Master’s Degree programme – Second Cycle (D.M. 270/2004)
in Business Administration

Final Thesis

Fostering creativity in standardized jobs

Supervisor
Ch. Prof. Andrea Pontiggia
Ch. Prof. Francesca Checchinato

Graduand
Luca Meneghello
Matriculation Number 821401

Academic Year
2015 / 2016
# Table of contents

Introduction .......................................................................................................................... 3

1 Creativity and the creative personality ............................................................................ 7
   1.1 Defining creativity ........................................................................................................... 7
   1.2 How the creative process works .................................................................................... 9
   1.3 The creative personality ............................................................................................... 16
   1.4 The role of moods in the creative performance .............................................................. 19

2 The organizational structure for creativity and innovation ............................................... 25
   2.1 Modeling organizations for creativity ........................................................................... 25
   2.2 The work environment for creativity ........................................................................... 32
   2.3 Standardized jobs and routinization ........................................................................... 33
   2.4 Turning dissatisfaction into creativity .......................................................................... 35
   2.5 The role of leadership .................................................................................................. 39
   2.6 Colleagues, organizational culture and climate ............................................................ 46

3 The case study .................................................................................................................... 49
   3.1 Hypotheses .................................................................................................................. 49
   3.2 Method ......................................................................................................................... 58
   3.3 Analysis of multiple choice questions .......................................................................... 60
      3.3.1 Sample 1 ................................................................................................................. 60
      3.3.2 Sample 2 ................................................................................................................. 67
      3.3.3 Sample 3 ................................................................................................................. 76
      3.3.4 Sample 4 ................................................................................................................. 86
      3.3.5 Aggregated Sample ............................................................................................... 94
   3.4 Analysis of open questions ......................................................................................... 105

4 Conclusions ....................................................................................................................... 112

5 References ......................................................................................................................... 119
Introduction

In our days, a word has gained an importance it had never reached before; we could say that it has become the synonym for “key to the future”. That word is “innovation”.

Innovation involves the break of a status quo in order for something new to be born, an improvement to the existing situation. Increasingly, at present times, in our so rapidly changing economic scenario, so much attention is being given to the problematics related to innovation that it often seems like companies, without innovation, can at best survive, but certainly not be successful.

We see the results of innovation, the outcomes deriving from the different behaviors and choices of companies, but sometimes we don’t linger enough on the factors that determine innovation, on the factors that make a company be successful while another one is not. Certainly, one of the factors that allow an organization to be innovative is its capability to foster and exploit the creativity of its employees, and this is where my study takes its steps.

It is often given much attention to some companies and some people for being outliers who are able to change the rules of the game, but sometimes it seems like all that is needed by a company is to have outstanding talented people that are able to think out of the box, to be creative and innovative. It is not uncommon for big companies to acquire smaller companies just to get their founders or the people working inside of them, as it is the case of FriendFeed, acquired by Facebook for its “well-regarded product managers and engineers”, and especially the two founders Bret Taylor and Paul Buchheit (Miguel Helft, May 17, 2011, NYT).

What I think, though, is that there are many factors inside an organization that play a role in the creative performance of a company, and there are at least three levels to take into account. A personal level, concerning the individual and his capability to be
creative, since there are people who are more creative while others are less. An organizational level, involving the inner structure and functioning of the company with the dynamics involving the relation between superiors and subordinates, where leadership plays an important role. A third one concerning the organizational climate, involving the relations with colleagues, the reciprocal expectations, and the perceived value given to personal contributions.

One of the mistakes that often companies do is thinking that it is sufficient to take into consideration and nurture only one of these three levels in order to have a successful creative performance. As I try to show in my study, though, each of them taken alone is not sufficient. It is rather necessary to consider and value each of them. What I believe is that a company is not made up only of a diamond point. To fully exploit the potentialities of an organization it is essential to get the right people for every part of it, people who fit with it, and to put them in the place and in the working conditions that bring out the best in them. I believe that innovation is not only a matter of exceptional and creative people, it concerns every single role inside the organization, which is made of very different parts and hierarchic levels that should all be working together in harmony for a common goal.

This is where this study begins. We often focus on the results of outstanding creative people in creative jobs, but little attention is given to creativity in work roles that are more structured. Some jobs have an inner structure that is very defined and standardized, leaving little freedom or autonomy, and they often involve following strictly a predetermined procedure and the frequent repetition of the same behavioral pattern. I would expect in this kind of jobs creativity to be absent, as creativity should involve free exploration and a certain discretionary power over the tasks to perform. Despite this, I think it is somehow naïve to think that every creative person has a job that allows him to express creativity. What does it happen, then, when creative people perform jobs that
should not let them be creative? Are they able to carve out
themselves a space to express creatively in standardized jobs?
In addition to this, I think it is important to consider that creativity
is not necessarily objectively valuable. The outcomes coming from
an individual could be considered creative by an organization at a
certain time, while not creative by another one or in another
moment. What is important, thought, is to allow this potentially
creative outcome of employees to emerge and possibly be exploited
by an organization as a resource. It is more important, in my
opinion, to try take the best out of every employee, be that outcome
valuable or not by the organization they work in, and consequently
it is more important to focus on the perception of employees, as it
influences their wellbeing in the work environment, rather than let
their creative performance be judged by someone else.

To investigate these aspects I considered a sample made of
employees performing standardized jobs, but belonging to two
different companies, were the job is structured enough to let me
expect to find no creativity expression. On the other side, I
considered a small sample of employees belonging to one of the two
companies performing a job that should be directed toward
innovation and problem resolution for its structure and possibly for
its work climate, where I would expect creativity to emerge by
definition.

Comparing the samples I would have expected employees in
standardized job to express no creativity, while those in a creative
job to express creatively, but what I have found is that reality is a
little more fuzzy and less predictable, as there are many factors to
take into consideration that are influencing each other.

What I say is that the direct line drawn between standardized jobs
and absence of creativity is questionable, as there are many
variables influencing this relation. I tried to identify some of them,
not all of them, and some are just preliminary results, indications
for further analysis, nevertheless some useful outcome have
emerged to start this path.
In the first part of this study I will start by defining creativity and the functioning of the creative process in individuals. In the second chapter I will try to outline the possible elements of the organizational structure that are necessary for creativity to emerge in companies. I will then take into consideration some aspects related to standardized jobs and factors that could influence the creative performance. In the third part, the case study methodology and consequent analysis will be presented. Conclusions will then be drawn.
1 Creativity and the creative personality

1.1 Defining creativity

Given the importance that creativity takes on at present times, it becomes important to clarify what creativity is and how it is expressed.

There is no clear and univocal definition of creativity, and though some attempts to give one were made by many authors, it could be important to try to define intuitively the object of interest before starting to examine the literature.

In our daily experience we are used in defining something as creative when it clearly emerges the characteristic of originality, meaning that it differentiates itself form what we have already experienced and we are used to in our lives, like something new is now existing that wasn’t before. Emotionally speaking, this bump on something new is also accompanied by some degree of wonder and surprise. Creativity is then about the generation of this “something” new. We could define it very generally as the process that generates something original.

The original output generated doesn’t necessarily need to be useful, and this is the big difference with innovation. We could define something as innovative when it not only possess the characteristic of originality, but also that of usefulness. Specifically, we could say that what happens with innovation - that is not necessarily true for something that is creative - is that it makes emerge a need, as if now that we are faced with this something new, we feel a lack of it even if it wasn’t perceived before.

These are some useful intuitive point from which to start my considerations, but taking a look at the existing literature on the topic, and specifically focusing on the company context, it becomes evident that the issue is not so obvious and straightforward; on the contrary, it is very indented and often ill-defined.
A definition of creativity that is widely accepted and often reported in literature is the product-oriented one given by Amabile (1988): “Creativity is the production of novel and useful ideas by an individual or small group of individuals working together”. As specified later by Amabile (1997) herself, though, the novel idea “can’t be simply bizarre; it must be appropriate to the problem or opportunity presented.” Innovation is then defined as the implementation of this new and useful idea (Amabile 1988). I personally add that the last clarification made by Amabile, though necessary, is not as strong and defining as it could seem, for it cannot be given for granted that an idea is automatically recognized as valuable and pertaining even if it is the case. It could happen that a newly generated creative idea is not recognized as such by the people appointed for the evaluation process; also, what is considered new or useful in a certain industry, could be recognized not as such in another one. It is not uncommon for writers not to see their book recognized as worthy publishing; we could use as example the Harry Potter saga, whose first book was refused by twelve publishers before getting a chance. This is the case, too, for many startups looking for investors who believe in them; some are considered worthy investing by someone and not by others, and so on. This is the main reason why in my study I am considering creativity in a more psychological sense, as a process pertaining the individual inner life, more than focusing on the outcome. It is not my interest to evaluate creativity; my concern is directed toward fostering the emergence of creative behaviors inside an organization.

What we agree on, though, is that creativity is the first step toward innovation, which involves a successive process of evaluation, selection and implementation that pertains the management responsible for these choices in the company.

Inside an organization, the ideas into question can be products, projects, processes or services, but the all start from a common
point: an idea that goes through a process of selection and refinement.

What we are going to see, then, is the process at the base of creativity and innovation.

1.2 How the creative process works

Once defined what creativity is about, we need to model or at least try to understand how creativity works, that is, what is the process that leads to the generation of new ideas, and try to define the factors composing it, so that we can manage to control and influence them.

An attempt to model the creativity process that is still valuable was first made by Amabile (1983) with her Componential model of individual creativity. In this model, Amabile outlined three major components necessary for creativity to emerge, irrespective of the particular domain, namely: domain-relevant skills, creativity-relevant skills, and intrinsic task motivation.

**Domain-relevant-skills**

This component includes the complete range of knowledge assets of the individual that are relevant to the specific domain in which the creative performance takes place. It comprises the whole range of responses to different situations acquired with actual time-on-task, all the information obtained with training and experience, and the technical skills and the expertise grown, that can be useful in a given situation. In psychological terms, it includes the full range of cognitive pathways that are available and can be used per se or combined in response to a given problem to face.

In addition to what explicitly considered by Amabile I would underline that we are not considering only the skills taught by mentors and all the designated people during the training, plus
those acquired during our working hours, but all the skills that are relevant to the particular domain in question.

This set of skills changes obviously according to the specific task to accomplish, but it should be considered in a broad sense, for it comprises all the responses and information that can be connected in some way to the specific situation, even if they are thought to belong to a different and apparently unrelated domain. It is the combination and recombination of these set of skills, knowledge and responses that ultimately leads to a creative outcome.

**Creativity-relevant skills**

Under this category are included all those capabilities that form the core of the creative process and that are object of discussion in different theories and models as we will see later. Given the set of knowledge that constitute the domain-relevant skills, what makes the difference in the creative process allowing for the production of a creative output is the set of skills here defined.

Generally speaking, it comprises a series of mental attitudes that lead to the break of current sets, the recombination of elements, the search for new pathways. The raw materials from which to start are the domain-relevant-skills just listed, thus, obviously, the wider is this set of knowledge and information, the better is for creative performance. An individual ability to understand complexities is, consequently, an individual trait that favors creativity. As we will see later, though, this capability to deal with different domains and sources of information is not the only way to reach a creative outcome. A deeper understanding of a narrower topic is another way to reach the goal.

Given the set of knowledge available, the skills relevant for creativity include the capability to think out of pre-existing schemes, to explore new possible pathways, to keep possibilities open and suspend judgment on them for longer periods, combining elements belonging to different domains and seeing similarities between distant situations.
**Intrinsic task motivation**

As cleverly stated by Amabile (1988), intrinsic task motivation is what “makes the difference between what an individual *can* do and what one *will* do”, or more scientifically (Amabile, 1997), it is “the motivation to work on something because it is interesting, involving, exciting, satisfying, or personally challenging”.

The degree to which an individual will make the effort to break current sets, leave his own comfortable certainties and explore new possible solutions, is determined by the energies he will channel in this direction. Though this can be in some way influenced resorting to external incentives - whose role we will see later - the biggest part is played by his inner natural push toward that goal, the degree to which one feels energetic when performing a task, especially when it is required persistence and dealing with failure.

Many different factors can influence motivation, both inner to the individual and belonging to the environment, and in addition to this, motivation can change not only between domains and jobs, but also between single tasks to perform.

The three components just outlined operate at different levels of specificity. Creativity skills are the more general ones since they can be applied to any given domain, while domain-relevant skills are more specific as they pertain by definition to a specific domain taken into consideration. Task motivation operates at the most specific level since it concerns a specific task and can vary not only between one task and another, but even over time on the same one depending on a number of factors.

Each of them is then necessary as they are supposed to work together in a multiplicative way, meaning that the higher is each of them, the better the creative performance overall should be.

Amabile (1988) also modeled the relations between these three components outlining an ideal five-stage workflow that leads to the generation of a creative output, be it high or low-level creativity.
1 – *Task presentation*

The first stage is the presentation of the task or problem. The problem can arise per se in the individual who is faced with a critical situation or freely exploring a certain domain, or can be presented by an external actor, specifically posing it and asking him for a creative performance. Intrinsic motivation plays a fundamental role at this stage since it gives to the individual a push to face the problem that cannot be compensated with anything else. It could be argued that an external motivating factor such as the promise of a reward could act as a sufficient motivating factor, but as we will see, though it can give a push and give rise to energies that can be used to accomplish the task, inner and external motivating factors don’t work in the same way. Moreover, an external request for a creative output doesn’t necessarily imply also an external source of motivation, since the person could find the task as intrinsically interesting and motivating as well, independently from its origin or possible external reward.

In my study, indeed, I am dealing with jobs characterized by a high degree of standardization and low explicit request for creative outputs, thus, by definition, I will be probably faced with inner posed problems, emerged during exploration of different possible cognitive pathways and led by intrinsic motivation.

2 - *Preparation*

At the second stage it is domain-relevant skills that play the central role. After the individual decides to take on the problem, he recalls to mind all the information that can be useful to face the obstacle. It can be heuristics, definable as any shortcut of thought or known solution to a given problem that showed to be satisfying in the past, or it can be the information capital grown with work experience or stored in memory throughout the years, also concerning previously solved problems, which are somehow similar but belonging to a different domain.
Amabile underlines that there is clear evidence from research of the impossibility to have too much knowledge related to a given task. It is not the amount of knowledge grown through the years that hinders creativity in employees with a longer working history, but it is the ease to recall and combine information that makes the difference in creative performance. In relation to my study, many of the interviewed people are laborers with many years of working experience in the same job, and their expression of creativity is not hindered by their experience; on the contrary, it is their capability and will to exploit those information that makes the difference, and that can be influenced by many factors.

3 – *Idea generation*

The third stage is where the magic happens. By selecting, comparing and mixing different information, pathways and responses, in this stage the individual generates the original ideas that will later be selected. At this point, task motivation and creativity-relevant skills are the main actors, since what makes the big difference here is the capability to combine and rearrange information breaking previous sets, also taking some risks, which are more likely to be undertaken if the individual is moved by a genuine inner motivation than in the case of an external reward.

Obviously, in this case, a big role here is played by how much the individual perceives to have the freedom to explore and take risks. Dealing with objective constraints that are by definition a characteristic of the job is likely to let individuals avoid or take fewer risks; this will exclude a priori ideas that would have been valuable in the case of complete freedom.

4 – *Idea validation*

Generating ideas is not enough; the further step implies filtering them, selecting only those that are correct and really pertain the current domain and situation while excluding those that are not really useful to attain the specific goal on purpose.
5 – Outcome assessment

The last step involves taking decisions based on the results of the judgments carried out in the previous stage. Be the creative performance successful or not, the process ends here, adding the newly acquired information to the domain knowledge. In case we didn’t select an idea as valuable, the process simply restarts from the beginning.

Increasingly, during the years, the role of motivation on creative performance has been examined, and different attempts to understand deeper the creativity process and model it have been made. Some question have risen insistently and they could be summarized like this: given a certain amount of information available to the individual to face a problem, what are the factors that can influence his motivation to look for original solutions? Is creativity an innate trait that belongs to certain people or we can influence it and teach it? How?

In recent times De Dreu, Bass and Nijstad (2008) developed a new model that gives a different perspective to the creative process, and in particular to the role of motivation. It is called the Dual Pathway to Creativity Model (DPCM). Before seeing it, it is useful to make some clarification about creativity in the first place.

At present times, the creative performance is usually operationalized by researchers into three components, namely: fluency, originality and flexibility.

Fluency refers to the number of non-redundant ideas, insights or solutions that are being generated; it is thus a measure of creative production. Originality is a defining characteristic of creativity and refers to the uncommonness or infrequency of the ideas, insights, or problem solutions that are being generated. Finally, flexibility concerns the use of various, broad and inclusive cognitive categories, and different perspectives; that is, a flexible processing of information, shifting between different domains and relating
them. Consequently, flexibility can be seen not only as a measure of creative performance but also as an antecedent to the production of many (fluency) and original responses.

The idea at the center of the dual pathway model is that fluency and originality can be achieved not only through flexibility but also through perseverance and hard work, exploring fewer cognitive categories or perspectives in greater depth.

The DPCM states that creative performance (fluent generation of original ideas and insights) can be achieved in two distinct but possibly overlapping pathways (De Dreu, Nijstad and Baas, 2011). The first pathway is through cognitive flexibility. It involves breaking standards and using flat associative hierarchies, switching frequently between many, broad and inclusive cognitive categories. It is the path at the base of divergent thinking, which originates uncommon, original ideas.

The other pathway is through persistence and perseverance. It involves the deeper analysis of fewer cognitive categories and generating many ideas and insights within them, leveraging on prolonged effort, and relatively longer time-on-task, analyzing with persistence and incrementally combining elements and possibilities in a methodical way.

Comparing this model to the one proposed by Amabile (1988), some implications can be drawn. First, concerning domain-relevant skills, it can be argued that it is not necessary to try to relate domains that are as many and as different as possible, but these skills are acquirable also by exploring deeper a narrower domain. This is also an additional proof that a long-standing experience grown in the same work role is not an obstacle to creativity but it actually is an advantage. More than this, a central aspect of the theory is that any trait or state influencing cognitive flexibility or cognitive persistence and perseverance can therefore influence the creative performance. This pertains the task motivation component in the Componential model by Amabile, but, as outlined throughout the years by the literature on the issue, pushes us to
consider also the role that mood states and emotions have on the creative attitudes of people.

