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CHANGE MANAGEMENT AND ORGANIZATIONAL LEARNING IN A NEW WORKING ENVIRONMENT: A LONGITUDINAL AND MIXED METHODS RESEARCH DESIGN

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ABSTRACT

The implementation of the first new working environment within the BMW Group requires the need to analyze and monitor variables affecting employee behavior and satisfaction. A new working environment is characterized by elements involving flexibility, mobility, and desk sharing. New working practices can provoke uncertainty and an emotional response to change (Ashkanasy, 2002; Bartunek et al., 2006; Ford et al., 2008), requiring the need to analyze and monitor employee perception of a changing working environment. The research presented in this dissertation consists of two parts. Part one includes a two year longitudinal field study, which focuses on the variables affecting employees' satisfaction with the working environment, both before and after the implementation of the new working environment. Two models were developed regarding, (1) satisfaction with the working environment and (2) satisfaction with mobile work.

The models were examined by using structural equation models in order to determine whether the variables: room atmosphere, relaxation, communication, technology, identification, support for mobile work, and work-life balance predict satisfaction with the working environment, as well as, to determine if satisfaction with the working environment predicts overall satisfaction with BMW due to the working environment. Additionally, content analysis was used to analyze open-ended responses regarding desk sharing and mobile work. Data were collected through questionnaire analysis with a returned sample size ranging between 171 and 252 from employees and managers from the departments, Real Estate and Facility Management, Corporate Security, and Strategic Human Resources. Results of part one indicate that room atmosphere, technology, identification, and mobile work predict satisfaction with the working environment. Moreover, satisfaction with the working environment predicts overall satisfaction with BMW due to the working environment.

Additionally, elements of the new working environment are hypothesized to affect the learning culture; therefore, part two includes an analysis of the learning culture in response to the working environment. A quasi-experimental, cross sectional research design measured the effect of the working environment on the learning culture for employees working in the new working environment, M51 (experimental group), and for standard workplaces within the BMW Group (control group). Data were collected through questionnaire analysis with a returned response rate of 81 for the experimental group and 61 for the control group from employees and managers from the departments, Real Estate and Facility Management, Corporate Security, Strategic Human Resources, and Process & Strategy Management. A multiple regression analysis, content analysis, and categorical analysis revealed

that positive support for learning predicts the perceived effect of the working environment on the learning culture for the experimental and control group. Content and categorical analyses indicate that employees in the experimental group perceive the following aspects as supporting learning in the working environment: flexibility, mobility, desk sharing, and various physical elements in the working environment that promote informal, collaborative, and experiential learning. Furthermore, employees in the control group perceive formal learning techniques, observation, experimentation, communication, and knowledge exchange to support learning in the standard workplace, which promote collaborative learning among colleagues.

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CHAPTER I.

INTRODUCTION

1.0. Introduction

Organizations are often faced with the challenge of implementing dynamic change due to external pressure in the environment (e.g., economic reasons, competition, company growth, technology, and so forth) which affects organizational development. As a consequence, it is imperative to find the proper fit between the organization and the external environment in response to tension between the two (Stacey, 1993; Lakomski, 2001). New working practices need to be adopted in order to accommodate necessary workplace change involving processes and elements that promote aspects such as: flexibility, mobility, collaboration, and so forth (Mosby, 2001); ultimately resulting in a change in organizational culture (Lakomski, 2001). By implementing new methods and concepts of workplace practice, resistance tends to emerge in employees as an emotional response to change (Lawrence, 1969; Dent & Goldberg, 1999; Ashkanasy & Daus, 2002; Bartunek et al., 2006; Ford et al., 2008; Smollan et al., 2010; Hon et al., 2014). People facilitate change, meaning that they can either drive organizational change forward, or halt it (Gagné et al., 2000; Kotter & Schlesinger, 2008). Due to the assumption that people are at the core of all organizations, employee perception regarding satisfaction should remain the focus for monitoring change as a response to newly implemented working practices (Paton & McCalman, 2000). Since the success of an organizational change project is dependent on the satisfaction of its employees, monitoring change in an effort to reach optimal employee satisfaction levels is crucial (Van der Voordt, 2004b; Rafferty and Griffin, 2006; Buskens & Earl, 2008). "Employee satisfaction refers to the degree to which the working environment meets the wishes and needs of the employees," (van der Voordt, 2004b, p. 139). Measuring employee satisfaction with a flexible working environment can be quantified with a five-point Likert scale questionnaire (van der Voordt, 2004b), as well as qualitatively through open-ended questions and categorical responses (Hofstede et al., 1990). Furthermore, learning is vital in preventing resistance to organizational change, constituting the demand for an optimal organizational learning culture (Ahmed et al., 1999). Moreover, continuous learning is believed to be a key success driver of change readiness concerning future organizational change (Lakomiski, 2001).

1.1. Background and Statement of the Problem

The BMW Group in Munich, Germany is currently dealing with issues regarding job growth and capacity, providing the urgent need for an alternative workplace concept solution (Promes, 2015), since job growth regulates workplace concepts. An alternative workplace concept solution refers to implementing working practice strategies, such as mobile work and flexibility, in order to accommodate the rapidly changing environment and the external pressure that the environment evokes (Gibson, 2003).

Additionally, maintaining a high level of employer attractiveness for current and future employees is a major concern for the company (Promes, 2015). Since relevant workplace concepts are necessary in order to incorporate various demographic groups, such as age and level of employment (Bradley& Hood, 2003), a higher level of innovation regarding workplace design, concept, and working practice is necessary. Moreover, by implementing a sustainable, flexible workplace concept, the BMW Group is able to obtain greater efficiency in terms of workplace design, allowing practitioners to significantly save costs regarding building development projects with the goal of maintaining a high level of employee satisfaction with the working environment. Saving costs is a practical problem that translates into an organizational learning problem due to the effect that the new workplace concept has on the learning culture within an organizational change scenario. Organizational change, furthermore, requires change management techniques in order to achieve change acceptance and a positive perception of the new working environment.

