acceptance of it as an innovation. Studies within the ABW field tend to rely on large-scale employees' satisfaction survey. Although these provide important results, these are often too broad and do not sufficiently explain why employees may be struggling to accept the ABW concept. This study draws on the innovation adoption, technology acceptance and existing ABW literature to provide a holistic model for evaluating employees' ABW acceptance.

Findings: A theoretical framework developed from the innovation adoption and technology acceptance literature is presented. This suggests that employees' ABW acceptance is a conflated assessment of three dimensions: affective responses, behavioural responses and cognitive responses. Even though these may be interrelated, all three dimensions have to be assessed.

Practical implications: The model presented here can serve as a useful assessment of employees' acceptance of an innovation, specifically, ABW acceptance. This is critical because organisations are achieving mixed outcomes from the ABW but the research community are unclear why.

Originality/ Value: This paper fulfils a need for a holistic and consistent way of assessing individual acceptance of an innovation or ABW.

Keywords: Employee acceptance, innovative workplaces, Activity Based Working, Corporate Real Estate Strategies, Psychological-based responses

Paper type: Conceptual paper

1. Introduction

Organisations are increasingly choosing innovative workplaces as the real estate intervention to achieve their Corporate Real Estate (CRE) strategies. The existing innovative workplace increasingly being adopted is Activity Based Working (ABW) offices which is a technological innovation to most organisations adopting it because it is new compared to their previous office layouts. Currently, there is conflicting evidence that organisations are achieving these CRE strategies as assessed using organisational level 'added-value parameters' but it is uncertain why this conflict is occurring.

Underachieving CRE strategies will negatively impact the achievement of organisational strategies where these were designed to align.

Existing performance evaluation tools for innovative workplace changes generally focus on organisational level 'added-value parameters' to gain an understanding on whether organisations have met their CRE strategies. Whilst these tools typically include some parameters for employee feedback on satisfaction and productivity, these do not provide a sufficient proxy for employee acceptance of the workplace as a new technology. For example, how employees feel, what they think and how they use the workplace. Not considering employees' workplace acceptance ignores that these workplaces are designed for employees and their acceptance of the innovative workplace affects the outcomes achieved of both CRE strategies and organisational strategies. Therefore, this paper presents an employee acceptance model to understand how employees respond to innovative workplaces through their affective, cognitive and behavioural responses. Since the current innovative workplace increasingly being adopted is ABW, the employee acceptance model is designed to assess employees' acceptance of ABW offices. It could also apply to other, future innovative workplace concepts.

This paper is the result of the first stage of the research, involving an early literature review and the development of an employee acceptance framework that will be used to guide the second stage of the research, namely: assessing employees' acceptance level of the ABW in case study organisations. This commences with a literature review on ABW offices outcomes, followed by the employee acceptance model and discussing how to operationalize the model prior to the concluding. The predominant theories that the employees ABW acceptance level draws from are the innovation adoption and technology acceptance literature.

2. ABW performance evaluation

From the diffusion of innovation literature, an innovation is defined by Rogers (2003, p. 12) as "an idea, practice or object that is perceived as new by an individual or another unit of adoption". Thus, ABW is an innovative workplace to organisations that are introducing the ABW to their employees for the first time. Unlike previous office layouts, the naming and definition of ABW offices is somewhat disjointed to date. The term 'ABW' is more common in the business world, whereas, 'flexible office', 'new ways of working' are more common in the academic literature but they refer to the same type of office layout (Appel-Meulenbroek, Kemperman, Kleijn, & Hendriks, 2015; Brunia, Been, & Voordt, 2016; De Bruyne & Beijer, 2015). This research adopts the term 'ABW' as it is more intuitive and self-explanatory, as explained below. The literature reviewed for this paper includes the work of authors that did not explicitly call the workplace an ABW but fundamentally referred to the same type of workplace with the following core features: 1) Unassigned (non-territorial) individual workspaces; and 2) A variety of workspaces designed to support a new way of working where employees switch workplaces based on their activity (switching behaviour) (For example, Hoendervanger, De Been, Van Yperen, Mobach, & Albers, 2016; Rothe, Sarasoja, & Heywood, 2015).