1.3 The creative personality

In this section, I am not going to analyze the factors that define a person as creative, such as the traits of personality that can help to identify a creative person. This would be of interest and concern only during a phase of recruiting, when a company is faced with the issue of selecting applicants and needs to recognize personality traits that identify the profile searched by the organization in that moment. Instead, I am going to talk about the needs of creative people and, more in general, what do people require to express themselves creatively and what are the factors that can foster or hinder their creativity, be it habitually expressed or not.

These aspects are considerable the basis upon which to build my discussion, since only by understanding the psychological needs of people to express creativity we can consequently understand the relation that is established between the employees and the organization itself and its effects on their behavior and working attitudes.

Considering this perspective is important because once people are hired, their performance is not going to be constantly the same; instead, it changes as it is influenced by contextual factors, together with their attitude toward their work role and the whole organization, thus possibly affecting the whole well-functioning and positive environment of the organization. Once people have been selected – with expense of energies and resources of the company, time in the first place – it comes the problem of retaining them and assuring that employees fit with their job and work role inside the organization.

We are going to see this in more detail, but we can say that employees who are happy with their job are more motivated and
energetic, and this energy is a positive resource for the whole organization. It gives rise to a virtuous circle and enables creativity (Amabile, 1997) as motivation and engagement in one’s job are its primary source.

As stated in Mumford (2012, pg. 253) there is no clear and defined profile of the creative individual, nevertheless, there is agreement that the basic elements characterizing personality are traits, and, among psychological theories concerning traits, the most used model is the Five Factor Model developed by Paul Costa and Robert McCrae (Mumford, 2012, pg. 242). The model describes five superordinate factors named openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (OCEAN). A recurring pattern found by different authors using this model - in particular McCrae (1987) - is the association to creativity of a high value of the openness to experience trait, together with a low value of conscientiousness. In particular, the openness to experience trait was found to be correlated to all the variables related to divergent thinking, which is at the base of original ideas. It is precisely this openness to experience trait that was found to be the greatest predictor of a creative personality, and among dimension of the Five Factor Model of personality it is the most consistently related to creativity (Shalley, Zhou, Oldham, 2004). Also, in a study by Scratchley & Hakistan (2000), was found related to creativity as rated by managers. Creative people are open to new experiences and ideas, they like exploring and finding unknown paths, new ways of doing things, different from the ones currently performed and defined. They are flexible and fluent in thinking and they are expert and find enjoyment with divergent thinking, a style of thinking directed at the production of less expected, unconventional ideas, opposite to the analytic convergent, logical thinking.

Openness to experience is the trait that allows the individual to explore different knowledge areas and gather information from different sources and experiences, so that they can be used and recombined in the phase of idea generation to produce different
solutions. This point, though, implies two possible drawbacks. The first one is that, to be creative, the individual would need to make different experiences, but this aspect is hindered in the case of standardized jobs where there is a strict procedure to follow and predetermined behaviors to be held that are decided by others, with virtually no space for exploration or possibility to do things differently. The second point is linked to the first one. It is likely that for creative individuals – which are high in openness and like exploring and having a certain degree of autonomy - the lack of freedom that is intrinsic in standardized jobs will lead to frustration, thus being detrimental for the individual mood and the consequent performance.

Highly creative people have shown to be more cognizant of their inner feelings and to give importance to them as they influence greatly their performance. In fact, outcomes of the creatives often take unexpected directions and are tightly linked with their emotions. Studies have demonstrated (Mumford, 2012, pg. 256) that positive affect enhances creativity and is central to intrinsic motivation, which is a very important component of creativity. The impossibility to express creativity and to explore freely is likely, then, to lead to dissatisfaction.

There is, however, another possibility related to anger. The effect of negative emotions is complex and some studies suggest that anger could also be a valuable resource serving the individual in behalf of self-preservation, where aggressiveness is only the maladaptive development of the original affect. From this point of view, then, the emotion of anger rising form a dissatisfactory working condition could be exploited as a precious resource acting as a motivational factor to change the current situation and thus be channeled into a positive outcome.

Studies have argued that positive moods are good for creativity, but when dealing with deadlines it is anger that is most beneficial; moreover, they are not mutually excluding, it is proposed that a mix
of them can coexist and thus be used to react to current needs. In particular, they can be good as a source for change.

How, then, are these individuals going to react? Are they able to find unknown ways to express themselves creatively in their jobs, carving out for themselves a space to fulfill these needs, or are they simply led toward frustration?

1.4 The role of moods in the creative performance

In order to talk about emotional phenomena and their influences on creativity, we must in the first place make some distinctions between the terms affect, mood and emotion, and give some definitions according to Mumford (2012, pg. 220).

Affect is considered the most general and abstract term and it refers to a subjective feeling state that can be classified as positive or negative. Mood states are a subtype of affect that lack the directedness and specificity of emotions; they tend to be enduring and pervasive and are subject to change and to situational pressures. Emotions, finally, are more specific than moods and more strongly directed toward a triggering stimulus.

Emotions are thus hardly controllable as they arise in response to a specific situation and can change not only from day to day, but even from a certain moment to another of the same day. They can relate to a specific task of one’s job role and not to another, and switch after a while; being so specific and time sensitive, they are considerable aleatory from the point of view of an organization, as it becomes impossible to control and consequently influence them.

Affects, on the contrary, are too generic, and lack that directedness that could be helpful to exploit in a working environment.

It is moods, then, that constitute the object of interest for an organization, as they are specific enough to influence significantly the working performance of an individual - and the creative performance in particular - and to be influenced by the directed
effort of the organization through the control of situational and environmental conditions.

Different authors (Baas, De Dreu, Nijstad, 2008) differentiate moods according to three characteristics that showed to have a meaningful effect on creative performance, they are: hedonic tone (or valence), activation, and regulatory focus.

Hedonic tone differentiates moods between positive and negative, while activation refers to the arousal level. Taken together they make a useful distinction between moods such as e.g. happiness vs anger, which are both activating but opposite in tone, or anger vs sadness, which are both negative in valence but opposite in activation, the first one being activating, while the second deactivating.

Regulatory focus is an additional characteristic that has been hypothesized to make a discrimination between self-regulatory and motivational systems of individuals; it essentially distinguishes into promotion vs prevention focus.

Promotion focus directs the attention of the individuals toward the possible positive outcomes of their actions, in response to the need for nurturance, thus leading to adopt an approach behavior. Prevention focus, on the other hand, is directed toward negative outcomes in response to the need for preservation, leading the respective strategy to attain goals toward avoidance behaviors.

In Mumford (2012, pg. 224) this duality is defined in terms of motivational orientation, with approach orientation directed toward the anticipation of aspired goals and the positive outcomes, and avoidance orientation toward the escape from aversive stimulations and negative outcomes. In kind of a naïve way, we could see this as choosing between the half-full or half-empty glass perspective, but we would be actually missing a big part of the story.

According to the Dual Pathway Creativity Model, we would expect both approach and avoid orientations to foster creativity as long as they activate the individual and push him toward the achievement of a desired end state; research findings, though, do
not agree on the point. However, a solution to this contrast between theory and practice was then found focusing on the role of regulatory success. It was hypothesized that, in the case of avoidance, the motivating push lasts only until the negative outcome is completely avoided, and then leaves the individual disengaged and deactivated, experiencing a sense of relief and relaxation after that. Conversely, in the case of approach orientation, the motivating state would be maintained after the goal is reached, leading to a better performance. Research confirmed that while in the case of regulatory failure both approach and avoid-oriented individuals produced similar levels of creative performance, in the case of regulatory success, the outcome was more creative in the case of approach-oriented individuals than for avoid-oriented individuals. Inner motivation deriving from the will to reach a desired goal, then, should foster creativity more than fear does.

According to Baas, De Dreu and Nijstad (2008), anyway, none of these three characteristics (valence, activation and regulatory focus) taken alone can be considered to be a key determinant to achieve creative outcomes since results overall have shown to be inconsistent. It is the combination of the three taken together, though, that allows to make a distinction between specific moods that can foster or hinder creativity.

Specifically, fear, which is negative in tone, activating and prevention focused, showed to have a negative impact on creativity, while happiness, which is positive, activating and promotion focused, has a positive impact. Sadness (negative in tone, deactivating and promotion focused) did not show to have any effect on creativity, just like being in a relaxed mood state (positive in tone, deactivating and prevention focused). In addition to this, these mood states have in some cases showed to have an effect on specific components of creativity. In particular, it is worth mentioning that the negative effect of fear has shown to impact especially on the flexibility component of creativity.
It is worth lingering for a moment on the possible implications of this specific result for my object of study. It entails that individuals working in a condition that make them fearful of their superior or afraid to mistake, are likely to repress both their will to explore freely and those attitudes that concern flexibility in thinking, thus implying a potential loss of resources for the organization. On the opposite side, evidence was found both in literature analysis and in empirical studies of a beneficial effect of positive moods on creativity and in particular on its flexibility component. Positive moods showed a general tendency to foster creativity when the task to accomplish is enjoyable and intrinsically rewarding, while they tend to prompt less creativity when the task is serious, extrinsically rewarding and performance standards are stressed.

Different researches summarized by Baas, De Dreu and Nijstad (2008) show that the storage of information in memory under positive moods is better integrated and more extensively connected, and that positive moods increase cognitive flexibility and inclusiveness between categories, thus promoting creative performance more than negative or neutral moods do.

In comparing positive mood states to mood-neutral controls, it appears that the level of activation plays an important moderating role. Researchers have shown that individuals’ capacity for complex thinking follows an inverted U-shape as arousal (activation) increases. At low levels, the individual is led to inactivity and avoidance, neglect of information and low cognitive and motor performance, whereas when arousal level is too high, the capacity to perceive, elaborate and assess information is reduced. At moderate level of activation, though, individuals are motivated to seek for information, integrate them and to consider multiple alternatives.

The optimal arousal level is thus at a medium point where stress and performance requirements are enough to keep the individual active, but not so high to lead to frustration and anger.
Mood states can therefore be activating or deactivating for individuals, with activating moods more likely to increase attention and integration of information than deactivating ones, providing they are not too high. Activating rather than deactivating moods increase working memory capacity, which facilitates cognitive flexibility and restructuring, and allows more deliberate, analytical and focused processing and combining of information. This is of particular interest for my object of study. As we will see later, indeed, increasing working memory in a highly standardized and routinized working context, where the amount of new information to process is low, can make available more cognitive energies that could be invested into individual creativity, deepening the level of knowledge on one’s job, or exploring new solutions.

In fact, as seen above, according to the DPCM, creative outcomes can be achieved through either positive or negative hedonic tone as long as it is activating and not deactivating. This is because positive states, like happiness, lead individuals to feel safe, free, unconstrained and willing to take risks and exploring. They increase cognitive flexibility by allowing individuals for inclusiveness in thinking, switching between different cognitive categories and permitting the exploration of uncommon perspectives. Negative affects such as fear and anxiety, oppositely, lead to narrow cognitive categories, lower ability to shift attention and reduced cognitive flexibility; they enhance risk aversion - implying fewer freedom and will to explore uncharted paths - but support detail-oriented processing and increase persistence and perseverance.

An additional support to this point of view is given by the mood as input model (Mumford, 2012, pg. 223). According to it, a greater motivation arises, and more energies are spent, when the task framing is coherent a person’s mood, with enjoyable and funny tasks benefitting from positive moods, and serious tasks benefitting from negative moods.
Furthermore, a study by De Dreu, Nijstad and Baas (2011) showed a curious result. The authors examined the relation between creative performance and behavioral activation, which could be defined as the propensity to become activated given incentives. They found that when information processing required a local and narrow focus, behavioral activation was negatively related with creative performance, which means that scope of attention impeded creativity. A stronger behavioral activation was found to be positive for creative performance when global processing is facilitated, while it was found to hinder creativity in the case of local processing.

Basing on previous research, they suggested that the fit between natural individual inclinations and situational requirements plays a central role, with individuals with stronger behavioral activation fitting better in case of global processing, flexibility and broad focus than in case of local processing and persistence.

Summarizing, positive moods support the creative performance by enhancing cognitive flexibility, while negative moods can lead to creative outcomes through persistence and perseverance. The creative performance originating from negative moods – anger in the first place – though, leads to less creative outputs than in the case of positive moods. Moreover, it is energy consuming as it is an effort directed toward a specific goal; once the goal is reached, the inner push stops, while for positive mood it is re-creative.

The mood states most beneficial for creative performance, thus, have shown to be positive, moderately activating, approach-oriented moods; that is, the ones promoting intrinsic motivation and engagement in one’s task to perform.
2 The organizational structure for creativity and innovation

2.1 Modeling organizations for creativity

Before considering in detail all the factors of the working environment that can influence the expression of creativity in employees, we start by outlining a general model depicting how organizational components can influence individual creativity.

As we saw above, creativity is far from being the direct result of personality traits. On the contrary, the expression of individuals in creative forms is tightly intertwined with their inner feelings, and as a consequence, the creative performance is highly influenced by affect, moods and emotions. This implies that any environmental condition that influences an individual emotional life can have a direct effect on that individual creative outcomes. Some of these elements pertain a person’s private and everyday life, and are not controllable at all. Others, though, are part of the working environment, and yet some of these are not modifiable as well since they are intrinsic conditions of certain jobs, some others can be controlled and consequently exploited not only to avoid obstacles and cross barriers, but also to enhance individual attitude toward creativity.

Amabile (1988), collected results from a set of interviews made in different studies and gathered them into a useful list of factors that most influence the emergence of creative outcomes as perceived by the interviewees. Leaving aside those that are identifiable as personal traits, innate characteristics that are not modifiable and cannot be influenced by the choices of an organization, and thus pertaining only to the selection phase of a hiring process, the most important characteristics that were identified, are, in order of importance:

- Self-motivation, as a natural excitement and commitment derived from the individuals’ fit with the task.
- The expertise and knowledge acquired in their working area.
• The synergy inside the working group, resulting from the personal characteristics of the individuals composing it and from their interpersonal interactions.
• The broadness and variety of general knowledge and experience in different domains.
• Social skills, which include all the capabilities that make the individual able to relate positively with others.

On the other side of the coin, the characteristics that were identified as hindering creativity are:
• Lack of motivation.
• Lack of capability or experience in the field of work.
• Lack of flexibility.

These results concern factors belonging or relating to the inner life and attitude of people, but differently from those permanent traits characterizing individuals, the ones above mentioned are skills and moods that can be influenced in some way and possibly used to attain our goals. Taken together, these results indicate that the factors whose presence or absence can mostly influence the emergence of creative outputs in employees are motivation in one’s job (we could say task engagement), knowledge and experience in the specific work domain, and the capability to be flexible and collaborate with other workers, sharing ideas with them.

According to the same study, the characteristics of the environment that were reported to mostly promote creativity are:
• Freedom of decision over one’s job; namely the power to decide what tasks to perform and in which way, and in particular what is called operational autonomy, defined as the power to freely decide how to manage one’s daily operations in order to achieve an overall goal.
• Good project management. This includes qualities as being a good and stimulating role model, and personal skills directed toward the care and development of his subordinates.
• Having enough resources to fulfill one’s job needs.
• Encouragement by the managers, who create an atmosphere that encourages the development of new ideas without the threat of judgement.
• An organizational system and climate that considers values and promotes collaboration between employees at different levels and spirit of initiative without the fear to mistake.

Environmental factors inhibiting creativity are:
• An organizational structure and climate that fails to reward initiative, innovation, and collaboration between employees at different levels.
• Lack of freedom and control over one’s work, in deciding what to do and how to accomplish tasks.
• Lack of organizational support or interest in a project.
• Management with poor leadership skills.

Comparing these lists, it appears clearly that people would feel the need have a clearly defined goal to achieve, carving out for themselves the most suitable way to fulfill it and deciding on their own what tasks to perform and how; yet, it would be of particular value being directed by their supervisors toward its accomplishment, feeling supported and encouraged to take initiatives.

As we can see, though, these lists comprise characteristics that imply dealing with a delicate balance between opposite and conflicting poles. Managing this conflict relates not only to organizational policies, but it is especially an issue of management practices.
The first conflict concerns goal setting, but to some extent also the opposition between freedom and constrain. Employees wish to feel free and unconstrained in the execution of their jobs, but they also perceive the need to be clearly directed, and thus somehow limited in a way that preserves themselves from mistakes and waste of resources. They want to be controlled so as to be protected, but not so much to feel constrained.

Another one relates to the reward system. While rewards can be good when they are perceived as a recognition of one’s efforts to do a good job, acting as incentives to repeat that behavior in the future, they can also be bad when they become the goal itself or when employees perceive as they are rewarded only in case of results, irrespective of their efforts.

The same delicate balance is to be found for evaluation, as it should not be perceived as a threatening judgement received a couple of times per year in a very formal and aseptic format; instead, it should be carried out as a more constant, progressive and constructive feedback that gives the evaluated people the perception that their boss cares about them.

Finally, pressure refers to both competition and time pressure. As previously said talking about the role of moods on creativity, pressure is good compared to relaxed states as it activates the individual and pushes him toward the attainment of goals, while its absence could give the perception that their task is not important; on the other side, tough, it should not be high enough to lead people to choose the easiest way to accomplish the task or to be defeated by threat.

To completion of this work, Amabile (1997) proposed a Componential theory of organizational creativity and innovation based on her previous model of componential individual creativity (Amabile, 1983), whose most fundamental assumption is that the work environment influences individual creativity by affecting its single components, and in the first place the task motivation component. According to the model, the organizational components
that give rise to innovation are organizational motivation, resources and management practices.

**Organizational motivation to innovate**

This component includes all the aspects of the organization that are directed toward innovation; these can include its values, the way in which its structure facilitates the flow of ideas at any level, and the capability to consider and implement them. Research has identified as most important elements in this group a general value placed on creativity and innovation in general, an offensive attitude aiming at taking the lead to the future, an orientation toward risk, and a sense of pride and enthusiasm between the employees for their organization and for what they are capable of doing.

As organizational elements supporting innovation, then, were identified mechanisms for communicating and sharing new ideas and develop them, and the fair evaluation of work, along with the recognition and reward of creative outcomes.