Since the overall goal of the new working environment is to provide a workplace that is sustainable, flexible, and accommodating for all levels of organizational hierarchy (i.e., employee versus manager) and job function (department), it is essential to determine whether or not the new working environment concept is the proper fit across demographics by measuring employee satisfaction. This furthermore leads to the topic of what the new working environment means for the BMW Group's culture. If the new working environment results in being an efficient, sustainable, and satisfactory workplace concept, it could potentially lead to an organizational-wide transformation in working culture. If this happens, researchers and practitioners within the BMW Group need to consider the meaning behind the transformational shift and what the new working culture conveys to members of the organization.

1.1.1. The New Working Environment

A new working environment is defined by the implementation of flexibility, mobility, and desk sharing in the workplace, which promotes collaboration and efficiency by changing work spaces, as well as adapting to new workplace practices (Bradley & Hood, 2003). A new workplace concept requires various fields of study in order to incorporate all aspects of the working environment (Daft & Lewin, 1993). Although there is a significant amount of existing research regarding: Organizational culture and workplace concepts like flexible and non-territorial offices (Almer & Kaplan, 2002; Arge, 2005; Brunia & Hartjes-Gosselink, 2009; Elsbach, 2003a; de Vries et al., 2005; Felstead et al., 2005; van der Voordt, 2004b; Volker & van der Voordt, 2005; Vos & van der Voordt, 2002), organizational change (Arge, 2005; Avey et al., 2008; Carr & Hancock, 2006; Paton & McCalman, 2000, 2008; Van den Heuvel & Schalk, 2009; Van de Ven & Poole, 2000), and organizational learning culture (Argyris & Schön, 1996; Fiol & Lyles, 1985; Rebelo & Gomes, 2011; Schaper et al., 2003; Sonntag et al., 1998, 2004, 2005; Sonntag & Stegmaier, 2008; Slater & Narver, 1995; Yang, 2003), empirical evidence concerning an interdisciplinary research approach is lacking in reference to a new working environment (Erickson, 2000; Lindahl, 2004; van der Voordt, 2004a; 2004b). For example, the following disciplines have a significant amount of research in terms of flexible and non-territorial offices: environmental psychology (Brown, 1992; Lee & Brand, 2005; MacMillan, 2012; O'Neill, 2010; Robertson & Huang, 2006; Saegert & Winkel, 1990; Sundstrom et al., 1994; Sundstrom & Sundstrom, 1986), industrial and organizational psychology (Brief, 2002; Hundert et al., 1969; Laschinger et al., 2004; Schein, 2015), facility management (Becker, 2002; de Vries et al., 2008; Green, 2004; Haynes, 2008; Lindahl, 2004; Maarleveldt et al., 2009; van der Voordt, 2004a, 2004b; Vos and van der Voordt, 2002), and architecture and design (Bradley & Hood, 2003; Hagel et al., 2013; Hedge et al., 1993; Hillier, 1996; Miller, 1993; Sailer & Penn, 2007; Volker & van der Voordt, 2005); although very few empirical studies exist combining each of the disciplines. Even though there is research combining selected fields of study, there is very little empirical evidence that combines all of the above stated disciplines, which is especially true regarding the integration of pedagogical research in a new working environment concept; although a significant amount of research exists stating the importance of combining learning and change management (Bargel, 2012; Blackman & Kennedy, 2011; Earl et al., 2001; Engeström et al., 2007; Jucevičienė & Leonavičienė 2007; Lakomski, 2001). Furthermore, change management, organizational learning, and organizational culture are strongly related to one another, although very little research exists regarding change monitoring in the field of organizational psychology. Although a

great deal of literature and empirical research exists, most of the change monitoring research exists in the pedagogical field, regarding education and classroom instruction, making it difficult to adapt and implement in an organizational setting. Therefore, a comprehensive model of interdisciplinary research representing a new working environment that incorporates different fields of studies is needed regarding: environmental psychology, organizational psychology, change management, facility management, and pedagogical research.

1.1.2. Measuring Progress in a New Working Environment

There are only a handful of tools and instruments that can be applied to organizational research regarding the evaluation of the working environment, especially in reference to characteristics of a new working environment, such as desk sharing, flexibility, and mobility (IBM, 1996; Kim & de Dear, 2013; Maarleveld et al., 2009). Additionally, there are a significant amount of conflicting views or lack of data according to Volker and van der Voordt (2005) regarding the positive versus negative effects that elements of a new working environment, such as desk sharing, have on employee behavior and how elements such as, desk sharing, affect collaboration, identification, performance, paperless office, and more have on employee behavior and perception. This has resulted in the need to develop a new inventory in order to measure employee satisfaction with the working environment. The following instruments were analyzed and partially adapted to the research in this dissertation, because not one instrument fit entirely to the research in this dissertation: IBM's Global Work and Life Issues Survey (1996), Physical Work Environment Satisfaction Questoinnaire (PWESQ) (Brennan et al., 2002), Work Environment Diagnosis Instrument (WEDI) (Volker & van der Voordt, 2005), and Occupancy Survey database (CBE) (Kim & de Dear, 2013).

The research conducted in this dissertation is the first of its kind regarding a new working environment culture at the BMW Group in Germany, as well as internationally. The overall goal of the new working environment project is to change the standard working culture at the BMW Group, transforming it into a flexible, mobile, non-hierarchical working environment that promotes greater collaboration and trust among all members of the organization. This research will focus on both psychological and physical elements of the working environment and how they affect employee perception and satisfaction in the working environment over time.

1.2. Theoretical Background

1.2.1. Characteristics of a New Working Environment

A "new working environment" is characterized by the features, flexibility, mobility, and desk sharing. Flexibility is conceptualized by the ability to collaborate and work efficiently through shifting work spaces and practices (Bradley & Hood, 2003). Mobility incorporates flexible work possibilities that are designed to allow employees to choose their optimal workplace situation within and outside of the established workplace location and standard office hours (Kelliher & Anderson, 2009). Mobility in the working environment promotes a trusting culture over a presence culture, meaning that employees do not need to be physically present at the workplace in order to achieve a high level of performance and productivity (Nair, 2006). Employees who participate in mobile work are predicted to have a greater work-life balance (Kelliher & Anderson, 2009), higher satisfaction levels, and a better quality of well-being (Green, 2004).

