

**THE RELATION BETWEEN RESISTANCE TO CHANGE AND
CREATIVITY: THE MEDIATING EFFECT OF PARTICIPATION
AND WORK ENGAGEMENT IN A PORTUGUESE BUSINESS
CONTEXT**

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Abstract

This study aims to understand the relation between resistance to change and creativity in a changing context of the Portuguese business setting. Resistance to change is represented in by four dimensions that together assess the level of resistance: routine seeking, emotional reaction, short-term focus and cognitive rigidity.

The main goal of this research is to comprehend if that relation exists and how it is affected by mediators such as participation and work engagement. To test this, an office redesign project of a real company from the Portuguese financing market was used. Their employees cooperated with this study contributing to the conclusions presented further on.

According to the analysis done on this study, the findings indicate that participation was not found to mediate the relation between resistance to change and creativity even though it was proved to be related to creativity. On the other hand, work engagement was found to mediate that same relation while also being related to creativity.

Keywords: Resistance to change, creativity, participation, work engagement.

Thesis' classification, according to the categories defined by the Journal of Economics Literature (JEL Classification Systems): Labor Management (M54); Dissertations (Y40).

Resumo

Este estudo pretende investigar a relação entre a resistência à mudança e a criatividade num contexto de mudança do mercado português. A resistência à mudança é representada por quatro dimensões que a juntas a caracterizam: procura de rotina, reação emocional, foco de curto-prazo e rigidez cognitiva.

O principal objetivo desta investigação é compreender se aquela relação de facto existe e como é que esta é influenciada por mediadores como a participação e o compromisso com a empresa. Para testar isto, foi utilizado um projeto de redesenho físico do escritório de uma empresa real do mercado financeiro Português. Os empregados dessa mesma empresa colaboraram neste estudo contribuindo para as conclusões apresentadas mais à frente.

De acordo com a análise deste estudo, as conclusões indicam que a participação não se verificou como mediadora da relação entre a resistência à mudança e a criatividade apesar de estar relacionada com a criatividade. Por outro lado, o compromisso com a empresa verificou-se como sendo um mediador da relação entre a resistência à mudança e a criatividade ao mesmo tempo que está relacionado com a criatividade.

Palavras-chave: resistência à mudança, criatividade, participação e compromisso com a empresa.

Classificação da tese de acordo com as categorias definidas pelo Journal of Economics Literature (JEL Classification Systems): Labor Management (M54); Dissertations (Y40).

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1. Introduction

This research is based on a project that took place in a real company that will be described further on. Its focus is on the project that was developed and the employees' reactions to the changes brought by that project. The research looks at how the project was conducted and how that relates to the variables the model aims to test.

Due to a confidentiality agreement, a new name for the company and its specificities was created. Nevertheless, the data of the company and of the characteristics of the sample were kept as accurate as possible.

There are is one main goal that conducts and supports the development of this research: to test the model described in the previous chapter. The analysis of the model is crucial for the study and can be considered to be divided in two steps: assess the veracity of the hypothesis presented, by exploring their level of accordance to the model, and investigate the relationship between the variables of the model, to understand their strength and presence in the model.

The focus of this study is to analyze the first perceptions of a specific redesign project, which occurred in a particular company, and the immediate reactions of the employees to the new office. The goal is to evaluate how receptive and resistant the employees are to the project, by assessing their resistance to change levels, and to understand whether or not resistance to change influences employees' creative potential. Moreover, it is also the aim on this study to investigate the way Office for the People was conducted, by assessing the participation level of the employees in the project. Other important goals are to understand the general engagement of the employees to their job and how participation and work engagement moderate the relationship between resistance to change and creativity.

2. Theoretical Background

To develop a proper research case, it is important to understand the most important and studied theories that are relatable. Therefore, this chapter aims to present relevant theory and literature about change in organizations, organizational culture and office redesign.

2.1. Change in Organizations

2.1.1. Theories of Change

Change happens everywhere and it is not always easily spotted. It is the one factor that is constant in organizations but also very poorly managed among most (Forgensen et al, 2014). After all, what is the real meaning of change? According to Ford and Ford (1994: 759, cited in Weick et al, 1999: 362) “*change is the phenomenon of time, it is the way people talk about the event in which something appears to become, or turn into, something else, where the ‘something else’ is seen as a result or outcome*”.

Therefore, stating that change has become a common practice among companies can already be considered an understatement. Changing became part of the companies’ business strategy long time ago in many different ways. Employees are now required to have a fast adaptation process to change in the work methods, in routine office procedures, in the location of a machine or a desk, in personnel assignments and job titles. None of the so called ‘little changes’ are taken in a serious matter but they are the ones that usually have the biggest impact and that are more likely to increase productivity (Lawrence, 1969). Lawrence also stated that those ‘little changes’ are indeed the ones that are essential to business progress.

This matter is getting trendier by the day since organizations show signs of struggle to cope with, for example, new technologies or global markets (Rafferty et al, 2013). It is the complexity and the growth of those markets that now demand that companies make moderate to major changes at least every four to five years (Lewis, 2000).

Either way, change practices and skill expertise are now not only required but also part of the trends that are shaping organizations. Those trends rely on globalization, information technology and managerial innovation (Cummings et al, 2013). Globalization has the power to open new markets and sources of innovation and capital for organizations while technology is redefining the traditional business model by changing the way people work and use knowledge. Additionally, technology also allows companies to rethink how they use and transmit information and how it is possible for them to increase the value and quality of products and services while lowering costs. This is where e-commerce strategies and organizations are born and their connection to innovation is inevitable. It is the innovation that brings new networks, new strategic alliances and new ways of thinking about how to do the exact same thing but in a different way.

Change can be considered an outcome of these trends but can also be what powers them since it is what allows organizations to survive and compete within the market. Organizations are making themselves more streamlines and agile, more responsive to external demands and more ecologically and socially sustainable. They are valuing performance more than they are valuing time and taking initiative in innovating and managing change instead of simply reacting to what has already happened (Cummings et al, 2013).

The final goal for businesses is to enhance their productivity. That has been proven to be done by changing, redesigning and improving their workspaces so that they are more suitable to the company's activities, culture and values (Gensler, 2006).

Change projects are neither easy nor fast. They require a fair amount of planning and research and they are developed to match the goals of the aimed changes. Therefore, organizations usually go towards either a planned or an emerged change project depending on the aim and content of the project and the target of the change. These two are distinguished according to their characteristics and can fall into the Continuous or Emerged Change process versus Episodic or Planned Change process (Weick et al, 1999).

On one hand, the Emerged Change process refers to changes that are constant, evolving and cumulative. It is usually driven by organizational instability and has a micro and local level perspective (Weick et al, 1999). It is also characterized by long run adaptability since it is cyclical and continuous. Emerged change relates to the shift in task authority, recurrent interactions, emergent patterns and learning. It seeks equilibrium and is associated with improvisation (Stacey, 2005). It is frequent in changes related, for example, to the organizational structure of the business.

On the other hand, Planned Change is known to be infrequent, discontinuous and intentional. It can be a result of the growth of the business since it happens mostly in periods of divergence and increased influence of external factors, such as technology change. It is featured at a macro level perspective and short run adaptability. The changes introduced by this process are intentional, progressive and motivated by goal seeking. It is focused on inertia and aims for points of central leverage (Liebhart, 2010). Moreover, planned change communicates differently through an alternative schema and builds coordination and commitment while it also considers the importance of imitating successful leaders of the market.

2.1.2. Emerged Change vs. Planned Change

The episodic/planned change model can be considered to be based on three stages that complement each other: inertia, triggers of change and replacement. Inertia is defined as the *“inability for organizations to change as rapidly as the environment”* (Pfeffer, 1997: 369 cited in Weick and Quinn, 1999) and this stage occurs through the rigid structures present in the organizations when these are part of a conservative sector, such as the financial business sector, that stands for old-fashioned and static practices. Inertia is very present in markets such as the consulting and auditing market since companies, most of the time, are not very flexible with their standard procedures and culture which makes it more difficult for them to go through a change process in a fast way.

The second stage is named as triggers of change and it states the sources through which change usually occurs. According to George P. Huber (Huber et al, 1993) there are five characteristics of the organization that can be considered triggers of change: environment, performance, top management, strategy and structure. Environment is one of the biggest motivators for companies since it has a huge impact on the work activities of the company. According to Indris and Primiana (2015) it can be distinguished between external and internal environment. External environment is focused on the reality of the market and the industry while competing strategically looking into the technology, the economy and the law. On the contrary, internal environment is more dedicated to the internal strategic factors, as the strengths and weaknesses of the company, where the main concern relies on the empowerment and preservation of the firms' resources and capabilities, which crashes with the Pearce and Robinsons' theory of Resource Based View (Indris and Primiana, 2015). Characteristics such as competitiveness, turbulence or complexity are easily found in the external environment whereas the internal environment is more affected through the fast growing businesses and the aims of their employees in progressing in their careers.

Performance is another factor of change and it can be usually spotted when a decrease in the overall productivity of the company takes place. It affects the commitment of the workforce and it needs to be monitored in order not to reach levels that raise concern. The next trigger, top management, relates to the influence that managers have in change processes. This trigger is extremely important since change processes are normally introduced as a necessary change by the top management and are then communicated to the younger layers of the hierarchy. Strategy is also a trigger and can be considered the basis of the change process in steady structured companies. The need for change comes from the aim to be a more dynamic and present company in the market and also to keep up with the trends in order to retain talent. Finally, structure is the remaining trigger of change, is more related with decision making and work methods and plays a very important part in the change process.

Finally is replacement (Weick and Quinn, 1999) and, contrary to the previous two processes, it is based on the substitution of a certain entity for a second one. The idea

behind this process is that first there is the need to define the current situation, then to determine its replacement, thirdly to engage in action to remove the current situation followed by the implementation of the replacement. In an office redesign change project, for example, first companies do an assessment of the current office and find that it no longer fulfils the needs of the activity and that it needs to be more modern and technological. Secondly, a change team creates a new design and a new space that aims to be more engaging and committed to the intended culture of the company. Thirdly, the demolition process begins and the current space is completely cleared to become raw again. Lastly, the office design change project takes place through the building of a new office with new features that are more related to the aimed environment and work methods of the company.

Two assumptions are also important to have in mind when dealing with planned change theories: time and content of change. These are two key factors (Mosakowski et al, 2000 cited in Huy, 2001) that influence the change process and the way it is managed, especially the decision makers' choices related to the allocation of resources to the project, prioritization of tasks, timing of the project and organization of the main activities. There are two other important elements on which this change process has a more significant impact: work processes and social relationships. The first one refers to "*what employees actually do collectively to deliver products and services to customers*" while the second one is more related with the "*nature and quality of interpersonal interactions among employees in their daily work*" (Tsoukas, 1996 cited in Huy 2001).

In line with those two elements, Beer and Nohria (2000) defend two different theories of planned change that focus on different aspects. On one hand, theory E's focus is on the change of the tangible structures and work processes first. The ultimate goal is to have satisfied shareholders and to increase economic value. On the other hand, theory O's main point is that change should occur first on the culture, beliefs and social relations by acting towards the behaviors, attitudes and capabilities of the workforce. There is also a combination of both theories E and O where the goal is to optimize the economic value and the organizational capability of the company. Changing the physical structures of the office

making it more aligned with the market impacts mostly the employees but it also gives the other stakeholders a sense of accompaniment and attention to the trends and to the competition. Ultimately this will please the involved parties in the sense that it prevents the company from falling behind the sector.

The focus of this combination is the simultaneous change on the structures and systems and on the corporate culture (Huy, 2001). The change in the work processes is based on the actions of analyzing, understanding and redesigning the work methods to improve overall production. It is about reorganizing the way work is done and how the organization is fragmented to promote new work habits. Additionally, the changes focused on the corporate culture aim to enhance the quality of relationships among peers. This change happens more in terms of behavioral interactions and it leads to changes in the beliefs, organizational culture and environment.

Either way, the key to a successful change process relies on how well it is conducted and how its impacts on the people of the organization are managed. According to John Kotter (1995), the basic goal to ensure the highest success rate possible is to apply fundamental changes in the way business is conducted so that this eases the process of coping with a new, more competing and more challenging market environment. This implies that change processes are researched, developed and planned based on the organizations' needs and not on the industry as a whole which can suggest that change does not occur overnight.

Changing requires a series of steps that normally demand a not so short period of time. Authors state that skipping these steps can create the illusion that the process is going faster than predicted which can most likely be a sign of non-satisfying results or of the detection of issues along the change process (Kotter, 1995). Therefore, critical mistakes in any of the steps of a change process should obviously be avoided.

There are eight a few major steps that change teams should apply to avoid negative gains. Table 1 describes those steps and their respective actions that are associated to a smoother

change process. These steps and actions were tested and proven to have a positive impact in over one hundred companies (Kotter, 1995).

Table 1. Eight steps to transforming your organization (Kotter, 1995)

Steps	Actions
Establish a Sense of Urgency	<ul style="list-style-type: none"> - Examining market and competitive realities - Identifying and discussing crises, potential crisis or major opportunities
Forming a Powerful Guiding Coalition	<ul style="list-style-type: none"> - Assembling a group with enough power to lead the change effort - Encouraging the group to work together as a team
Creating a Vision	<ul style="list-style-type: none"> - Creating a vision to help direct the change effort - Developing strategies for achieving that vision
Communicating the Vision	<ul style="list-style-type: none"> - Using every vehicle possible to communicate the new vision and strategies - Teaching new behaviors by the example of the guiding coalition
Empowering Other to Act on the Vision	<ul style="list-style-type: none"> - Getting rid of obstacles to change - Changing systems or structures that seriously undermine the vision - Encouraging risk taking and nontraditional ideas, activities and actions
Planning for and Creating Short-Term Wins	<ul style="list-style-type: none"> - Planning for visible performance improvements - Creating those improvements - Recognizing and rewarding employees involved in the improvements
Consolidating Improvements and Producing Still More Change	<ul style="list-style-type: none"> - Using increased credibility to change systems structures and policies that don't fit the vision - Hiring, promoting and developing employees who can implement the vision

	<ul style="list-style-type: none"> - Reinvigorating the process with new projects, themes and change agents
Institutionalizing New Approaches	<ul style="list-style-type: none"> - Articulating the connections between the new behaviors and corporate success - Developing the means to ensure leadership development and succession

There is no standard recipe to plan and develop a change process since they are usually related to sensitive topics such as restructuring, cultural change or resizing. Having a clear and transparent vision of the change process is one of the most important steps to keep in mind during a change process. It is also essential to communicate it well and to ensure that the target of the change is involved in the process, ready for something new and aware of the changes that will come.

As a final note, more than certifying that the change process is designed, planned and prepared to be implemented, it is fundamental to have a steady top management team that is confidently on what is coming next and its impacts.

2.1.3. Socio-Technical Systems

It is essential to proceed with the change process in an open and structured way to avoid instability and to reduce anxiety caused by false perceptions and unpredictability. Some change processes fall under the Socio-Technical System (Emery et al, 1973) that is an approach to organizational work design that considers human, social, organizational and technical factors. This system aims to promote the interaction between people and technology in their workplaces and takes into consideration the design of organizational structures and business processes (Baxter et al, 2010). Moreover, the system has been proven successful in many studies since it obtained beneficial outcomes for both employees and the organizations (Davis et al, 1958 cited in Hackman et al, 1976). Therefore, companies who design the new workplace by this system are focusing on the interaction between the infrastructures and the human behavior.

The Socio-Technical Systems theory is the most extensive literature underlying employee involvement and work design. In these systems, both “*social and technical elements must work together to accomplish tasks, work systems and produce physical products and social/psychological outcomes*” (Appelbaum, 1997: 453). The main issue in this theory is to reach joint optimization that is obtained through the achievement of excellence in both technical performance and quality in people’s work lives. The key principles of the Socio-Technical theory are that the overall productivity depends directly on the accurate analysis of social and technical needs and requirements and that an accurate analysis of those same elements leads to the work designs with specific characteristics.

The performance of the employees varies proportionally to the changes that are implemented in the company (Appelbaum, 1997). For example, when there used to be no system to reserve rooms for a meeting, employees would lose a lot of time trying to ensure that a room was reserved and that no overbooking would happen. Once a system to reserve rooms was implemented, people generally became more productive since their schedule was easier to manage.