**Resources**

Under this component is comprised everything that is necessary and useful for creative ideas to arise and be implemented. It includes the financial resources made available by the organization to develop ideas, the technical equipment necessary to test them and make them concrete, the time to be invested in exploration, in generating new insights, in developing expertise and in training.

**Management practices**

Management practices include all the aspects under the control of supervisors that can influence the working conditions of employees. They include the relationship established by managers with their subordinates, their ability to challenge and inspire them, but also the degree to which subordinates feel free to speak, express doubts and share ideas. Also, the capability to set goals clearly and
motivate, to assign the right tasks to the right people, the degree of autonomy left to employees.

Research has shown this to be one of the most important determinants for the results of the creative performance and we are going to see all its aspects and the possible implications in closer detail.

These three general aspects of an organization are the necessary conditions for innovation to be possible; they are complementary and work in a multiplicative way, as they all must be present to a certain degree, but the higher each of them is, the greater is the possibility to generate innovation for the organization. Together they constitute the work environment that surrounds and influences employees and their capability and possibility to generate ideas to be developed and implemented.

The motivation of the organization to innovate is the main driving force that defines its whole structure and inner working mechanisms. Not every company wants to be a leader. Innovating is a risky business as it implies by definition the effort to open a new way and face unprecedented situations, and not everybody are willing to take the risks and costs linked to this process. The amount of effort directed to the search for new solutions is usually a strategic choice that is part of the DNA of the company. As part of this choice, companies who want to succeed are going to set up a structure that favors the process of idea generation, evaluation, development and implementation, and this is exactly what the resources component is about. For certain, resources includes funds dedicated at the scope, financial resources available to set up the needed organizational structure and to face all the costs necessary to go through the whole innovation process, starting from idea generation and going to its implementation, including all the possible failures in between. It also includes the time needed for this process to be passed through adequately and the inner structure directed to this proposition, including machinery and equipment to
test and develop prototypes. To make this whole process work, it is necessary someone who takes the responsibility to manage it and who has got the capabilities to do this in the most appropriate way.

As we have previously seen with the Componential model of individual creativity, for a creative idea to be generated it is necessary in the first place a person willing to be creative. The three components outlined constitute the environment that allows this to happen. An individual working for a company with no will toward innovation is likely to not develop or even repress its inclination toward creativity. Moreover, creativity skills and expertise can also be taught with training (Scott, Leritz and Mumford, 2004), which depends upon the will of the organization and the capability of the management to invest in this sense.

In addition, Woodman, Sawyer and Griffin (1993) proposed a model of organizational creativity that is similar in many aspects to that proposed by Amabile, but looking from an interactionist perspective it adds a block concerning the role of groups.

**Group characteristics**

The creativity of the group is not merely the aggregate of the individual creativity of its members, but it is the result of many factors inner to the group composition itself. Moreover, groups should not be considered only in the sense of workgroups, teams, but in a more general sense of groups of individuals, colleagues, who interact with each other.

Characteristics of the groups influence the way people interact and the consequent results of their interactions. They can differ in terms of size and diversity of its members, cohesiveness between them and capabilities and personality traits of the people composing them, comprising all the individual characteristics depicted in the Individual creativity model outlined above.
2.2 The work environment for creativity

An attempt to systematically assess the factors of the work environment that have an influence on creativity was made by Amabile, Conti, Coon, Lazemby and Herron (1996). Starting from results obtained with empirical and theoretical research, they defined their KEYS instrument, based on a model whose peculiarity is that it focuses on the self-perceived effects of organizational characteristics on the interviewed individuals themselves.

This level of analysis is chosen based on the fact that it is the perception that individuals have of their working conditions that influences their reactions to the environment. It is the psychological meaning they give to the situation they are facing to influence their actions and performances; thus, it is this perspective that should have the priority on that of an external observer.

The model is built up of eight environmental factors perceived to be influencing creative outcomes, six of which having a positive influence, while two being an obstacle for it.

Three of them concern the encouragement of creativity, and specifically the encouragement given by the organization, by the supervisor and by the work group. The others are freedom, sufficient resources and challenging work. Factor inhibiting the emergence of creativity are, on the other side, workload pressure and organizational impediments.

Taken into consideration the organizational aspects that are suggested to affect creative performance inside companies, I am going to see in more detail some of the factors of the work environment that can influence creativity in standardized jobs and that I believe are more useful to take into greater consideration for my study.
2.3 Standardized jobs and routinization

Standardized jobs are characterized by a structure that involves a narrow set of tasks to perform and a more or less strict procedure to follow. In this condition, a big role is played by routines. As Ohly, Sonnentag and Pluntke (2006) report, routines develop through the repeated execution of a behavior. In this kind of jobs, the same patterns of behaviors are repeated frequently during the day, in a methodical way, in order to achieve a greater efficiency in performing them, so that a greater number of activities can be executed in the same amount of time. Through repetition, these tasks become more and more automatic, moving from an initial stage of skills acquisition to a greater degree of unintentionality, where increasingly less consciousness is put into the performance in order to free cognitive energies and maintain only those that are strictly necessary in order to do the job.

This automaticity in behaviors is considered to hinder creativity, since the optimization of the processes involved implies a lower degree of exploration of alternatives, as the objective and the usefulness of routinization relies in this fact of removing behaviors that are considered not to be essential or optimal. Despite this, there is not univocal consensus on the role played by routines on the creative performance and on innovation. In fact, it is suggested that the development of routines through the repetition of behaviors, could actually free mental resources that could be then used to be applied on the job itself, enabling to carve out a space to freely explore alternatives.

As their study show, indeed, routinization was found positively related to creativity and innovation, supporting this second view according to which routinization allows employees to free cognitive resources that can be used to search for improvements on their job. They also suggest that it may be useful to make a distinction between two kinds of routinization, where on one side, routinization in job content might be harmful as it leads to
boredom, while routinization in specific tasks could give rise to the positive results that have just been evidenced. Despite this, they also highlight how the control over one’s job, that is, autonomy, is beneficial for creativity, innovation and personal initiative, meaning that discretionary power could give rise to a sense of empowerment and of responsibility for their work which could lead them to a more active attitude to their job. In line with this is also the research by Ozaralli (2015) which found that empowerment by the leader, but especially the degree of empowerment as felt by employees, results in intrinsic motivation and plays a fundamental role in psychologically stimulating the creative behaviors of employees. In particular, work by Atwader and Carmeli (2009) shows that the feeling of energy derived by involvement in the job, assumed a particular importance to the involvement in creative activities when the job was one requiring a lower degree of creativity, like for less complex, standardized jobs.

Also, research by Ohly, Sonnentag and Pluntke (2006), shows that time follows an inverted U-shape relation with creativity and innovation, as found in Baas, De Dreu and Nijstad (2008) concerning the level of activation. The same type of relation between time and creativity was found in Baer and Oldham (2006) when it was present an adequate support to creativity by supervisors. In addition to this, they also found that this relation was mediated not only by a supportive behavior of supervisors, but also by the degree of openness to experience of employees. Only when the work environment showed to be supportive for creativity, the openness to experience trait resulted to mediate the relation between time pressure and creativity.

What we can conclude from this, is that we cannot exclude a priori the expression of creativity in standardized jobs. Their job structure can leave some space to express creativity through job improvements by freeing mental resources through the development of routines, but this can depend on a number of factor, and a particular role is played by their perceived empowerment,
which gives rise to motivation, and on the perceived amount of support to creativity given by the organization, that mediate the positive outcomes that can be obtained when time pressure is not too high or too low. This holds particularly for individuals high on the openness to experience trait and consequently for creative personalities.

2.4 Turning dissatisfaction into creativity

As we have seen, it is possible that especially for creative personalities, a standardized job with low job complexity, low autonomy and experienced time pressure, lets them experience dissatisfaction with it, which could in the end lead to lower performances or even burnout.

As found in Zhou & George (2001), many authors argued that jobs dissatisfaction could actually benefit to some degree the organization since employees’ discontentment may trigger in them a will to react and improve the current situation, coming up with new and betters ways of doing things - that is, leading to creativity.

According to the model they rely on, there are four possible reactions of employees to job dissatisfaction. The first one is exit. That is, they can decide to quit with the job and the organization or just transfer within the same organization to leave the dissatisfying condition in search for a better one. The second option is voice, which is the attempt to change the status quo rather that escaping from discomforting conditions, by coming up with new ways of doing things to improve the current situation. The third option is loyalty, which is a passive reaction, and happens when employees choose to accept the current situation - though it is deteriorating – and adapt to it, without making any suggestion to improve their work conditions nor raising any objection. The last reaction is neglect. In this case, employees exhibit passive withdrawal or lax and disregardful behaviors such as lateness and absenteeism.
Essentially, all these different responses are detrimental for the organization and, obviously, even more for creativity, except for voice, which is the outcome of greatest interest for my object of study.

The meaning underling the choices of exit, loyalty and neglect is that employees think the organization is not worth their energies.

The tacit message hidden in these choices, is that individuals feel like the status quo, although dissatisfactory, cannot be changed or that the effort required to try to improve current conditions is too big compared to the possible outcomes. The possible outcomes of a proactive behavior are not worth the cost, thus the voice option is excluded. This is due to distrust in management or in the organization as a whole. This, moreover, means that possible chances for growth and improvement for the organization are lost since there is no will between employees to take the challenge and provide a possible value added to it.

Taking a step further, we could consider loyalty the most desirable outcome between the negative ones, since it entails that although living a dissatisfactory situation, employees have only become passive to it, but they still feel good enough to choose to stay. This means that possible latent creative ideas and suggestions to improve the situation and benefit the organization are not completely lost. A change in the working conditions could unleash hidden energies and enable creativity.

Worse is the case for the exit option. This reaction underlies a belief that the organization is not worth enough contributing to it, and that the uncertainty of an unknown condition is better than the certainty of the present one. Worse than that, it also suggests some kind of proactive behavior of the individual. That is, a will to change of the employee strong enough to lead him to take the risk of leaving the organization for another one. This entails a definitive loss of the possible benefits deriving from the employee contribution, and the loss of a valuable human resource capable of agentic behaviors.
Neglect is probably the worst case, because it implies not only a loss of possible benefits, but even a damage for the organization since the employee starts exhibiting behaviors that are detrimental, counterproductive for its wellbeing and - even worse – that can be spread to the whole organization, thus starting a vicious circle.

What is of greatest interest for us is voice since it is the only reaction that is constructive and thus favorable for the organization. Voice has a big underling power because it has a double effect. On one side, it channels employee dissatisfaction into positive outcomes, thus reducing the feeling of frustration of employees derived from the current unpleasant conditions and strengthening the positive relationship with the organization. On the other side, it helps removing the obstacles that make employees feel discomfort and it benefits the whole organization with new creative ideas to improve working conditions that could benefit everyone and maybe even leading to an increase in productivity and consequently profits. Put into simpler words, generating higher returns from the human capital as a whole.

Zohu & George investigated the conditions under which dissatisfaction could actually result into creativity. In their study, they underlined the role of continuance commitment, defined as the commitment of employees to the organization due not to a real affective attachment to it, but to the lack of valuable alternatives, as a necessary but not sufficient condition for dissatisfaction to result in creativity. This aspect, according to them, is what causes an individual to avoid the exit choice, as it involves costs that are too high to be faced.

Not surprisingly, results of the study showed that for employees in this condition, their dissatisfaction was more likely to be channeled into creative outcomes as rated by employees’ supervisors when coworkers provided them with useful feedback that enabled them to make improvements on the jobs and when they were helpful and supporting. Also, this positive outcome was helped when they had the perception that the organization was supportive to creativity.
This study suggests that dissatisfaction is not necessarily an undesirable situation; instead, when the organization provides the appropriate support, it can be an opportunity to be exploited for creativity to emerge and new ideas to flow, resulting in improvements.

In line with this reasoning, Shalley, Gilson and Blum (2000) give an interesting perspective on what factors can make a difference driving employees to creativity or creating dissatisfaction and leading them to think about leaving the organization - that is, taking the exit option. They divide work environment characteristics between proximal and distal factors.

Proximal factors are those related to the everyday work of the employee, the ones composing the closest context of daily work, such as autonomy, complexity, and demand in the job performed.

Distal factors are related to the organization as a whole and concern organizational policies. Elements composing this are the control exercised by the organization over the employees’ behavior, like making sure that they strictly follow procedures and rules, and organizational support, meaning how responsive the organization is to the needs of employees, how much it is sensitive to their possible expression of voice.

Unsurprisingly, results of the study showed that the most important factors were the proximal rather than the distal ones, meaning that the most influencing factors for job creativity are the closest to the employee daily work. What is more important to highlight in this study’s results, though, is the importance of the complementarity between the work environment and the creativity required. It was hypothesized that for jobs requiring a high degree of creativity, attitudes of the employees should be more positive, and thus job satisfaction higher, when work characteristics complemented their needs, such as greater individual autonomy and lower organization control. On the other side, though, it was suggested that the same complementarity between work environment and creativity requirements could hold for lower
creativity jobs, meaning that the same characteristics of the work environment that are needed for high creativity jobs could result in causing frustration to the employee and thus being detrimental. Coherently with this assumption, work environment characteristics were indeed found to mediate the relation between the creativity required by the job and the psychological outcomes of job satisfaction and intention to leave, meaning that when the characteristics of the work environment complement the requirements of the job (e.g. job requirements are not too high compared to discretionary power), a higher job satisfaction is experienced, together with a lower intention to leave.

2.5 The role of leadership

Among all the factors we just outlined, leadership seems to assume a role of particular importance. Some authors consider leadership to play the main role in defining the organizational attitude toward creativity, directing the efforts of companies in a specific direction, focusing energies toward that specific goal and thus being some kind of solution to its lack. This is likely to be only a part of the story, though, being organizational creativity influenced by many factors affecting each other in different degrees and possibly overlapping. Nevertheless, leadership, despite being only a component, plays a big role in defining the characteristics of the organization and its attitude toward creativity. Many theories and models exist concerning leadership and explaining its functioning and influences on the other components of an organization, but I choose to take in main consideration one that I consider being particularly useful and explanatory for the purposes of this study. As Basu and Green (1997) indicate, leadership styles have been traditionally divided in two categories view as antithetic. The first one is transactional leadership and it involves giving valuable things to followers in exchange for something else of value. The
second one is transformational leadership and, in contrast to the transactional one, it seeks to replace the values of followers pushing them in directions that represent a possibility of morality growth, shifting their system of values, beliefs and needs, from self-interest to higher value outcomes, motivating to perform and do more than what originally expected to do, eventually resulting in employees feeling engaged and personally rewarded through work (Sarros, Cooper, Santora, 2008). However, the distinction between the two seems not to be so clear-cut, with transformational leaders being an extension of the transactional approach in which the intensity of leaders and the arousal of followers is higher.

Research on Leader-member exchange (LMX) suggests that the interaction between leaders and their subordinates eventually come to defining dyads of higher quality with some followers, referred to as in-group members, who are perceived to be more reliable and competent compared to other followers, called out-group members. In-groupers, in addition to the terms of employment, are solicited for loyalty and support, and in exchange are given greater support, autonomy, freedom in choosing their roles and influence in decision-making. In these dyads, compared to out-groupers, the stronger trust linkage brings to in-groupers roles that are more congruent with their preferences, more time spent on non-routine tasks, greater latitude along with less supervision, and greater opportunities to negotiate differences on issues of unit functioning with their leaders.

LMX implies that the quality of the relation with their supervisors influences the quality of the relation between employees and their work role under different aspects. These include fit with their role – and consequently engagement – autonomy and freedom in completing tasks, and motivation, along with the perception of leader sensitivity to employee problematics and consequent freedom to make suggestions and take decisions concerning their work role.
All this, taken together, is likely to positively influence creative and innovative behaviors. In fact, it seems that for in-groupers, leaders nurture innovative behaviors by providing material support, and, more interestingly for us, emotional support, encouraging followers to assert their ideas and to take risks with less fear of the impact of possible failure; all aspects that should stimulate the engagement in unconventional behaviors and consequently innovation. In addition, then, in-group followers are likely to be more committed to the organization as commitment is not primary related to rewards or punishments and can only be volunteered by the members and it is stimulated with greater care for the personal relationship with the above mentioned attentions.

It is likely then, that in large groups differences are found between the relations of single members and their supervisors, some being of higher quality, while others lower. More than this, though, what LMX teaches us is especially that the quality of the relation between employees and their supervisors influences the outcomes of their work and their attitude toward their job.

In particular, transformational leadership, whose central idea is to change the familiar ways of doing things and the way followers minds are framed, should foster the attainment of innovative goals. One of the studies that seem to contradict this relation comes from Basu and Green (1997). Contrary to expectations, results showed a strong negative relation between transformational leadership and innovative behaviors. Despite this, making some clarifications allows us to obtain some useful information for our interests. Transformational leadership is tightly dependent on the way it is measured, and in this case, its focus was more on its role as agent of change than on the quality of the relationship. In fact, the measurement of LMX was found to be positively related to innovation but there was not a clear empirical distinction between LMX and transformational leadership, which included behaviors that can be detrimental for the personal growth of individuals, such as excessive pressure, intimidation and achievement-oriented
cultures. In addition, the duration of the research was a short-term one, and this could be a strong limitation as any change triggered by transformational leadership style can require a longer time to show the positive outcomes resulting from it, and even follow a J-shape curve like many other innovation adoption processes, with results getting worse before they get better. Moreover, innovative behaviors were evaluated by the supervisors themselves, thus leaving a margin to the possibility that leader expectations are too high compared to followers outcomes.

What we are interested in is the possibility that the quality of the relationship influences innovative outcomes, and this was confirmed. Transformational leadership is preferable to a transactional style only as long as it substitutes an external reward system focused on the achievement of short-term goals, with a shift of values that points at taking the best out of employees, elevating them to a higher moral status. It is the quality of the relationship that makes the difference, not the change per se, which can result to be only stressful if achieved in the wrong way.