Flexibility and mobility provide the foundation that desk sharing is built on. Desk sharing refers to the way in which the office is utilized, meaning how workstations are assigned to employees (De Croon et al., 2005). It refers the the notion of having shared workstations, where multiple employees are assigned to a certain amount of desks. There is typically a sharing ratio implemented in the concept which defines the amount of desks assigned to a group of individuals. In the example of the new working environment trial study at the BMW Group, the sharing ratio is 1: 1.4, meaning that 1 desk is assigned for every 1.4 employees in the established user group. This furthermore integrates the level of flexibility and mobility, which ultimately regulates how many employees are present on a typical work day. The level of mobility that an employee has is determined by the manager through the use of 'worker typologies.' Worker typologies are characterized by a percentage of mobility that is included in his or her job function. Each worker is assigned a typology that determines the amount of his or her flexibility and mobility. For example, employees who normally work with external clients have a significantly higher mobility percentage (i.e., 70%) than executive assistants who work primarily from their desk (i.e., 20%).

Although there are many elements incorporated in the new working environment concept, mobility, flexibility, and desk sharing serve as the foundation of the concept. Furthermore, since the BMW Group is growing rapidly, the capacity for new employees needs to increase as well, which is a difficult task given the density of the city of Munich. Therefore, an innovative and creative workplace concept such as desk sharing (characterized by

flexibility), mobile work (characterized by mobility), and paperless office allow for overall company development.

1.2.2. Change Management in a New Working Environment

Organizations are made up of four features: work, people, formal structures, and processes, all of which need to maintain alignment with one another in order for an organization to thrive (Nadler and Tuschman, 1989). When one or more elements are no longer in alignment with the other features due to external pressure, an organization is forced to change in order to maintain stability and flourish as a dominant competitor in a given industry (Nadler & Tushman, 1989; Stacey, 1993; Promes, 2015). Deciding on the best fit for an organization can be a discouraging task involving members of the organization because of employee resistance due to changes in their environment (Lawrence, 1969; Dent & Goldberg, 1999; Ashkanasy & Daus, 2002; Bartunek et al., 2006; Ford et al., 2008; Smollan et al., 2010; Day, 2012; Hon et al., 2014). Organizational change management is characterized by the fixation of new potentials, like behavior and workplace rules, due to sustainable changes in the environment (Kanter, 2003). Change is a difficult process because it is challenging to achieve lasting change. Managers are limited to what they can implement and enforce due to organizational pressure and decision making. Change functions as a system requiring an integrated group of change initiatives that need to be entrenched within the features of the organization (Kanter, 2003).

In order to determine an appropriate working environment concept to implement in the workplace, researchers and practitioners first need to understand the psychological standpoint of the employees undergoing the change in their working environment. This refers to resistance, which is characterized by attitudes in both behavioral and cognitive aspects of a response to change (Piderit, 2000; Oreg, 2003, 2006; Van den Heuvel & Schalk, 2009). Employee perception regarding satisfaction levels with the working environment can drastically decline in the face of strong employee resistance to change initiatives in the workplace (Choi, 2011). Moreover, resistance to change can ultimately discontinue the progress of a project (Salem, 2013). Considering the multitude of new working environment practices, processes, and supporting elements; change management initiatives are vital in order to assure that employees accept, adapt, and internalize (Armenakis & Harris, 2002; Elving, 2005; Paton & McCalman, 2000; Saruhan, 2014) the 'new ways of working' even after the new working environment trial project ends. In order to overcome

employee resistance to change, researchers and practitioners should apply various practices. By providing open communication and support that will lead to a better understanding for the reasoning behind the move, as well as clear up any uncertainty that exists among employees (Paton & McCalman, 2000; Richmond & Skitmore, 2006; Saruhan, 2014). Creating a change story and defining the logic behind the change to the new working environment (Taylor & Morgan, 2014), as well as involving employees in the planning and implementation phase (Franz & Mastrangelo, 2014), change acceptance will increase (Choi, 2011), ultimately leading to higher employee satisfaction levels.

Change monitoring is an important strategy for measuring the progress of various change initiatives in a new working environment project. It allows researchers and practitioners to scientifically record the progress of various change interventions implemented throughout the project timeline by accurately planning and evaluating specific elements that have an impact on employee satisfaction (Magnaye et al., 2014). Change acceptance is believed to to have an impact on employee satisfaction as a response to change interventions (Fernandez & Rainey, 2006; Rafferty & Griffin, 2006). In order to determine whether or not intervening in the change and learning process of employees is necessary, appropriate steps need to be taken to determine the effectiveness of the interventions (Fernandez & Rainey, 2006). Furthermore, scientifically monitoring change in a new working environment is critical to the overall success of the project, as well as the progress of employee perceptions through satisfaction analyses

1.2.3. Learning Culture in a New Working Environment

Change and learning are two concepts that are strongly related to one another because change impacts organizational learning and how employees internalize the change and behave thereafter (Schaper et al., 2003). The goal of learning in the working environment is to generate new knowledge with the intent of leading to a change in employee behavior (Slater & Navar, 1995; Huber, 1991; Škerlavaj, Štemberger, & Dimovski, 2007). Learning in the workplace improves and develops when optimal working conditions are provided (Choi & Jacobs, 2011) and is conceptualized by the relationship of various working practices that are driven by the spatial environment (Edenius & Yakhlef, 2007). According to Edenius and Yakhlef (2007), the success and form of an organization's learning culture is, therefore, largely due to the spatial environment in which it exists. As a result, the relationship between psychological and physical elements is believed to affect employee perception of the learning culture due to the working environment.