At the same time, the awareness around the social and technical needs of companies points to work designs that: are critical to success, control the deviations from the ideal process, have a broad *spectrum* of skills that can be used in different contexts, group similar roles in the same department, spread information across the company, support and reinforce the intended behaviors, and provide high quality of work life to fulfil individual needs (Appelbaum, 1997). These work designs are based on the top managements’ vision of each area and the set of skills needed in every employee.

No change process is an easy task, especially if it involves a change from a traditional work design workspace to one based on the Socio-Technical System. This transition requires employees to pursue new skills and knowledge and encourages them to learn to adapt to the new design work faster. Change processes bring a new and innovative workspace that not only allow people to communicate better but also promote their engagement with the

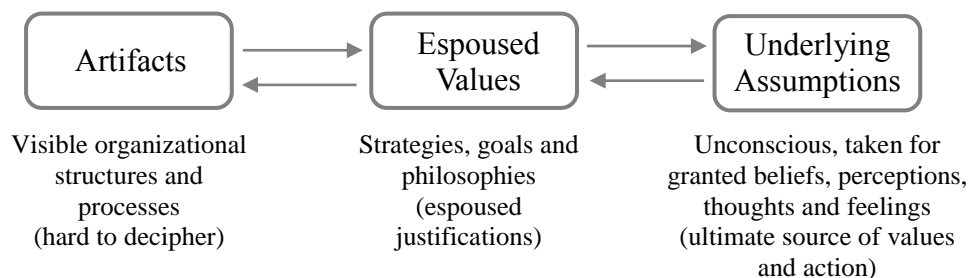
knowledge tools of the company. These physical workplace designs are one of the top three factors that affect performance and satisfaction the most (ASID, 1999 cited in Hameed 2009). They aim to introduce changes that are considered to be easier to implement, such as changes in the physical structures of the office and work methods, so that these, in the medium to long term periods, lead to changes in the way of thinking and working. The transition period involves innovation, learning and change and requires an open mindset and an adaptive attitude to the new work design.

2.2. Organizational Culture

Edgar Schein (2009: 27) defined culture as “*a pattern of shared tacit assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems*”. When asked what culture is about, most people state that it is ‘the way things are done around the company’ or ‘the combination of the values with the climate and the people’. It is indeed all that but to truly explain and understand culture it is necessary to dig deep into its composition.

Figure 1 represents the three levels that can define culture and that go from very tacit to invisible according to Schein (2009). These levels are not mutually exclusive but instead a complement of each other so much that they range from very superficial and observable behaviors to deeper knowledge, thoughts and feelings.

Figure 1. The three levels of culture (Schein, 2009)



The first level defines what anyone can observe when going into an organization. It is related to what can be seen, heard and felt on an initial impression such as the architecture, the decoration, the climate and the way people behave towards each other. At this level, culture is still very clear and has a straight emotional impact which leads to further research on the next level.

Level two is based on what employees of that organization can transmit to you and how they share what they were previously integrated into. It is more related to the certain values and strategies that were once presented to them as being the ‘this is how it goes around here’ of that organization. This level refers to the values, principles, ethics and visions that were shared to the employees through a document or a short paper of a welcome package in the beginning of their work.

The last level is the more complex to explain and share. It is grounded on the history of the company and on the initial values, beliefs and assumptions the organization was created and developed beneath. The basis of this is on the founders and key leaders of the company that transformed what they believed in on tacit assumptions about the nature of the world and how to succeed in it. This level states that the essence of the culture is translated by the national background, the core technology underlying the business and the personalities of the founders. This same essence is represented by the learnt values and beliefs that are now taken for granted and as non-negotiable in organizations.

When talking about change in organization, the culture concept is an implicit subject since it is an important factor in determining how well an individual fits an organizational context during and after change projects. Therefore, the person-culture fit has become more associated with change and it has focused on the idea that cultures are more or less attractive to certain types of individuals (O’Reilly III, 1991). Nevertheless, person-culture fit is defined as the compatibility between the person and the culture that occurs when both parties provide what the other party needs and/or when they both share similar characteristics (Kristof-Brown et al, 2005).

The relation between the person and the culture is a mutual giving relation that indirectly encloses two perspectives. On one hand the organization needs have a culture that fulfils employees' needs while on the other hand the employee must demonstrate the ability to meet the culture and the organization's demands (Sutarjo, 2011). These two perspectives suggest that the employees' goals, desires, values and interests and their experience, aptitudes and education describe the person whereas the supplies, demands, structure and strategies end up describing the organization and the culture.

Regarding how organizations value and see culture, Smircich (1983) suggests that organizations are divided in two perspectives: one that considers that 'organizations have cultures' and other that states 'organizations are cultures'. The first emphasizes the understanding of their pragmatism in terms of their focus on organizational effectiveness and organizational change and also explores the attributes of the organization that differentiate what is more and less effective. The second perspective believes more in the description and understanding of how organizational members develop meaning and identify the unique manifestations of culture (Schneider et al, 2013).

Moreover, culture considered to be stable and difficult to change due to being a representation of the accumulated learning of a group. It is the way of thinking, feeling, and perceiving the world that have made that same group successful. Still, it is important to note that the most important parts of culture are essentially invisible and that is exactly what makes it hard to define and study (Schein, 2009).

2.3. Office Work Design

As stated by Amina Hameed (2009), office designs are defined as "*the arrangement of workspace so that work can be performed in the most efficient way*". They incorporate both the ergonomics and the workflow in order to optimize the layout and the space. A company that aims to proceed with a change process of the workplace must analyze the work they do to identify the best possible setting for the office to improve productivity and team work.

These restructures of the office designs can be done for different reasons but it is believed that they all aim the same gains and all report the same costs from these change projects (Voordt, 2003). On one hand, organizations proceed with office redesigns to create a more efficient use of the space, to promote a better performance which reflects in high productivity and higher satisfaction, to create a positive image in the eyes of the clients and shareholders, to increase flexibility and prevent loss of time in future changes and to save space to ultimately reduce energy consumption and the accommodation costs (Hameed, 2009). On the other hand, companies can face a high resistance to change and a massive financial investment in the workspace, among other risks and additional costs such as the human capital training to the new technologies.

New office designs have to be considerate of many elements that have been proven to be essential for high performance (Manning, 1965). This happens because people spend over half of their lives within indoor environments and this can have a huge influence on their mental status, actions and performance (Sundstrom, 1994 cited in Hammed, 2009). Planning a new work design requires a well-developed analysis of the flexibility of the space for inter-office communication, the use of technology and new systems, the lighting requirements, among others. It is important to account for the group membership and the feeling of belonging to the workspace to make employees feel comfortable and satisfied. This satisfaction most likely leads to efficiency to work and to build relationships with peers and co-workers.

Becker (2007, cited in Matthews, 2009) proposes five principles that should be respected when planning a new physical environment to support a collaborative and communicative culture in a company. The following table describes best these factors.

Table 2. Organizational ecology (Becker, 2007 in Matthews, 2009)

Design Factors that Likely Increase Informal Communication, Interaction and Learning	
Eco-Diversity	More varied work settings inside and outside the “office”

Spatial Transparency	More opportunities for employees to observe the behavior of each other and the work they are doing
Neutral Zones	More deliberate planning, design and the use of spaces not “owned” by any particular discipline or unit
Human Scale	Smaller scale work areas within floors and less separation of related functional areas
Functional Inconvenience	Designing space to increase the opportunity for chance encounters

One of those factors is eco-diversity and this stands for a more varied and diverse type of space to foster interactive work. Spatial transparency is also relevant and relates to the promotion of visual connections to facilitate information seeking. The neutral zones also play a role in the planning of a new space since they minimize professional and status hierarchies. Additionally, there is the principle related to the human scale that aims for smaller unit sizes to stimulate interaction and reduce barriers between functional areas. At last, is the functional inconvenience that stands for flexible workspaces and that enhances relationships among the hierarchy.

In a study conducted by Hughes (2007, cited in Hameed, 2009), ninety percent of employees believe that the qualities of the workspace affect employees’ attitudes and that better physical environments boost the employees engagement, ultimately improving their productivity. Therefore, the size and disposal of the working area needs to be well planned to fit the activities of the company and employees’ needs. The physical proximity of co-workers allows for a growth of the relationships between employees of different levels of the hierarchy and influences the way supervision and leadership are practiced. The use of a common entrance, instead of multiple offices, and of common spaces such as the informal meeting areas and the kitchen promotes non-related to business interactions which can lead to strengthen the culture of the company (Manning, 1965).

The open space disposal increases opportunities to establish contact between people from different work streams or specialties within the same department. This promotes an

environment that stands experience and knowledge sharing and that also supports the improvement of competences due to the contact with people with different skills.

According to Brill et al (1984 cited in Hameed, 2009), there are eight factors that not only affect productivity but also influence the working environment. Furniture is a big player in these processes and this is proved to improve employees' performance up to fifteen percent when ergonomic and modern. The noise level also influences tremendously the focus of the employees and internal environment of the company and a certain level of noise was actually found to be positive (Tian, 2014). Flexibility of the workspace also affects the culture and is related to the independency of time and place to work. At the same time, comfort plays a big role in the feeling and engagement of the employees with the internal environment and with the working facilities of the company. Communication is also a key player in the company's culture and in the relationship between top management and employees. Additionally the lighting can completely change the look of the workplace and mess with the focus of the people. In seventh is the temperature that is also much related to comfort since it relates to physical well-being of the workers. Lastly is the air quality that, like lighting and temperature, was also proven to greatly impact not only the focus but also the physical health of the workforce and on how their brain works. Ultimately, all these factors can influence the productivity, the culture and the environment of the company when well adapted to that specific workplace.

It is also important to explore how the redesign of an office can be framed along with the person-environment fit. This theory consists in the study of the match between individual and environmental characteristics (Kristof, 1996 cited in Shalley et al, 2004). Individual characteristics are more related to the person's values and goals while the environment characteristics deal with intrinsic and extrinsic factors of the environment. This relation can be researched as the match between the person and the corresponding environment and how these adapt to each other. This is an important theory to keep in mind when redesigning an office to respect the needs of the relationship, to understand how the values and goals of the company are preserved and how the individual needs can be fulfilled.

To sum up, all theories here presented somehow explain the process and impact of a change project in a company. Their planning, context and presentation to the firm represent important steps that should be kept in mind to succeed on these projects. Moreover, the comparison and similarities between a change project, as the one that will be further presented in this research, and socio-technical systems are good predictors of the outcome of the change project. Additionally, culture is a factor that can also be changed or damaged when an office redesign project, such as the one under study, is in place.

3. Description of the Model

This research aims to study a specific model that was developed to understand a few relations between some variables. This chapter describes the variables in detail, shows the model that is being tested and presents the hypothesis under study.

3.1. Creativity

Most of the literature that researches the structuring of offices and work environments examines elements that lead to good relationships and potential for team breakthroughs. As stated by Judy Mathews et al (2009: 644), “*creating environments where knowledge is created, developed and shared has become extremely important*”. Thus, structuring a workplace that promotes creativity and supports mechanisms that foster creative expressions should be the ultimate desire for companies that are under an office redesign process.

Creative ideas have the power to lead to innovation and to set companies apart from their competition and their industry. They may be generated by employees at any job and at any level of the company and they can be potentiated in specific environments. Creativity can be seen as a function of employee’s personal characteristics and the interaction these have with the context where the employee works. Certain context characteristics are more suitable to an individuals’ personal characteristics than others and it is when this match occurs that high levels of employee creativity are found (Shalley et al, 2004)

The creativity element is defined as the “*generation or production of ideas that are both novel and useful*” that “*must be both new and seen as having the potential to create value from organizations in the short or long run*” (Amabile et al, 1996: 1155). Moreover, creative ideas can relate to work procedures and organizing structures and vary in terms of scope or the range of their potential to create value. Additionally, creativity has been recognized as an important source of effectiveness of work in organizations (Amabile, 1988).

Not only do they improve performance, creative environments also allow employees to express themselves better, which ultimately contributes significantly to the culture of the company. Employees become more open to different ways of doing things and also challenge themselves more often to come up with innovative creations.

Early theories on creativity emphasize the importance of person-context interactions where these interactions are influenced by events that already happened as well as by characteristics of the current situation. Additionally, the individuals' characteristics play an important role as to their engagement and adaptation to the environment and context since some people adjust better to these factors than others. Thus, both cognitive (e.g. knowledge) and non-cognitive (e.g. personality) aspects of the individual's mind are related to creative behavior. This creative behavior results in the joint of that person's characteristics and the contextual influences (Woodman et al, 1993).

Creativity is, more than ever, essential for organizations (Mahajan, 2014). It leads to greater innovation that then leads to greater success in the long term. Since economies are developing and changing all the time, creativity is specially needed to compete in the market and to create new solutions. Therefore, it is fundamental that workplaces reflect the characteristics of environments with high perceived creative potential that stand for being visually interesting, both spatially and ornamentally complex, have extended views and natural materials and some provision to promote social interactions (McCoy et al, 2002 cited in Matthews, 2009).

Once stated that creativity is indeed a very important factor among companies nowadays, it is wise to understand how it can be affected by different factors. What can be changed in the environment so that employees have higher levels of creative potential?

According to a study conducted by Major Tian (2014), the relationship between the working environment and creativity is quite strong showing that a number of environmental cues impact people's cognition and behaviors. This happens unconsciously when people are

exposed to different environment conditions that, without them knowing, are manipulated to promote and study different reactions and changes in their behavior. Tian's study revealed, firstly, that a certain amount of sound, such as people talking or even music, in the working space was actually facilitating creative thinking. Secondly, that the right level of temperature of the working environment varies according on the complexity of the task, so the more complex the task is the warmer the temperature should be. The study also tested what the intensity of the lightening should be and results showed that, contrary to what was expected, people working in a darker environment were more creative. Lastly, Tian also explored the space organization of the working environment and concluded that employees seating in an angular shape feel the need to be more unique and creative.

This study supports the argument that creativity is directly associated with the working environment and with the conditions that the same work environment provides to employees. Therefore, it is important to organizations to have workplaces that offer environment conditions that promote creativity. For many organizations, it may mean the need to transform their office work design – in other words, the development and implementation of a change project.

3.2. Resistance to Change

To be successful, a change project requires full commitment from the company leaders and a well-designed and structured process. The more the whole company is involved in the full process, the easier the adaptation to the final changes is.

In a general way, the concept of change is likely to generate resistance since it creates a feeling of uncertainty. It is also usually associated with pressure and risk which can be indicators of low performance and, eventually, failure (Hon et al, 2011). Resistance to change can be considered, therefore, as a direct consequence of a change process and it is an element that has a big influence on the success of a change project.

According to Hon et al (2011), resistance to change is characterized by six different reasons. The reluctance to loss of control is represented by the fear that employees might lose control of their activities and of their daily routine after change comes along. Cognitive rigidity is also a concern when it comes to change since it is defined as the unwillingness to think differently and to stay within the usual activities while having a tendency to be close-minded. The lack of psychological resilience, which translates into the low ability to cope with change, is quite frequent in change processes that are major to companies. Another reason is the intolerance to the adjustment period involved in change that is represented by the inadaptability to adjust to new situations. Additionally, resistance to change is also characterized by the preference for low levels of stimulation and novelty that is defined as the ability to perform well within a well-defined framework with a tendency to perform poorly outside that same framework. Moreover, the reluctance to give up old habits, also known as the tendency to experience stress when encountering new stimuli, also manifests itself quite often during a change process.

Resistance to change is often associated with people's extra-role behaviors (Dent and Goldberg, 1999). These behaviors can be divided into two distinguished groups: citizenship behaviors and adaptive performance behaviors (Johnson, 2001). According to Johnson (2001), two dimensions related to adaptive performance behaviors are dedicated to creative problem solving and dealing with unpredictable or changing work situations.

In the light of this study, it was considered to be an interesting research to look into the relation between resistance to change and creative potential, as reflected in two of the main behaviors undertaken under the dimensions of adaptive performance. That said, how does resistance to change impact creativity? And is that impact affected when other variables are in place?

Changing is unavoidable and creativity implies change. According to Burns and Stalker (1961, cited in Aqdas et al, 1999) change is an essential part of creativity and is directly associated with high levels of difficulties in experiencing something new. Usually, employees would rather stick to their original routines and behaviors and show a fairly high

level of resistance to change. They tend to be sensitive to risks and potential failures that are normally a complement of change, which translates into the resistance to innovation and creativity. This individual resistance can represent danger for organizations firstly because employees can influence each other to resist and secondly because it prevents them to take steps to embrace change, bring creativity and, therefore, respond to competitive changes (Aqdas et al, 1999).