As Jung, Chow and Wu (2003) report, transformational leadership emphasizes longer-term and vision-based motivational processes. Leaders can influence the creativity of their followers both directly, by providing higher level needs and intrinsic motivation, and indirectly, by setting up a work environment that favors behaviors related to innovation. As they suggest, leaders can positively influence their followers creativity in different ways. By structuring the work environment in a way that pushes employees to interact and define goals, problems and solutions. By shaping a vision that values and emphasizes long-term outcomes over short-term ones and a general tendency toward innovation. By modeling an organizational culture and climate that facilitates the diffusion of learning and promotes creative efforts. By structuring a system that provides intrinsic and extrinsic rewards for efforts in creativity-related activities such as experimenting and acquiring new skills.
More than this, the authors define a clearer picture of what transformational leadership is about and list several reasons why it would positively affect creativity and innovation. According to Jung, Chow and Wu (2003), transformational leadership is made of four behavioral components, namely:

- **Inspirational motivation** consists in articulating an appealing vision.
- **Intellectual stimulation** involves promoting creativity and innovation.
- **Idealized influence** is about providing an adequate charismatic role model.
- **Consideration** concerns coaching and mentoring followers.

Sarros, Cooper and Santora (2008), though, adopt a model that adds to this list the two components of:

- **Fostering the acceptance of goals.**
- **Setting high performance expectations.**

Transformational leaders go beyond the professional interpersonal exchanges defined by contractual agreements; they actively engage their followers’ personal value systems and provide ideological reasons to redefine them. They link the identity of their followers to the collective one of the organization, and provide and shape a captivating vision and mission for the whole organization. By means of this process, they enhance commitment and intrinsic motivation to perform one’s job and model the ways it is accomplished by providing an understanding of the role of the single employee activity for the whole organizational system. They explain the importance and value of the desired outcomes, raising performance expectation and motivating them to transcend their personal interest and move to a higher moral status, giving priority to the wellness of the collective entity.
In addition to these motivational factors, by providing intellectual stimulation, transformational leaders encourage followers to engage in divergent thinking, considering and exploring new and unconventional thinking processes directed toward the generation of creative ideas, and challenging their systems of values, traditions and beliefs. They often stimulate and encourage this attitude by serving as a role model and by showing high expectations and reliance on followers’ capabilities.

In particular, as Kahai, Sosik and Avolio (2003) indicate, the intellectual stimulation component encourages the members of a group to rearrange and clarify issues and to question and challenge each other’s thoughts. Leaders clarify what are the expectancies they put on their followers and motivate them through increasing their confidence that they can meet leader’s expectations, accomplish their tasks and achieve the goals.

This is consistent with the Pygmalion Effect reported by Carmeli and Schaubroeck (2007), which asserts that people behave in compliance with the expectations that their reference group (defined as “any group influencing the attitudes and behavior of individuals”) have on them, so if their leaders raise the expectations they have on them, it is more likely that followers will increase their performance according to those expectations. As they report, research by Tierney and Farmer (2004) was consistent on the point, as the relation between employee creativity and creativity-supportive behaviors revealed to be mediated by self-expectations for creativity as perceived by individuals.

In particular, results of their study showed that individual self-expectations for creativity were increased by leaders’ expectations for creativity, and these expectations had a direct effect of the involvement in creative work of individuals. It is worth underlying, though, that results also seemed to show that to achieve a high degree of involvement in creative behavior it could be required not only high self-expectations, but also strong self-efficacy, meaning
the belief of the individual that he can succeed in reaching high self-standards.

The individual consideration component, then, promotes a deeper understanding and appreciation of different ideas inside the group, helping followers to recognize their own capabilities and the importance assumed by their unique contributions to the totality of the group efforts. This motivates them to cooperate and participate actively, positively questioning each other’s ideas and behaving supportively.

This cooperation and participation attitude is also promoted by the inspirational motivation component, which is the main driver of the reframing in followers’ personal hierarchy of values, shifting from a personal advantage thinking style to a collectively shared vision of cooperation that emphasizes learning from each other and working together toward a common goal.

The transactional leadership style, distinctly from the transformational one, relies on external sources of motivation. Transactional leaders clearly define the goals and highlight the desirability of the outcomes that would be obtained if goals were achieved. Motivation to make contributions to the group is stimulated through external short-term rewards contingent to goal achievement. This is a big discriminant that differentiates between transactional and transformational leadership styles and that can have had a significant impact on the results of the study carried by Kahai, Sosik and Avolio (2003), since transformational leadership is likely to take a longer period to show its results, and a transactional approach is likely to show greater effects of the short term. On the other side of the coin, though, it can also be dangerous. It is true that results of their study showed that the originality of solution was greater under transactional leadership in this short-term experiment. When group members worked in a condition of anonymity and group reward, though, making it impossible to associate positive or negative contributions and responsibilities to single members and giving individual rewards, a phenomenon of
social loafing arise under a transactional leadership condition but not in the transformational one. This supports the idea that transformational leadership elicits a collective vision and action focused on the long term, beyond and individualistic one focused on self-interest, giving priority to the creation of a positive climate and work environment that values autonomous proactivity for a common welfare, over the achievement of single results that stimulate a reaction only when personal benefits are clearly seen.

Jung, Chow and Wu (2003), underlined in particular the role of empowerment, as transformational leaders often choose the way of participation on that of direction, highlighting the importance of cooperation in performing collective tasks, learning from shared experiences and giving followers the autonomy and authority to put into action what is necessary to perform effectively, seeking for innovative approaches to face the challenges and attain their goals.

This whole process, which consists basically in communicating what is believed to be right or wrong according to the leaders, eventually ends up in defining and shaping an organizational culture and climate, where “culture focuses on the shared behavioral expectations and normative beliefs in work units”, and “climate describes the way individuals perceive the personal impact of their work environment on themselves” (Sarros 2008).

Results of the study by Jung, Chow and Wu (2003) support this view, showing a positive and significant relation between transformational leadership and organizational innovation, empowerment and support for innovation, as well as between support for innovation and organizational innovation.

2.6 Colleagues, organizational culture and climate

Between the factors concerning the work environment, an important role for the creative process is played by the relation with colleagues. According to Gilson and Shalley (2004), the sharing of
information and ideas between members of a team should foster creativity. The creative process in a team can be thought of as both an individual process and a group level one, where the individuals develop their own ideas and value them in order to decide if to share them with other members. This sharing should happen more frequently with people they are comfortable with, leading employees who work in an environment who is positive in this sense to provide more suggestions. Also, when there is a high degree of task interdependence, individuals should feel a motivational push toward personal contribution in the group, in order not to let the team down, as they are reliant one upon the other. Cohesiveness of a group, thus, should foster the emergence of creative attitudes and personal contribution toward a common goal.

As results of their study show, teams whose members socialized more during breaks at work or outside of it, showed a greater engagement in creative processes. Moreover, the more creative teams were those in which members perceived that their tasks required a high degree of creativity, whose work role required more task interdependence, and were the group had a strong feeling of a common goal orientation, valued participative problem-solving and had a climate supportive of creativity. In particular, I underline that when employees perceive that creativity is an important part of their job, be it because of the definition itself of the job structure or because they believe so, this is likely to improve their motivation toward experiencing new things or link ideas from diverse areas, leading them to engage more actively in creative processes.

As Sundgren, Dimenäs, Gustafsson and Selart (2005) report, then, creativity and innovation rely on information, and it is reasonable to think that the exchange of information at any level in an organization is important to transfer corporate knowledge in a successful manner. Studies have shown that the free exchange of information is fundamental for creativity and this led to hypothesize that the creative performance inside an organization can be fostered when they exist group norms that support the free
sharing of information, while constraints is this sense are likely to hinder creativity. In order to ease this transfer of knowledge that allows for organizational learning to happen, it is then desirable the establishment of a learning culture inside the organization, which comprises a system of attitudes and shared beliefs that go in this direction, to provide improvements, by promoting a positive critical sensibility that encourages positive dissent and experimentation and learning from mistakes, openly discussing and communicating.

As their study shows, learning culture, information sharing and intrinsic motivation are related to the perceived creative climate and they assume great importance as drivers for creativity to emerge inside organizations.

In line with this, research by Porzse, Takacs, Csedo, Berta, Sara and Fejes (2012) shows that a creative climate inside an organization is a key driver to foster innovation in companies, and that between all the dimensions composing the organizational climate, a particular role was played by debates, meaning with it the attitude of communicating with people in a critical but positive way. A positive debate is created creating a dialogue with employees belonging also to different areas of knowledge, regularly asking people for their opinions and feedback, listening to different voices inside the organization and questioning the status quo, to find new solutions to the problems currently faced through cooperation. This kind of sharing with colleagues should be part of daily activities.
3  The case study

3.1  Hypotheses

There are several questions that come up to mind after all the we have seen with the previous review of existing literature on creativity in the work environment. The main root of these questions relies in two points: are creative people going to express their creative capabilities in their job even when little space is left to it? What are the factors of the working environment that can influence this outcome?

I am interested in their self-perception of creativity instead of a measurement of creative outcomes, and I investigate this aspect through the following issue of the questionnaire:

“I consider myself a creative person: I like to find solutions to complex problems, developing original ideas for new products, projects, processes, or express what I feel through forms of art.”

The issue takes into consideration different ways of creativity expression, according to the definitions previously seen in literature, and taking into particular consideration those aspects that are closer to an economic context, pertaining more to possible creativity application in a work environment.

I consider creativity to be subjective and not objectively valuable. A certain outcome can be considered creative by some people in some contexts and under certain circumstances, while not creative by different people in other situations. What is objective, thought, is if people who possess this creative attitude make available their capabilities to the organization they belong to or choose to keep them unexpressed, be their output valuable or not for the company they work in. I consequently choose to consider as more important the
expression of the best that can be took out in employees instead of the evaluation of an outcome, as the latter is considerable to depend on the fit between an idea and a certain organization in a certain moment, and should belong to a following phase of selection between ideas.

An objective measure of this expression of individual creativity is the amount of suggestions made or thought to be made. This represents a measure of resources that are potentially exploitable by an organization. Suggestions are a potential way to improve the functioning of the organization and they result from an effort made by employees. Employees are exposed to stimulations that are specific to their role, and the time spent doing their job results in acquiring knowledge and expertise that no one else can achieve in a different situation. These are precious resources that should be given importance to by an organization, as they are a way to improve not achievable elsewhere.

I chose to include also suggestions that are only thought to be made since I want to examine possible factors affecting the expression of creativity in the work context and giving rise to the inner will to apply a creative attitude to one’s job and contribute to the organization. I consider, then, that different factors can affect the emergence of suggestions, but also that these suggestions can fail to come out due to a number of reasons including not only the goodness of the relation with one’s superior, but also personal traits like shyness. I thus think that if a relation exists between environmental factors and suggestions, it is going to emerge also, if not even more clearly, considering suggestions only thought to be made. This is how the issue was formulated:

“I suggested or thought to suggest different ways to perform my job: I explained or thought to explain to my superior what I think is improvable in my job, how to solve the problem and why my solution could improve current conditions.”
Since I am interested in the emergence of creative attitudes applied to one’s specific job, I also chose to define two variables measuring this application of creativity to a specific work role from two different points of view.

The first one is the recombination of tasks and activities:

“Given the result that is expected from my job, I try to carry out my tasks in ways that are different from what previously done, using other techniques, changing the order or dedicating more time to some ones compared to others, to see if I can get improvements.”

An employee is allowed for a certain degree of freedom in the execution of his job, and though this amount is particularly small in the case of standardized jobs, I argue that, given the result to be obtained, a creative person could be able to carve out himself a space to act creatively. In other words, given that an employee must obtain a certain outcome resulting from performing his job, I expect creative individuals to follow the path of divergent thinking and try out different solutions and unexpected ways of performing their tasks, driven by their curiosity to explore different possible solutions and by their will to obtain better performances.

Similarly, a second item of the questionnaire aims at measuring the other facet of the same coin:

“I try to carry out my job in ways that make it more pleasant: I modify the execution and timing of the tasks in order to make more pleasant those that I don’t like, I try to make funny what is not.”

I expect creative individuals to explore different ways of accomplishing their job not only because of their interest in exploration or improvement, but also because of their seeking for pleasure. Standardized jobs are by definition characterized by low variety in tasks to be performed and little freedom for the expression of creativity on the job. As already said, for highly
creative people this is likely to lead to frustration. I expect, then, these individuals to possibly find new ways of performing tasks in order to make them more enjoyable and reach a better fit with their job. This search for new solutions and recombination of tasks and activities is thus driven by the seek for pleasure or to avoid boredom and uncomfortable working conditions instead of the search for newness. I expect to see both dimensions related to individual creativity.

These two aspects, in particular, should be affected to some degree also by the amount of freedom in performing one’s job:

“I can autonomously decide how to accomplish the tasks that are part of my job, their order, or how much time dedicate to them.”

Again, like for creativity, I are interested in the self-perception of autonomy in one’s job, as it is not the actual degree of freedom (supposed it is even possible to determine it objectively), but the individual perception that determines the emotional state that gives rise to reactions. It is how much I feel free to shape my work role or constrained by it that determines my will to explore different solutions. I expect autonomy on the job to be possibly correlated to the above-mentioned variables measuring the expression of creativity on the job, as an individual with the will to explore new possible solutions and different cognitive paths is likely to carry out these behaviors proportionally to the perceived degree of freedom to do that. Also, I would expect it to be related to engagement. It is possible that a lack of autonomy in jobs with low variety of tasks will result in a low degree of engagement as jobs are usually found more enjoyable and satisfactory as the variety of tasks increases. I partially examine this aspect with another item:

“When I’m working, in the moments when I don’t need to be necessarily concentrated, it happens to me to think about my passions, about my private life.”
It is likely, especially when a creative attitude doesn’t find a way of expression due to constraints in the working conditions, and in general when there is a lack of engagement, that employees use their working time to think of things that lie out of work.

Following this line of reasoning, another question emerges. We easily focus on employees exercising their creative skills during the performance of their jobs in their working hours, but how are they going to act in their private lives, during their free time? Are people who perceive themselves as creative actually going to apply their creativity out of work? How?

Two items in the questionnaire examine the issue.

The first one aims at defining how much creativity is expressed in all its possible different forms in one’s private life:

“In my private life I carve out for myself a time to express myself creatively: I carve out a time in my daily life to create new objects, find new solutions to complex problems, developing original ideas, express what I feel into forms of art.”

I would expect this item to result in being correlated to the of self-perception of creativity, as a creative individual should feel the need to express himself creatively and be able to carve out himself a time dedicated to this. Otherwise we would perceive a discrepancy, a lack of coherence between self-perception and the reality of facts, though it could also mean that creativity is seen as a capability that can be used or not, just in case of need, when the individual is faced with a problematic situation. Any of the two cases would be very informative for my object of study.

On the other side of the coin, with a second item, I examine the pervasiveness of one’s job:

“It happens in my private life to think of my job, to what I think is improvable in my tasks or how to solve possible problems.”
We easily expect that creative individuals who perform standardized jobs will feel unsatisfied and confined in a role they don’t like, or in the best of cases we expect them to be able to model as much as possible their job according to their needs. It is possible, though, that individuals feel actually engaged in their jobs and that in this case, they are going to think of ways to improve the working situation also outside of working hours, during their free time. I expect this item to result in being correlated to engagement, as I believe that individuals who do not feel engaged should not think of their job out of working hours as in standardized jobs with low variety of tasks should not be put enough responsibility to make it happen.

Coming to the factors that are supposed to influence the creative expression of individuals, the most important seems to be their inner motivation. As previously seen, intrinsic motivation not only plays a crucial role in the creative process, but it is definable as its main driver, while its absence is likely to lead to burnout. The following item investigates the issue:

“I like to do my job: I start my daily working life willingly, doing my job makes me feel energetic, I do it with passion, when I perform it I’m engaged in it, I think it is stimulating.”

Employees who feel engaged in their own job should possess that inner motivation which is the best source for a spontaneous and satisfactory creative process. Differently from the motivation driven by an external source of reward, which lasts only until the accomplishment of a goal, the intrinsic motivation given by engagement in one’s job is a renewable source that doesn’t stop with the achievement of an objective, but on the contrary is likely to even increase as success is experienced. More than this, I can also suppose that this inner motivation is going to be pervasive in the life of employees, thus, as said above, I could hypothesize a relation
between this variable and the item investigating how much employees think of ways to improve their job during their free time.

Both inner motivation and the creative expression of individuals, though, are likely to be heavily influenced by another factor: leadership.

Leadership style has been shown in literature to be one of the main drivers of creativity in the workplace and engagement in one’s job. In particular, it is the transformational leadership style that seems to give the greatest results in the long term. Exception made for the short term, in which a transactional approach, which exploits the promise of a reward, can give greater results, the transformational approach affects the motivational side and the whole working wellbeing of the employee, his expectation from the future, the will to contribute to the organization, the efforts he puts in his own job and the propensity to make suggestions.

The relation with leadership is examined through two items, and from a different perspective through a third one, though this is more tightly linked to a motivational aspect.

The first item investigates the leader as a role model and a supportive figure:

“My superior is a model for me and he supports me: he is a positive figure for me to take as an example, I can speak freely to him if I have problems, he supports me in difficulties and motivates me in my work.”

The most important aspect of a good leader is the motivational side of its role. What can make the difference is how much an employee feels guided by his superior, who should take the best out in his subordinates and push them to a higher moral level where they see themselves as an important part of the organization as a whole. They should perceive that the contribution of everyone is valued and that they should not be scared of mistaking as long as they are trying to improve the current situation through a personal contribution.

55
A second item investigates the sensitivity of leaders to suggestions of his subordinates:

“My superiors are sensitive to my suggestions: if I explained them how to solve possible problems or how to improve things in my working environment they would be happy of that and would welcome the suggestion.”

Employees should not only feel free, but even encouraged to make suggestions. If leaders tell their subordinates to do their best and to contribute personally with suggestions that could improve the functioning of the organization, but then employees perceive their suggestions not to really be welcome, any effort made by leaders in this sense results in being useless.

I would expect a possible direct correlation of this item to the amount of suggestions made or thought to be made, thought this linkage is not necessarily going to appear since not everybody would necessarily make any suggestion under any circumstance. I would expect it to appear at least on highly creative individuals, but what I expect is especially that a perceived lack of sensitivity to suggestions is going to act as a barrier for people who would otherwise give a personal contribution.