Similar to the concept of organizational culture, which is understood as a set of shared values, assumptions, and beliefs that determine how members of the organization act (Schein, 1988, 1990), an organizational learning culture is defined by the perception, behavior, and understanding that facilitates the continuous process of learning (Schein, 2004). The learning culture in the workplace is conducive to developing and promoting the quality of norms, values, and knowledge basis for members of the organization. It is furthermore responsible for leading change through learning for employees (Sonntag, 1996). Moreover, the overall intention of an organizational learning culture is to identify the process that impacts the advancement of new knowledge and behavioral change; to explain sustainability of knowledge driven behavioral change; to determine theoretical elements that constitute the culture and climate of the learning organization, as well as to determine topics necessary for further research (Slater & Naver, 1995).

Change in reference to both the psychological and physical elements, contributes to the influence on the working environment learning culture (Schaper et al., 2003). The learning culture as an effect of the working environment, furthermore, has a significant impact on the organizational culture (Wang et al., 2007) because a learning culture is simply a reflection of organizational behavior as a consequence of development and workplace practice (Yang, 2003). Therefore, continuous learning is believed to have emanated as a response to the new working environment study. Continuous learning is furthermore conceptualized by applying various strategies that allow individuals to adapt to an ever-changing environment (Marsick & Watkins, 2003; Sessa & London, 2006), alleviating the issue of resistance that emerges in response to external pressure (Lawrence, 1969; Dent & Goldberg, 1999; Ashkanasy & Daus, 2002; Bartunek et al., 2006; Ford et al., 2008; Smollan et al., 2010; Day, 2012; Hon et al., 2014). Moreover, since adults tend to learn from their peers, through experience, and through knowledge exchange, continuous learning is characterized in the new working environment study by the following theories: informal learning, experiential learning, collaborative learning, and self-directed learning. The research in this dissertation, referring to the learning culture, will ultimately focus on the informal aspect of adult learning as a consequence of the physical and psychological elements of the working environment.

1.3. Purpose of the Research

The central purpose of the longitudinal, mixed methods designed research study is to analyze the extent of which various elements in the workplace predict satisfaction with the

working environment. Furthermore, overall satisfaction with the BMW Group due to the working environment is measured as well. A new working environment is implemented in order to determine whether or not the new workplace concept is a sustainable solution for the challenges that the company is currently facing. The general goal of this research is to develop a new working environment model, along with measurement tools, that can be tested and implemented in additional new working environment projects in other areas of the BMW Group.

Aside from the measurement of employee satisfaction due to various elements in the working environment, a study exploring the organizational learning culture as an effect of the new working environment is explored and compared to a standard office at the BMW Group. New ways of working potentially introduce new approaches to workplace learning and interaction, hence the need to measure employee perceptions of how the physical and psychological elements in the new working environment affect their learning possibilities. This study attempts to determine whether or not there are significant differences in the perceived learning culture as an effect of the working environment.

Finally, the results for both the employee satisfaction analyses and for the perceived learning culture in the new working environment are supported by change management initiatives throughout the longitudinal studies. Since the workplace learning culture is directly influenced by the working environment, change management interventions are predicted to have an impact on the perceived learning culture in the new working environment. Furthermore, since learning and change are connected to one another (Ahmed et al., 1999), both learning and change should have an influence on employee perceptions of the new working environment concept and culture as well. Monitoring change throughout the new working environment project is anticipated to have a significant impact on employee satisfaction, which is the fundamental driver of measuring new working environment success. In turn, the new working environment is anticipated to transform the organizational learning culture to one that promotes greater informal, experiental, collaborative, and self-directed learning in the new working environment as opposed to a standard workplace at the BMW Group.

1.4. Research Goals and Questions

There are three research goals and four research questions that have been developed in order to provide the fundamental reasoning behind the research and guidance in this dissertation. They are derived from theoretical research included in this body of research.

1.4.1. Research Goals:

(1) Identify the variables that increase employee satisfaction in the new working environment.

(2) Determine the effect that change monitoring has on employee satisfaction the new in working environment.

(3) Align organizational learning with strategic change management initiatives in the new working environment.

1.4.2. Research Questions:

(1) What are the driving success factors for employee satisfaction in a new working environment?

(2) What effect does change monitoring have on employee satisfaction in a new working environment?

(3) What type of learning culture exists in a new working environment?

(4) Are there significant employee satisfaction differences with the working environment across demographic variables regarding: Age, department, and level of employment?

1.5. Summary

This chapter introduces and provides a short description of the current issues and development surrounding the topic of workplace concepts in a new working environment. Major approaches are defined and important terms are provided. A brief theoretical overview is also described following the background and statement of problems relating to the new working environment. The theoretical background, providing an overview regarding the working environment, change management, and organizational learning, is reviewed. Additionally, the purpose of the research, goals, and questions are described in order to provide a short synopsis and guide the reader throughout the research in this dissertation.

CHAPTER II

THEORETICAL BASIS AND RESEARCH REVIEW

2.1. The Working Environment

2.1.1. Introduction

Since behavior in the workplace continues to evolve, organizational culture must change with it. Before the industrial revolution, people tended to stay in the same place and work in agricultural related areas. After the revolution, individual work took place in an established workplace and workday hours were fixed (Mosby, 2001). The nature of working culture continued to evolve during the world wars as organizations adopted a hierarchical working model that emulated world events (Mosby, 2001). The structure of workplace behavior kept changing as informal working practices, limited hierarchy, and more collaborative and participative employees were sought after to construct the new culture of the workplace (Mosby, 2001). Today, new methods and analyses are employed in order to understand employee behavior, and to assist organizations in reaching higher levels of innovation through less hierarchy, collaboration, mobility, and technology (Mosby, 2001).

Given the evolution of the workplace structure and employee behavior and perception toward the organizational culture, a change in mentality regarding appropriate behavior at work requires a change in the working environment (Mosby, 2001). Unfortunately, many workplace environments still represent organizational culture concepts of the past (Mosby, 2001). Since the working environment affects how employees function (Oksanen & Ståhle, 2013), it is necessary to adopt new and innovative approaches in the working environment in order to keep up with today's continuously changing business environment (Chang & Lui, 2008; Koberg et al., 2003; Unsworth & Parker, 2003). As a result of the competitive business environment in today's society, status and salary are no longer sufficient incentives in reference to employee retention, recruitment, and satisfaction (Mosby, 2001). Therefore, the design of workplace facilities has emerged as a key concern in order to support organizational culture (Mosby, 2001) and employee satisfaction regarding working conditions (Vischer, 2007; Wineman, 1982), by providing an environment that attracts employees to the organization and maintain retention levels (Bradley & Hood, 2003).