ABWs are increasingly being adopted as 'the' real estate intervention because it addresses most of the nine value-adding CRE strategies that organisations aspire to achieve: 1) Increase productivity; 2) Reduce and control occupancy costs; 3) Increase customer and employee satisfaction; 4) Increase asset value; 5) Increase flexibility; 6) Increase innovation; 7) Support image and culture; 8) Increase

sustainability; and 9) Risk control (For example, Gerritse, Bergsma, & Groen, 2014; Jensen & Voordt, 2016; Lindholm & Levainen, 2006; Nourse & Roulac, 1993). From a Dutch study of approximately 250 organisations who have implemented ABW, increase in organisational flexibility was the only CRE strategy which outperformed the organisation's expectations, whereas, other CRE strategies such as real estate cost savings, increase in employee well-being, work/private balance, employee satisfaction, employers' image and productivity did not meet organisations' expectations (Baalen, Heck, Muelen, & Oosterhout, 2011) in (Appel-Meulenbroek, Oldman, & Susante, 2016). The under-performing ABW CRE strategies are attributable to the levels of employees' ABW behavioural acceptance (Brunia et al., 2016). Employees' ABW acceptance impacts real estate cost savings because expected savings are highly dependent on post-relocation changes and may dissipate if organisations revert back to assigned seating (Becker, Quinn, Rappaport, & Sims, 1994).

Common issues with past office concepts (cellular and open plans) are still present in ABW offices such as the lack of privacy and uncomfortable indoor environment (Brunia et al., 2016; Kim, Candido, Thomas, & de Dear, 2016). There are new issues for CRE Managers and Facilities Managers (FM) to deal with due to the ABW nature which encourages a radical change to employees' behaviours in the way they work, their cognition to self-organise in a workplace with more autonomy whilst requiring them to accept a loss of personal territory and personalisation (Koetsveld & Kamperman, 2011; Voordt, 2004b) that may adversely affect how they feel, think and use the ABW.

ABW aspires to increase employee productivity by encouraging switching behaviour but mixed outputs have been achieved. Some studies found that ABW have slightly higher productivity levels than employees in assigned seating (Appel-Meulenbroek et al., 2016; Candido, Zhang, Kim, Dear, & Thomas, 2016) and productivity increased after relocating to an ABW office (Voordt, 2004a). However, other studies found that productivity levels fell after relocating to an ABW office (Voordt, 2004a) and that productivity levels fell over time as the ratio of workspaces to employees decreased and territorial behaviour increased (Mosselman, Gosselink, & Beijer, 2009). Several studies have reported that 68-87% of employees do not switch workplaces on a regular day (Appel-Meulenbroek, Groenen, & Janssen, 2011; Hoendervanger et al., 2016; Tagliaro & Ciaramella, 2016a, 2016b).

Employees appear to be struggling to accept switching behaviour because they do not relate it to productivity gains due to the time spent to switch workspaces (Kim et al., 2016); the appropriateness for business units and employees' activity profiles (Greene & Myerson, 2011); their work dependency (Been, Beijer, & Hollander, 2015; Ekstrand, 2016); and collaboration needs (Kim et al., 2016). However, Hoendervanger et al.(2016) found that employees' acceptance of switching behaviour is more strongly linked to their social ties, norms and place attachments rather than their activity profile. Employees have resorted to: reserving desks (occupying workspaces even when not present to use it) (Kim et al., 2016; Mosselman et al., 2009; Tagliaro & Ciaramella, 2016a, 2016b); arriving early to occupy their favourite workstation (Kim et al., 2016; Voordt, 2004b); and personalisation despite the workplace policies (Brunia & Hartjes-Gosselink, 2009; Tagliaro & Ciaramella, 2016b). As a result, some employees have reported an under-provision of popular workspaces (Brunia et al., 2016; Kim et al., 2016; Tagliaro & Ciaramella, 2016a, 2016b) because these are occupied the whole day by the same person(s) and booked out in advance when it is possible to do this (Brunia et al., 2016). However, in these 'under-provided' environments, there are still large amounts of unused spaces (Tagliaro & Ciaramella, 2016a) indicating an over-provision of space due to a potential misallocation of workspace to activity. Employees arriving later typically waste time

looking for a suitable workspace and may end up working at unsuitable workspaces such as the kitchen that is not fitted with the appropriate technology (monitors) and furniture (Kim et al., 2016; Voordt, 2004b). This adversely affects their health and wellbeing even though some studies have reported that employees are more satisfied with their health in an ABW due to the superior indoor climate and flexibility of the ergonomic furniture customizable to various needs (Been et al., 2015; Candido et al., 2016; Tagliaro & Ciaramella, 2016b).

Some studies have found that ABW improves employees' satisfaction in regards to employee interaction and support for collaboration (Appel-Meulenbroek et al., 2016; Been et al., 2015; Candido et al., 2016) but others have found that this varies across departments, organisation hierarchy (Ekstrand, 2016) and employees' ability to arrive early enough to co-locate (Kim et al., 2016). Superficially, organisations seem to achieve their strategy to improve their corporate image since employees are prouder to bring visitors to the ABW compared to employees in assigned offices (Appel-Meulenbroek et al., 2016).