The third aspect follows this line of reasoning from a more motivational approach, examining if employees feel they are expected to make suggestions. Also, this aspect is somehow in between a leadership factor and a contextual factor, since it considers the role not only of the superior, but also that of colleagues:

“I am expected to be creative in my work: my superior or my colleagues expect me to find solutions to existing problems in my job, better ways to perform my tasks, to find original ideas that can improve the company.”
Here it is not only sensitivity to suggestions that is investigated, but a concrete request for personal contribution. This is the pure motivational aspect of leadership, which should give rise to a natural push toward the expression of creativity. In this case I could expect a direct correlation between this item and the amount of suggestions made. Also, it could be related to the similar measure of sensitivity to suggestions, to the creativity expression on the job, to the measure of engagement, and to the time spent thinking of one’s job in the free time.

Another item investigates if employees share their job problematics with their colleagues:

“I talk with my colleagues about how to perform our job: we talk about the problems we are facing and we share suggestions about how to solve them, we talk about our successes or about how to improve our job.”

Sharing the working life and job problematics with colleagues is an important source of information and problem solving. It also gives a measure of cohesiveness between employees of an organization. It could be related to the number of suggestions made, since sharing problematics and possibly finding solutions together could give the courage to voice the issues.

Finally, an additional item concerning the openness to experience trait was included since in literature it showed to be the greatest predictor of a creative personality.

“I am a person open to new experiences: I like when I’m proposed to do things I have never done, I find stimulating doing things that are different from what I already know like seeing new places, spending time in new environments, meeting new people, doing new activities or jobs.”

It should thus result in being related to the self-perception of creativity and to all the measures related to it, like number of suggestions and the expression of creativity on the job.
3.2 Method

One hundred and four employees working in two different companies participated on this study. Employees belonged to four different samples. The first one comprised twenty-three employees working in the administrative office of an oven producer, while the other three were from a company producing amusement rides. Specifically, of these three groups, a first one was made of twenty-three people working in the machine design department; a second one was made of thirty-nine people working in the production department, and a third one grouped together nineteen people belonging to different departments. Data for this last sample and for the machine design one were collected with an online survey, while the others were collected on site. Despite the small size of the samples, respondents constitute the totality of the employees working in those departments for the respective companies.

Sample 1
This sample comprises the administrative office of Company 1, the oven producer. Age of respondents ranged from twenty-one to forty-three, with an average of 31 and a mode of 27. Between them, 87% were female, the remainder were male. 30.4% held a high-school diploma, while 69.6% held a bachelor degree or superior title. The average time in role was 3.1 years, ranging from 0 to 21 years, while the modal value was 1.

Sample 2
This group aggregates the following departments of Company 2: buying, business management, costs and estimates, selling, shipping, and administration. Age of respondents ranged from twenty-six to fifty-five, with an average age of 42.9 years. Male represented the 47.4% of the sample, the remaining were female. Between them, 5.9% held a junior high school diploma, 57.9% held a high-school diploma, and 36.8% held a bachelor degree or superior
title. The job tenure ranged from three to thirty years, with an average of 13.4 years.

**Sample 3**
This sample includes the laborers of the production department of Company 2. Age of respondents ranged from twenty to sixty, with an average of 40.6 years. 94.9% of them were male, the remainder female. 23.1% of them held a junior school diploma, while 64.1% of them held a high school diploma and 12.8% held a bachelor degree or superior title. The time spent in the same role ranged from 0 to 42 years, with an average value of 13.4 years.

**Sample 4**
This sample included employees in the machine design department of Company 2. Age ranged from twenty-six to fifty-eight years, with an average value of 39.6. Male constituted 95.7% of the sample. 47.8% of respondents held a high school diploma, while 52.2% held a bachelor degree or superior title. The average job tenure was 12.9 years, ranging from a minimum of two years, to a maximum of thirty-three.

Participants were asked to fulfill a questionnaire conceived specifically for this study, which took from 10 to 15 minutes to complete and was made up of three parts. The first part was composed of fourteen close questions with responses on a five-point Likert-type scale ranging from 1=strongly disagree to 5=strongly agree. The second one included three open questions. The third one only collected personal information.

The open questions were formulated as follows:

*Given the following definition of creativity: “Creativity is the production of new and useful ideas by an individual or a small group of individuals”, answer to the following open questions:*

- A way in which I express creativity in my job is (if existing):
• To be more creative in my job I would need:
• Do I think my colleagues show to be creative people in their job? Why:

3.3 Analysis of multiple choice questions

3.3.1 Sample 1

In order to have a reliability value greater than 0.7, and specifically equal to 0.724, I had to leave out of the analysis the amount of working time spent thinking of things that lie out of work and the creativity expression in private life (creatpri in the tables).

Looking at the correlation indexes between variables (Figure 1), it can be seen how, contrary to expectations, creativity (creatind in the tables) was not related to any of the other variables considered. In the first place, I would have expected at least a correlation with creativity expression in private life, but even if I included this variable in the analysis ignoring the reliability test, this wouldn’t have been the case. No significant relation – and to say the complete truth, no relation even close to significance – was found with creativity expression on the job in search for improvements (creatjob) or for pleasure (creaplea), nor with suggestions (suggesti), private-life time spent thinking of job (privajob), or openness to experience (opennexp).

It would come to mind the doubt that we have a lack of creative individuals, but as we can see from Figure 2, more than 69% of respondents affirm they are creative and 21.7% affirm it strongly.

The result that immediately catches the attention is the high number of significant relations found for all the different aspects concerning leadership. Leadership as a role model (leadersh) results in being correlated to leader sensitivity (leadsens), expected creativity (createxp) and suggestions, and also leader sensitivity is correlated to expected creativity and suggestions.
<table>
<thead>
<tr>
<th>Correlations</th>
<th>creatind</th>
<th>autonjob</th>
<th>engagemn</th>
<th>collshare</th>
<th>leadersh</th>
<th>createxp</th>
<th>creatjob</th>
<th>creaplea</th>
<th>suggesti</th>
<th>leadsens</th>
<th>privajob</th>
<th>opennexp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation index</td>
<td>0.094</td>
<td>0.062</td>
<td>0.055</td>
<td>0.039</td>
<td>0.039</td>
<td>0.094</td>
<td>0.062</td>
<td>0.055</td>
<td>0.039</td>
<td>0.039</td>
<td>0.094</td>
<td>0.062</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td>0.669</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td>0.669</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td>0.669</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td>0.669</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td>0.669</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td>0.669</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
<td>0.840</td>
<td>0.840</td>
<td>0.840</td>
<td>0.778</td>
<td>0.803</td>
</tr>
<tr>
<td>N</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
</tbody>
</table>

*The significance level of the correlation is 0.05 (two tailed).**The significance level of the correlation is 0.01 (two tailed).
The three dimensions of leadership are related to each other, and this seems to indicate a coherence of the three aspects in measuring a transformational style of leadership, as when the leader is perceived to be a supportive role model is also found to be sensitive to suggestions, and employees feel they are expected to show creativity on their job.

Taking a look at frequencies, it emerges that 56.5% of employees believe their superior is a supportive role model, and 68.6% believe he is sensitive to suggestions. Most interestingly, we see that in an clerical job, a context where we wouldn’t expect creativity to be requested, almost 74% of employees believe they are requested for creativity in their job.

Moreover, the third facet of leadership, expected creativity, is linked to engagement, though this last item is not related to the other dimensions of leadership. I will ponder on this result later.

Given these premises, we can take a look at the output measure, suggestions. This item results in being correlated to both leadership as a supportive and motivating role model and leader sensitivity,

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>creatind</td>
<td>0,0</td>
<td>4,3</td>
<td>26,1</td>
<td>47,8</td>
<td>21,7</td>
</tr>
<tr>
<td>autonjob</td>
<td>8,7</td>
<td>34,8</td>
<td>13,0</td>
<td>30,4</td>
<td>13,0</td>
</tr>
<tr>
<td>engagemn</td>
<td>0,0</td>
<td>13,0</td>
<td>26,1</td>
<td>39,1</td>
<td>21,7</td>
</tr>
<tr>
<td>collshare</td>
<td>0,0</td>
<td>4,3</td>
<td>4,3</td>
<td>43,5</td>
<td>47,8</td>
</tr>
<tr>
<td>leadersh</td>
<td>0,0</td>
<td>8,7</td>
<td>34,8</td>
<td>43,5</td>
<td>13,0</td>
</tr>
<tr>
<td>createxp</td>
<td>4,3</td>
<td>13,0</td>
<td>8,7</td>
<td>65,2</td>
<td>8,7</td>
</tr>
<tr>
<td>creatjob</td>
<td>0,0</td>
<td>17,4</td>
<td>13,0</td>
<td>60,9</td>
<td>8,7</td>
</tr>
<tr>
<td>creaplea</td>
<td>0,0</td>
<td>26,1</td>
<td>17,4</td>
<td>56,5</td>
<td>0,0</td>
</tr>
<tr>
<td>suggesti</td>
<td>0,0</td>
<td>8,7</td>
<td>8,7</td>
<td>52,2</td>
<td>30,4</td>
</tr>
<tr>
<td>leadsens</td>
<td>0,0</td>
<td>13,0</td>
<td>17,4</td>
<td>43,5</td>
<td>26,1</td>
</tr>
<tr>
<td>privajob</td>
<td>8,7</td>
<td>4,3</td>
<td>8,7</td>
<td>60,9</td>
<td>17,4</td>
</tr>
<tr>
<td>opennexp</td>
<td>0,0</td>
<td>0,0</td>
<td>0,0</td>
<td>39,1</td>
<td>60,9</td>
</tr>
</tbody>
</table>
but not with expected creativity. Instead, it is related to engagement.

What is interesting is that both suggestions and expected creativity are related to both aspects of leadership and to engagement (engagement) but they are not related to each other. Moreover, engagement results in being related to expected creativity, to suggestions and to the amount of time out of working hours spent thinking of one’s job (privatujob), but not to variables concerning leadership style. Trying to give a meaning to these results, it seems that suggestions, which is an output measure, is affected by the leadership style on one side, and by engagement on another side. I consider these two to be distinct factors of influence since they are not related to each other, thus it cannot be that the style of leadership influences engagement in one’s job or that engagement influences the perception of employees concerning the relation with their superior. What is curious is that suggestions are not influenced by expected creativity. It seems like, for some reason, suggestions are assisted by the positive role and sensitivity of superiors, but since they are not related to expected creativity, their primary source has to be engagement, which gives rise to that inner motivation which we have seen in literature as being one of the most important - if not the primary – source of creativity.

It is thus engagement that could result in an inner push toward innovation and in the take of new challenges, expressing creativity on job problematics and resulting in problems resolution.

It could also be that expected creativity influences the engagement of employees, but in this case, with expected creativity being a source of motivation, I would have expected it to be related to suggestions. Instead, it is more likely that somehow the engagement of employees in their job, influences their perception about creativity expectations and about the relation with their boss.

Coherently with this vision of engagement as a primary source of motivation, it can be seen that engagement is related only with expected creativity, suggestions, and private-life time spent
thinking about how to improve one’s job. This last dimension could be defined as pervasiveness, as what it tells us is that individuals who are engaged in their job, are going to think about it and about ways to improve it, also out of working hours.

I also want to underline that engagement is not related to the expression of creativity on the job, both in search for improvements and for pleasure. Instead, it is correlated to private-life time spent thinking of work, which is in turn related to the sharing of problematics with colleagues (collshare). This last dimension is related only with private-life time spent thinking of work problematics, meaning that those who share their working life with colleagues are also those who think of ways to improve their job even when time for work is over and they could spend it in other ways. This is an index of an attitude toward teaming up. Looking at data, it appears that individuals who share with colleagues problematics relating to their job, suggestions and solutions, are those who let their working life permeate their private life, not drawing a clear line that differentiates between two distinct moments of daily life. This tendency toward pervasiveness of working time into private-life time, which happens often or very often in 78.3% of cases, is driven by personal interest, as it likely to be driven by engagement in one’s own job, or to some degree on the relation established with colleagues.

It is quite hard to draw conclusions from these results, especially considering the small size of the sample, although it represents the universe of the population; despite this, with a little bravery I could dare some hypotheses. These data give the idea that it is not creativity to be the main driver of possible improvements on the job, nor a will of people to change their currently unsatisfactory job, but it is the actual engagement of employees with their job to rise in them the will to personally contribute to the wellbeing of the organization the belong to.

Engagement, then, since it is not correlated with leadership variables, is considerable to depend on the natural fit with the job or
on the general positive climate, and thus probably with a good work in phase of candidates selection and establishment of working conditions.

Running a factor analysis on the variables, results seems to confirm the hypotheses just made (Figure 3).

Results are actually quite surprising, but some curious considerations can be drawn from them. Under the first component are grouped together the three dimensions of leadership, namely leader sensitivity, leadership as a role model and expected creativity, but with the addition of suggestions. The information this gives is that the suggestions variable seems to rely on the same latent construct that holds together the variables related to leadership style. The amount of suggestions that employees make or think to make seems to depend strongly on the role of leadership.
and to vary along with it, even more than it is influenced by engagement. It seems that in the perception of respondents, the propensity toward suggestions depends on how much their superior requires from them and is willing to accept contributions.

The second factor groups together time of private life spent thinking of job problematics, engagement, sharing with colleagues and the inverse of creativity application on the job trying to make it more pleasant. What all these variables have in common is what I have previously referred to as pervasiveness. Individuals do spend their free time thinking of work depending on how much they are engaged in it, allowing their work-life to cross the boundaries of working time and of the mere execution of their job. This attitude is reflected also in their willingness to share their job problematics, successes and suggestions with their colleagues. The application of creative behaviors in the execution of their job is taken inversely indicating that when employees are driven by this pervasive passion for their job, they don’t need to try to change it in order to make it more pleasant, as this is probably to be considered as a way of escaping from a dissatisfactory situation, a way to evade from their duties.

Even more curious and surprising is the third factor, which groups together individual creativity and the inverse of openness to experience. It is quite hard to give a meaning to this result, as these two dimensions were supposed to go together and having a direct relation, but daring a little bravery this could seems to indicate a style of creativity, as presented in the DPCM model, more reliant on persistence and perseverance, on the deeper analysis of a phenomenon with a narrower focus than on the free exploration of possibilities crossing different domains.

Creativity application on the job in search for improvements and autonomy on the job (autonjob) are left aside as independent factors, and this is particularly curious for the first one as I would have expected it to be grouped with creativity on the job in search for pleasure, being them designed as being two sides of the same coin.
This could be interpreted as an additional proof that creativity is perceived as something closer to the fulfillment of a duty expected by superiors than as a set of behaviors enacted autonomously searching for pleasure.

3.3.2 Sample 2

I order to have a reliability value greater than 0.7, and specifically equal to 0.748, I had to leave out of the analysis the amount of working time spent thinking of things that lie out of work.

In this case, too, contrary to expectations, creativity is not related to any variable, not even openness to experience, as can be seen in Figure 4. Looks like individual creativity doesn’t influence any factor. Especially, I would have expected it to be related at least to dimensions of creativity on the job, both in seek for improvements or for pleasure, or to suggestions. Taking a look at frequencies (Figure 5), it emerges that individual creativity is well distributed and that there is no lack of creative individuals as 63.1% of the interviewed agree or strongly agree when asked if they are creative. In particular, the modal value, with 36.8% of respondents, strongly agrees with the statement. Given these frequencies, I would expect creativity to be related at least with creativity expression in private life, as a creative person should feel the need to carve out himself a time to express his creativity, but this is not the case. As previously outlined, this could be interpreted as if people see creativity as a capability or set of capabilities – we could say soft skills – that can be used or not during life when faced with a problem to solve instead of a need of expression like in our imaginary of the artist.

It is also interesting to notice that although openness to experience should be the greatest predictor of creativity, no relation was found with it. Moreover, 89.5% of respondents say they are open to
<table>
<thead>
<tr>
<th></th>
<th>creatind</th>
<th>autonjob</th>
<th>engagemn</th>
<th>collshare</th>
<th>leadersh</th>
<th>creatpri</th>
<th>createxp</th>
<th>creatjob</th>
<th>creaplea</th>
<th>suggests</th>
<th>leadsen</th>
<th>privajob</th>
<th>opennexp</th>
</tr>
</thead>
<tbody>
<tr>
<td>creatind</td>
<td>1</td>
<td>.224</td>
<td>.373</td>
<td>.304</td>
<td>.034</td>
<td>.424</td>
<td>.149</td>
<td>.395</td>
<td>.359</td>
<td>.117</td>
<td>.367</td>
<td>.112</td>
<td>.452</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>autonjob</td>
<td>.224</td>
<td>1</td>
<td>.549</td>
<td>.219</td>
<td>.096</td>
<td>.288</td>
<td>.289</td>
<td>.603</td>
<td>.476</td>
<td>-.019</td>
<td>.011</td>
<td>.318</td>
<td>.360</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>collshare</td>
<td>.304</td>
<td>.219</td>
<td>.276</td>
<td>1</td>
<td>.049</td>
<td>.547</td>
<td>.200</td>
<td>.233</td>
<td>.250</td>
<td>-.028</td>
<td>-.082</td>
<td>.023</td>
<td>-.155</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>leadersh</td>
<td>.034</td>
<td>.066</td>
<td>.259</td>
<td>.049</td>
<td>1</td>
<td>.189</td>
<td>.127</td>
<td>-.122</td>
<td>-.336</td>
<td>.078</td>
<td>.363</td>
<td>-.013</td>
<td>-.193</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>creatpri</td>
<td>.424</td>
<td>.298</td>
<td>.045</td>
<td>.547</td>
<td>.189</td>
<td>1</td>
<td>-.072</td>
<td>.421</td>
<td>.517</td>
<td>-.048</td>
<td>-.197</td>
<td>-.278</td>
<td>.058</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>createxp</td>
<td>.149</td>
<td>.289</td>
<td>.455</td>
<td>.200</td>
<td>.127</td>
<td>-.072</td>
<td>1</td>
<td>.445</td>
<td>.118</td>
<td>.081</td>
<td>.407</td>
<td>.713</td>
<td>-.015</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>creatjob</td>
<td>.395</td>
<td>.603</td>
<td>.339</td>
<td>.233</td>
<td>-.122</td>
<td>.421</td>
<td>.445</td>
<td>1</td>
<td>.778</td>
<td>-.182</td>
<td>.024</td>
<td>.206</td>
<td>.397</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>creaplea</td>
<td>.359</td>
<td>.476</td>
<td>.136</td>
<td>.250</td>
<td>.336</td>
<td>.517</td>
<td>.118</td>
<td>.778</td>
<td>1</td>
<td>-.271</td>
<td>-.253</td>
<td>.083</td>
<td>.458</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>suggests</td>
<td>.117</td>
<td>-.019</td>
<td>-.028</td>
<td>.078</td>
<td>-.048</td>
<td>.081</td>
<td>-.182</td>
<td>-.271</td>
<td>1</td>
<td>-.092</td>
<td>.089</td>
<td>-.075</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>leadsens</td>
<td>.367</td>
<td>.011</td>
<td>.412</td>
<td>-.082</td>
<td>.363</td>
<td>-.197</td>
<td>.407</td>
<td>.024</td>
<td>.253</td>
<td>.032</td>
<td>1</td>
<td>.342</td>
<td>.352</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>privajob</td>
<td>.112</td>
<td>.318</td>
<td>.563</td>
<td>.023</td>
<td>-.013</td>
<td>-.278</td>
<td>.713</td>
<td>.206</td>
<td>.083</td>
<td>.089</td>
<td>.342</td>
<td>1</td>
<td>.140</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>opennexp</td>
<td>.452</td>
<td>.360</td>
<td>.229</td>
<td>-.155</td>
<td>-.193</td>
<td>.058</td>
<td>-.015</td>
<td>.397</td>
<td>.734</td>
<td>.716</td>
<td>.152</td>
<td>.140</td>
<td>.567</td>
</tr>
<tr>
<td>N</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

* The significance level of the correlation is 0.05 (two tailed).
** The significance level of the correlation is 0.01 (two tailed).
experience and 57.9% strongly assert that. This means that to be open to experience is a very diffuse state of mind, probably seen as a passive form of liking novelties rather than creativity, which is an active form that takes the effort to put one’s mind into something.