Moreover, when organizations motivate and teach their employees that creativity is a need of the market and a necessity of time, failures in pursuing change will be embraced, because they show effort and commitment, and changes will be encouraged. Then, acceptance of change will become natural and, as a result, creativity will be enhanced. On the contrary, when change is discouraged, failures are judged and creativity is seen as unwelcomed, then the creative potential performance of the employees declines (Bennebroek Gravenhorst et al, 2003). So, in general people do resist change and ultimately prevent creativity levels from being at their best (George, 2007).

Resistance to Change can be, therefore, measured by four dimensions (Oreg, 2003) that are routine seeking, emotional reaction, short-term focus and cognitive rigidity. These dimensions will be further explained and properly presented. For now, and as a result, this study expects that all dimensions of resistance to change will negatively affect creativity.

- **H1a:** Employees' tendency to seek routine during a change process is negatively related to their creativity, so that the greater the tendency to seek routine, the lower the perception on creativity.
- **H1b:** Employees' tendency to react emotionally to a change process is negatively related to their creativity, so that the greater the tendency to react emotionally, the lower the perception on creativity.
- **H1c:** Employees' tendency to focus on short-term issues of a change project is negatively related to their creativity, so that the greater the tendency to focus on short-term issues, the lower the perception on creativity.

- **H1d:** Employees' tendency to display cognitive rigidity during a change project is negatively related to their creativity, so that the greater the tendency to display cognitive rigidity, the lower the perception on creativity.

Furthermore, a change process requires a few steps in order to be successful (Scott, 2015). It is important to ensure that the change plan is suitable for the company and that all risks are accounted for. Also, everyone should be aligned with what is going on at the company. This includes a well-developed expectation management plan from the very beginning of the process, to reduce the risk of resistance to change and disappointment, and a message that represents the goals of the project. Moreover, the involvement of the workforce and the stakeholders of the company is seen as an essential part of the process. Additionally, it is fundamental to establish a designated team to coordinate the project that covers both the operational part of the project and the human side of the change. Lastly, it is the top management's responsibilities to be an example to the company and to support the change initiative by approaching it as a great feature for the future of the company.

Part of this study aims to understand the perceptions of the employees on how a change process was done. In sequence to what was previously presented, the engagement of the employees with the company and their involvement in the project are two vital factors that can influence the success of the change. Thus it was considered to be interesting to investigate two different variables: (1) the influence of the level of involvement and participation of the employees during the change project and (2) their level of work engagement with the organization.

3.3. Participation

Assessing how much the employees were involved in the process turned up to be an interesting research issue for this study. The participation variable refers to promoting the workers to have an active participation in the change project by allowing them to have input regarding the proposed changes (Wanberg and Banas, 2000). Some authors defend that when top management increases levels of employee's participation and listen to their

suggestions and advice, employees should increase the acceptance of change by, therefore, diminishing the levels of resistance to change (Kotter et al, 1979 cited in Wanberg and Banas, 2000).

When considering the effect of resistance to change on participation, Agboola and Salawu's (2011) study suggested that people who are less resistant to change are more likely to be more participative on change projects. Additionally, Wanberg and Banas (2000) note that by being less resistant to change and innovation, employees improve their satisfaction and involvement with the company, which are indicators of higher participation. This relation is important for the dynamism and performance of both the employees and the company since a poor environment and a low performance of either the employees or the company can be deadly in a competitive market (Pralhad and Ramaswamy, 2000). Given the importance of this link to organizations, this study investigates the relation of resistance to change with participation.

Thus, it is suggested that the employees' resistance to change affects their participation level on the projects. To test this, H2 was developed.

- **H2a:** Employees' tendency to seek routine during a change process is negatively related to their participation on change projects, so that the greater the tendency to seek routine, the lower the participation level.
- **H2b:** Employees' tendency to react emotionally to a change process is negatively related to their participation on change projects, so that the greater the tendency to react emotionally, the lower the participation level.
- **H2c:** Employees' tendency to focus on short-term issues of a change project is negatively related to their participation on change projects, so that the greater the tendency to focus on short-term issues, the lower the participation level.
- **H2d:** Employees' tendency to display cognitive rigidity during a change project is negatively related to their participation on change projects, so that the greater the tendency to display cognitive rigidity, the lower the participation level.

The participation of the employees and its effect on creativity has been researched before. It was emphasized the involvement of customers in the development of new ideas and some authors even suggest customer's intervention in service innovation processes. More specifically, those authors see the customer as a co-producer and as an idea generator (Prahalad and Ramaswamy, 2000).

In the case of a change in the physical structures of the office, employees of that company can be considered customers since they are the ones that will enjoy and make use of the space the same way a customer would enjoy and make use something they bought. Change projects aim to the way people work and therefore the employees are the target of those changes. Kristensson et al (2002) defends that if the customers are the ones using the product or service and if they are the ones who ultimately decide if it is unique or not, then they should be considered a valuable resource to generate profitable ideas. The deeper the interaction between the manufacturer (seen as the company) and the customer (seen as the employee), the higher the level of creativity.

Thus, involving the employees in the change project and having them contribute with ideas and suggestions would most likely turn out in a great outcome. Their participation in the change innovation process affects the end-result and makes a difference compared to the merely involvement of only the top management of the company without the interactions of the workers.

To understand and test this relation H3 was created. It suggests that the employees' participation level will have an overall positive relation with creativity and it focuses on the relation between participation and creativity.

- **H3:** Employees' level of participation in the change project positively influences their perceptions on creativity, so that the greater the participation level, the higher the perception on creativity.

3.4. Work Engagement

Likewise, another element that plays an important role in making a change process successful is the analysis of the work engagement of the employees. This is defined by McEwen (2011:2) as “*the affective and cognitive connection employees have for their organization that leads them to exert discretionary effort at work*”. Work engagement explains the degree to which employees are satisfied with their job and feel an emotional connection to the success of the organization and it is usually driven by their desire to identify with others in their work environment and with the values of the company (Cable and DeRue, 2002).

It is important for companies to ensure employees are engaged with the organization since this impacts the environment of the workplace. This engagement can be focused on the energy, the satisfaction, the involvement and the efficacy and it is stated that employees that share similar goals and values with the company are more likely to experience positive feelings towards their organization such as affiliation and loyalty (Kristof-Brown and Stevens, 2001). Work engagement presents two aspects: the emotional and the behavioral. The first translates into how employees feel about their job, their colleagues and their leaders while the second is more focused on the value added component that is reflected on the employees' effort (Gichohi, 2014).

This study requires the understanding of the variables and their relations. Thus, to look at the relation between resistance to change and work engagement, a study developed by Heuvel et al (2010) was used. Their research studied the relation between personal resources and work engagement during a change context. These personal resources refer to factors that facilitate goal attainment when adversity, such as resistance to change, is in place and relate to resources that are useful in coping with those goals and that create a more favorable situation.

Heuvel et al (2010) suggested that employees need knowledge, skills and engagement to work with new techniques or ways of working. Their study also concluded that openness to

change is predicted by a few factors and that it also predicts outcomes related to the employees' performances. They stated that resistant employees that are not positive or proactive towards change, are less likely to be engaged and feel guided and oriented by the company. Thus, different personal resources, such as openness to change, can have a direct effect and influence on factors such as the engagement of the employees with their company.

The study of these personal resources is important because resistance to change can be related to the performance or damage of other personal resources, such as engagement. By being resistant, people can lose focus on other resources of their own such as engagement or creativity (Heuvel et al, 2010). Therefore, it was considered to be interesting to test the relation and influence of resistance to change on work engagement.

So, this research suggests that resistance to change is negatively related with work engagement. To test this, H4 is presented.

- **H4a:** Employees' tendency to seek routine during a change process is negatively related to their work engagement level, so that the greater the tendency to seek routine, the lower the work engagement level.
- **H4b:** Employees' tendency to react emotionally to a change process is negatively related to their work engagement level, so that the greater the tendency to react emotionally, the lower the work engagement level.
- **H4c:** Employees' tendency to focus on short-term issues of a change project is negatively related to their work engagement level, so that the greater the tendency to focus on short-term issues, the lower the work engagement level.
- **H4d:** Employees' tendency to display cognitive rigidity during a change project is negatively related to their work engagement level, so that the greater the tendency to display cognitive rigidity, the lower the work engagement level.

The study of engagement is needed because, like participation, it was also found to influence creativity. According to a study conducted by McEwen (2011), engaged

employees are more involved and enthusiastic about their work and are, therefore, more creative and innovative. On the other hand, staff that is disengaged diminishes the organizations' ability to adapt to the changing environment. Work engagement has also been linked with numerous organizational outcomes among which were found: personal initiative on the job, increase in creativity and innovation and application of creative energy in the work (Gichohi, 2014).

It is the organizations' job to ensure engagement levels are high since that may allow staff to feel free to give ideas and help with change projects. Also, workers that show high levels of engagement with the company are known to be more able to respond adequately to changes and to be more creative than disengaged workers (Gichohi, 2014). Additionally, engaged employees demonstrate higher levels of performance than they are required or expected to which results in creativity and innovation. High performing employees are considered to be a source of creative performance for the company while they can also lead to the attraction and recruitment of more talented people to the organization. This is done by promoting their role and performance in the company among potentially strong candidates, namely in universities and schools (Gichohi, 2014).

Work engagement is an important variable to nurture creativity and innovation. So, this research suggests that work engagement has a positive relation with creativity.

- **H5:** Employees' level of work engagement with the company positively influences their perceptions on creativity, so that the greater the work engagement, the higher the perception on creativity.

3.5. Mediating Effects

Besides studying the direct effects of resistance to change on participation and work engagement and of these last ones on creativity, this study also aims to understand a few interactions. Hypothesis 1 suggests that resistance to change, studied through four dimensions in this research, has a negative relation with creativity but it is important to

understand if this relation is or not affected by the mediating variables: participation and work engagement.

As previously written, participation is a behavior that is expressed in many different contexts, being it in the business field, education field or among any other. Thus, this variable has already been used in other studies either as part of a direct relation between two variables or as part of a mediator of a relation.

In 2000, a study was conducted to understand the relation between high risk growing environments and school drop-out levels and how this relation was affected by the students' level of participation in extracurricular activities (Mahoney, 2000). It was suggested that students who grew in high risk environments were more likely to leave of school and end up in trouble with the law, which was, in the end, verified. Nevertheless, when analyzed if that relation was somehow affected by the students' participation levels in extracurricular activities, it was concluded that, when high levels of participation were in place, those same students were less likely to drop-out of school or be arrested.

Even though the previous study was applied on an educational instead of a business context, it sets the opportunity in the literature as to the role of participation as a mediator of different relations between different variables and in different contexts. If participation was a solid, concrete and game changer variable in Mahoney's research, there is a possibility of also being so in the relation under this research.

Therefore, the level of participation and involvement of the employees in a change project can somehow influence the relationship between resistance to change and creativity. Environments where employees are more involved in the change project will most likely mediate the effect of employees' resistance to change on creativity so that the negative relationship between the previous two will be smoother in environments where the workers are more involved and have high levels of participation in the change project.

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- **H6a:** Participation mediates the negative relationship between routine seeking and creativity such that this relationship is weaker for environments with high participation of the employees than for environments with low participation of the employees.
- **H6b:** Participation mediates the negative relationship between emotional reaction and creativity such that this relationship is weaker for environments with high participation of the employees than for environments with low participation of the employees.
- **H6c:** Participation mediates the negative relationship between short-term focus and creativity such that this relationship is weaker for environments with high participation of the employees than for environments with low participation of the employees.
- **H6d:** Participation mediates the negative relationship between cognitive rigidity and creativity such that this relationship is weaker for environments with high participation of the employees than for environments with low participation of the employees.

When considering work engagement as a possible mediator, it was important to understand its role in other studies and to understand if it had affected the interaction between other relations. One of those studies (Salanova and Schaufeli, 2008) aimed to research the association between job resources and proactive behavior and aimed to show that job resources had a direct impact on employee proactivity but only through work engagement. Thus, the mediating role of work engagement in the relation between job resources and proactive behavior was tested.

The study concluded that no direct relation between job resources and proactive behavior was found but that work engagement was a strong mediator that fully impacted the relation between those two variables. So, the two variables alone showed no relation between each other but when mediated by work engagement, job resources positively influences proactive behavior.

Salanova and Schaufeli (2008) revealed that work engagement could be strong enough to mediate a relation that was insignificant without its mediation. This leads work engagement on to possible further research as to what other relations it might or not influence. Thus, there is a possibility that work engagement also mediates the relation between resistance to change and creativity.

So, the same logic is applied to the use of work engagement as a mediator variable of the model. Higher levels of work engagement in organizations will most likely mediate the relation between resistance to change and creativity so that the negative relationship between the previous two will be weaker in environments where the workers are more engaged with the company.

- **H7a:** Work engagement mediates the negative relation between routine seeking and creativity such that this relationship is weaker for environments with high work engagement levels than for environments with low work engagement levels.
- **H7b:** Work engagement mediates the negative relation between emotional reaction and creativity such that this relationship is weaker for environments with high work engagement levels than for environments with low work engagement levels.
- **H7c:** Work engagement mediates the negative relation between short-term focus and creativity such that this relationship is weaker for environments with high work engagement levels than for environments with low work engagement levels.
- **H7d:** Work engagement mediates the negative relation between cognitive rigidity and creativity such that this relationship is weaker for environments with high work engagement levels than for environments with low work engagement levels.

To better understand the relations between the variables, the hypothesis suggested and the model under study in this research, two figures of the model were created.

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Figure 2. The mediating effect of Participation in the relation between Resistance to Change and Creativity.

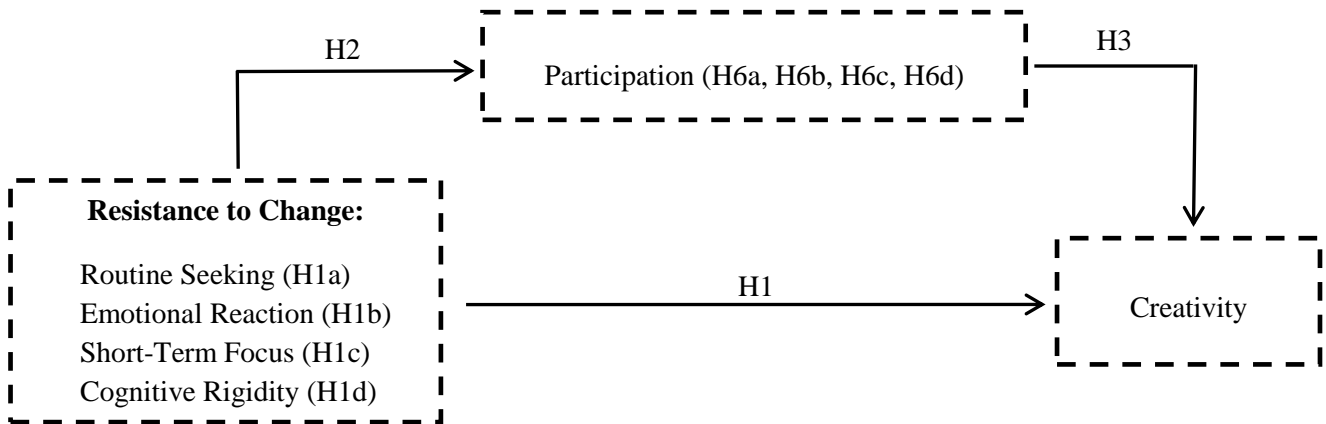
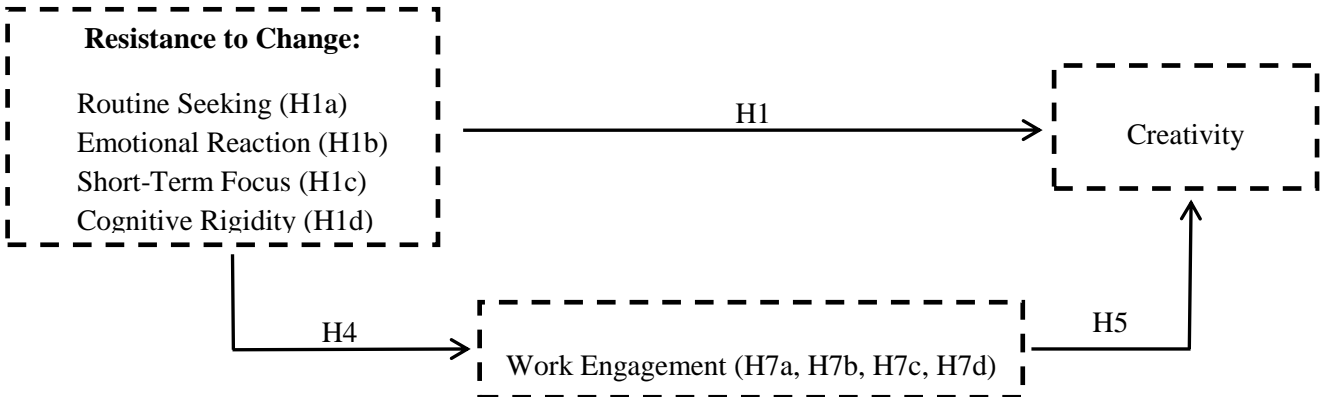


Figure 3. The mediating effect of Work Engagement in the relation between Resistance to Change and Creativity.