Existing ABW studies relying on large-scale post-occupancy evaluation questionnaires typically assess several aspects of the new office through employees' extent of agreement with subjective statements or level of satisfaction with certain aspects (For example, Appel-Meulenbroek et al., 2016). These are typically used to assess organisational CRE strategies such as employee satisfaction with the general work environment and employee productivity (Riratanaphong & van der Voordt, 2015). Arguably, satisfaction captures both affective and cognitive response (Organ & Konovsky, 1989; Weiss & Cropanzano, 1996) but these surveys tend to lack capturing employees' satisfaction in relation to specific innovative ABW features and the ABW policies, for example, the Work Environment Diagnosis Instrument (WODI) and Building Occupants Survey System Australia (BOSSA) questionnaires (For example, Been et al., 2015; Brunia et al., 2016; Candido et al., 2016). Additionally, these surveys do not assess behavioural responses and typically do not explain 'why' due to the limitation of the method. Some questionnaires deal with these issues by complementing questionnaires with observations to capture employees' behavioural responses (Tagliaro & Ciaramella, 2016a, 2016b) and by providing a list of pre-defined reasons (Hoendervanger et al., 2016), an open-ended comments option (Kim et al., 2016) and supplementing the results with interviews (Brunia et al., 2016) to provide some explanation to the questionnaire responses.

Overall, the key issue is not the methods but the existing ABW measures or what the methods are capturing. Existing ABW measures attempt to provide proxies of employees' acceptance of the workplace and its policies but they are only proxies that do not specifically evaluate employees' ABW acceptance of the ABW features and policies holistically from employees' affective, cognitive and behavioural response. This is critical because ABW outcomes are mixed but the end-users acceptance of the ABW leading to these outcomes are under-evaluated leading to a great deal of uncertainty on how employees feel, think and use the ABW office. Employees' acceptance of the ABW is critical because they are the end-users that the ABW is designed for and their acceptance of the workplace affects the achievement of both CRE and organisational strategies. This brings us to this research question: How can employees' acceptance of innovative workplace be evaluated?

3.0 Employee Acceptance Model

Traditionally, the diffusion of innovation literature associates the success of an innovation with the S-curve charting the accumulated number of adopters over time (Rogers, 2003). However, ABW adoption within organisations is typically a two-fold process commencing with installing the ABW fit-outs to support Activity Based Working followed by employees' acceptance of the physical workplace. Therefore, the success of ABW as an innovation is not as simple as monitoring the number of organisations adopting ABW over time but it is also necessary to assess the individual employees' acceptance of the ABW to understand the ABW outcomes which is the focus of the model presented in this paper.

The term 'acceptance' is from the Technology Acceptance Model (TAM) which acknowledges that realising potential benefits determining the success of new technological innovations, like ABW, is reliant on users' acceptance of the technology (Davis, 1985). Within the ABW field, acceptance is occasionally included as an ABW 'success' measure that is broadly discussed as employees' behavioural responses to the new ways of working and their awareness of the ABW employee benefits (cognitive) (Becker et al., 1994). The TAM¹ is more comprehensive where technology acceptance is conceptualized as individual's cognitive (perceived usefulness and perceived ease of use), affective (attitude towards using) and behavioural responses (actual system use) (Davis, 1985; Venkatesh & Bala, 2008) drawing its roots in psychology. As these three responses are related, a negative response in any of these is likely to negatively impact the individual's technology acceptance and use (or non-use) (Venkatesh & Bala, 2008). Effectively, greater technology acceptance enables organisations adopting the technology to realise the potential benefits. The change management field also acknowledges that 'thinking' (cognition) and 'feeling' (affection) can change behaviour significantly (Kotter & Rathgeber, 2006). Therefore, simply assessing behavioural response (use) is insufficient due to the interrelatedness between affective and cognitive responses. Whilst the term 'acceptance' may be interpreted as positively biased, the acceptance level model eliminates this bias through including 'negative acceptance' such as 'Limited or Non-use'.

Both intended or unintended reactions that occur as a result of ABW implementation within organisations are assessed to avoid neglecting the unintended reactions and overemphasizing the intended reactions (Fisher & Howell, 2004; Klein & Sorra, 1996; Rogers, 2003); but intended and unintended reactions remain undefined. For the purposes of this paper, intended reactions are the anticipated employee reactions that align with and facilitate achieving the intended outcome by the organisation to yield the potential benefits expected from the innovation, such as, the value-adding CRE strategies in the context of ABW. Unintended reactions are those that may not align with the intended organisational outcomes which are not just negative but may also be positive (Fisher & Howell, 2004). For example, attractive, elaborate kitchen areas were initially adopted to improve employees' satisfaction and commitment but an unintended reaction was the positive knowledge spill-over and cross-pollination of ideas from more interactions at the kitchen from employees of different departments (Bajaj, 2016). Since ABW implementation is an organisational change, it is a process in which employees' acceptance of the ABW can vary over time and may not be static but stabilizes over time to the point of equilibrium (Balogun, 2006; Fisher & Howell, 2004).