Characteristics of the physical working environment have a strong impact on employee behavior and attitude (Lee & Brand, 2005; MacMillan, 2012; Robertson & Huang, 2006), and a substantial influence on employee well-being (Ulrich, 1984). This can cause employees to create meaning and emotional development based on behavioral elements of

the workspace and the general environment (Oksanen & Ståhle, 2013). "Attraction, identity, and stimulation are important characteristics of high performance workplaces, but impact needs to be produced rapidly, managed actively and renewed frequently," (Bradley & Hood, 2003, p. 71) in order for a working environment to remain sustainable. If changes in the working environment are not maintained, complications may occur. Problems that emerge out of the workplace include issues such as: stress, poor health, lack of or too much collaboration and communication, technological malfunction or adaptation problems, as well as other elements (Sundstrom et al., 1996). Organizations need to increase adaptability and flexibility over time in order to embrace change that will enable them to work at their highest potential, regardless of the changing external environment (Becker & Sims, 2001). Designing a workplace that is driven by change can be costly because obstacles, such as those listed above, need to be taken into consideration, and, therefore require greater strategic planning. This simply means that organizations need to be more creative in how they design a working environment with the goal of changing the organizational behavior of its employees, as well as the culture of the organization.

There are two crucial aspects that make up the working environment, (1) the physical layout of the workplace, and (2) the employees working in this workplace; their attitudes, perception, and acceptance toward the designed working environment. There is a need to combine office design theories with environmental psychological theories in order to understand the implications that the physical environment has on employee behavior in the working environment. Although several researchers in the literature refer to the importance of combining the two fields of study (De Croon et al., 2005; Sailer, 2014a, 2014b; Wineman, 1982; van der Voordt, 2004a, 2004b), there is a need for more interdisciplinary research combining environmental psychology and architecture and design, among others (Erickson, 2000; Lindahl, 2004; van der Voordt, 2004a, 2004b). In order to comprehend the intricate elements involved in a working environment, both the environmental psychological perspective and the architecture and design perspectives will be outlined in order to provide evidence for the need to combine these fields of study when designing a new working environment.

De Croon and colleagues (2005) define three dimensions that describe a working environment: the office location, which refers to the place where employees accomplish their work tasks, the office layout, pertaining to the plan and use of the workspace, and the office use - the manner in which employee workplaces are designated. The term, *working environment* is exceptionally broad and is used in various fields of study. Therefore, in

order to fully understand diversified elements of the working environment, it is crucial to distinguish and comprehend its different intersecting aspects from several fields of study, such as: environmental psychology, organizational pedagogy, architecture and design, and communication. By examining these fields and their definitions, researchers are able to interpret the important elements of a working environment from an overall organizational point of view; furthermore providing the ability to analyze interactions between different fields of studies holistically. A holistic view supplies researchers with the opportunity to draw direct conclusions from different fields of study. Figure 1 illustrates the relationship between office concepts, working conditions that emerge from the office concept, and short and long-term reactions of the employees working within the environment.
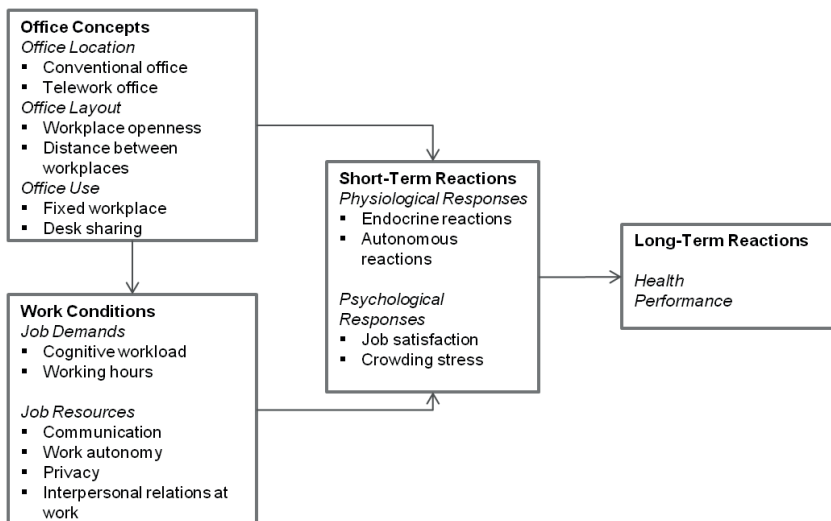
Figure 1. **Conceptual Office Model (De Croon et al., 2005, p. 121).**

The conceptual office model shows the connection between office location, layout, and use (via) demands and resources, relates to short- and long-term reactions (De Croon et al., 2005, p. 121). The office concept refers to the location (where the employee carries out his or her work), the office layout (form of office and workplace boundaries), and the office use (how the workplace is positioned for employees) which can be a fixed workplace or a community workspace, incorporate working practices such as desk sharing (De Croon

et al., 2005). Furthermore, the office concept influences working conditions, like job demands and resources. Job demands refer to hours spent working (e.g., mobile work) and cognitive load, referring to aspects such as noise and other possible workplace disturbances. Job resources pertain to the circumstances that support employee goals and demands that are connected to their physical and psychological needs and effects of the environment (De Croon et al., 2005). For instance, communication can be stimulated by elements of the office concept, such as desk sharing; work autonomy can be heightened due to mobile work; psychological privacy can be decreased in an open-office; and working relationships can decline in the midst of mobile work (De Croon et al., 2005, p. 121). Finally, the physical and psychological responses of short-term reactions can lead to long-term reactions, which affect employee health and performance depending on the office concept (De Croon et al., 2005, p. 122). Therefore, it is important to consider the effect that the working environment has on employee behavior, satisfaction, and perception. The research in this study measures employee satisfaction and perception of the office concept (open and flexible office, mobile work, desk sharing), work conditions (work-life balance, communication), short-term reactions (monitoring employee reactions to a changing environment), and long-term reactions (not assessed in this study, but are still considered relevant).