4. Methodology

4.1. Research Strategy

The study is based on a case study approach involving the observation of a particular organization that will be presented further on. Even though case study approaches are usually perceived to be mainly qualitative, this research adopted mainly a descriptive quantitative approach to investigate an ongoing change process in its context.

Case studies are the most appropriate methods of investigation to describe the application of a research to a real situation or company (Yin, 2009). They benefit businesses with new information and systems when compared to former investigation methods. Case studies present the context under research in the context of a specific project including its characteristics and data (Barlish and Sullivan, 2012).

Quantitative approaches emphasize objective measurements and can be complemented with different methods of information gathering to boost the validity and the dependability of the data. Quantitative analysis involves the use of scientific data to comprehend an issue and focuses on the statistical analysis of the results gathered to explain a particular phenomenon or model (Zohrabi, 2013).

The items tested on quantitative approaches are mostly developed based on the research objectives of the study and on the model under study itself. It is important to ensure the quantitative approach is reliable and unambiguous (Babbie, 2010). These aspects are warranted through numerical data or recoded text information. Quantitative approaches are extremely useful due to the fact that they allow to easily quantify the hypothesis under study and validate them. These approaches produce results that are as important when making business decisions as when studying a research model for a project such as this research.

4.2. Institutional Details

Market Solutions is a multinational company that is composed by multiple branches all over the world. It is a global leader in the fields of consulting, auditing and tax services and focuses on delivering the service of excellence to their clients. Among their many offices, there are two located in Portugal that together compose Market Solutions Portugal (MSP).

MSP counts with a little over 700 employees divided between both offices. These are integrated in seven different departments that are segmented by core business areas: assurance, advisory, tax, transaction services, people services, financial services and administration. Since they are a multinational company, they deal with big and multinational clients and develop projects within a variety of different industries and sectors of the Portuguese and international market.

As a company operating in Lisbon, MSP has an office located in the business heart of the city. The office met the standards the company had set when it first started its activity in the country but over the years those standards no longer applied to their vision for the future and the message the company wanted to send to its clients, employees and the market in general. MSP's office needed to be physically redesigned, developed, modernized and turned into a more comfortable and friendly working environment.

Therefore, the Office for the People project was born along with a change management team that was assembled. Its goals were focused on enhancing the performance of teams, improving the commitment and employees' flexibility and optimizing efficiency.

To enhance team performance, the project focuses on the following points:

- It is designed according to how MSP people work and not where they sit
- It promotes the freedom of being able to choose what space to use, regardless of their rank in the company, based on their current task
- It is tailored to the type of work activity and collaboration that is promoted at MSP

The relation between resistance to change and creativity: the mediating effect of participation and work engagement in a Portuguese business context.

- It promotes the virtual collaboration with colleagues from other locations
- It stands for the use of technology allowing people to work anywhere and still be connected to the network and to other people

To improve the commitment, the project aimed to emphasize the following issues:

- It aims to value the importance of flexibility for the younger generations by allowing career and personal life
- It strikes for higher engagement and commitment rates that will then lead to revenue growth in the long term
- It is seen as one working place but not the only one
- It intends to attract and retain the best talent lowering turnover rates and improving engagement levels

To optimize efficiency, the project focuses on the following concerns:

- It is redesigned based on MSP's growing perspectives
- It is concerned about the physical organizations of the space in order to maximize efficiency and team communication
- It has an ecological perspective that aims to reduce MSP's footprint and to reinvest the savings that come from that feature into other developing areas of the business
- It enables for the teams to welcome new colleagues in a flexible and forward-looking environment through technology

Office for the People was mostly focused on internal changes (Huber et al, 1993). The basis of the project was to have an impact in the culture (through the promotion of employee cooperation and development of the workforce), on the way people work (changes in equipment, techniques and activities) and on the coordination and communication procedures (introducing meetings to discuss possible improvements to the work environment, to close the gaps in the communication system and to announce the wins and news of the company). Even though the changes will generate a long term change in the way MSP operates, the goal of this study falls under the short term effects of the project.

These short-term effects are mainly related to the immediate reactions of people to the new working space and environment.

The project can also be associated with some of the theories previously presented. It fits under a combination of both Theory E and O (Nohria and Beer, 2000) where the goal is to optimize the economic value and the organizational capability of MSP. The Office for the People was created mostly to change the way work was done at MSP. Its ultimate goal was to improve the communication among peers and to be more innovative and competitive in this sector.

In practical terms, Office for the People aimed to keep up with the changing market trends, to develop MSP's working environment, to promote the company's growth and to bring a more dynamic, modern and technological workplace. The project brought six main core changes: (1) concept of free address, (2) clean desk policy, (3) introduction of specific workstations, (4) activity based protocols, (5) concept of paperless office and (6) the addition of lockers.

The concept of free address (1) consists on the sharing of the common open working space among all ranks meaning that no employees have a specific room assigned for them to work in. This promotes a better communication across the hierarchy and multidisciplinary teams. The clean desk policy (2) was already familiar to some employees, mostly on the lower ranks, but Office for the People made it a regulation for everyone. This prevents people from always sitting on the same place and enforces them to make a better use of the common space enhancing a more respectful environment. The introduction of specific workstations (3) emphasizes the strategic distribution of the departments according to their core business areas. This encourages the cooperation and teaming between departments and it also promotes a better management of the workspace. The activity based protocols (4) state that there are no reserved spaces for anyone. It also promotes the free utilization of the multiple spaces available through a pre-reservation of that same space. This is managed through a specific space reservation system that controls all the room reservations and their timings. The paperless office concept (5) stands behind MSP's mission to be more

environmental friendly and to promote ecological practices. This concept helps MSP to reduce their footprint and their costs with materials. Lastly, the addition of lockers (6) to the office strengthens the company's practices of concern with the employees' well-being and their belongings' safety and also their individual space. This last change is strongly aligned with the clean desk policy and with the free address concept.

4.3. Sampling

Since Office for the People was developed for everyone and had an impact on the whole population of the company, it was appropriate to consider all the employees of the company as part of the target of this study. That totals 736 employees divided according to each department of the company.

The total response rate of the research was 49% that corresponds to 368 employees. After reversing 2 negative questions and checking if the questionnaires were completed and finished, a few questionnaires were excluded from the research. Therefore, 226 questionnaires were left for further analysis which corresponds to a useful response rate of 31%.

Most departments of MSP kept that same rate around 30%, although an exception was verified in the advisory department since this showed a cooperation rate that reached 65% while the assurance department presented the lowest rate, 24%. The gender ratio of the respondents was very balanced since 54,4% of the respondents identified as males and the other 45,6% as females. Their age mean was about 30 years old being the youngest respondent 21 and the oldest 56. The company's tenure was also gathered. The respondent that has been in MSP the longest sums 26 years with the company, while the one who has been there the shortest is there for 1 year, being the seniority mean about 4 years.

The two lowest ranks of the hierarchy had the higher percentage of participation in the questionnaire representing 65% of the respondents combined. Also, the majority of the

respondents (71%) come from an area related to management or economics while the minority is related to either technology or health science (4% combined).

The complete data about the demographics of the respondents and the detailed information can be found in Annex A.

4.4. Instrumentation

A questionnaire was composed and applied to the employees of MSP where the change project occurred. This is a common method that has a few advantages and disadvantages depending on the research it is used to (Wright, 2005).

Questionnaires are a practical way to gather data since they are easy for both the respondent and the researcher to understand. They allow the researcher to collect a large amount of information in a short period of time and with very little cost while allowing access to unique populations that would otherwise be hard to reach. Also, they are quickly and easily analyzed, on their very workable and intuitive platforms, and they are suitable for specific types of responses. Furthermore, they provide repetitive information that is easily separated, they are uniform in the way they are presented to the respondents and they are, most of the times, anonymous. Lastly, collecting large amounts of data is great for two reasons: to compare with other researches and to test theories or test hypothesis (Wright, 2005).

Still, using questionnaires is always risky for other reasons. The fact that they are suitable for specific types of responses can also be considered a disadvantage since they are limited in the types of research they can be used in. Questionnaires limit the amount of information that can be gathered about the respondents' profile, provide very straight to the point results with a short and concise answer and frequently come with access issues that generally drive respondents away. Also, questionnaires restrain the personal contact between researcher and respondent, they have a high rate of incomplete entries and they are subject to manipulation by both parties (Zohrabi, 2013).

Nonetheless, using a questionnaire is the best method to reach all employees of a company, to save them time when answering and to collect valid and reliable answers while preserving their anonymity. Furthermore, carrying this study through a questionnaire was the best way to test the model previously described to then analyze its hypothesis and come up with accurate and consistent conclusions.

Each construct was assessed with a valid and evaluated scale published in an academic journal. The full scale construct for each variable is presented in Annex B. All scales were combined into one single questionnaire, divided into three main sections:

- Content section – it is where the items of each construct are presented and evaluated by each respondent
- Opinion section – it is where the employees' opinions and suggestions about Office for the People are gathered
- Demographic section – it is where information about the respondents' profiles and backgrounds is gathered

The content section was then divided into four sub-sections (reflected in five separate questions with multiple items each) each dedicated to one construct: resistance to change, participation, work engagement and creativity. All these were measured by a 7-point Likert scale in this researches' questionnaire, where 1=Strongly Disagree and 7=Strongly Agree since most of their original scales were either 5-point or 7-point scales.

- Dependent Variable

The only dependent variable, Creativity, was assessed by a scale originally applied by Zhou, J. and George, J. M. (2001) and Binnewies, C. and Gromer, M. (2012). The scale is composed by 8 items, even though there were originally 14 items 6 were excluded since they were not applicable to this study. Only one dimension is presented by the authors, which is the creativity dimension. This is described as the expression of opinion that promotes new ideas. All the 12 chosen items were included in the questionnaire in a

random order and they were evaluated through the 7-point Likert scale previously mentioned. The internal consistency of this scale is 0.96 (Zhou and George, 2001) and represents a very high, and therefore acceptable, value.

- Independent Variables

To measure Resistance to Change, one of the independent variables of this model, the scale used by Oreg, S. (2003) was applied. It is important to note that the choice of this scale as a measure was based on an investigation led by Hon et al (2014) that also resorted to this scale and obtained positive results on their research. This can be used as a good predecessor to assume this scale effective and usable to the current research. The resistance to change scale, as a whole, has an internal consistency of 0.92, measured through the Cronbach coefficient, while the subscales Routine Seeking, Emotional Reaction, Short-Term Focus and Cognitive Rigidity have coefficient of 0.89, 0.86, 0.71 and 0.68 respectively (Oreg, 2003).

Resistance to Change's measure of this research was composed by 17 items that were originally divided into four dimensions each containing a specific number of items: routine seeking – that assesses the inclination of the employees to adopt routines instead of embracing change; emotional reaction – that evaluates the amount of instability and stress caused by change; short-term focus – that assesses the tendency of the employees to be focused on the short-term issues brought by change; cognitive rigidity – that evaluates the frequency and ease with which employees change their minds. These four constructs and their respective items were integrated with each other in the questionnaire so that the respondents could not perceive what items were related with each other and belong to the same construct.

The Participation, also an independent variable of the research, was assessed based on a combination of two different scales from both Randall, R., Nielsen, K and Tvedt, S. D. (2009) and Wanberg, C. R. and Banas, J. T. (2000). These two scales were combined because one assessed the employee's willingness to be involved and participative while the

other focused on the level of permission that was given to the employees to be involved and participative in the project. Thus, it was important for the research to understand both perspectives of this variable. The original 6 items (3 from each scale) were kept and adjusted to MSP's change project. There was only one construct, named participation, that was used to this study's questionnaire and that measures the level of involvement of the employees on the change project and their permission to give inputs about it.

The last independent variable of the model is the Work Engagement developed by Clercq, D., Bouckenoghe, D., Raja, U. and Matsyborska, G. (2014). A short version of the original 17 item scale was validated and tested by the authors and a nine item scale, with an internal consistency of 0.90, resulted from that adjustment. That nine item scale was applied in this study and it was assessed by the 7-point Likert scale used both in this research and on the original scale. The original literature states there is only one construct and labels it work engagement. It is described as the propensity to engage with the work itself and experience a close fit with the organization.

The second section of the questionnaire consisted in two questions to understand the employees' thoughts, opinions and suggestions. The goal was to compile a general opinion of the project and to understand if the expectations of the employees were met. The questions were as following:

- 1) Did you like the final result of the Office for the People? Do you enjoy working in the new working space?
- 2) If you were able to change anything about the new office, what would it be and why?

The last section was dedicated to the demographics of the respondents, to enable a profile analysis of the sample, and consisted of six basic questions. Thus, this section requested MSP's employees to provide information about their gender, age, hierarchical rank in the company (junior, senior, manager, senior manager, executive director or administrative), background area (management and economics, law, engineering, technology, social

sciences, health sciences or other), seniority in the company and department (assurance, advisory, tax, transaction services, people services, financial services and administration).

A full version of the questionnaire is presented in Annex C. It contains all three sections exactly the way they were presented to the respondents.

4.6. Procedure

Given the fact that the questionnaires were applied in Portugal to mostly Portuguese employees, the questionnaire had to be translated into the native language of the country. The back-translation method was used to address this issue and to ensure the quality and accuracy of the questionnaire. This method states that the translation involves having a separate independent translator, fluent in both languages, that translates it to the other language. Hence, the questionnaire was developed and constructed in the English language, was translated to Portuguese and the results were then analyzed back in English.

Beforehand, a pre-test of the questionnaire was done by 3 people non-related to the study or to the company where it was applied. This pre-test prevented the questionnaire to be sent with errors or problems that could lead to misinterpretations or difficulties in its access. It also ensured that the questionnaire was well developed, that the platform was functioning as it should but mainly to validate its adequacy.

When distributing the questions along the questionnaire, the scales that contained more than one dimension had its items all missed up so that the respondents were not able to identify which items were related to each other within the same construct. This was done to avoid biased answers and to strengthen the clearance of the questions.

Additionally the questionnaire was developed by an online software named *Qualtrics* that is reliable and approved, by the institution that supports this research, and was distributed by email in partnership with the company's change team. Since it was distributed by email, the questionnaire is considered to have been self-administered. It contained 4 closed

questions with multiple items, each referred to one of the variables of the model, 2 opened questions and general closed and opened questions about the profile of the respondents.

The questionnaire was applied in a phased process. Office for the People was a long project that lasted more or less about 1 year since it was first communicated until the final touches were completed. The move to the new office was made in three rounds to the different floors. In the first round two departments moved to the new space (advisory and administration), during the second round three more departments moved (assurance, tax and people services) and in the last round the remaining two departments (transaction services and financial services) were integrated in the new space. According to this distribution, the questionnaires were applied separately to each round to ensure that all employees had experienced about the same time in the new space when they answered. So, they were applied between two and three weeks after that department moved to the new office.

4.7. Statistical Technique

To analyze the collected data, a few methods were followed, namely a principal component analysis (PCA), a descriptive and correlation analysis and a path analysis. All these procedures were done through *IBM SPSS Statistics Version 23*.

Principal Component Analysis is a method that assesses and combines factor loadings into groups to feature other factors. It groups variables together, according to their loading value, and it is based on a process of simplifying the data through the reduction of necessary variables and the grouping of items that show a strong relation between each other. The existence of underlying variables could lead to the measure of similar aspects of the same dimension (Field, 2013). This technique is effective to study models with multiple variables just like the one under this research.