¹ Currently at its third variation, Technology Acceptance Model 3 (Venkatesh & Bala, 2008).

The following section commences with a discussion on affective, cognitive and behavioural responses and ends with presenting the employee acceptance model in a tabular format (Table 1).

Affective acceptance responses

Sailer & Penn (2010, p. 8)'s definition of affect is adopted where affect is defined as the 'emotional interpretation of perception, information or knowledge'. Affective responses include emotions (Kark Smollan, 2006; Ulrich, 1983), mood (Kark Smollan, 2006), temperament (Kark Smollan, 2006) and a feeling state (Heywood, 2007) but many authors have supported that affect and emotions are rather closely aligned and have used them synonymously (Ulrich, 1983; Weiss & Cropanzano, 1996).

Workplace relocations may cause employees to go through emotional stages such as denial, anger, bargaining and acceptance. Similar to Kübler-Ross's (2009) model and the Affective Events Theory (Weiss & Cropanzano, 1996), Inalhan (2009) explains that workplace relocation events such as a delay in moving in may trigger changes in employees' affective reactions, for example, a loss of enthusiasm and buy-in. Upon reviewing the literature on ABW, affective responses are rarely captured except in the joined affective and cognitive response captured by post-occupancy evaluations for employee satisfaction. These include Tagliaro & Ciaramella (2016b) who asked employees to tick the checkbox for doubts and worries pre-move and post-move feelings and Appel-Muelenbroek et. al (2016) who explored what employees valued about the workplace also somewhat included some affective aspects such as whether employees enjoyed the working environment, pride to bring visitors to the office and a sense of community.

Affect is classically evaluated through self-report by asking individuals what they feel as it is convenient and simple but is critiqued for only being applicable to conscious emotional states (Parrott & Hertel, 1999; Picard & Daily, 2005). More recent alternatives can use sensors to measure physiological reactivity but this is limited by methodological fit and technological resources availability (Picard & Daily, 2005). Self-reports are still prevalent where researchers typically use a survey including a bipolar Likert scale for 'agree/ disagree' affective reaction statements (Babakus, Yavas, Karatepe, & Avci, 2003).

Cognitive acceptance responses

Cognition is the mental process of generating information or knowledge (Sailer, 2014) that is "... separated from the emotional aspects of knowledge" (George, 2015, p. 24). Cognition includes several mental activities including interpretive and constructive activities (Weisberg & Reeves, 2013) and goes beyond simply "... learning and perceiving; it also means thinking, reasoning and remembering, and these are more difficult fields in which to experiment" (George, 2015, p. 28). Cognition is not solely based on incoming information but also dependent on the individual's existing knowledge, memory, motivation (George, 2015; Kraiger, Ford, & Salas, 1993; Weisberg & Reeves, 2013), visual and spatial processing and attention (Weisberg & Reeves, 2013). This is supported in the office accommodation context where there is longstanding support for longitudinal studies on the basis that employees' cognitive responses post-relocation is dependent on their previous office accommodation as many respondents tend to compare the new workplace to their previous workplace (Been et al., 2015; Bergstrom, Miller, & Horneij, 2015).

Common cognitive measurements test an individual's knowledge with multiple-choice, true-false, free-recall exams (Kraiger et al., 1993) or a Likert scale of approval or disapproval with statements containing knowledge about different subjects (Bless, Bohner, Schwarz, & Strack, 1990; Yuksel, Yuksel, & Bilim, 2010). Since individuals' behavioural responses are limited by their knowledge on how to use the innovation, individual knowledge on how to use the innovation is critical (Hall & Hord, 2015). Assessing employees' knowledge is new in the ABW field but this is an important cognitive response since studies have found that employees lack knowledge in aspects such as the adjustment of their furniture and knowledge on the appropriate uses of certain workspaces (Been et al., 2015; Ekstrand, 2016; Ekstrand & Hansen, 2016; Voordt, 2004b). Similar to existing ABW studies, employees' perceived support for each activity conducted at each workspace also indicates their cognitive acceptance of the ABW (For example, Appel-Meulenbroek et al., 2016; Brunia et al., 2016).

This model also intends to capture cognitive strategies to indicate individuals' intent to continue using the innovation because collective individual ongoing usage will determine innovation implementation success (Klein & Sorra, 1996). This will be captured by asking employees about their intentions to continue using the ABW at their current level of use and whether they have any intentions to make future changes in their innovation use- similar to (Hall & Hord, 2015).