2.1.2. Behavior in the Working Environment

The following sections of this chapter will attempt to explain how employees interact in a working environment, as well as the impact that a working environment has on employee behavior.

2.1.2.1. Person-Environment Interaction

Although it is difficult to develop theory for a topic that is as broad as the physical environment (Sundstrom et al., 1996), Kurt Lewin (1951) is deemed responsible for introducing the value and importance of research regarding person-environment interactions. These are defined by the following two assumptions, (1) that the environment is objectively characterized by geometrical and material physical elements; and (2) through psychological forms, which are described as "qualitative properties linked to employee behavior in space," (Fischer, 1997, p.7), referring to the area in which an individual forms his or her perceptions of the surrounding environment (Fischer, 1997). Furthermore, an environment

is the analysis of different affiliations that have an effect on one another (Fischer, 1997). The person in the environment serves as the element that is analyzed in order to comprehend various behavioral trends (Saegert & Winkel, 1990). Therefore, "both the person and environment dynamically define and transform each other over time, as 'aspects' of a unitary whole as stability and change coexist continuously," (Saegert & Winkel, 1990, p. 443). Table 1 defines the characteristics of the interaction between the person and the environment.

Table 1: Characteristics of Person-Environment Interactions

	Characteristics
Person	▪ Adapt to the environment, manage stress and hazards, interpret threats and resources, and select adaptive responses on a basis of personality and social context. ▪ Maximize goals, meet needs, perform roles, find gaps in the environment, and accomplish personal projects. ▪ Reproduce a socio-cultural system. ▪ Interaction of development, pursuit of goals and performance of roles in relationship to pre-existing and emerging environment.
Environment	▪ Includes physical qualities, interpersonal interactions, and information. ▪ Temporal and spatial structures of services and facilities. ▪ Socially and culturally defined settings and systems. ▪ Constrains and enables human interactions.

Own interpretation supported by Saegert & Winkel, 1990, p. 444

The focus for environmental psychology is to create positive change in reference to the relationship between the person and the environment (Saegert & Winkel, 1990). Most studies that analyze workplace systems fail to include how the influence of the physical environment affects people. Although some studies document results of employee reactions in reference to physical elements in the working environment, the fluctuation in behavior is left empirically unexplained (Carlopio, 1996), until recently (O'Neill, 2010; Robertson & Huang, 2006). Elements of the physical working environments include aspects

such as: climate, noise, illumination (Carlopio, 1996; Sundstrom et al., 1994), communication elements (Brager et al., 2000; Parkin et al., 2011; Townsend, 1998), technology (Townsend, 1998), and flexible work opportunities (Carlopio, 1996), among others. In a study carried out on individuals at various workplace locations by Sundstrom et al. (1994), the majority of the employees found noise to be distressing and correlated to dissatisfaction with the environment. On the other hand, noise level did not have an impact on how supervisors rated employee performance. "Quasi-experimental analysis after relocation or renovation revealed declining environmental and job satisfaction concurrent with increasing noise, and increasing environmental satisfaction with decreasing noise," (Sundstrom et al., 1994, p. 494). In addition to the effects of noise, Katzev (1992) conducted a study on atmospheric conditions pertaining to light and sound and found that reducing light illumination by 50% did not result in significantly negative mood or performance. On the other hand, higher satisfaction, greater environmental control, and less employee complaints were found with a ventilation system underneath the floor (Hedge et al., 1993). When asked to identify features of the office environment that promoted or constrained employee performance, managers stated that supportive social interaction facilitated performance, while distractions such as disruptive noise, and temperature restricted performance (Crouch & Nimran, 1989). These elements highlight the importance of the workspace and work atmosphere and how they affect employees.

The environmental space serves as a significant psychological element that regulates behavior. Environmental space, furthermore, refers to reactions of the layout of various elements (Eliot, 1987). The environmental model of behavior, therefore, is an "interaction between the physical and social characteristics that interfere with cultural features specific to situations," (Fischer, 1997, p. 7). Hence, the working environment should support the physical, psychological, and physical needs of employees (Bailey, 1982). Organizations need to provide the appropriate physical and psychological support in order for employees to thrive in their daily work (Bitner, 1992). In order to do so, organizational leaders should systematically develop an environment that promotes physical and psychological support that is aligned with the cultural vision and norms in order to obtain desirable behavior, so that organizations can achieve an optimal satisfaction level for employees.

There are many variables that affect employee behavior, especially the influence of the working environment (Mosby, 2001). "The physical setting is a silent language that expresses the culture of the space, the behavioral norms and the framework for relating,"

(Mosby, 2001, p. 26). The physical working environment, therefore, has a significant impact on the organizational culture, in relation to how individuals perceive various events and situations that affect their apparent behavior (Schein, 1996b). Since the office environment influences the way in which employees behave, organizations should focus more of their concern and effort in providing a working environment that will promote positive employee behavior based on the cultural values and norms that it represents (Appelbaum et al., 2007). Table 2 outlines six environmental psychological theories that affect employees in the working environment: arousal, environmental load, stress and adaptation, privacy and regulation, ecological psychology, and transactional approach. These theoretical elements promote a cause-effect relationship between the environment and employee behavior, leading to the overall outcome of employee satisfaction (Fischer, 1997).

Table 2: Environmental Psychological Theories in the Work Environment

Theory / Approach	Definition
Arousal	- Mediates influence of environmental features, such as sound and temperature. - Arousal Hypothesis predicts optimal performance and satisfaction function under conditions of moderate arousal, depending on the complexity of the task and other factors.
Environmental Load	- Humans have a restricted capacity for processing stimuli and information. - We cope with sensory and information overload through selective attention and by ignoring low-priority input.
Stress and Adaptation	- We apply coping and adaptive behaviors to reduce stress and its impact on us due to elements such as: Extreme temperature, sound, and other environmental variables with physical and psychological stress. - It is also important to theoretically define the difference between acute and chronic environmental stress.
Privacy Regulation	Aspects such as: Privacy, spatial behavior, crowding, and territoriality suggest the human tendency to seek optimal social interaction, which is partially facilitated by the physical environment (Altman, 1993).