This study applied PCA to explore the group of measurement variables that are related to a single factor and then test the hypothesis. PCA was done through the Keiser-Meyer-Olkin

(KMO) test was used to test the suitability of the sample in terms of, for example, size. This test results in values between 0 and 1 and the result is of an overall level of quality when is it above 0.80. Additionally, the Bartlett's test was also used to present a significant value, which should be lower than 0.50, meaning that the expressed data is adequate to proceed with the analysis.

The analysis of the Eigenvalues greater than one and of Scree plot (Field, 2013) followed the KMO and Bartlett's test. Before this, an analysis of the SPSS communality values is needed. These values explain the total variance an original variable shares with all the other variables. If the variable shares nothing at all with the other variables, its value should be 0, and if it has no specific variance (meaning that it shares all its variance with other variables) its value should be 1 (Field, 2013). When analyzing the communality values of this research, every variable whose variance was below 0.50 was excluded from the analysis.

Further on the analysis, the rotation output was analyzed in order to improve the utility of the results and the goal is to minimize low correlations and maximize high correlations between the factors with similar interpretation (Field, 2013). Factors with a 0.50 loading value were considered significant for the study and were associated to the respective component. The internal consistency was also tested through a complementary technique to PCA, Cronbach's alpha coefficient. This coefficient estimates the reliability level and is considered to be acceptable when it is above 0.70 (Field, 2013).

After this first analysis, a descriptive and correlation analysis followed. This analysis aims to produce a matrix that joins all independent and dependent and variables in one table to assess the type of relation that exists between each other, in case there is any. The correlation matrix is then used to understand which variables should be included in the model and which should not.

Lastly, a mediation analysis was computed by using the procedures recommended by Preacher and Hayes (2008). This sort of analysis is an extension of the regression model

where the direct and indirect influences of a specific set of variables is tested. Path analysis can be viewed part of a structural equation model where single indicators are engaged for each of the variables (Preacher and Hayes, 2008).

These analysis excel on explaining the causal order of effects between the variables. Moreover, they allow to study how the causal effect of the independent variable (resistance to change) can indirectly affect the dependent variable (creativity) through the mediating variables (participation and work engagement). Also, these analysis allow to understand the effect of the independent variable directly on the dependent one (Preacher and Hayes, 2008).

Mediation analysis use the BCa procedure with 5000 resamples and Preacher and Hayes (2008) SPSS OLS regression macro for multiple mediation to generate 95% CIs for the indirect effects of resistance to change on creativity behavior acting through participation and work engagement. If the 95% CI do not include zero, then the indirect effect would be considered to be significant.

Preacher and Hayes' macro also provides estimates of direct effect of independent variables (resistance to change, participation and work engagement) on the dependent one (creativity).

4.8. Validity

Ensuring the validity of a study relies mostly on the representativeness of the sample and on the reduction of threats to the reliability of the research. This reliability focuses on the quantity and quality of the respondents, so it is important to analyze the composition of the sample (Cresswell, 2008).

Looking at the universe of this research, which is composed by 736 people, a 31% response rate can work, fairly well, as a representative sample. It cannot be considered a high rate but it is, more or less, what is expected from a study of this nature (Cresswell, 2008).

When matching the profile data of the collected sample with the profile data of the universe, a few factors should be noted: the age of the respondents and the validity of the research sample based on the gender, hierarchical position and department participation.

The average age represents a fairly young sample giving the context and activity of the company (30 years old) which can indicate MRS frequently hires graduate students of employees with little experience. The youngest respondent is 21 and the oldest 56 which represents a broad range of ages and people from different generations. This is a positive feature for this research since change is usually received differently depending on people's age and mindset. It was also interesting to observe that the higher the rank of the respondents, the lower their participation in the questionnaires.

The validity of this study was assessed by the quality of the respondents' profile in comparison with the total number on employees of the company. All hierarchical ranks were fairly represented by an average of 27% of the respondents of that specific rank. The ranks that were below this average were the partners (16%) and the senior managers (23%) of the company, which clearly represent higher positions. The ranks with a higher representation were the staffs (36%) and the seniors and back office and administration (both with 30%).

When it comes to gender representation, the sample is quite balanced. Out of the 51% women of the company, 34% participated in our study while out of the 49% men, 29% responded our research. Therefore, these numbers could be considered to be representative of the sample.

Lastly, when assessing the sample representativeness in terms of departments, it is observable that the average of participants per department was 33% which is quite reasonable. It is important to note that the Advisory and the PAS departments were noticeable as to having higher rates of participation compared to all the others, 52% and 38% respectively, even though together they represent only 16% of the company which

turns the sample quite unrepresentative of the universe. This is in line with the usual behavior of these two department since they are both dedicated to consultancy work that is normally more creative, proactive and involved with clients as opposed to departments more related to law and auditing, that are usually more passive when it comes to internal activities of the company.

All participating employees were informed that their responses were confidential and anonymous which lessened the possibility of response bias. Also, the responses were analyzed as a whole group instead of separated which also reduced the issues with reliability.

5. Data Analysis and Results

5.1. Principal Component Analysis

After data collection, PCA was done to confirm the structure of each variable used in this study. The procedures used during this analysis were previously explained. Due to the fact that constructs demonstrated different structures, and for the better understanding of this topic, the analysis of their dimensions is done separately for each construct.

– Resistance to Change

The original scale of resistance to change is composed by 12 items divided by 4 dimensions: routine seeking, emotional reaction, short-term focus and cognitive rigidity. On a first analysis items Q2_1 and Q2_5 were excluded from the analysis due to their low extraction values. The KMO, that quantifies the correlations between the input variables of the sample, presented a 0.853 value that is considered as acceptable as well as the Bartlett's test that presented a null significance value, which is desirable. As Table 3 shows, the rotated component matrix defined four components and recommended the exclusion of items Q2_17, Q2_7 and Q2_12. Additionally, the utilization of the *varimax rotation* allowed the identification of 4 components that explain 58% of the total variance present on the data collected. However, Cronbach's alpha was also analyzed for each component and was always a mediocre value, except for the first component, which represents a low internal consistency of the answers to this instrument.

Table 3. Resistance to change variable composition

Items	Component			
	1	2	3	4
Q2_9	0.820			
Q2_11	0.798			
Q2_8	0.754			

The relation between resistance to change and creativity: the mediating effect of participation and work engagement in a Portuguese business context.

Q2_10	0.674			
Q2_4	0.537			
Q2_13		0.703		
Q2_16		0.653		
Q2_15		0.648		
Q2_2			0.804	
Q2_3			0.670	
Q2_14				0.743
Q2_6				0.665
% Total Variance Explained	30,7	12,0	8,6	7,4
Cronbach Coefficient	0.83	0.61	0.53	0.37

Note

Q2_2: When I was informed that there would be a significant change regarding the way things are done at work, I felt stressed. Q2_3: If the performance assessment system changed, it would probably make me feel uncomfortable even if I thought I'd do just as well without having to do extra work. Q2_4: Changing plans seems like a real hassle to me. Q2_6: I often change my mind. Q2_8: I'll take a routine day over a day full of unexpected events any time. Q2_9 I like to do the same old things rather than try new and different ones. Q2_10: Often, I feel a bit uncomfortable even about changes that may potentially improve my life. Q2_11: When I am informed of a change of plans, I tense up a bit. Q2_12: Whenever my life forms a stable routine, I look for ways to change it. Q2_13: When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me. Q2_14: I don't change my mind easily. Q2_15: I like to do the same old things rather than try new and different ones. Q2_16: Once I've come to a conclusion, I'm not likely to change my mind.

When compared with the item composition of the original dimensions of the variable, almost no similarities are found among the item distribution. This reveals that the respondents of this research did not understand the dimensions of the scale proposed by the author in the same way which implies that the data base is not a reflection of the author's proposal. The items are not relatable enough to be regrouped and, therefore, the component results of this variable are discarded. To ensure the usability of the construct, the author's original dimension composition is considered for further analysis. This means that four latent variables were created to reflect each dimension by computing the means between the items proposed by the author. Thus, the construct of Resistance to Change consists of the following dimensions:

Table 4. Resistance to change (Oreg, 2003)

Dimension	Author's Proposition Items
Routine Seeking	17, 8, 15, 12, 1
Emotional Reaction	2, 11, 9, 3
Short-Term Focus	4,10, 13, 5
Cognitive Rigidity	6, 14, 16, 7

- Participation

The involvement of the employees on the project is measured through the Participation component. According to the authors, this construct is represented by 6 items all belonging to only one dimension named Participation. PCA revealed that KMO was 0.83 showing a good relation (83%) between the input variables. Bartlett's test significance level was null concluding that every item of this instrument is correlated with all other items. Also, *varimax rotation* was carried out, highlighting the existence of 2 components that explain approximately 74% of the total variance. Lastly, Cronbach's alpha showed an acceptable value (0.80) resulting in a good internal consistency value.

Table 5. Participation variable composition

Items	Component	
	1	2
Q4_1	0.867	
Q4_2	0.814	
Q4_3	0.745	
Q4_4		0.873
Q4_5		0.867
Q4_6		0.632
% Total Variance Explained	57,1	16,8
Cronbach Coefficient	0.81	0.80

Note

Q4_1: I had the opportunity to give my views about the change before it was implemented. Q4_2: I was involved in the design of the implementation of the change project. Q4_3: I have been able to participate in the implementation of the changes that have been proposed and that are occurring. Q4_4: I have some control over the changes that have been proposed and that are occurring. Q4_5: I had the opportunity to ask questions about the changes that the change project would promote before these actually happened. Q4_6: Management has made a great effort to involve employees in the change process.

Table 5 shows the 6 items evenly distributed between two components contrary to the original variable. Even though the results of the analysis do not match entirely the original scale, the items can be regrouped since they have similar content. Hence, two latent variables were created containing the items of the Component 1 and Component 2 respectively.

On one hand, the items of Component 1 are all more associated with a proactive and practical involvement of the employees in the process since they deal with concepts such as design, implementation and control of the project. They were, therefore, regrouped into a new variable designated as Practical Participation, consisting of the following items:

- Q4_1 - I had the opportunity to give my views about the change before it was implemented.
- Q4_2 - I was involved in the design of the implementation of the change project.
- Q4_3 - I have been able to participate in the implementation of the changes that have been proposed and that are occurring.

On the other hand, Component 2 has items that are related to an intellectual involvement that deal more with the employees' opinions and the contribution and effort of the top management to integrate everyone in the change project. Thus, this component was named as Intellectual Participation and is composed by:

- Q4_4 - I have some control over the changes that have been proposed and that are occurring.
- Q4_5 - I had the opportunity to ask questions about the changes that the change project would promote before these actually happened.
- Q4_6 - Management has made a great effort to involve employees in the change process.

- Work Engagement

The employees' work engagement is used to understand the level of commitment of the workforce to the company and is measured, according to the authors of the scale, through one dimension composed by 9 items. Its KMO coefficient was 0.89 which represents an excellent correlation between the input variables. On Bartlett's test, the significance is null, as desired, rejecting the null hypothesis and reinforcing that the items are correlated with each other. Additionally, A *varimax rotation* was also taken into account and showed that the one component found in the analysis explained 70% of the total variance of the data collected. Cronbach's alpha was found to be 0,928 illustrating an extremely high internal consistency of the instrument.

Table 6. Work engagement variable

Items	Component
	1
Q5_3	0.918
Q5_4	0.912
Q5_2	0.876
Q5_5	0.867
Q5_1	0.859
Q5_8	0.819
Q5_7	0.768
Q5_6	0.760
Q5_9	0.722
% Total Variance Explained	70,0
Cronbach Coefficient	0.928

Note

Q5_1: At my work, I feel bursting with energy. Q5_2: At my job, I feel strong and vigorous. Q5_3 I am enthusiastic about my job. Q5_4: My job inspires me. Q5_5: When I get up in the morning, I feel like going to work. Q5_6: I feel happy when I am working intensely. Q5_7: I am proud of the work that I do. Q5_8: I am immersed in my work. Q5_9: I get carried away when I am working.

The Work Engagement variable analysis resulted on a single component where all the items remain included, which can be confirmed through Table 6. The outcome of this analysis is in line with the literature previously presented. So, no division is required and the construct of work engagement is reflected in one latent variable labelled Work Engagement.

– Creativity

According to the author, the Creativity variable has a scale of 8 items grouped into only one dimension. After testing the KMO coefficient, the 0,91 result obtained showed a great correlation between the input variables. Also Bartlett’s test presented a null significance value, rejecting the null hypothesis as desired to proceed with the study. The *varimax rotation* was assessed and demonstrated a solo component of this variable that explains 60% of the total variance of the data collected. Lastly, Cronbach’s 0,94 coefficient resulted in a very good internal consistency indicator of the instrument.

Table 7. Creativity variable composition

Items	Component
	1
Q6_4	0.846
Q6_5	0.792
Q6_7	0.776
Q6_2	0.754
Q6_3	0.731
Q6_6	0.710
Q6_8	0.639
Q6_1	0.599
% Total Variance Explained	60,2
Cronbach Coefficient	0.945

Note

Q6_1: Exhibits creativity on the job when given the opportunity to. Q6_2: Is a good source of creative ideas. Q6_3: Suggests new ways of performing work tasks. Q6_4: Often has new and innovative ideas. Q6_5: Comes up with new and practical ideas to improve performance. Q6_6: Often has a fresh approach to problems. Q6_7: Comes up with creative solutions to problems. Q6_8: Suggests new ways to achieve goals or objectives.

Through Table 7, it is observed that, as happens with the Work Engagement variables, the analysis of Creativity resulted in one component only. This component includes all original items and endorses the literature previously presented. Consequently, the Creativity construct is reflected in one latent variable labelled Creativity.

5.2. Descriptives and Correlation

The next step of this study is to understand the level of correlation between all the variables of the model. The results of the correlation analysis showed that only a few variables indeed have a correlation with the dependent variable. It is important to note that all demographic variables will only be used to understand and compare the respondents' profile. Therefore, Table 6 summarizes the results of the variables that were considered for further analysis.

Table 8 shows the correlation coefficients of the variables. These results indicate the presence of a weak and moderate associations between pairs of variables (Field, 2013). It can be observed that Creativity shows a moderate positive association with Work Engagement ($r=0.353$, $p<0.01$) and a moderate negative association with the Routine Seeking dimension of Resistance to Change ($r=-0.331$, $p<0.01$). Moreover, other negative associations are significant between the dependent variable and the other two dimensions of Resistance to Change: Emotional Reaction ($r=-0.206$, $p<0.01$) and Short-Term Focus ($r=-0.251$, $p<0.01$). A weaker but significant association was also detected between Creativity and Intellectual Participation ($r=0.178$, $p<0.01$). Table 8 also shows that both Cognitive Rigidity and Practical Participation present no significant association with the dependent variable.

Table 8. Descriptive statistics and bivariate correlation matrix

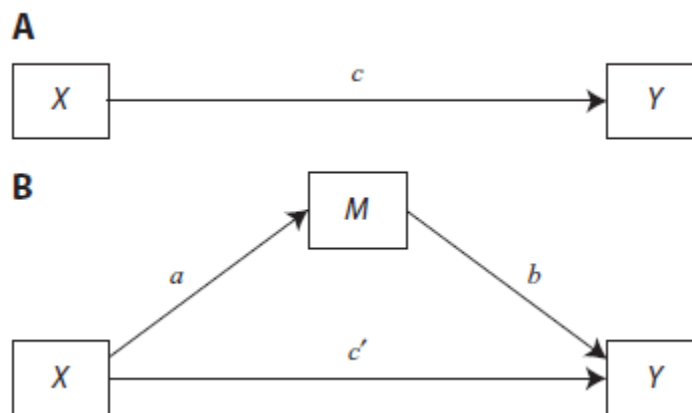
Correlations									
	Mean	Std. Deviation	Routine Seeking	Emotional Reaction	Short-Term Focus	Cognitive Rigidity	Practical Participation	Intellectual Participation	Work Engagement
Routine Seeking	3,12	0,91							
Emotional Reaction	3,07	1,05	,576***						
Short-Term Focus	2,83	1,00	,663***	,687***					
Cognitive Rigidity	3,96	0,89	,223***	0,111	,150**				
Practical Participation	2,14	1,25	,130**	0,059	,142**	-0,036			
Intellectual Participation	3,58	1,54	0,057	0,046	0,112*	0,037	,582***		
Work Engagement	4,93	1,15	-,340***	-,195***	-,274***	-,164**	0,128*	,171***	
Creativity	5,20	0,86	-,331***	-,206***	-,251***	-0,123*	0,089	,178***	,353***

***p < 0.01 **p < 0.05 *p < 0.1

5.3. Direct and Mediating Effects

The direct and mediating effects of a path analysis are obtained through the SPSS output of a Macro analysis. This output shows the level of strength and impact of one variable on another. For a better understanding of how this analysis works, figure 4 was used.