Despite this, a relation emerges between openness to experience and creativity applied on the job in search for pleasure. It is difficult to give a meaning to this result because of what I have previously said, and I would be very careful in doing it especially because openness to experience doesn’t follow a normal distribution, but I could hypothesize that the need for pleasure linked to newness is in the end expressed also in the job context trying to make it fit better with personal needs.

It can be noticed then, especially compared to Sample 1, that no relation at all exists between suggestions and any other variable, nor with leadership items or any other variable. No information are available about these dimensions, but looking at frequencies can be helpful.
As can be seen, only 47.4% of respondents ever thought of giving suggestions about ways to improve their job, just as many people as those who are indifferent to the statement. What is more interesting is taking a look at the answers concerning the facets of leadership.

36.8% of employees don’t see their superior as a positive and supportive role model, and this bad situation becomes even worse looking at leader sensitivity responses, where 57.9% of employees think their superior wouldn’t be sensitive to suggestions which could improve working conditions. It is especially worth and proper to highlight the fact that 42.1% of them completely disagrees with a sensitive attitude of their superior.

The situation goes a little better for expected creativity, which results in being more equally distributed, with a peak of answers (36.8%) on creativity to be expected and a 21.1% who think it is strongly expected, though there is still a 15.8% of employees who think it is not. Expected creativity, on its side, results linked to engagement, just like it did for Sample 1. This commonality could actually mean that the perception that creativity is expected from one’s role, is influenced by, if not even some kind of reflection of, the engagement of the person with his job, though it is also possible that the perception of creativity to be expected gives rise to the feeling of engagement of the employee. In particular, expected creativity seems also to give rise to that engagement which is the source that leads employees to think of work problematics also when working time is over, as we can see form the strong relation emerged between expected creativity and private-life time spent thinking of job.

Commonalities don’t stop here though, and it is interesting to notice that engagement, just like in the case of Sample 1, is linked to the amount of time of private life spent thinking of ways to improve working conditions. In addition, this last item is positive in 52.7% of cases, and 68.5% of respondents also affirmed to actually feel engaged in their job, which means that more than half of the interviewed employees feels engaged in their job and even
experience that pervasiveness that makes them think of work also out of working hours.

This is a second evidence that engagement could be the greatest driver of a feeling of pervasiveness of the working life into the private life, touching aspects that are completely out of any contractual agreement. In particular, also, it seems reasonable to suppose that, since both free time spent thinking of work and creativity expectations are linked to engagement, just like for Sample 1, engagement can be thought as the source of a natural inner push that makes individuals actually care so much about their job that they put their efforts into trying to improve it even when they are not required to at all.

Comparing these results to those derived by Sample 1, I could dare to hypothesize that suggestions could derive from the action of two factors, namely engagement and leadership, and that the lack of the leadership factor could stop their emergence even though there actually is a natural push in that direction coming from the engagement of the individual in his job. The misfit between these two components could result in the lack of correlation between suggestions and any other variable, as both of the components have to be present. Also, this lack of correlation between the two aspects of leadership could mean that, though they are supposed to be two facets of the same construct, they measure two aspects of leadership that are actually distinct and can run in two distinct ways, while they both have to be present to give a positive results. Some additional information will be given later from the factor analysis.

Engagement, then, results in being correlated to the degree of autonomy in choosing how to execute one’s own job, thus supporting the hypothesis that variety of tasks and autonomy in deciding them actually helps individuals to feel passionate about their jobs. For the hypothesis just made, though, it is also possible that it is actually engagement to give individuals the perception of having autonomy in deciding what tasks to perform and how.
Autonomy in performing one’s job, then, is related also to creativity expressed on the job both in search for improvements and for pleasure. This seems a meaningful result, as it groups under the common relation with job autonomy, two variables that are supposed to be two faces of the same coin and that result moreover to be strongly related to each other. This outcome could be explained by the fact that what I have defined as two distinct items measuring two facets of the same construct, are actually not so distinct in the mind of the interviewed, as they could be seen as being the same behavior. Namely, the application of creativity on a specific job just to make something new and different or to make the job fit more with the needs of the employee, making it more pleasant. Another explanation is that these two items are actually distinct in the mind of respondents, but they both vary along with the perceived freedom to experiment freely in one’s own job, modifying the ways tasks are performed.

Another result worth analyzing is that while creativity on the job in search for improvements is related only to autonomy on the job, creativity in search for pleasure is related also to expression of creativity in private life. It is worth lingering for a moment on this outcome since it seems to indicate that the two aspects are actually perceived as being distinct also by respondents, otherwise the relation with creativity in private life should have been found in both cases. This means, making a step backward, that creativity on the job seeking for improvements and for pleasure are probably perceived as two distinct aspects that vary together, probably according to the degree of autonomy on the job. Moreover, it is interesting to notice that the expression of creativity in private life was not related to individual creativity but was related instead to the pragmatic application of creativity on the job trying to make the job more pleasant. This could possibly mean an underlying attitude toward the use of creative behaviors in order to follow the personal emotional state, seeking for pleasant feelings, in a way closer to that of an artistic expression than to a problem solving one.
Given these results it looks as creativity is perceived as a soft skill that many people have the perception to possess and that can be used at will, while the concrete application of a creative attitude is a distinct aspect that is reflected both in private life and in the working life and driven by passion.

It is maybe worth underlying, though, that differently from Sample 1, where this relation didn’t appear, in this case it could be the leadership style that could have made an actual difference. It is possible that the lack of a positive, supportive and sensitive leadership style, has taken individuals to a degree of frustration or lack of stimulation concerning their job that in the end is vented seeking for pleasure inside or outside of the working context.

Creativity expressed in employees’ private life, though, results also being related to the sharing with colleagues of job problematics, and it is the only relation emerged between sharing with colleagues and any other variable. It is difficult to draw real conclusions on this point. I could hypothesize that what it emerges here is some kind of pervasiveness of a personal creative attitude that goes both in the direction of expressing itself in artistic forms in private life and in the form of the attempt to make a job more pleasant both in one’s own job and through the sharing of problematics with colleagues. It would be tempting to hypothesize that the creative expression in private life concerns the same problematics shared with colleagues, but in this case I would have expected to find a relation between the two variables and private-life time spent thinking of work, which did not emerge.

Running a factor analysis (Figure 6) it emerges how the first component groups together private-life time spent thinking of work, expected creativity, engagement and autonomy on the job. This result is in line with the hypotheses previously made about some kind of pervasiveness of a natural motivation toward one’s work that goes beyond the simple contractual agreements and that is driven by passion.
In particular, private-life time spent thinking of work problematics is again (like it was for Sample 1) grouped together with engagement, leading to think of a job pervasiveness out of working boundaries that is driven by the engagement in the job. In line with this reasoning should be interpreted the grouping with expected creativity, which includes the expectations by colleagues in addition to that of superiors, and autonomy on the job. They all seem to depend on a common ground of working autonomy and freedom, where the role of the leader is more fuzzy, and what plays the bigger role is the will of the individual, who perceives a greater autonomy over the way to accomplish his duties and that is driven by the personal engagement in the job, together with the consciousness of being part of a system where probably the

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>privajob</td>
<td></td>
<td>.885</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>createxp</td>
<td></td>
<td>.875</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>engagemn</td>
<td></td>
<td>.697</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>autonjob</td>
<td>.514</td>
<td></td>
<td>.402</td>
<td></td>
<td>.328</td>
</tr>
<tr>
<td>creatpri</td>
<td></td>
<td></td>
<td>.890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>collshare</td>
<td></td>
<td></td>
<td>.781</td>
<td></td>
<td></td>
</tr>
<tr>
<td>creatjob</td>
<td>.441</td>
<td>.475</td>
<td>.434</td>
<td></td>
<td>-.334</td>
</tr>
<tr>
<td>opennexp</td>
<td></td>
<td></td>
<td></td>
<td>.905</td>
<td></td>
</tr>
<tr>
<td>creatind</td>
<td></td>
<td>.377</td>
<td></td>
<td>.726</td>
<td></td>
</tr>
<tr>
<td>leadersh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.809</td>
</tr>
<tr>
<td>leadsens</td>
<td>.345</td>
<td></td>
<td>.439</td>
<td></td>
<td>.704</td>
</tr>
<tr>
<td>creaplea</td>
<td></td>
<td>.498</td>
<td></td>
<td>.451</td>
<td>-.569</td>
</tr>
<tr>
<td>suggesti</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.957</td>
</tr>
</tbody>
</table>

Method of extraction: Principal components analysis.
Method of rotation: Varimax with Kaiser normalization.
a. Convergence for the rotation executed in 8 iterations.
interdependence with colleagues plays a more important role than that of superiors in the mind of respondents.

The second factor is harder to interpret, since it comprises creativity expression in private life, sharing with colleagues and creativity expression on the job searching for improvements. In particular, it surprises that not only the application of creative behaviors on the job searching for improvements and for pleasure are separated, but especially that the first one is grouped here together with creative expression in private life. It holds that sharing of working problematics with colleagues is grouped with creativity in search for improvements as they can both refer to a research for the solution of problems faced during the execution of daily activities in working life, or with an improvement of the job in general, but this grouping with expression of creativity in private life seems to give the idea that this creativity is also perceived as being strictly relative to the job. It would seem like, just to dare giving a meaning to this result, for respondents these three dimensions all refer to the solution of working problematics.

The third factor is in line with the hypothesized structure of creativity and openness to experience going together toward an attitude of open mindedness, following a conception of creativity closer to that of exploration of possibilities and the free cross of boundaries.

The fourth factor unsurprisingly holds together the two main dimensions of leadership, and this is good news as it indicates a clear perception of the figure of a leader in the mind of respondents, though there is still the possible presence in the grouping of the application of creative behaviors on the job in search for pleasure. Despite this element crosses in lower degree other factors, it is present inversely with the greater value in this group and it seems again to give creativity on the job in search for pleasure a negative characterization, as a way to evade from duties, where its lack follows the direction outlined by leadership.
Suggestions is left on its own, autonomously from all the other dimensions.

### 3.3.3 Sample 3

In the case of laborers, it can be seen from the correlation table in Figure 7 how individual creativity shows more than one meaningful relation with the other factors under analysis. None of these, though, is openness to experience, which I would expect to be strictly related since it is the theoretical greatest predictor of a creative personality.

A very curious outcome that emerged is the strong relation between individual creativity and engagement. Looking at frequencies (Figure 8) we see that 86.8% of the interviewed thinks he is creative, and almost 29% of those strongly believes so. 84.3% of employees, then, feel engaged in their job, of which 21.1% is strongly engaged in it. The information given by these data is that individuals who think they are creative also feel engaged in their job. It is hard to say what is the reason behind this relation. Trying to formulate an hypothesis, though, it is hard to suppose that the engagement in one’s job influences somehow the perception of the person concerning his creativity; it would be more reasonable to suppose that a creative person is able to find out a way to make his job fitting with his needs or more pleasant.

I leave on side for the moment the relations found for engagement and I go on focusing on the relations found for creativity.

Coherently with my expectations, individual creativity results also being related to the expression of creativity in private life. Differently from previous results, which seemed to indicate that creativity was seen more as a soft skill which could be used just in case of necessity, what appears here is a clear evidence that those individuals who perceive themselves as creative (and they are almost 87%) are also those who express themselves creatively in
<table>
<thead>
<tr>
<th>Variable</th>
<th>Pearson correlation index</th>
<th>Sign. (two tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>creatind</td>
<td>1.257</td>
<td>0.576</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>autocjob</td>
<td>-0.12</td>
<td>0.001</td>
<td>243</td>
</tr>
<tr>
<td></td>
<td>0.36</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>engagemn</td>
<td>0.456</td>
<td>0.000</td>
<td>145</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>collshare</td>
<td>0.343</td>
<td>0.000</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>leadersh</td>
<td>-0.131</td>
<td>0.000</td>
<td>231</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>creatpri</td>
<td>0.557</td>
<td>0.000</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>createxp</td>
<td>0.328</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>creatjob</td>
<td>0.198</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>creatplea</td>
<td>0.090</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>suggests</td>
<td>0.139</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>creother</td>
<td>0.213</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>leadsens</td>
<td>0.134</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>prinjob</td>
<td>0.156</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>opennexp</td>
<td>0.244</td>
<td>0.000</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>36</td>
<td>38</td>
</tr>
</tbody>
</table>

*The significance level of the correlation is 0.05 (two tailed).** The significance level of the correlation is 0.01 (two tailed).
their private life, too. This is a picture closer to our imaginary and theoretical definition of the creative personality, which tells that creative personalities are not only artists, but they are very diffuse also in such context as a laboring one and they can actually both feel engaged in their job and express themselves creatively in their private life. Also, this gives a first flavor that creativity can be expressed in different forms depending on the context.

Individual creativity, also, results being linked to the perception that employees’ superior and colleagues expect creativity from them in their job. At first sight, it would be tempting to consider expected creativity a perception that is influenced by personal creativity instead than a determinant of the self-perception of creativity, as this last item should be an independent variable, but no possibility should a priori be excluded.

In particular, it emerges as also in this case a strong relation is found between engagement and expected creativity. It is not considerable a coincidence, and it is hard to find a possible latent

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>creatind</td>
<td>2.6</td>
<td>2.6</td>
<td>7.9</td>
<td>57.9</td>
<td>28.9</td>
</tr>
<tr>
<td>autonjob</td>
<td>5.3</td>
<td>15.8</td>
<td>31.6</td>
<td>31.6</td>
<td>15.8</td>
</tr>
<tr>
<td>engagemn</td>
<td>0.0</td>
<td>2.6</td>
<td>13.2</td>
<td>63.2</td>
<td>21.1</td>
</tr>
<tr>
<td>collshare</td>
<td>0.0</td>
<td>5.3</td>
<td>7.9</td>
<td>52.6</td>
<td>34.2</td>
</tr>
<tr>
<td>leadersh</td>
<td>0.0</td>
<td>10.5</td>
<td>13.2</td>
<td>52.6</td>
<td>23.7</td>
</tr>
<tr>
<td>creatpri</td>
<td>15.8</td>
<td>21.1</td>
<td>15.8</td>
<td>36.8</td>
<td>10.5</td>
</tr>
<tr>
<td>createxp</td>
<td>2.6</td>
<td>7.9</td>
<td>23.7</td>
<td>47.4</td>
<td>18.4</td>
</tr>
<tr>
<td>creatjob</td>
<td>2.6</td>
<td>10.5</td>
<td>23.7</td>
<td>34.2</td>
<td>28.9</td>
</tr>
<tr>
<td>creplea</td>
<td>7.9</td>
<td>13.2</td>
<td>18.4</td>
<td>39.5</td>
<td>21.1</td>
</tr>
<tr>
<td>suggesti</td>
<td>7.9</td>
<td>0.0</td>
<td>23.7</td>
<td>44.7</td>
<td>23.7</td>
</tr>
<tr>
<td>creother</td>
<td>7.9</td>
<td>18.4</td>
<td>21.1</td>
<td>36.8</td>
<td>15.8</td>
</tr>
<tr>
<td>leadsens</td>
<td>2.6</td>
<td>5.3</td>
<td>31.6</td>
<td>42.1</td>
<td>18.4</td>
</tr>
<tr>
<td>privajob</td>
<td>10.5</td>
<td>2.6</td>
<td>13.2</td>
<td>50.0</td>
<td>23.7</td>
</tr>
<tr>
<td>opennexp</td>
<td>0.0</td>
<td>5.3</td>
<td>18.4</td>
<td>39.5</td>
<td>36.8</td>
</tr>
</tbody>
</table>

Figure 8
variable that links these two together as there are no other significant common related variables between the different samples.

Results from Sample 1 drove me at first to suppose that engagement was the main actor that stimulated the perception that creativity was expected, as it appeared that suggestions where inspired by leadership style and engagement as two main actors. It would be appropriate now, though, to make a step backward and consider that expected creativity could be a main driver of engagement with the job, especially because this variable plays a role that is in between leadership and organizational climate and it can depend on numerous factors.

Taking a look at the other items related to expected creativity, it catches the attention the strong relation existing with leader sensitivity. This relation indicates that those who perceive that creativity is expected from them in their work are also those who perceive their leader as sensitive to suggestions. Leaving aside the suppositions made in the case of Sample 1, what emerges here is that two of the three facets of leadership, namely expected creativity and leader sensitivity, are found related to each other – just like in Sample 1 - and these are both about the possibility that employees find out new ways to improve their work.