To capture unintended cognitive reactions, the inclusion of a less structured and a more open method is necessary. For example, the inclusion of an open-ended section in their questionnaire either to capture any open-ended comments (Kim et al., 2016) or continuing the semi-directed statement such as "Working without an assigned desks has affected me by ..." (Millward, Haslam, & Postmes, 2007, p. 551). These open-ended information is subject to negative skew but is highly valuable (Kim et al., 2016; Millward et al., 2007). To prevent negative bias, employees can be asked for the most positive and negative aspects (Been et al., 2015; Hoendervanger et al., 2016) of the ABW layout and its policies.

Behavioural acceptance responses

Behaviour is defined as "... how individuals overtly act in the presence of others; actions that are observable and measurable, including verbal expression" ("Behavior: Research Starters Topic," 2015, p. No page). Additionally, (Brower & Abolafia, 1995; O'Riordan, 1976) also included action or inaction as a behavioural response. Behavioural responses are the observable and overt employees' action or inaction in the way they use the ABW. The simplest approach to assessing innovation usage is its 'use' or 'non-use' (Lapointe & Rivard, 2007). However, depending on an innovation's complexity its extent of use may vary. Assessing degrees of use accounts for the different employees' adoption and/or adaption the innovation to a variety of uses (Klein & Sorra, 1996; Shih & Venkatesh, 2004) and various innovation configurations (Hall & Hord, 2015). Since territorial behaviour is also a common issue, traces for territorial behaviours will also be investigated such as personalisation/ marking and arriving early to use the same workstation consistently.

Overall theoretical model

This section commences with a discussion on exemplary levels of use models and how one model was adapted to arrive at the final employee acceptance model presented in Table 1 which collates all the affective, cognitive and behavioural response indicators at the individual end-user level to understand the outcomes that the ABW is achieving.

Upon reviewing the literature for a model that provides different levels of innovation use, Hall & Hord (2015) and Klein and Sorra (1996) provided exemplary models with different levels of innovation use from the field of education innovation and organisational management respectively. Whilst Hall & Hord (2015) provide a very comprehensive model, their model is unsuitable for the purposes of ABW as an innovation for various reasons. Firstly, in the education innovation, the teachers are direct decision makers on implementing the innovation and the classrooms of students are a large group of entities directly, immediately impacted by their decision. Whereas, in the ABW context, the higher level management are responsible to implement the innovation to provide employees with the physical office; but the employees are the end-users that decide how to use it and are directly, immediately impacted by their own decision on how to use the ABW. Thus, the amount of 'planning' which goes into employees' ABW use and the amount of discussion about the innovation is significantly different from education innovations.

Klein and Sorra (1996) conceptualised five levels of use of an innovation depending on implementation climate² and innovation-values fit which were further distinguished by these identifiers: Skilfulness, Emotions, Obstacles/ Barriers to use, Commitment of use, Incentives and disincentives for innovation use'; 'Employee resistance' and 'Consistency of use'. Klein and Sorra (1996)'s model was adopted but adapted because it was a multi-level unit of analysis including both organisational or collective-employee level and employee level indicators; unlike the employee acceptance model that is only for individual employee level indicators. This continuum (Table 1) is modified based on the employees' affective, cognitive and behavioural responses put forward in the earlier sections and four of the indicators from Klein and Sorra (1996)'s work aligns closely with the proposed variables:

- 'Skilfulness' is a reflection of employees' knowledge of the innovation;
- 'Emotions' is a reflection of employees' affective responses;
- 'Obstacles/ Barriers to use' is slightly similar to the opposite of employees' perception of the support offered by the workplaces; and
- 'Commitment of use' is a reflection of employees' long-term behavioural intentions.

The following factors were removed from Klein and Sorra (1996)'s model due to the inconsistency of being an organisational level or collective-employee indicator and not an individual employee level indicator: 'Incentives and disincentives for innovation use'; 'Employee resistance' and 'Consistency of use'. Nevertheless, employee resistance may still be captured in the proposed variables. For example, if the employee has already been equipped with the ABW and the knowledge to use it but still do not use it, further investigation may reveal employee resistance at the individual level. If the population being sampled is large enough, it may provide an indication of the consistency of innovation use across the organisation.

Additional indicators that were not included by Klein and Sorra (1996) but are included in the proposed model (as discussed above) are the 'Extent of Use' of the ABW as reflected in the way employees' use the workplace (number of workplaces used and compliance to workplace policies)

² Implementation climate refers to "... targeted employees' shared summary perceptions of the extent to which their use of a specific innovation is rewarded, supported and expected within their organisation" (Klein & Sorra, 1996, p. 1060) that is based on their perception of organisation's implementation policies and practices.

and employees' 'Territorial Behaviour' which is linked to employees' extent of use of the ABW. It is assumed that 'Level 5: Committed and creative use' is the intended outcome and 'Level 1: Limited or Non-Use' is the unintended outcome from the organisation investing in an ABW office.