Figure 4. Illustration of a direct and indirect effect of a mediation design (Preacher and Hayes, 2008)



As the figure shows, there are two different relations under study for each model: direct and indirect. In figure 4, X represents the independent variable, Y represents the dependent variable and M is representing the mediators of the model. On a simple mediation as this, the first part of the figure (A), demonstrates the unstandardized weight of X on Y and is represented by c . The second part (B), shows the indirect effect of X on Y through c' while path a represents the effect of the independent variable on the mediator variable and path b displays the effect of the mediator on Y (Preacher and Hays, 2008). The total effect of the independent variable of the dependent variable (X on Y) is expressed as $c = c' + ab$.

Therefore, this path analysis will explore the mediation results between resistance to change and creativity with Participation and Work Engagement as mediators of the model.

5.4. Results

As previously explained, this research investigates two different mediation effects separately which leads to the existence of two different models. Looking at the path analysis, the initial important note is to understand the value of the R Square and the Adjusted R Square. The first gives the percentage of the explained variation as if all independent variables affected the dependent model while the second represents the proportion of the total variability in the dependent variable that is explained by the independent variables that actually affect the model (Field, 2013).

These results are outcomes of the mediation analyses by Preacher and Hayes (2008) and will lead to conclude to what extent the literature is or not reflected in this study. The first model concerns the direct and indirect effects of the relations between resistance to change and creativity with intellectual participation as a mediator. On the other hand, the second model concerns the direct and indirect effects of the relations between resistance to change and creativity with work engagement as a mediator. Results show that there are, in fact, direct and indirect effects between the variables and that there is an influence of the indirect effects on creativity.

5.4.1. Results of Direct and Mediating Effects of Model 1 – Intellectual Participation

As Table 9 shows, the values presented for R^2 range between 5% and 15% which are, in general, significant but weak. At the same time, the Adjusted R^2 also presents low values, ranging between 4% and 14%. These results translate into the fact that a low percentage of the creativity of the employees is theoretically explained by the independent variables associated to the model. Addressing the direct and indirect relations that connect the resistance to change to creativity through the mediation of participation, the path analysis through the intellectual participation mediator led to few notes.

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Table 9. Results of the regression analysis of Model 1 – Participation

Dependent Variable = Creativity, Mediator = Intellectual Participation															
Independent Variable	a		b		Direct Effect (c')		Indirect Effect (ab)				Total Effect (c)		F	R2	Ad R2
	Point Estimate	(SE)	Point Estimate	(SE)	Point Estimate	(SE)	Point Estimate	(SE)	BC a 95% - CI a		Point Estimate	(SE)			
									Lower	Upper					
Routine Seeking	0,10	0,11	0,11**	0,04	-0,32***	0,06	-0,01	0,01	-0,01	0,05	-0,31***	0,06	19,82***	0,15	0,14
Emotional Reaction	0,07	0,10	0,11**	0,04	-0,18***	0,05	-0,01	0,01	-0,01	0,04	-0,17**	0,05	9,60***	0,08	0,07
Short-Term Focus	0,17 ⁺	0,10	0,11**	0,04	-0,24***	0,05	-0,02	0,02	-0,01	0,06	-0,22***	0,06	13,50***	0,11	0,10
Cognitive Rigidity	0,07	0,12	0,11**	0,04	-0,13*	0,06	-0,01	0,01	-0,02	0,04	-0,12 ⁺	0,06	5,79**	0,05	0,04

Note

N=230. + p < 0,10 * p < 0,05 ** p < 0,01 *** p < 0,001

Numbers in the model are unstandardized regression coefficients. (Beta: Bs)

a Column entries are the bias correlated and accelerated (BCa) 95% confidence intervals (95% CI) based on 5000 bootstrap resamples (and were estimated using an SPSS script written by Preacher and Hayes, 2008).

Table 10. Results of the regression analysis of Model 2 – Work Engagement

Dependent Variable = Creativity, Mediator = Work Engagement															
Independent Variable	a		b		Direct Effect (c')		Indirect Effect (ab)				Total Effect (c)		F	R2	Ad R2
	Point Estimate	(SE)	Point Estimate	(SE)	Point Estimate	(SE)	Point Estimate	(SE)	BC a 95% - CI a		Point Estimate	(SE)			
									Lower	Upper					
Routine Seeking	-0,43***	0,08	0,24***	0,05	-0,23***	0,07	-0,09	0,03	-0,16	-0,04	-0,31***	0,06	24,10***	0,18	0,17
Emotional Reaction	-0,21**	0,07	0,24***	0,05	-0,12*	0,05	-0,05	0,02	-0,11	-0,02	-0,17**	0,05	19,17***	0,14	0,14
Short-Term Focus	-0,32***	0,07	0,24***	0,05	-0,14**	0,05	-0,07	0,02	-0,13	-0,04	-0,22***	0,06	20,13***	0,15	0,14
Cognitive Rigidity	-0,21*	0,08	0,24***	0,05	-0,07	0,07	-0,05	0,03	-0,11	-0,01	-0,12 ⁺	0,06	16,83***	0,13	0,12

Note

N=230. + p < 0,10 * p < 0,05 ** p < 0,01 *** p < 0,001

Numbers in the model are unstandardized regression coefficients.

a Column entries are the bias correlated and accelerated (BCa) 95% confidence intervals (95% CI) based on 5000 bootstrap resamples (and were estimated using an SPSS script written by Preacher and Hayes, 2008).

The direct effect of resistance to change on creativity, stated in H1, was proven to be negative in all the dimensions of resistance to change tested in the model. The findings for routine seeking, emotional reaction and short-term focus present significant values, all of them negative, describing the negative relation with creativity. These negative relations show that the employees' tendency to resist change, in these dimensions, has a negative impact on creativity so that the higher the resistance to change level, the lower the creativity level.

Even though cognitive rigidity was not found to be statistically associated with creativity, as presented in Table 6, it was tested as part of the model. As shown in Table 9, it presented a coefficient that was marginally accepted ($B=-0.12$, $p<0.1$) and proved to also be negatively related to creativity, following the other dimensions path in terms of influence on creativity. Therefore, it can be established that H1a, H1b and H1c are supported while H1d is marginally supported, concluding that there is indeed a negative direct effect of resistance to change on creativity.

Table 7 also presents the results of H2 (a, b, c and d), H3 and H6 (a, b, c and d). H2 refers to the influence of resistance to change on participation. As it can be observed, only the relationship between short-term focus and creativity is significant even though it is marginally significant. However, contrary to this researches prediction, the coefficient for short-term focus is positive suggesting that higher short-term focus positively influences creativity. Therefore, there is no support for hypothesis H2c. Taken together, the hypothesis H2a, H2b, H2c and H2d, stating that routine seeking, emotional reaction, short-term focus and cognitive rigidity negatively influence creativity, are not supported.

The influence of the employees' level of intellectual participation on creativity is tested in H3. All values are acceptable and fairly significant which leads to the conclusion that H3 is supported in this research. Thus, there is indeed a positive influence of participation on creativity, so that the more participative the employees are on the companies' activities, the more creative they tend to be.

As H6a, H6b, H6c and H6d represent the influence of resistance to change on creativity when participation is in place, the outcomes of H2 and H3 are relevant to understand if these hypothesis are or not supported. That influence happens through the mediation of participation and, since no significant relations were found between each dimension of resistance to change (routine seeking, emotional reaction, short-term focus and cognitive rigidity) and participation (H2a, H2b, H2c and H2d not supported), it can be concluded that participation does not mediate the relation between resistance to change and creativity. Therefore, H6a, H6b, H6c and H6d are not supported in this research.

Thus, in Model 1, results show that H1 (a, b, c and d) and H3 are confirmed, while H2 (a, b, c and d) and H6 (a, b, c and d) are all rejected. So, there is a direct effect of resistance to change on creativity but the intellectual participation is not a significant mediator of the relationship, concluding that no indirect effects were found relevant for this study.

5.4.2. Results of Direct and Mediating Effects of Model 2 - Work Engagement

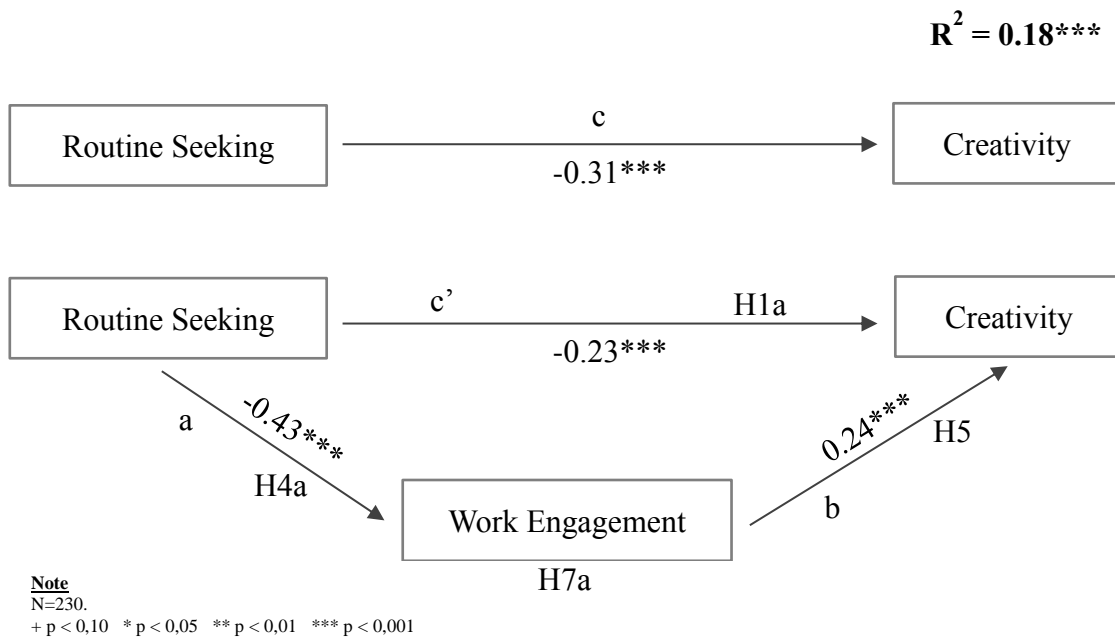
When analyzing Table 10, is it observable that the results are more significant and relevant than the ones from Model 1.

Model 2, presents relevant results with an R^2 ranging between 13% and 18% and with an Adjusted R^2 of between 12% and 17%. While analyzing the direct effects of resistance to change on creativity and the mediating effects of work engagement in the relationship between resistance to change and creativity, some conclusions regarding our testing hypothesis were made.

The results of the regression analysis presented on Table 10, provide substantive support for the research hypothesis. The direct negative effect of resistance to change on creativity is verified the same way as it is in the previous model. Other results will be analyzed separately by variable and by hypothesis, for a better understanding of the influence of one variable on another, and a representation of the different models will be presented to explain the level of support of each relation.

The first to be analyzed is the routine seeking dimension of resistance to change. This variable is present in H1a, H4a and H7a, while also influencing H5 as a whole.

Figure 5. Path model showing work engagement mediating the relationship between routine seeking and creativity

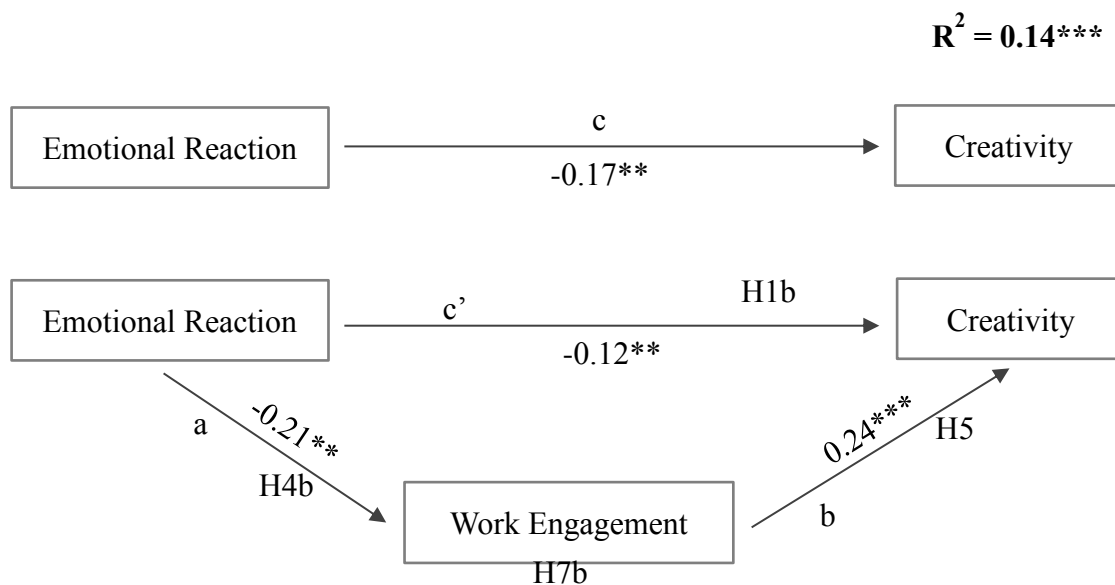


As Figure 5 shows, there is a relation stated in every path represented. In this model, 18% of creativity is explained by the independent variables presented above. This research found a direct negative relation between routine seeking and creativity (B=-0.23, p<0.001). Therefore, the more the employees tend to seek routine the less creative they tend to be, which provides support for H1a. A negative relation between routine seeking and work engagement was also revealed (B=-0.43, p<0.001), so that the more the employees tend to seek routine, the less engaged with their work they are. This provides support for H4a. Also, a positive relation between work engagement and creativity (B=0.24, p<0.001) resulted from this analysis leading to the conclusion that the more engaged the employees are, the more creative they are as well. Therefore, H5 is supported.

Additionally, the directions of the a and b paths were consistent with the interpretation research that greater levels of routine seeking lead to lower work engagement which in turn leads to greater creativity. An examination of the specific indirect effects of the routine seek dimension acting through work engagement indicates significant effects for the routine seeking → creativity relationship, since the CI for the indirect effect (-0.16; -0.04) does not include zero. This supports H7a that states that work engagement mediates the relation between routine seeking and creativity. Based on the guidelines discussed earlier, the mediation process can be described as complementary mediation (or partial mediation).

Stepping onto the emotional reaction dimension of resistance to change, there are three hypothesis under testing: H1b, H4b and H7b. As in the previous analysis, H5 is also tested.

Figure 6. Path model showing work engagement mediating the relationship between emotional reaction and creativity



Note
 N=230.
 + $p < 0.10$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

The presented path model, Figure 6, shows an acceptable relation within all paths, which is more detailed on Table 10 Besides presenting that 14% of creativity is explained by this

model, Figure 6 shows that a direct negative relation between emotional reaction and creativity was found in this analysis ($B=-0.12$, $p<0.01$). So, the more the employees tend to react emotionally to a change process, the less creative they tend to be, supporting H1b. Also, a negative relation between emotional reaction and work engagement was detected ($B=-0.21$, $p<0.01$) stating that the more the employees tend to react emotionally to change, the less engaged they are with their work. This fully supports H4b. Similarly to the previous analysis, a positive relation between work engagement and creativity was found ($B=0.24$, $p<0.001$), supporting H5 that defends that the more engaged the employees are, the more creative they are as well.

Nevertheless, this analysis showed that the directions of the a and b paths were in line with the interpretation of this research stating that greater levels of emotional reaction lead to lower work engagement which in turn leads to greater creativity. By examining the specific indirect effects of emotional reaction acting through work engagement, signs of significant effects for the emotional reaction \rightarrow creativity relationship are found, since the CI for the indirect effect (-0.11; -0.02) does not include zero. This supports H7b that defends that work engagement mediates the relation between emotional reaction and creativity. Based on the guidelines discussed earlier, the mediation process can be described as complementary mediation (or partial mediation).