	▪ When a person does not achieve their subjective-optimal level of social contact for a given situation, stress as a result, motivates coping behavior, which can rely on the physical environment (Brown, 1992).
Ecological Psychology	▪ A small social system that is made up of people and physical objects configured in a way that carries out routine programs and activities with time and place boundaries (Wicker, 1992, p. 166).
Transactional Approach	▪ The physical environment is a potential context for social interaction that can support, constrain, symbolize, and deliberate meaning of various aspects of social relationships. ▪ Includes different levels and facets, variation over time, and cyclical processes. ▪ Describes social relationships and physical settings as tension between opposing influences.

Own interpretation supported by Sundstrom et al., 1996, p. 489-491.

2.1.3. Characteristics of a Working Environment

This section describes the characteristics of a working environment. It identifies the physical, as well as the psychological aspects of a working environment and how it affects employee perception.

2.1.3.1. Office Layout and Design

Although a great deal of research exists in terms of employee behavior in the working environment and success factors that influence employee satisfaction, little research exists in reference to the design and space configuration of a work environment that promotes individual and collective action (Sailer, 2014a, 2014b). The environmental space shapes organizational outcomes, such as collaboration (Heerwagen et al., 2004; Wineman et al., 2009), interaction and knowledge flow (Becker & Sims, 2001; Fayard & Weeks, 2007; Peponis et al., 2007; Sailer & Penn, 2007), and innovation (Toker & Gray, 2008). For example, Lee and Brand (2005) conducted a study on 228 employees regarding perception of an open-office plan and workspace flexibility, from the following types of companies: auto suppliers, customer service, logistics and distribution manufacturers, tele-

communications, and mobility. The researchers found that perceived control and work-space flexibility as a response to the open-office space had a positive influence on communication and cohesion. Furthermore, the study conducted by Haner (2005), involving the Frauenhofer Institute in Germany and a Scandinavian financial institution, revealed that in order to promote creativity, innovation, and learning, organizations need to promote spatial support. Haner (2005) also suggests the need to provide different forms of work-spaces (i.e., open-office layout, collaboration areas, lounges, creativity rooms, rooms specific for concentration, and so forth) so that various forms of creativity and innovation are accounted for. By providing an innovative workspace, interaction and social activity are enabled, providing a more attractive and efficient work environment for individuals (Oksanen & Ståhle, 2013). The tangible environment can interfere with the approach that people take when interacting in social situations and, depending on the workplace, can promote or limit collaboration (Oksanen & Ståhle, 2013).

2.1.3.2. Facilitation of Space in the Working Environment

People work both in collaborative groups and independently, as well as, communicate with one another, use technology, and meet in formal settings (Becker & Sims, 2001). The most significant difference that has emerged from workplaces of the past is that the working climates of today's organizations embrace the entity of a social atmosphere (Becker & Sims, 2001). For previous workplace generations in the 1950s and 1960s, socialization was deemed as a waste of time and accomplishing the current task was considered more valuable than any other aspect as an effect of the working environment (Becker & Sims, 2001). During this period, separation panels and cubicles were implemented in order to assure that employees were accomplishing their tasks. This also reinforced the concept of a hierarchical management system in that mangers were expected to 'check up' on their employees to make sure that they were accomplishing their tasks. With this office structure, employees were expected to separate work and socialization based on their location within the working environment (Becker & Sims, 2001). This furthermore affected and provided a great deal of acoustic privacy for employees, which slowly overflowed into symbols of status and rank (Becker & Sims, 2001).

Office layout and design are extremely important in reference to the influence that they have on employee satisfaction and behavior. Inalhan (2009) and Carr and Hancock (2009) believe that the connection between the physical environment and environmental psychology, together, have a powerful impact on one another that suggests that space and time,

combined, are the basic predictors that mediate the way in which organizations and working environments function. The layout and design, additionally, have a significant impact on how efficient the workplace is and how efficiency affects employees. For example, by implementing flexibility into the office concept, it benefits the organization by requiring less floor space per employee. It also allows employees to collaborate more efficiently with one another, given their flexible work standards and culture. By linking working processes to the office environment, researchers are able to identify how different office layouts and designs affect employee attitude, behavior, working processes, and efficiency (Lee & Brand, 2005; Sundstrom & Sundstrom, 1986; Zalesny & Farace, 1987).

Sustainable office designs foster change, resulting in the emergence of innovative workplace concepts. Different patterns of behavior in the workplace develop in response to various workplace designs. The design of the workspace can be used as a tool to achieve desired behavioral patterns or perceptions in response to the office concept (Ilozor & Ilozor 2002). An open-office, where employees sit in the same large room office without barriers, has a positive effect on collaboration among colleagues (Ilozor & Oluwoye, 1999). For example, "greater perceived support on informal meetings by open-plan workspace is associated with increased measuring of staff productivity," (Ilozor & Oluwoye, 1999, p. 244).

2.1.3.3. Environmental Factors Affecting Employee satisfaction

Employee satisfaction is a necessary element in developing a high quality and sustainable workplace concept, which is an important indicator of organizational success (Chen et al., 2006). Employee satisfaction is defined by the "measure of how happy workers are with their job and working environment," (Tso et al., 2014, p. 570). Satisfaction is furthermore understood as the "emotional response to a type of existing situation," (Tso et al., 2014, p. 570). Therefore, the psychological perception, behavior, and attitude directed toward or in response to the organization is understood by analyzing employee satisfaction (Tso et al., 2014). The working environment can have both positive and adverse effects on employee behavior, requiring the need to evaluate employee perception (Brief & Weiss, 2002). For example, "a survey is an effective tool for measuring, monitoring and eliciting feedback in the context of employee satisfaction and could provide a basis for developing effective policies for organizational management to meet enterprise goals," (Tso et al., 2014, p. 570). Therefore, employee satisfaction is analyzed in this dissertation as a way to understand employee perception and behavior in the changing working environment,

as well as, how employees react to a new working environment. The following sections demonstrate how variables in the workplace affect employee perception.