This relation also seems to mean that, concerning expected creativity, which was defined as a borderline variable between leadership and contextual factors, the role of the leader has priority on that of colleagues, as otherwise it wouldn’t have emerged this strong correlation with a construct which is all about the sensitivity of the superior and where the influence of colleagues is not contemplated.

Rethinking my hypotheses, it could be that it is the perception of creativity to be expected from individuals, derived especially by the leader’s behavior, that influences the item of leader sensitivity. Following this line of reasoning it could thus be that employees, depending on the relation with their superior, have a certain perception that creativity is expected from them in the execution of
their job, and this trait influences both how much they think their boss is sensitive and happy about the possibility that they can make suggestion to improve the working situation, and how much they feel engaged in their job. This consideration is of particular importance as, supposing it is correct, it gives a powerful picture of the relation between employees, their superior, and the whole wellbeing of the organization.

The last relation found for expected creativity is that with job autonomy, which indicates that the more employees feel that creativity is expected from them, the more they feel they have autonomy in their job. It could be also hypothesized that it is the actual degree of autonomy in deciding what tasks to accomplish, their order, or the time dedicated to them, to give the perception that creativity is expected, but given the previous reflections and hypotheses, it seems more reasonable to think that it is the perception of creativity being expected by superiors that implies the perception of having more freedom in deciding how to accomplish tasks and how to perform the job.

Consequently, what emerges is that having autonomy in one’s own job is actually more a state of mind given by the relation with the superior than an actual objective measure, and this implies that it could actually be shaped depending only on leader behaviors without actually modifying the work role.

Moving to the relations found for engagement, it results correlated to both individual creativity and to the expression of creativity in private life. All three of them are related to each other, and this could lead to think that one of these relations is only apparent and that it depends only on the relation between the other two, as they seem to be hardly interpretable.

Individual creativity should be the starting point as it is by definition an independent variable. Its relation with the expression of creativity in private life was expected and I already talked about it previously. I also hypothesized that creative individuals could be able to find ways of making their job enjoyable, but it is quite hard
to see why employees who are engaged in their job should also express creatively in their private lives. Looking at frequencies we see that 36.9% of respondents don’t express themselves creatively in their free time; nevertheless, the more these individuals do express creatively, the more they perceive they are creative, and the more they are engaged in their job. It is probably not engagement that pushes individuals to express creatively in their free time; it is more likely that creativity plays the main role. Looks like creativity results in being some kind of capability, and attitude or a soft skill that leads individuals to express creatively in their free time, but that is also applied by them during their working hours and making them able to find ways of enjoying their working life.

Engagement is also related to time of private life spent thinking about ways to improve one’s job. Again, this is anything but surprising, as this relation was found also in Sample 1 and Sample 2. Engagement of employees in their job is a source of inner motivation that is not possible to compensate in any other way. This natural push is in the end reflected in a pervasiveness that makes individuals think of ways to improve their job even when they are not required to by a contractual agreement.

Private-life time thinking of work is also related to the individual creative expression in that time. This relation is curious and it could lead to think that, given the broad range of characteristics included in the item of the questionnaire concerning individual creativity, the time spent out of working hours is used by employees to express creativity in a way that is linked to their job. Put differently, it is possible that laborers, who self-perceive to be creative in 86.8% of cases, and feel engaged in their job in 84.3% of cases, not only use some of their free time to think of work, but actually use that time to think creatively of job problematics instead of doing anything else.

The more employees are creative, the more they are engaged in their job, the more they think of work even outside of working hours and use their time to solve job problematics.
Also, the relation between free time spent thinking of work and creative expression in the job in search for pleasure, could be seen as an additional support to this view, where employees spend their time to make their job better. Nevertheless, I would have expected this correlation to emerge with creativity on the job in search for improvement, and not for pleasure. This would generally seem to indicate a situation closer to an unsatisfactory one, where laborers look for ways to make their work more pleasant because of a feeling of dissatisfaction with it, but given what said before, it is also possible that they just don’t make a clear separation between their working-life and private-life, trying to maintain a pleasant climate during their whole life time, making their job always as pleasant as possible in order to avoid dissatisfaction.

As can be seen, creativity on the job in search for improvement and in search for pleasure are related to each other. This is not surprising being them to faces of the same coin. This would seem to indicate that they are aspects not so distinct from each other, or that they both refer to the same attitude of employees toward their job. Also, they are both strongly related to the openness to experience trait, but not to the individual creativity one. This seems to indicate that there is not a real tendency toward the application of creativity on the job, but something closer to an attitude of openness to possibilities, which would be like the prerequisite for serendipity.

No relation was found between suggestions and any other variable, thus giving no information on the point. Looking at frequencies, 67.7% of respondents made or thought to make suggestions about ways to improve their work, though 7.9% of them never thought to. Only a very strong relation was found between leader sensitivity and expected creativity, but no relation was found between leadership as a supporting role model and leader sensitivity. This means that the propensity of the leader to accept and nurture the tendency toward suggestions and improvement in his subordinates doesn’t get together with the fact that he is perceived as a supportive role model. These are actually
perceived as two distinct aspects of leadership, and the leader, in this case, is not perceived by all employees to possess both of them proportionally.

Frequencies show that 74.3% of laborers see their superior as a supportive role model, although there is a 10.5% that thinks he is not good enough. Coming at leader sensitivity, opinions are more equally distributed, with a 60.5% of respondents who perceive their superior to be sensitive or very sensitive to suggestions, while 7.9% of them disagrees or strongly disagrees on the point.

Running a factor analysis (Figure 9) it can be seen how some of my suppositions seem to find confirmation.

<table>
<thead>
<tr>
<th>Rotated component matrix*</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>creaplea</td>
<td>.881</td>
</tr>
<tr>
<td>creatjob</td>
<td>.879</td>
</tr>
<tr>
<td>opennexp</td>
<td>.752</td>
</tr>
<tr>
<td>leadsens</td>
<td>.808</td>
</tr>
<tr>
<td>createxp</td>
<td>.785</td>
</tr>
<tr>
<td>collshare</td>
<td>.594</td>
</tr>
<tr>
<td>creatind</td>
<td>.891</td>
</tr>
<tr>
<td>creatpri</td>
<td>.752</td>
</tr>
<tr>
<td>suggesti</td>
<td>.757</td>
</tr>
<tr>
<td>privajob</td>
<td>.688</td>
</tr>
<tr>
<td>autonjob</td>
<td>-.516</td>
</tr>
<tr>
<td>leadersh</td>
<td></td>
</tr>
<tr>
<td>engagemn</td>
<td>.365</td>
</tr>
<tr>
<td>creother</td>
<td>-.481</td>
</tr>
</tbody>
</table>

Method of extraction: Principal components analysis.
Method of rotation: Varimax with Kaiser normalization.
a. Convergence for the rotation executed in 9 iterations.

Figure 9

Under the first factor fall the application of creative behaviors on the job trying to make it more pleasant and searching for improvements, and openness to experience. These items were also
found to be related to each other, and this is an additional proof that these elements are also perceived in a similar way by respondents, like measuring the same underlying construct. Despite the first two items are thought by their definition to be similar variables, measuring two very close attitudes considerable almost the same one seen from two different perspectives, it is curious that openness to experience is statistically grouped with them according to responses of employees. It seems like they all measure a common attitude of individuals directed toward the search for newness and the willingness to consider and accept novel possibilities. It would seem to go in the direction of being the prerequisite for serendipity, the ability to consider, accept and catching unexpected possible opportunities when they naturally emerge without being driven in that precise direction from the beginning.

The second factor groups together leader sensitivity, expected creativity and sharing with colleagues. What they all have in common is the expectation for suggestions and the consideration given to them. Leader sensitivity and expected creativity don’t surprise that much as they were defined to be two aspects of leadership despite expected creativity is a variable that is somehow in-between being a leadership facet and a work environment one as it comprises also the expectations of colleagues in the general environmental climate. Here, they are separated from the leadership as a role model item, being this an index that they are perceived not from the leadership side, but more from a perspective linked to the attitude toward individual contributions. In line with this view, they are grouped also with the amount of sharing of work problematics and suggestions with colleagues, meaning that what seems to lie beyond and join these items, is the amount to which laborers perceive they are requested to show proactive behaviors and how much their personal individual contribution is valued both by colleagues and by superiors.

The third component joins individual creativity and creative expressions in private life. This is in line with a view of creativity
conceived as a personal attitude of individuals that conveys their creative capabilities venting them independently from job problematics, driven by passion and pertaining more the personal private life than one pertaining the working context.

Under the fourth factor fall the amount of suggestions made or thought to be made, the amount of private-life time spent thinking of job problematics, and the inverse of autonomy on the job. The first two items are more similar and more easily interpretable, since suggestions are the personal contribution that an individual is willing to give to the organization e belongs to, and it requires an effort and an interest in this kind of problematics that lies also beneath the willingness to think of job problematics even when working time is over. They thus seem to be both driven by the passion for the job and the organization as a whole. More surprising is the inclusion in this group of the inverse of autonomy. It could be defined as constraint, a control exercised by superiors, over their job and it would seem to give a negative characterization to the whole group, like all this participation on work that is linked to the solution of job problematics even outside of working hours is related to a very strict definition of the job, that gives no space for personal initiative but is like a duty to fulfill. It should be taken into consideration, though, that this element lies in between the fourth factor with negative value and the fifth factor with positive value; its interpretation should consequently be cautious as it is not so well defined.

The last factor groups together leadership as a supportive role model, engagement and the amount of time spent thinking of things that lie out of work. Again, an interpretation of this result is brave and should be made carefully. To dare one, it would seem that the leadership aspect is associated with engagement by the fact that they are motivational factors, having in common that the leaders should be motivating and supportive for employees, who should also feel energized and motivated toward the accomplishment of their working goals. Harder is the interpretation for the third item,
which should measure a mental attitude toward the escaping from working duties, and thus I would have expected to find it inversely related, being it thought as dependent to a lack of motivation.

### 3.3.4 Sample 4

In order to have a reliability value over 0.7, and specifically equal to 0.717, it was necessary to leave out of the analysis the variables of working-time spent thinking of things that lie out of work, and expression of creativity in private life.

In the first place, as can be seen in Figure 10, the perception of individual creativity doesn’t result to be related to many of the variables that I would have expected, like creative expression on the job in search for improvement or for pleasure, nor with expression of creativity in private life even in the case it was included in the analysis. Despite this, it shows a very strong relation with suggestions, which indicates that in this case the amount of suggestions made or thought to be made is strongly dependent on the self-perceived creative capabilities of the individual. Frequencies (Figure 11) show that 56.5% of designers at least thought to suggest ways to improve their job, and 17.4% of these did this often. 65.2% of employees thinks to possess a creative attitude, and 17.4% of these strongly believes so. It is curious how this relation emerges only in a working context where creativity is required by definition, and not in the other samples where creativity is not required by the structure of the jobs. Suggestions are also found related to creativity expression in the job in search for improvements, which is not surprising given what just said, as employees are expected by the definition of their job to find new ways to make things work better, and it is probably during this process that possible suggestions emerge. Despite this, it must be taken into account that, as previously seen, also individual creativity plays a role in this, as what these results seem to suggest
<table>
<thead>
<tr>
<th>Variable</th>
<th>Pearson correlation index</th>
<th>N</th>
<th>Sign. (two tailed)</th>
<th>Sign. (two tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>creatind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>autonjob</td>
<td>-1.183</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.engagemn</td>
<td>.104</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>collshare</td>
<td>-.081</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadersh</td>
<td>.273</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>createxp</td>
<td>.108</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>creatjob</td>
<td>.182</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>creaplea</td>
<td>-.118</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>suggesti</td>
<td>.605</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadsens</td>
<td>-.154</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>privajob</td>
<td>.310</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>opennexp</td>
<td>.014</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The significance level of the correlation is 0.05 (two tailed).
** The significance level of the correlation is 0.01 (two tailed).
is that individuals who self-perceive to be more creative are those who are going to apply more their creativity skills in their job, resulting in more suggestions made or thought to be made.

Proceeding with creativity factors, it can be seen how the other facet of creativity in the job, the one applied in order to make the job more pleasant, is related to leadership as a positive and supportive role model. Between designers, 47.8% of them seeks for different ways of performing their job in order to make it more pleasant, while 21.7% of them does never do that or almost never. 65.2% of them agrees on the fact of seeing their leader as a supporting and motivating role model, 30.4% of which strongly agrees on the point, but there is still 21.7% of them who disagrees or strongly disagrees on the point. Given the strong relation existing between the two variables, it is likely that these individuals who feel the lack of a positive leadership model are the same who never try to modify their job in order to make it more pleasant.

A possible explanation of this result is that depending on the goodness of the relation with their superior, designers are left with
a certain degree of freedom in the execution of their job. It is possible that some designers are allowed to model their job in order to make it more pleasant, since what matters more is the final result to achieve and not the process through which it is obtained. Following this line of reasoning it is likely that designers whose work is more in line with the expectations of their leader are left more space in defining their routines and need not to be continuously followed during the process of execution of their job. These are the ones who are likely to have the best relation with their boss. On the opposite side, other designers have a relation with their superior which is not so good, and possibly due to the frictions or conflicts deriving for the misfit between the expectations of the two actors, they feel less free to explore or modify the execution of the tasks according to their pleasure, and they are possibly more closely controlled during its execution.

The other variable to which is related creativity on the job trying to make it more pleasant, is openness to experience, which, by the way, once again was not found to be linked to individual creativity despite the fact that it should be its greatest predictor. Looks like in the case of designers, individuals who find pleasure in making new and different experiences are also going to express this attitude toward newness in their job, trying out new ways of performing it in order to reach a higher degree of pleasure in its execution. This result seems to indicate a strong attitude of people who find pleasure in newness in braking routines, thus seeming a proof in line with the assumption that they are more creative as they apply this creativity in everyday life in search for their pleasure.

Openness to experience shows to be related also to leadership as a role model, though. This seems to be in line with the previous hypothesis of a greatest degree of freedom of execution for some designers, though here it seems to emerge that it is the personal disposition of the individual to define the relation with his superior. What this relation seems to suggest is that employees who are more open to new possibilities and experiences are more likely to
perceive their boss as a positive, motivating and supporting figure, possibly because they are more open to suggestions and critics. If this hypothesis were true, it would imply that in this case the relation with the boss is more a mental behavior dependent on the employee than a consequence of the actions of the superior.

I consider, both for leadership and for creativity in the job, that it is openness to experience to influence them, as it is likely to be an inner personality trait, unmodifiable by external working factors.

Proceeding with leadership factors, it can be seen how leader sensitivity is strongly related to leadership as a role model and to expected creativity. The three dimensions of leadership are all related to each other. This indicates that the two main aspects of leadership go together as we would have expected, supporting the idea that both the dimensions are perceived as being two sides of the same coin, embodied by the leader, who is seen as the unique representative figure, be the relation with him more or less pleasant. The third dimension, expected creativity, goes together with them and this indicates that the feeling of being requested to be creative, which is perceived in 56.5% of cases, is determined in great part by the relation with the leader. It is not possible, though, to claim that only leadership is playing a role on this point, as expected creativity is strongly linked also to the sharing of working problematics with colleagues. There are two possible interpretations for this last relation. On one side, it is possible that also colleagues, whose influence is considered in the definition of the issue in the questionnaire, play their role in letting individuals think that they are expected to show creative behaviors, consequently leading individuals to share problematics with them. On the other side, though, it is also possible that employees perceive creativity to be expected a priori from them by superiors and colleagues, due to the definition of their job itself. It is possible, if not even probable given that 65.2% of respondents strongly shares with colleagues, that depending on the nature itself of the job, employees need to collaborate with each other in order to make things go in the best
possible way, by helping and supporting each other, thus sharing problematics and searching for solutions. This situation engenders a feeling that giving a personal contribution to a common goal is part of every employee’s duties, consequently generating the feeling that they need to share their working life with colleagues and report to them for the creativity they showed as it is part of making a good job.

This last vision is also supported by the relations emerged between the variable of sharing with colleagues and both engagement and autonomy on the job. What this seems to indicate is that employees established a good relation with each other and a consequent environmental climate deriving from it, which is linked to the engagement of employees with their job. I say linked with it and not determined by it or determining it because it is likely that a virtuous circle is established. It seems plausible to say that employees who fit with their role feel engaged in it and spontaneously give their personal contribution to the wellbeing of the organization, but on the other side, the positive working climate given by the sum of the single personal contributions becomes a source of motivation, wellbeing and engagement for each single employee in the same department. The more a designer is engaged in his job, the more he is going to team up with colleagues and share his working life with them.

Moreover, also in this case, as it was for the other samples, it can be observed a correlation between expected creativity and engagement, meaning that independently from the kind of job performed, the hypothesized virtuous circle that these two factors define influencing each other, is the most important constant found for the wellbeing of the relation between employees and their organization. It is interesting, then, to notice that despite Sample 4 is composed of employees that perform a job that should by definition leave more space to creativity, it is the sample in which proportionally less people above all perceive creativity is expected from them. This is a strong index that the feeling of being expected
to show creative behaviors is not so strongly dependent on the definition of the job itself; the main role is probably played by factors composing the working context that are tightly linked to the engagement of the individual.

Concerning the relation with autonomy on the job, the information it gives is that the more employees have autonomy in the execution of their jobs, the more they share their working life with colleagues. It seems a proof in line with the suggested idea that some designers are left a greater degree of autonomy in the definition of their jobs and routines and it is plausible that they use this autonomy to team up with colleagues.

Running a factor analysis, though, results are not so comforting, as they are not so in line with expectations (Figure 12).

<table>
<thead>
<tr>
<th>Rotated component matrix^a</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>leadersh</td>
<td>.922</td>
</tr>
<tr>
<td>opennexp</td>
<td>.748</td>
</tr>
<tr>
<td>creaplea</td>
<td>.698</td>
</tr>
<tr>
<td>leadsens</td>
<td>.682</td>
</tr>
<tr>
<td>collshare</td>
<td>.892</td>
</tr>
<tr>
<td>engagemn</td>
<td>.738</td>
</tr>
<tr>
<td>autonjob</td>
<td>.677</td>
</tr>
<tr>
<td>createxp</td>
<td>.564</td>
</tr>
<tr>
<td>privajob</td>
<td>.434</td>
</tr>
<tr>
<td>creatind</td>
<td></td>
</tr>
<tr>
<td>creatjob</td>
<td></td>
</tr>
<tr>
<td>suggesti</td>
<td></td>
</tr>
</tbody>
</table>

Method of extraction: Principal components analysis.
Method of rotation: Varimax with Kaiser normalization.
^a. Convergence for the rotation executed in 6 iterations.