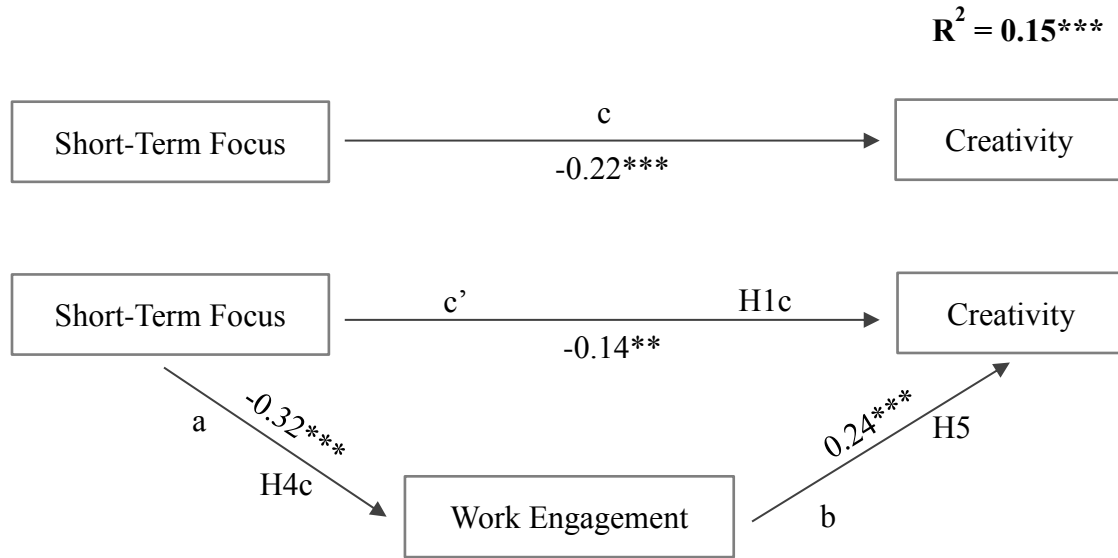
The next dimension of resistance to change is short-term focus. This variable is present on H1c, H4c and H7c. As in the previous analysis, the result of H5 is also presented.

Figure 7 presents the mediation of work engagement on the relation between short-term focus and creativity. Here, 15% of creativity is explained by this model at the same time that a direct negative relation between short-term focus and creativity was found ($B=-0.14$, $p<0.01$). This relation allows to conclude that the more the employees tend to focus on the short term issues of a change process, the less creative they tend to be, which supports H1c. Likewise, a negative relation between the short term focus variable and work engagement was discovered ($B=-0.32$, $p<0.001$) declaring that the more the employees tend to focus on the short term issues of change, the less engaged they are with their work. This fully

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supports H4c. Moreover, as previously stated, a positive relation between work engagement and creativity was found ($B=0.24$, $p<0.001$). This supports H5 that defined that the more engaged the employees are, the more creative they are.

Figure 7. Path Model Showing Work Engagement Mediating the Relationship Between Short-Term Focus and Creativity



Note
 N=230.
 + $p < 0.10$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Still, this research also presented a clear indirect effect of this model. It showed that greater levels of short-term focus lead to lower work engagement which in turn leads to greater creativity. Once more, based on the guidelines discussed earlier, this mediation process can also be described as complementary, or partial, mediation. Hence H7c, that states that work engagement mediates the relation between short-term focus and creativity, is fully supported.

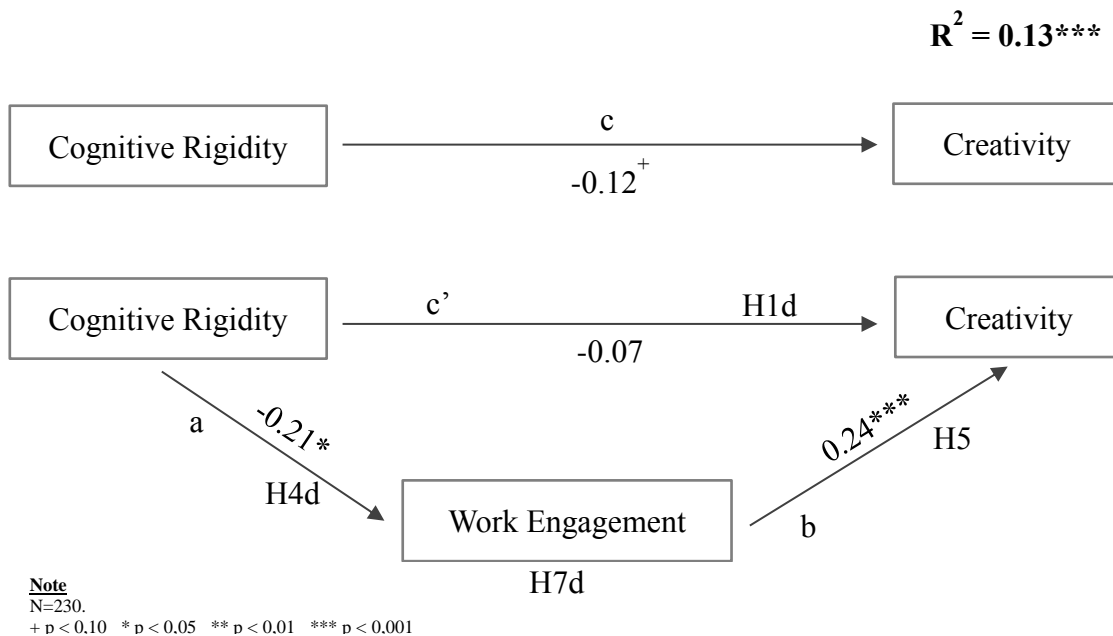
Furthermore, the directions of the a and b paths were consistent with the interpretation research that greater levels of short-term focus lead to lower work engagement which in turn leads to greater creativity. An examination of the specific indirect effects of the short-term focus dimension acting through work engagement indicates significant effects for the short-term focus \rightarrow creativity relationship, since the CI for the indirect effect (-0.13 ;

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-0.04) does not include zero. This supports H7c that states that work engagement mediates the relation between short-term focus and creativity. Based on the guidelines discussed earlier, the mediation process can be described as complementary mediation (or partial mediation).

Lastly is cognitive rigidity, the missing dimension of resistance to change. It is present on the H1d, H4d and H7d hypothesis. Again, the result of H5 is also presented.

Figure 8. Path model showing work engagement mediating the relationship between cognitive rigidity and creativity



Cognitive rigidity, Figure 8, presents influence on both work engagement and creativity and shows that 13% of creativity is in fact explained by this model. Cognitive rigidity marginally has a negative influence on creativity ($B=-0.07$). Mediation analysis using the procedures recommended by Preacher and Hayes (2008) shows that the direct effect of cognitive rigidity is not statistically significant. Consequently, H1d is not supported. However, a negative relation between cognitive rigidity and work engagement was revealed ($B=-0.21$, $p<0.05$) showing that the more the employees tend to display cognitive rigidity during a change process, the less engaged they are with their work, fully supporting H4d.

Furthermore, as already mentioned before, a positive relation between work engagement and creativity was found ($B=0.26$, $p<0.001$). This supports H5 that defends that the more engaged the employees are, the more creative they tend to be.

Lastly, this analysis also detected some relevant indirect effects. It revealed that greater levels of cognitive rigidity lead to lower work engagement which in turn leads to greater creativity. Additionally, based on the guidelines discussed earlier, this mediation process can also be described as complementary, or partial, mediation. Hence H7c, that states that work engagement mediates the relation between short-term focus and creativity, is fully supported.

Nevertheless, this analysis showed that the directions of the a and b paths were in line with the interpretation of this research stating that greater levels of cognitive rigidity lead to lower work engagement which in turn leads to greater creativity. By examining the specific indirect effects of cognitive rigidity acting through work engagement, signs of significant effects for the cognitive rigidity \rightarrow creativity relationship are found, since the CI for the indirect effect (-0.11; -0.01) does not include zero. This marginally supports H7d that defends that work engagement mediates the relation between cognitive rigidity and creativity. Based on the guidelines discussed earlier, the mediation process can be described as indirect-only mediation (or full mediation).

5.4.3. Results of the Opinions about the Change Project

The questionnaire also assessed the employees' opinion about the change project. The first question inquired if they liked the final result and if they enjoyed working in the new workspace and most people (87%) stated they did so. This high percentage can be considered successful since it represents that a clear majority of people was pleased by the new office and would rather work in the new space as opposed to the previous one.

The second question focused on the employees' general opinion about what they would change in the new space if allowed. This open question allowed them to propose changes

that could still be implemented, in their opinion, to make the final outcome more appealing, functional and according to MSP's values and culture. The suggestions were diverse but could fall into a few categories.

The first one is privacy. The meeting rooms are all covered by clear glass being left with no privacy for team meetings and confidential information and so it was suggested that a few designs should be applied on to the glass walls. Next is the physical composition of the space. Employees stated that there should be more room for people (since some departments are quite numerous), that people should be divided in desk islands according to their core area of work and that the furniture that was placed in the middle of the open space (mainly archive cabinets) should be withdrawn to make allow more space. Still on a physical note, some people suggested that there should be a way of tracking people down to know where they were and also that MSP's building should be remodeled on the outside to create more impact.

When it comes to commodities, employees indicated the light and location of the restrooms is not as it should be since it is too dark and they are too close to the center of the open working space. The air condition temperature was also suggested by many people as one of the most upsetting issues in the daily work as well as the lack of garbage bins. Lastly, there were a lot of suggestions regarding a more creative side that claimed on one hand the need for a library and for quiet places to study and work and on the other hand the need for more relaxing and living areas for people to take breaks during the day. The most out of the box suggestions included the creation of a nap room for people to rest and recover their energies when tired and also construction of a gym, for company members only, so that they employees could enjoy at their most convenient time without having to travel to a specific place.

6. Discussion and Future Research

6.1. Discussion

Based on the results of the path analysis, all hypothesis tested in this study were conclusive to this research. Most hypothesis related to the intellectual participation mediator were rejected and all hypothesis associated with work engagement were supported by the model. Nevertheless, they all need to be further explained in this chapter.

The direct relation between all dimensions of resistance to change and creativity was proven to be considered negative and relevant. It presented clear results of an inverse influence between one variable and the other where the higher the levels of resistance to change the lower the levels of creativity. However, findings show that the levels of correlation between the four dimensions of resistance to change and creativity appear to be distinct. Routine seeking presents a stronger relation followed by short-term focus and emotional reaction. Cognitive rigidity was found to be only marginally related but significant to the study.

The fact that routine seeking displays a higher levels of correlation is related to what it represents. This concept is related to the employees' leaning to maintain their habits and routines and ends up restraining them from embracing and increasing creativity. This is partially in line with what is suggested in Aqdas et al (1999). Additionally, routine seeking was already found to be relevant in another research that studied the role of dispositional resistance in the context of organizational change. That research was carried out by Michel et al (2013) and it concluded that out of the different extents of resistance to change, the changes in work routines, processes and structures were the ones that carried a greater impact on the employee's enthusiasm and commitment to work that would then directly affect their performance in multiple levels such as creativity.

Both George (2007) and the literature presented in Bennebroek Gravenhorst et al (2003) also support the theory that resistance to change is in fact related to creativity. Routine

seeking, emotional reaction and short-term focus are variables that represent the affective part of resistance to change and are, thus, more associated with feelings that are generally harder to trace and test. Routine seeking was defined as the tendency to adopt routines, emotional reaction was described as the amount of stress and difficulties that change brings while short-term focus was defined as the extent to which individuals are distracted by the short-term inconveniences associated with change. These three variables might be considered more complex to assess and evaluate since they are more related with the individual's perceptions of change and emotional statuses. Therefore, it is not surprising that results showed they were negatively correlated with creativity, since emotions tend to represent a hurdle when trying to think outside of the box (Bennebroek Gravenhorst et al, 2003).

Yet, as Michel et al (2013) research confirmed, all three dimensions (routine seeking, emotional reaction and short-term focus) were verified as relevant in any of the five studies that were carried on that research. The more stress and complexity the change project involves, the less creative the employees are. Shanteau & Dino (1993) developed a study that supports these results. Their research investigated the effect of stress on creativity and concluded that employees under high levels of stress and unstable or changing environments showed decreased levels of creativity. Therefore, the present study is in line with their conclusions stating that greater levels of change in routine and of negative emotions such as stress and anxiety lead to lower levels of creativity, supporting the suggested hypothesis on this study.

Moreover, as results demonstrated, short-term focus was also considered to be significant to this model. This dimension of resistance to change was proven to negatively influence creativity. It indicates that the more likely the employees are to lose their focus over unexpected events, the less likely they are to be creative. Friedman and Forster (2001) researched the influence of different extents of the focus concept on creativity. Most of those concepts were proven to be negatively associated with creativity and their study concluded that the more likely employees are to be more distracted and less focused on

their work due to inconveniences promoted by change, the less creative they will turn out to be as well.

On the other hand, when analyzing the results, it is observable that cognitive rigidity presents a marginally acceptable correlation, not fully supporting the first hypothesis as a whole. In the research conducted by Michel et al (2013), a similar outcome was found that led to the disregard of cognitive rigidity of that research. This might indicate that the resistance to change scale used (Oreg, 2003) was not appropriately developed to be applied in all types of populations or even that further tests on this scale should be carried out to better understand its construction and application. Nevertheless, cognitive rigidity was not excluded from the present research because it proved itself to be relevant and statistically significant when mediated by work engagement.

Therefore, the premises that suggested that resistance to change dimensions have a direct negative effect on creativity were verified for routine seeking, emotional reaction and short-term focus.

The results of this research also show that no relation was found between any of the resistance to change dimensions and intellectual participation. This outcome is conclusive, since none of the hypothesis suggested for this matter were supported, and refutes the literature presented previously in the beginning of this research.

Agboola and Salawu (2011) suggested that people who are less resistant to change are more likely to be more participative and that these levels of participation also increase with the acceptance and embracement of change in the company (Wanberg and Banas, 2000). On the other hand, the opposite can also be supported as proven in a study about participation at work conducted by Spector (1986). He tested multiple relations between different variables, including participation and strong indicators of resistance to change.

Paul Spector (1986) studied the relation between participation and variables such as satisfaction of the employees, commitment, emotional distress, absenteeism, role conflict,

and intention to quit, among others. He concluded that there was absolutely no relation between participation and absenteeism and that the relation between participation and emotional distress was extremely weak. This can support the results of the present research in the sense that no relation also resulted from resistance to change and participation. As stated in Spector's study, absenteeism and emotional distress can be high indicators and predictors of resistance to change. Therefore, the absence of relation in his research could explain the absence of relation in the present study.

When it comes to the connection between participation and creativity, it was confirmed that there is, in fact, a relation between these two. It was proven that the involvement of the employees in the change project positively influenced their creativity levels. This comes in accordance with Prahalad & Ramaswamy's (2000) theory about the engagement of customers in the innovation process and directly related to the project under study.

The involvement of the employees in the actual redesign of the new office was seen as a source of creativity since they felt valued and appreciated. At the same time they were not only contributing to the final outcome but also developing their creative thinking and skills. This corresponds to researches that were developed on this matter and that showed that participation in decision making (in this project related to the employees' contribute to the change project) is positively related with creativity (Christensen & Jonsson, 2011). This theory defends three perspectives that are all according to this research.

First, the higher the level of participation and integration in the project, the more diverse, unique and innovative the outcomes are. In this study, the employees' involvement on the change project creates incentives to a more creative ways of working. Second, the more the freedom and autonomy given to the employees to participate if desired, the more positive the creative process. This happens due to the creation of a more open and dynamic culture that promotes free will and independence. Lastly, the more committed the employees are to be involved in the change, the greater quality of the innovation outcomes. Office for the People generated a sense of care and attention to the employees' needs which led to higher commitment and relation to the company and, thus, more dedication to their work, possibly

indicating higher quality levels. Therefore, the influence of participation in creativity is clear and visibly supported, concluding that the participation level of the employees has indeed a direct effect on creativity so that the greater the participation level, the higher the creativity.

Even though some relations were found in model 1, due to the lack of relation between the dimensions of resistance to change and intellectual participation, the mediating effect of participation on the relation between resistance to change and creativity was not verified. According to Herting (2002), there are a few norms that must be followed in order to comply with a fully supported mediation. First, a significant relation between the independent variable of interest and the final dependent variable must be found (path c). Second, the same kind of relation has to be found between that same independent variable and the mediator of the model (path a). Lastly, the relation between the mediator variable and the dependent variable must also be significant (path b). At the same time, no relation can be found the independent variable and the dependent variable through the mediator variable (path c'). Thus, no further conclusions could be found in terms of mediation, causing the rejection of the mediation effect.