2.1.3.3.1. Working Environment Atmosphere

The working environment atmosphere refers to elements of the workplace, such as workspace temperature, lighting, and air quality. Room atmosphere in the working environment is a major concern for office employees because low levels of comfort can lead to levels of dissatisfaction and cause discomfort, physical arousal, poor task performance, irritation, and a lack in social behavior (Bell, 1981; Wineman, 1982; Yildiriam et al., 2007). It has an indirect effect on productivity, which has an indirect impact on individual subjective satisfaction. Temperature levels, furthermore, have an influence on the rate that employees are able to complete their tasks, affecting overall performance (Seppänen et al., 2006b). Seppänen and colleagues (2006a) found that employee performance in a typical office decreased with office temperatures surpassing 24-26°C. Furthermore, illumination is an essential element affecting employee productivity (Hoffmann et al., 2008). Also, employees tend to prefer natural light instead of artificial light, leading to the preference to sit next to a window (Ozdemir, 2010; Yildiriam et al., 2007). An office environment without windows can have a negative psychological effect on employees (Ozdemir, 2010; Vahedi & Dianet, 2013; Yildiriam et al., 2007); potentially leading to decreased satisfaction levels with the working environment.

2.1.3.3.2. Relaxation

The physical aspect of the working environment can have a significant effect on employee well-being and occupational stress levels (Heerwagen et al., 1995). Factors that influence stress levels in employees include: A lack of control over the environment, distraction from colleagues, lack of privacy, noise level, and a negatively perceived working environment atmosphere (Heerwagen et al., 1995). Furthermore, aspects such as pressure from managerial styles, workload, and job security have a significant effect on employee well-being (Sparks et al., 2001). The above stated issues such as: Lack of control over the environment, distraction from colleagues, a lack of privacy, noise level, adverse managerial styles, workload, and job security can have a substantial influence on occupational stress levels (Kinman & Jones, 2005). For this reason, employees need to be able to relax in order to relieve occupational stress levels and to maintain satisfactory well-being.

2.1.3.3.3. Technology

Technology has transformed the way in which organizations conduct business, ultimately affecting working practices and communication in the working environment (Kuo et al., 2010), and transforming the way that people work. This is especially true for information and communication technology, such as e-mail, mobile devices, and instant messaging (Bloom et al., 2009). Technology furthermore allows employees to maintain a more flexible and mobile work schedule, allowing for a greater work-life balance (McCarthy et al., 2010). Moreover, elements of technology in the working environment represent change that is imposed on employees, requiring the acceptance and understanding of employees (Stam & Stanton, 2010). Ahuja and Thatcher (2005) carried out a study on 345 employees in a public university in the U.S. regarding perceptions of the working environment and the effect on innovation with IT. The researchers found that perceptions of autonomy in the working environment significantly impacted how individuals reacted to innovation regarding IT use. With the transformation of workplace culture due to the implementation of new and advanced technology, change management is necessary to assure employee acceptance of technological developments (Kuo et al., 2010). How employees adapt to changes in technological advances in the working environment affect employee satisfaction, furthermore influencing the general perception of the working environment (Stam & Stanton, 2010).

Technology can have both a positive, as well as a negative impact on employee job satisfaction and stress levels (Tarafdar et al., 2010). Organizations implement new forms of technology as a response to negative employee cognition. Employees can experience stress due to technological demands placed on them in the working environment. For this reason, appropriate technology and user acceptance can allow greater employee satisfaction and performance by decreasing individual cognitive load (Tarafdar et al., 2010).

2.1.3.3.4. Communication and Collaboration in the Workspace

The design of the workplace has an impact on the communication and collaboration opportunities that individuals engage in. Communication refers to exchanging information with others (Peperonis et al., 2007); whereas collaboration is considered to be the interaction among employees in an attempt to advance information exchange (Hua et al., 2010).

Space is one element that the organization utilizes in order to identify itself with its employees (Mosby, 2001), and is used to influence communication and behavior between employees (Boutellier et al., 2008). The design of space influences the exchange of information and employee communication opportunities. Communication is the foundation for socialization, essentially facilitating informal and formal aspects of collaboration through the the layout of the working environment (Boutellier et al., 2008; Hua et al., 2010; Peponis et al., 2007). Furthermore, "communication in the workplace is most effective when the office layout directly reflects the required flow of information, such as by placing people who need to communicate near each other," (Peponis, et al., 2007, p. 816). Robertson and colleagues (2008) carried out a study on the effects of a flexible workspace on employee perception and satisfaction. A longitudinal study including three online employee satisfaction questionnaires was carried out on 1250 individuals working in a US management consulting firm. Results indicated that communication and collaboration among employees in the flexible working environment increased over time.

In general, space is the framework for models of communication, collaboration, and learning to occur (Boutellier et al., 2008; Hua et al., 2010). The fluidity of information and knowledge exchange promotes greater levels of organizational productivity, which is feasible by means of a space framework that is: Interactive (Peponis et al., 2007), promotes collaboration among employees (Heerwagen et al., 2004; Hillier, 1996; Sailer, 2014a, 2014b), representative of the organizational culture (Peponis et al., 2007), and collects knowledge from others and of the promotion of ongoing projects that occur in the environment (Peponis et al., 2007). Space is, furthermore, responsible for emotional and social fields that transmit communication, perception, knowledge, etc.; which is facilitated by personal, functional, psychological, psychosocial, and physical functions (Fischer, 1997).

2.1.3.3.5. Identification

Working environment identification is conceptualized by applying symbolism or a form of physical description that symbolizes status and identity in the workplace (Elsbach, 2003a, 2004). Although deemed to be an efficient use of space, non-territorial working environments that incorporate desk sharing in the workspace, can potentially provoke identification issues among individuals because of the changing nature of the workspace. In this case, individuals are not allowed to personalize their workspace to fit desired needs (Elsbach, 2003a). According to Csikszentmihalyi (1996), "people tend to create microenvironments, personal spaces that one creates to feel comfortable, safe, or cozy. People need