Table 1: ABW acceptance level model

	ABW innovation acceptance				
	Acceptance Level 1: Limited or Non-Use	Acceptance Level 2: Compliant Use	Acceptance Level 3: Sporadic and inadequate Use	Acceptance Level 4: Adequate Use	Acceptance Level 5: Committed and Creative Use
Affective Responses	Negative	Negative	Negative	Neutral	Positive
Knowledge of ABW	Low	High	Low	High	High
Perceived support from the ABW	Low	Low	Low	High	High
Commitment of use	Low	Low	Moderate-High	More than compliant but less than committed use.	High
Extent of Use	Low	Low	Moderate	Moderate-High	High
Territorial Behaviour	High	High	Moderate	Low-moderate	Non-existent

Source: Author adapted from (Klein & Sorra, 1996)

4.0 Operationalizing the Employee acceptance model

Mixed methods will be used to operationalize the employee acceptance model to capture the affective, behavioural and cognitive responses in case studies: focus group interviews, interviews and semi-structured non-participant observations. The affective acceptance responses can be captured through how employees feel about the ABW by splitting them into positive, negative and neutral responses (Bless et al., 1990; Kark Smollan, 2006). The cognitive acceptance response is evaluated by assessing employees' knowledge of the ABW, their perceived support from the ABW and their commitment to use the ABW. Their behavioural acceptance response is captured by how extensively employees use the ABW and whether there are traces of territoriality. The extent of use of the ABW can be evaluated based on the variety of activities that employees conduct at the different workplaces that the employees use and their compliance with the workplace policies.

If employee acceptance level for the entire organisation is evaluated, the proportion of employees at each acceptance level and the relationship between acceptance level and other variables such as employees' mobility across the organisation can be assessed. Future research will focus on gathering more data, conducting comparisons across different datasets and adapting the model to new innovative workplace solutions.

5.0 Conclusions

The employee acceptance model is presented here to provide a direct and holistic way of evaluating employees' acceptance of innovative workplaces, specifically, ABW offices without relying on proxies with different agendas. The model includes psychologically-based individual employee indicators with varying degrees of acceptance because employees' acceptance of innovative workplaces is a psychologically-based phenomenon. This will facilitate the research community's understanding on the outcomes that the ABW is achieving, the impact on the CRE and organisational strategies that will be useful for future decision-making on ABW offices and other innovative workplace strategies. The employee acceptance model is yet to be verified in case study organisations in the near future.

References

- Appel-Meulenbroek, R., Groenen, P., & Janssen, I. (2011). An end-user's perspective on activity-based office concepts. *Journal of Corporate Real Estate*, 13(2), 122–135.
- Appel-Meulenbroek, R., Kemperman, A., Kleijn, M., & Hendriks, E. (2015). To use or not to use : which type of property should you choose ? Predicting the use of activity based offices. *Journal of Property Investment & Finance*, 33(4), 320–336.
- Appel-Meulenbroek, R., Oldman, T., & Susante, P. van. (2016). How employees value the support of activity based and traditional work environment. In *Proceedings of the CIB World Building Congress* (Vol. 4, pp. 296–304).
- Baalen, P., Heck, E. Van, Muelen, N. Van der, & Oosterhout, M. Van. (2011). *Het Nieuwe Werken barometer Inzicht in adoptie en effecten van HNW in Nederland*.
- Babakus, E., Yavas, U., Karatepe, O. M., & Avci, T. (2003). The Effect of Management Commitment to Service Quality on Employees' Affective and Performance Outcomes. *Journal of Academy of Marketing Science*, 31(3), 272–286. <http://doi.org/10.1177/0092070303253525>
- Bajaj, P. (2016). *Activate To Collaborate- The evolution of the smart workplace*. UK. Retrieved from <http://www.ccmountainwest.org/sites/default/files/617-2977-1-pb.pdf>
- Balogun, J. (2006). Managing Change: Steering a Course between Intended Strategies and Unanticipated Outcomes. *Long Range Planning*, 39(1), 29–49.
- Becker, F., Quinn, K. L., Rappaport, A. J., & Sims, W. R. (1994). *The Ecology of New Ways of Working Implementing Innovative Workplaces: Organizational Implications of Different Strategies*. International Workplace Studies Program. New York.
- Been, I. De, Beijer, M., & Hollander, D. den. (2015). How to cope with dilemmas in activity based work environments: results from user-centred research. In *EuroFM Research Papers 2015* (pp. 1–10).
- Behavior: Research Starters Topic. (2015). *Research Starter Topic Pages*. Salem Press. Retrieved from <https://ezp.lib.unimelb.edu.au/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=ers&AN=91919322&site=eds-live&scope=site>
- Bergstrom, J., Miller, M., & Horneij, E. (2015). Work environment perceptions following relocation to open-plan offices: A twelve-month longitudinal study. *Work*, 50(2), 221–228. <http://doi.org/10.3233/WOR-131798>

- Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and Persuasion: A Cognitive Response Analysis. *Personality and Social Psychology Bulletin*.
<http://doi.org/10.1177/0146167290162013>
- Brower, R. S., & Abolafia, M. Y. (1995). The structural embeddedness of Resistance among Public Managers. *Group & Organization Management*, 20(2), 149–166.
- Brunia, S., Been, I. De, & Voordt, T. J. M. van der. (2016). Accommodating new ways of working: lessons from best practices and worst cases. *Journal of Corporate Real Estate*, 18(1), 30–47.
- Brunia, S., & Hartjes-Gosselink, A. (2009). Personalization in non-territorial offices: a study of a human need. *Journal of Corporate Real Estate*, 11(3), 169–182.
<http://doi.org/10.1108/14630010910985922>
- Candido, C., Zhang, J., Kim, J., Dear, R. De, & Thomas, L. (2016). Impact of workspace layout on occupant satisfaction , perceived health and productivity. *Windsor 2016*, (April), 7–10.
- Davis, F. D. (1985). *A Technology Acceptance Model for Empirically Testing New End-User Information Systems*. Massachusetts: Massachusetts Institute of Technology 1985.
- De Bruyne, E., & Beijer, M. (2015). Calculating NWoW office space with the PACT model. *Journal of Corporate Real Estate*, 17(2), 122–133.
- Ekstrand, M. (2016). Walk the talk: Creating a collaborative culture in an Activity-based Workplace. In *CIB Facilities Management Conference2* (pp. 283–295).
- Ekstrand, M., & Hansen, G. K. (2016). Make it work! Creating an integrated workplace concept. *Journal of Corporate*, 18(1), 17–29.
- Fisher, S. L., & Howell, A. W. (2004). Beyond user acceptance: An examination of employee reactions to information technology systems. *Human Resource Management*, 43(2–3), 243–258.
- George, F. H. (2015). *Cognition* : Florence : Taylor and Francis, 2015.
- Gerritse, D., Bergsma, F. H. J., & Groen, B. H. (2014). Exploration of added value concepts in facilities management practice: learning from financial institutes. In *EuroFM Research Symposium* (pp. 52–63).
- Greene, C., & Myerson, J. (2011). Space for thought: designing for knowledge workers. *Facilities*, 29(1/2), 19–30.
- Hall, G. E., & Hord, S. M. (2015). *Implementing change: Patterns, principles, and potholes* (4th ed.). Las Vegas: Pearson.
- Heywood, C. A. (2007). *The role of affect in local government corporate real estate management*.
- Hoendervanger, J. G., De Been, I., Van Yperen, N. W., Mobach, M. P., & Albers, C. J. (2016). Flexibility in use. *Journal of Corporate Real Estate*, 18(1), 48–62.
- Inalhan, G. (2009). Attachments. *Journal of Corporate Real Estate*, 11(1), 17–37.
- Jensen, P. A., & Voordt, T. van der. (2016). Towards an Integrated Value Adding Management Model for FM and CREM. In *CIB World Building Congress 2016: Intelligent Built Environment for Life* (pp. 1–12). Tampere Hall, Tampere, Finland.
- Kark Smollan, R. (2006). Minds, hearts and deeds: Cognitive, affective and behavioural responses to