Equally, in order to understand different connections between different variables, model 2 also tested similar hypothesis to model 1. As presented before, the relation between each dimension of resistance to change and creativity was fully verified, except cognitive rigidity that presented a marginally acceptable total effect. Nevertheless, these were already analyzed and aligned with the literature in the beginning of this chapter.

The effect of resistance to change on work engagement was one of the focus points of this study. Results showed that all four dimensions of resistance to change were negatively related to the engagement of the employees since they presented significant betas. This is in line with what was proposed in the literature by Heuvel et al (2010). Their research stated that resistance to change can pose as a factor against creative potential since it inhibits people from opening their minds to new ways of doing things. Their study reads deeply into personal resources, which are described as resources that promote goal attainment

when obstacles are in place, and how resistance to change can be seen as one of those obstacles to those same resources. Though, resistance to change deprives employees of focusing on their personal resources that potentiate their strengths and creativity.

Additionally, a research conducted by Rubin et al (2013) also supported the negative influence of resistance to change on work engagement. Their study showed that changes in companies such as restructures, mergers or even a more simple office redesign like in the present research, have a strong impact on the way people engage with the company. Employees that are more likely to resist change, are less likely to be engaged and show commitment to the company.

At the same time, the direct influence of work engagement on creativity was also tested and analyzed in this research. Results turned out to be in line with what was suggested and a positive relation was found between work engagement and creativity. . In line with what McEwen (2011) found in his research, the more engaged the employees are with their work and with the company, the more likely they will present strong levels of creativity and fitness to innovation. Engaged employees are considered to be a source of creativeness for other employees and have the power to positively influence others.

This turns into a snowball effect where high engagement levels are spread among the crowd while creativity naturally evolves from this dynamic environment (Gichohi, 2014). Results showed that, the greater the level of engagement of the employees with the company, the better they respond to changes and the more creative they tend to be when compared to disengaged colleagues. As mentioned in the literature of this research, engagement promotes better work performances and more creativity and innovation. Thus, results presented a fairly strong and solid influence of work engagement on creativity levels, so that a direct relation between these two was proven to exist.

As the direct effects of resistance to change on work engagement and of this last one on creativity are verified, it is wise to infer that the relation between resistance to change and creativity, when mediated by work engagement, is also supported. This is observable on the

results of model 2, which show that there is a significant and relevant effect of resistance to change on creativity through the mediation of work engagement.

This is partially in line with what was defended by Salanova and Schaufeli (2008). They defend the added value and impact of work engagement on other studies as a mediator variable due to its influence on employees' attitudes and performances. Their study presents a positive outcome of a work engagement mediation, similarly to the present research. However, no relation between the independent and dependent variables was found in Salanova and Schaufeli's research, while the results of this research presented a relation between resistance to change and creativity.

The same was detected in a research conducted by Calderón et al (2013). It investigated the influence of the supervisor support on the behavior of the employees, which was represented by the organizational citizenship behavior (OCB) variable, and mediated by work engagement. Along their research, they verified that there was not only a relation between supervisor support and OCB, but that relation was also verified when work engagement worked as a mediator. The work engagement variable, did not change the already existent relation, but was significant enough to act as strong mediator.

As happens with the present research, there was already a previous stated and existent relation between resistance to change and creativity, except with cognitive rigidity. When work engagement performed as a mediator, different dimensions of resistance to change dropped their negative influence on creativity. This means that work engagement acts as an important mediator in the negative relationship between resistance to change and creativity.

Thus, as an overall conclusion, this research proved to be important to mostly understand how resistance to change affects creativity and if that influence changes in the presence of mediators such as participation and work engagement. Results concluded that resistance to change is, in fact, negatively related to creativity. That relation is not mediated by participation but is influenced by the mediation effect of work engagement.

Additionally, this study also assessed the employees' suggestions to the improvement of the new work space. Most of these suggestions represent the issues that will most likely be attended to by the change team in the future. The bolder ideas such as the nap room or the gym are not, for now, going to be looked into. Still, these more creative ideas might suggest that employees were ready for a bigger and more daring change project which leaves a possibility for new projects in the air.

6.2. Limitations and Future Research

Similarly to other researches, this study encountered a few limitations that led to future guidance for related studies. It is important to note these in order to understand possible restrictions of the results and of the application of the study.

The size and diversity of the sample used to develop this research could be considered as not significant and representative of the universe. There was a high response rate of a couple departments while all the other departments showed low levels of participation in the research. At the same time, only about a third of the population of company answered the questionnaire, representing a low rate of involvement in the research. This leads to a non-representative sample of the population making it difficult to generalize to the investigation.

On the analysis side, the scale used to test resistance to change was found to present some issues related to its effectiveness. A study conducted by Michel et al (2013) presented the same problem in terms of the non-validation of the cognitive rigidity dimension as a results of principle component analysis. This suggests that the scale might present some defects in terms of its consistency or it might be more applicable to a distinct type of population or culture than the ones that cooperated with this study and with the research done by Michel et al.

As recommendations for future research, it is advised to apply similar studies to characteristically different populations, in order to understand if there are any differences in

the results, and to readjust the resistance to change scale or to proceed with a different measure. It might also be important to enlarge the size of the sample in order to obtain a wider range of participants and opinions. Regarding the results of this study, it would be interesting to develop two distinct researches: one that focused on understanding why participation was not considered a mediator of the relation between resistance to change and creativity and another that focused on understanding if the mediation of work engagement in the same relation applied to other contexts.

7. References

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8. Annexes

Annex A – Demographics of the Respondents

Departments	Total Number of Employees	Number of Respondents	Percentage of Respondents
Assurance	200	47	24%
Advisory	91	59	65%
Tax	170	44	26%
Transaction Services	61	18	30%
People Services	29	11	38%
Financial Services	128	36	28%
Administration	57	15	26%
Total	736	230	31%

Gender	Total Number of Respondents	Percentage of Respondents	Percentage of Total Population
Female	103	45,6%	34%
Male	123	54,4%	29%
Total	226	100%	-

Age	Total Number of Employees	Average	Seniority	Total Number of Employees	Average
<25	74	30	<1	43	4
26 - 30	71		2 - 4	125	
31 - 35	12		5 - 7	31	
36 - 40	43		8 - 10	9	
>41	26		>11	18	
Total	226	-	Total	226	-

Background	Total Number of Employees	Percentage of Respondents
Management/Economics	161	71%
Law	26	12%
Engineering	13	6%
Technology	4	2%
Social Sciences	7	3%
Health	4	2%
Other	11	5%
Total	226	100%

Annex B – Scale Constructs

Variable	Construct	Item Description	Item ID	Original Scale	Literature
Resistance to Change	<u>Routine Seeking</u> : behavioral component of resistance to change, "inclination to adopt routines"	I'd rather be bored than surprised.	Q2_1	6 point Likert scale: 1) Strongly Disagree 2) Partially Disagree 3) Disagree 4) Agree 5) Partially Agree 6) Strongly Agree	Oreg, S. 2003. Resistance to Change: Developing and Individual Differences Measure. <i>Journal of Applied Psychology</i>
		I'll take a routine day over a day full of unexpected events any time.	Q2_8		
		Whenever my life forms a stable routine, I look for ways to change it.	Q2_12		
		I like to do the same old things rather than try new and different ones.	Q2_15		
		I generally consider changes to be a negative thing.	Q2_17		
	<u>Emotional reaction</u> : affective component of resistance to change, "the amount of stress and uneasiness induced by change"	When I was informed that there would be a significant change regarding the way things are done at work, I felt stressed.	Q2_2		
		When I am informed of a change of plans, I tense up a bit.	Q2_11		
		I like to do the same old things rather than try new and different ones.	Q2_9		

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		If the performance assessment system changed, it would probably make me feel uncomfortable even if I thought I'd do just as well without having to do extra work.	Q2_3		
	<u>Short-term focus:</u> affective component of resistance to change, "the extent to which individuals are distracted by the short-term inconveniences associated with change"	Changing plans seems like a real hassle to me.	Q2_4		
		I generally consider changes to be a negative thing.	Q2_5		
		Often, I feel a bit uncomfortable even about changes that may potentially improve my life.	Q2_10		
		When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me.	Q2_13		
	<u>Cognitive rigidity:</u> cognitive component of resistance to change, "frequency and ease with which people change their minds"	I often change my mind.	Q2_6		
		My views are very consistent over time.	Q2_7		
		I don't change my mind easily.	Q2_14		
		Once I've come to a conclusion, I'm not likely to change my mind.	Q2_16		
Participation	<u>Participation:</u> allowing workers to have input regarding a proposed change	I had the opportunity to give my views about the change before it was implemented.	Q4_1	7 point Likert scale: 1) Totally Disagree 2) Strongly	Randall, R., Nielsen, K. & Tvedt, S.D. 2009. The development of five scales to

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		I was involved in the design of the implementation of the change project.	Q4_2	Disagree 3) Partially Disagree 4) Neither Agree or Disagree 5) Partially Agree 6) Strongly Agree 7) Totally Agree	measure employees' appraisals of organizational-level stress management interventions. <i>Work & Stress</i> . 23 No 1: 1-23 Wanberg, C.R. & Banas, J.T. 2000. Predictors and outcomes of openness to changes in a reorganizing workplace. <i>Journal of Applied Psychology</i> . 85, No 1: 132-142
		I have been able to participate in the implementation of the changes that have been proposed and that are occurring.	Q4_3		
		I have some control over the changes that have been proposed and that are occurring.	Q4_4		
		I had the opportunity to ask questions about the changes that the change project would promote before these actually happened.	Q4_5		
		Management has made a great effort to involve employees in the change process.	Q4_6		
Work Engagement	<u>Work engagement</u> : propensity to engage with the work and experience a close fit with the organization	At my work, I feel bursting with energy.	Q5_1	7 point Likert scale: 1) Never 2) Very rarely 3) Rarely 4) Occasionally 5) Often 6) Very Often 7) Always	Clercq, D., Bouckennooghe, D., Raja, U. & Matsyborska, G. 2014. Unpacking the goal congruence – organizational deviance relationship: the roles of work engagement and emotional intelligence. <i>Journal of Business Ethics</i> . 124:695-711
		At my job, I feel strong and vigorous.	Q5_2		
		I am enthusiastic about my job.	Q5_3		
		My job inspires me.	Q5_4		
		When I get up in the morning, I feel like going to work.	Q5_5		
		I feel happy when I am working intensely.	Q5_6		
		I am proud of the work that I do.	Q5_7		

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		I am immersed in my work.	Q5_8		
		I get carried away when I am working.	Q5_9		
Creativity	Creativity: expression of opinion that promote the generation of new and useful ideas	Exhibits creativity on the job when given the opportunity to.	Q6_1	5 point Likert scale: 1) Not at all characteristic 2) Usually not characteristic 3) More or less characteristic 4) Usually characteristic 5) Very characteristic	Zhou, J. & George, J.M. 2001. When Job Dissatisfaction Leads to Creativity: Encouraging the Expression of Voice. <i>Academy of Management Journal</i> . 44, No 4: 682-696 Binnewies, C. & Gromer, M. 2012. Creativity and innovation at work: the role of work characteristics and personal initiative. <i>Psicothema</i> . 24, No 1: 100-105
		Is a good source of creative ideas.	Q6_2		
		Suggests new ways of performing work tasks.	Q6_3		
		Often has new and innovative ideas.	Q6_4		
		Comes up with new and practical ideas to improve performance.	Q6_5		
		Often has a fresh approach to problems.	Q6_6		
		Comes up with creative solutions to problems.	Q6_7		
		Suggests new ways to achieve goals or objectives.	Q6_8		
		Is not afraid to take risks.	Q6_9		
		Promotes and champions ideas to others.	Q6_10		
		Develops adequate plans and schedules for the implementation of new ideas.	Q6_11		
		Suggests new ways to increase quality.	Q6_12		

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11. Quando sou informado(a) de mudanças de planos na minha vida pessoal/profissional, tenho tendência a ficar tenso(a).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Sempre que a minha vida se torna numa rotina diária estável, procuro maneira de a mudar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Quando alguém me pressiona para mudar alguma coisa, tenho tendência a resistir mesmo que ache que a mudança possa ser benéfica no final.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Normalmente não mudo de opiniões e ideias facilmente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Prefiro fazer atividades que já conheço em vez de experimentar atividades novas e diferentes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Quando chego a uma conclusão, é raro mudar de ideias.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Em geral, encaro o conceito de mudança como algo negativo.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Os processos de mudança têm em vista o melhor funcionamento da empresa e o bem-estar dos colaboradores. Diga, em que medida, concorda com as seguintes afirmações sobre o seu envolvimento no processo.

	Discordo Totalmente	Discordo em Grande Parte	Discordo Parcialmente	Não Concordo Nem Discordo	Concordo Parcialmente	Concordo em Grande Parte	Concordo Totalmente
1. Tive a oportunidade de dar a minha opinião sobre as mudanças que o [] propunha antes destas acontecerem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Estive envolvido no design da implementação do []	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Tive oportunidade de participar na implementação das mudanças que foram propostas e que estão a ocorrer no âmbito do []	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Sinto que tive algum controlo sobre as mudanças que foram propostas e que estão a ocorrer no âmbito do []	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Tive a oportunidade de fazer perguntas sobre as mudanças que o [] propunha antes destas acontecerem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. A gestão da [] fez um esforço para envolver os colaboradores no processo de mudança.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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A criatividade e a inovação são duas características muito faladas no mercado. Utilizando as afirmações seguintes, descreva-se a si próprio(a) no momento atual. Por favor, faça-o de forma tão precisa quanto possível.

	Discordo Totalmente	Discordo em Grande Parte	Discordo Parcialmente	Não Concordo Nem Discordo	Concordo Parcialmente	Concordo em Grande Parte	Concordo Totalmente
1. Mostro criatividade no meu trabalho quando tenho oportunidade para tal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Considero-me uma boa fonte de ideias criativas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Sugiro novas maneiras de executar tarefas do trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Tenho frequentemente ideias novas e inovadoras.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Arranjo novas ideias para melhorar a minha performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Apresento com frequência uma abordagem nova para problemas do trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Desenvolvo soluções criativas para problemas do trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Sugiro novas maneiras de atingir objetivos.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Não tenho medo de arriscar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Promovo e defendo ideias aos outros.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Planeio e organizo a implementação de novas ideias.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Sugiro novas maneiras de melhorar a qualidade do trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A relação que um colaborador tem com o seu trabalho e o que sente relativamente à ■■■ é um fator muito importante no seu desempenho. Em seguida encontra algumas afirmações relativas a esse compromisso. Por favor classifique-as como achar mais adequado.

	Discordo Totalmente	Discordo em Grande Parte	Discordo Parcialmente	Não Concordo Nem Discordo	Concordo Parcialmente	Concordo em Grande Parte	Concordo Totalmente
1. Sinto-me cheio de energia no meu trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. No meu trabalho sinto-me com força e vigor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Estou entusiasmado(a) com o meu trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. O meu trabalho inspira-me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Quanto me levanto de manhã, tenho vontade de ir trabalhar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Sinto-me feliz quando trabalho intensamente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Tenho orgulho no trabalho que faço.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Sinto-me envolvido(a) com o trabalho que faço.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Deixo-me levar pelo meu trabalho.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The relation between resistance to change and creativity: the mediating effect of participation and work engagement in a Portuguese business context.

Por último, a fim de recolher a sua opinião sobre o [REDACTED] pedia-lhe que desse a sua opinião sobre as duas perguntas seguintes de forma livre.

Gostou do resultado final do [REDACTED]?
Gosta de trabalhar no novo espaço?

Se pudesse, o que mudaria no novo office e porquê?

Para fins meramente estatísticos pedia-lhe que me fornecesse alguns dados demográficos sobre si. Por favor seleccione a opção que mais se adequa a si

Qual é o seu género?

Masculino



Feminino



Qual é a sua idade?

Qual é o seu rank na [REDACTED]?

- Staff
- Senior
- Manager
- Senior Manager
- Executive Director
- Partner
- Outro (CBS)

Qual é a sua área de estudos?

Gestão e/ou
Economia



Direito



Engenharias



Informática e/ou
Tecnologia



Ciências Sociais
e/ou Humanidades



Ciências Físicas
e/ou da Saúde



Outras



Há quanto tempo está na [REDACTED]?

O questionário termina aqui.

MUITO OBRIGADA PELA SUA COLABORAÇÃO!!