- change. *Journal of Change Management*, 6(2), 143–158.
- Kim, J., Candido, C., Thomas, L., & de Dear, R. (2016). Desk ownership in the workplace: The effect of non-territorial working on employee workplace satisfaction, perceived productivity and health. *Building and Environment*, 103(April), 203–214.
- Klein, K. J. ., & Sorra, J. S. (1996). The Challenge of Innovation Implementation. *The Academy of Management Review*, 21(4), 1055–1080.
- Koetsveld, R. Van, & Kamperman, L. (2011). How flexible workplace strategies can be made successful at the operational level. *Corporate Real Estate Journal*, 1(4), 303–319.
- Kotter, J. P., & Rathgeber, H. (2006). *Our iceberg is melting : changing and succeeding under any conditions / by John Kotter and Holger Rathgeber ; with artwork by Peter Mueller*. New York : St. Martin's Press, 2006.
- Kraiger, K., Ford, J. K., & Salas, E. (1993). Application of Cognitive , Skill-Based , and Affective Theories of Learning Outcomes to New Methods of Training Evaluation. *Journal of Applied Psychology*, 78(2), 311–328. <http://doi.org/10.1037//0021-9010.78.2.311>
- Kübler-Ross, E. (2009). *On death and dying: What the dying have to teach doctors, nurses, clergy and their own families*. Taylor & Francis.
- Lapointe, L., & Rivard, S. (2007). A Triple Take on Information System Implementation. *Organization Science*, 18(1), 89–107.
- Lindholm, A.-L., & Levainen, K. I. (2006). A framework for identifying and measuring value added by corporate real estate. *Journal of Corporate Real Estate*, 8(1), 38–46.
- Millward, L. J., Haslam, S. A., & Postmes, T. (2007). Putting Employees in Their Place: The Impact of Hot Desking on Organizational and Team Identification. *Organization Science*, 18(4), 547–559.
- Mosselman, N., Gosselink, A., & Beijer, M. (2009). Long-Term Effects of Activity-Based Working, 2009.
- Nourse, H. O., & Roulac, S. E. (1993). Linking Real Estate Decisions to Corporate Strategy. *The Journal of Real Estate Research*, 8(4), 475–494.
- O'Riordan, T. (1976). Attitudes, behavior, and environmental policy issues. In *Human behavior and environment* (pp. 1–36). Springer.
- Organ, D. W., & Konovsky, M. (1989). Cognitive Versus Affective Determinants of Organizational Citizenship Behavior. *Journal of Applied Psychology*, 74(1), 157–164.
- Parrott, W. G., & Hertel, P. (1999). Research Methods in Cognition and Emotion. In *T. Dalgleish & M.J. Power, Handbook of Cognition and Emotion* (pp. 61–81). Chichester, England: Wiley.
- Picard, R. W., & Daily, S. B. (2005). Evaluating affective interactions : Alternatives to asking what users feel. In *CHI Workshop on Evaluating Affective Interfaces: Innovative Approaches* (pp. 2119–2122). New York: ACM.
- Riratanaphong, C., & van der Voordt, T. (2015). Measuring the Added Value of Workplace Change: Comparison between Theory and Practice. *Facilities*, 33(11/12), 773–792.
- Rogers, E. M. (2003). *Diffusion of innovations*. New York., NY : Free Press, c2003.

- Rothe, P., Sarasoja, A., & Heywood, C. (2015). Short-distance corporate relocation : the employee experience. *Facilities*, 33(1/2), 38–60.
- Sailer, K. (2014). Organizational Learning and Physical Space—How Office Configurations Inform Organizational Behaviors. *Learning Organizations SE - 7*, 6, 103–127.
- Sailer, K., & Penn, A. (2010). Towards an Architectural Theory of Space and Organisations : Cognitive , Affective and Conative Relations in Workplaces. In *2nd Workshop on Architecture and Social Architecture* (pp. 1–16).
- Shih, C. F., & Venkatesh, A. (2004). Beyond adoption: Development and application of a use-diffusion model. *Journal of Marketing*, 68(1), 59–72. <http://doi.org/10.1509/jmkg.68.1.59.24029>
- Tagliaro, C., & Ciaramella, A. (2016a). Experiencing smart working: a case study on workplace change management in Italy. *Journal of Corporate Real Estate*, 18(3), 194–208.
- Tagliaro, C., & Ciaramella, A. (2016b). How To Manage Corporate Real Estate And End-Users Engagement Into Smart Workplace Change Strategies: A Case Study. In *Proceedings of the CIB World Building Congress* (pp. 750–766).
- Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In *Behavior and the natural environment* (pp. 85–125). Springer.
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences*, 39(2), 273–315.
- Voordt, T. J. M. Van Der. (2004a). Costs and benefits of flexible workspaces: work in progress in The Netherlands. *Facilities*, 22(9/10), 240–246.
- Voordt, T. J. M. Van Der. (2004b). Productivity and employee satisfaction in flexible workplaces. *Journal of Corporate Real Estate*, 6(2), 133–148.
- Weisberg, R. W., & Reeves, L. (2013). *Cognition: from memory to creativity*. Hoboken, N.J. : John Wiley & Sons, c2013. Retrieved from <https://ezp.lib.unimelb.edu.au/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cat00006a&AN=melb.b5580984&site=eds-live&scope=site>
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In *Research in organizational behavior: An annual series of analytical essays and critical reviews* (pp. 1–74). Elsevier Science/JAI Press.
- Yuksel, A., Yuksel, F., & Bilim, Y. (2010). Destination attachment: Effects on customer satisfaction and cognitive, affective and conative loyalty. *Tourism Management*, 31(2), 274–284. <http://doi.org/10.1016/j.tourman.2009.03.007>