Figure 12

The first factor groups together leadership as a role model, openness to experience, the application of creative behaviors in the
job trying to make it more pleasant, and leader sensitivity. The two main facets of leadership are grouped together, and this is coherent with expectations, indicating that there is a clear identification of the role of leadership in responses. More curious is the inclusion in this group of the other two items. Concerning openness to experience, the only hypothesis I could dare, as said above concerning their correlation, is that the relation with leadership is to be seen more as a mental approach related to the acceptance of different opinions coming from a guiding figure, and from this perspective it would seem in line to interpret the presence of creativity application for pleasure, where the central aspect is the pleasure of the individual performing the job and not the will of a strong leading figure.

Under the second component fall sharing with colleagues, engagement, autonomy and expected creativity. To give a meaning to this grouping it seems useful to adopt the previous line of reasoning and give priority to the autonomy perspective. It would seem like employees define their role from a personal point of view, where the central aspect is their individuality in relation with the others, measured by their engagement on their job and autonomy related to it, and by their attitude toward the sharing with their colleagues, who constitute their more strict and interrelated work environment.

The third factor comprises private-life time spent thinking of work and individual creativity. This seems in line with a view of creativity strictly applied to job problematics and improvements rather than the expression of emotions in artistic forms.

Finally, I consider creativity application in the job searching for improvements and amount of suggestions to be separate, as the variable of suggestions is present both under component 4 and 5 with values that are too close to each other.
3.3.5 Aggregated Sample

Differences and commonalities between three samples have been outlines, namely Sample 1, Sample 2, and Sample 3, distinguishing each other mainly for the working context, but having in common a job structure that doesn’t include creativity to be shown by the definition itself of the job. I proceed now by aggregating and analyzing these three samples in order to see if any information can gathered that can be considered of general nature and crossing different contexts but with the constant of pertaining standardized jobs.

In order to obtain a reliability index greater than 0.7, it was necessary to leave out of the analysis working-time spent thinking of things that lie out of work.

I start my analysis from the factors that can have an influence on the amount of suggestions made or thought to be made. It can be seen from Figure 13 that engagement and private-life time spent thinking of work show a significant relation with suggestions.

Once again one of the strongest sources of suggestions is the personal inner motivation that derives from engagement in one’s job. This result is important since suggestions are the kind of personal contribution that derives from the application of creativity on job problematics in order to improve the job and working context, and they are thus a precious source of potential innovation for the organization that is not replaceable in other ways since they come from the direct experience of employees.

The relation with private-life time dedicated to job problematics indicates that those individuals who give personal contributions to improve the wellbeing of the organization are the same who think of work also when their working time is over. Looking at the variables related to this last one, it becomes even more evident that they are those who are more engaged in their job.

Private-life time dedicated to work is strongly linked to engagement, even more than it is related to suggestions. It is the
<table>
<thead>
<tr>
<th></th>
<th>creatind</th>
<th>autonjob</th>
<th>engagemn</th>
<th>collshare</th>
<th>leadevsh</th>
<th>creatpri</th>
<th>createxp</th>
<th>creatjob</th>
<th>creaplea</th>
<th>suggesti</th>
<th>leadens</th>
<th>privajob</th>
<th>opennexp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pearson correlation index</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sign. (two tailed)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>creatind</td>
<td>1</td>
<td>0.194</td>
<td>0.307</td>
<td>0.190</td>
<td>0.002</td>
<td>0.374</td>
<td>0.218</td>
<td>0.262</td>
<td>0.206</td>
<td>0.080</td>
<td>0.187</td>
<td>0.109</td>
<td>0.156</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>autonjob</td>
<td>0.194</td>
<td>1</td>
<td>0.276</td>
<td>0.194</td>
<td>0.075</td>
<td>0.190</td>
<td>0.002</td>
<td>0.262</td>
<td>0.080</td>
<td>0.019</td>
<td>0.112</td>
<td>0.075</td>
<td></td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>engagemn</td>
<td>0.307</td>
<td>0.276</td>
<td>1</td>
<td>0.226</td>
<td>0.190</td>
<td>0.026</td>
<td>0.438</td>
<td>0.092</td>
<td>0.129</td>
<td>0.226</td>
<td>0.236</td>
<td>0.440</td>
<td>0.065</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>collshare</td>
<td>0.195</td>
<td>0.194</td>
<td>0.226</td>
<td>1</td>
<td>0.226</td>
<td>0.262</td>
<td>0.120</td>
<td>0.034</td>
<td>0.084</td>
<td>0.260</td>
<td>0.133</td>
<td>0.246</td>
<td></td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadevsh</td>
<td>0.002</td>
<td>0.075</td>
<td>0.190</td>
<td>0.226</td>
<td>1</td>
<td>0.022</td>
<td>0.157</td>
<td>0.019</td>
<td>0.038</td>
<td>0.215</td>
<td>0.037</td>
<td>0.197</td>
<td>0.244</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>creatpri</td>
<td>0.001</td>
<td>0.426</td>
<td>0.819</td>
<td>0.010</td>
<td>0.041</td>
<td>0.484</td>
<td>0.706</td>
<td>0.054</td>
<td>0.010</td>
<td>0.733</td>
<td>0.936</td>
<td>0.721</td>
<td>0.141</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>createxp</td>
<td>0.374</td>
<td>0.090</td>
<td>0.026</td>
<td>0.285</td>
<td>0.022</td>
<td>1</td>
<td>0.042</td>
<td>0.215</td>
<td>0.286</td>
<td>0.038</td>
<td>0.009</td>
<td>0.040</td>
<td>0.165</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>creatjob</td>
<td>0.218</td>
<td>0.284</td>
<td>0.436</td>
<td>0.262</td>
<td>0.157</td>
<td>0.042</td>
<td>0.285</td>
<td>1</td>
<td>0.612</td>
<td>0.156</td>
<td>0.023</td>
<td>0.269</td>
<td>0.363</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>creaplea</td>
<td>0.262</td>
<td>0.223</td>
<td>0.092</td>
<td>0.120</td>
<td>0.019</td>
<td>0.215</td>
<td>0.285</td>
<td>1</td>
<td>0.612</td>
<td>0.156</td>
<td>0.023</td>
<td>0.269</td>
<td>0.363</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>suggesti</td>
<td>0.080</td>
<td>0.096</td>
<td>0.236</td>
<td>0.094</td>
<td>0.049</td>
<td>0.013</td>
<td>0.040</td>
<td>0.054</td>
<td>0.156</td>
<td>0.039</td>
<td>0.039</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadens</td>
<td>0.476</td>
<td>0.392</td>
<td>0.034</td>
<td>0.453</td>
<td>0.054</td>
<td>0.733</td>
<td>0.272</td>
<td>0.165</td>
<td>0.731</td>
<td>0.033</td>
<td>0.053</td>
<td>0.025</td>
<td></td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>privajob</td>
<td>0.187</td>
<td>0.019</td>
<td>0.238</td>
<td>0.200</td>
<td>0.039</td>
<td>0.054</td>
<td>0.025</td>
<td>0.054</td>
<td>0.217</td>
<td>1</td>
<td>0.203</td>
<td>0.015</td>
<td>0.151</td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>opennexp</td>
<td>0.156</td>
<td>0.075</td>
<td>0.095</td>
<td>0.244</td>
<td>0.165</td>
<td>0.027</td>
<td>0.363</td>
<td>0.343</td>
<td>0.128</td>
<td>0.105</td>
<td>0.151</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Sign. (two tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The significance level of the correlation is 0.05 (two tailed).

** The significance level of the correlation is 0.01 (two tailed).
actual engagement in their job that lets employees think of ways to solve problems related to it and to ways to improve it even when they are not required to do so by a contract. Also, the more individuals are engaged in their job, the more they perceive they are required for creativity expression at work. The relation between engagement and expected creativity is a constant that crosses all the samples that we have considered and it is likely to be a two-way kind of relation. It is probable that the perception of being expected to show creative behaviors lets employees perceive they are meaningful to the organization and pushes them to give their personal contribution toward its improvement, leading them to feel more engaged in their job. On the other side, individuals who fit with their work role and the organization and department they belong to, are likely to feel engaged in their job and have a good relation with colleagues and superior than can let them feel like something more is expected from them.

These expectations for creativity are also related to time of private life spent thinking of work, meaning that this attitude of dedicating one’s own free time to work problematics depends on how much the employee feels that creative behaviors are expected from him. This last variable proves also to be related to the application of creative behaviors on one’s job in search for improvements, adding another evidence that those individuals who think of work in their free time are also those who experiment more in their job in order to enhance it, trying out new ways to make it function better.

Proceeding with the work factors related to engagement, it can be seen that the more employees are engaged in their job, the more they are going to share with colleagues. As previously said, it is likely that a positive work environment influences individual engagement in one’s job, and it is likely, also, that an employee who is engaged in his job has a good relation with his colleagues and that he is going to share problems, successes, suggestions and possible solutions with them.
In addition, the correlation found with autonomy on the job, leads to think of a confirmation that a greater degree of freedom in one’s job strictly influences his engagement in it, as a greater possibility of choice in how to perform tasks is likely to improve job passion. It is also possible, though, that his engagement, at least in part, influences the perception of the degree of autonomy possessed.

The most curious link is the one emerged between engagement and individual creativity, though it showed up also in Sample 3. Individual creativity should be an independent variable according to my suppositions, as it should be a characteristic of the individual not modifiable by environmental factors, or at least not so easily modifiable as to be affected by organizational politics and working context. Given this, data seem to suggest that creative individuals are the most engaged ones, supposedly because they are able to make their job more pleasant by applying their creative capabilities to their job. The apparent oddity of this relation, though, leads to think of the possibility that engagement in one’s job could possibly influence the self-perception of individuals’ own creative attitudes.

A more interesting result that seems to emerge, though, is that the employees who are going to contribute more to the improvement of the working context, are the ones being the most engaged and not the most creative. Creativity was not found related to suggestions, though it showed to be related to one’s expression in creative ways in his private life. What this seems to say is that creative individuals are going to carve out for themselves a time to express themselves creatively at least in their private lives. The amount to which they are going to apply their creative attitudes in their job or in problematics related to their work context and the whole organization, is strongly dependent in their actual engagement in their job. More than this, data seem to tell us that there’s no need of creative individuals for suggestions to emerge. What is most important is the engagement of employees in their job, which is going to take the best out of them, making them contribute to the wellbeing of the organization in their own way, be it more or less
useful in a certain organization at a certain time. On the other side, though, this would also mean that creative individuals need to feel engaged in their job in order not to waste their potential. Creative individuals have the possibility to contribute to their organization with more creative ideas and suggestions for improvements, but what these data seem to say, is that if they don’t fit with their work role and work contest enough to feel engaged in their job, they are not going to make their own personal contribution. Instead, they are going to express creatively in their private life, perceiving working life and private life as two separated spheres and daily moments, and venting their creative attitudes in ways that don’t concern the work context. This would mean a loss of potentially useful resources for the organization.

Accordingly to this hypothesis, individual creativity results related to the application of creativity in one’s job in search for improvements. This result is in line with my supposition, meaning that individuals are going to apply creativity in their job as much as they possess a creative attitude, but this doesn’t mean that they are going to make suggestions to make improvements that can benefit the whole organization, resulting in a loss of potential.

Both the dimensions of creativity application in the job, seeking for improvements or for pleasure, were found related to the degree of autonomy in performing one’s job. This is not surprising, as for creativity to be applied, it takes a certain degree of freedom in changing the current situation, in recombining elements, and consequently the amount of autonomy in deciding how to perform tasks influences how much the individual can explore different cognitive paths and patterns of execution, which are the basic processes related to the concrete application of creativity in the job.

Also, autonomy is related to expected creativity, which is likely to be a two-way relation. On one side, the job definition itself, or contextual factors linked to leadership and colleagues expectations that give the perception that creativity is welcomed or even required, can engender the feeling of having more freedom of
action. On the other side, the perception of a greater degree of autonomy in deciding one’s job execution due to daily experience can generate the feeling that something more than a standard execution is expected.

Creativity application in the job seeking for improvements results related also to expected creativity, being an additional proof of the importance of the role of expectations of colleagues and superiors for job performance. The more employees perceive they are supposed to show creative behaviors, the more they are going to apply their creative capabilities in order to find better ways to perform their jobs.

On his side, creativity application on the job searching for pleasure is strongly related to one’s expression of creativity in his private life. What these two dimensions have in common is the aspect of pleasure underlying them. Employees who possess the creative attitude driven by the personal need for the expression of themselves and not by necessity when facing a problem to solve, are the same who apply that creative attitude during working hours driven by the desire to make their job more pleasant.

The application of creative behavior in the job seeking for improvement and for pleasure are strongly related to each other, meaning that these two similar constructs, conceived as being two side of the same coin, actually go together in the same way, measuring two very similar aspects of the same issue. Despite this, what data seem to suggest is that they are actually linked to two distinct aspects of employees’ skills and traits. Creativity application in search for improvement is related to individual creativity, but as previously seen, creativity is not necessarily the creative attitude driven by passion pervading the whole individual life as it is often in our imaginary. Here it is seems to dominate a conception of creativity as a soft skill that is possessed by the individual as a personal trait but that can be used just in case of necessity. The more it is required by environmental and situational conditions to find solution to problems, the more employees put
into practice their latent abilities. On the other side, creativity application seeking for pleasure appears to be related more to our common idea of the creative individual, where his personal passion and necessity to express himself creatively lead him to carve out a space to convey this personal characteristic during working hours, applying his skills in the job in order to follow his personal will and find ways to fulfill his duties that are closer to his emotional state. If this view were right, a primary role would be played by the relation previously seen with job autonomy, as without a certain degree of freedom in deciding how to fulfill his duties, an employee with these creative needs, wouldn’t be able to carve out a space in which to convey his creatives attitudes and necessities, and it is likely to be led to frustration.

Following this line of reasoning, it would make sense the relation of both these dimensions with openness to experience and the lack of relation between this last variable and individual creativity, which was never observed in the samples. Openness to experience was found in literature to be the greatest predictor of a creative personality. As said above, though, the self-perception of personal creativity pushed us to reconsider its definition and meaning. A creative personality is one that is often seeking for newness, driven by a passion that pushes herself toward unexpected and unconventional directions, redefining boundaries, breaking the status quo, following unexplored paths. Individual creativity seems to be yet conceived by employees in two distinct ways. One is more linked to the creative personality just mentioned, driven by passion. The other is a soft skill that is exploited just when requested, in case of necessity. In this study, the same issue in the questionnaire gathers both aspects and it is possible that the openness to experience trait relates only to the creative personality aspect. In line with this hypothesis, it doesn’t show a relation with individual creativity, but it results in being strongly related to both concrete applications of creativity in the job. Openness to experience appears thus to be a mental attitude that allows for a free exploration of
possibilities and for seizing opportunities, so being the essential prerequisite for serendipity to emerge.

The most surprising result concerns the inverse relation emerging between openness to experience and leadership as a role model. It is quite hard to give an interpretation to this result, as what data indicate is that the less employees are open to new and different experiences, the more they perceive their superior as a supportive and motivating role model. To dare an hypothesis this seems to say that employees that don’t possess a personal attitude toward newness and free exploration, tend to perceive a boss as a positive leading figure more than employees who possess that trait, as they are more in need for guidance and thus need more to rely on someone who can direct them.

Proceeding in the analysis with leadership factors, we see that leadership as a role model and leader sensitivity are strongly related to each other, despite only leader sensitivity is related to expected creativity. Before making any consideration it must be kept in mind that now we are dealing with data that gather together different samples; consequently, any relation concerning leadership doesn’t refer to a single individual or leading figure, but to a mix of different people and situations. We must thus be very careful in drawing conclusions on the point from these data.

What emerges here is that the two variables conceived to represent two facets of the same leader actually go together. When the superior is perceived to be a supporting and motivating role model, he is also seen as being sensitive and open to suggestions that can be useful to improve the current working conditions or ways to perform jobs. The goodness of responses, which are positive in 57.3% of cases for leadership as a role model and in 58% of cases for leader sensitivity, concerns the goodness of the relation with the boss. The fact that these variables are related each other only indicates that in this aggregated sample the two aspects go together; the relation can be good or bad, but these attributes are both present or absent. There is a tendency of employees to perceive their leader
as possessing both or none of the attributes of a transformational leader, when not even a tendency of leaders to act as a transformational one or not.

On the other side, the relation existing between expected creativity and leader sensitivity but not with leadership as a role model is confirmative of the fact that expected creativity is a variable somehow in between leadership factors and work environment factors. In fact, expected creativity is also related to the amount of sharing with colleagues of work problematics.

Expected creativity is an aspect that seems to concern strictly the work environment. Its goodness seems to depend on one side on the relation with the leader while on the other side on the relation with colleagues and the organizational climate. To dare an interpretation, it looks like environmental factors like the relation with colleagues and organizational climate are the main actors in defining the feeling of creativity to be expected by individuals, while the elements of leader sensitivity to suggestions, though influencing as well, acts more like a potential block to the emergence of behaviors related to creativity. Coherently with this vision, engagement was not related to leadership factors but to sharing with colleagues and expected creativity, possibly meaning that the relation with the superiors helps in defining the feeling of creativity to be requested, but it is the engagement of the employee that constitutes the actual push toward the search for improvements, and it depends on factors that lie out of the leadership context.

The relation between the amount of sharing with colleagues and leadership as a role model is one on which is worth lingering for a moment. On one side, we have seen as this aspect of leadership is not related to the engagement of employees, meaning that it is not influential on it or not enough to be one of the main drivers. On the other side, it emerges how this leadership facet is related to the amount of sharing with colleagues. What it seems to emerge here is that the supporting and motivating role of leadership is a key
determinant of the successful sharing of employees between them. It seems that leadership allows for sharing to happen or even defines the work environment structure in a way that pushes employees to team up with each other. The more employees perceive to be ruled by a positive leading figure, the more they share problematics, suggestions, successes and suggestions with each other.

Last but not least, the amount of sharing with colleagues is also related to creativity expression in private life. This relation gives the idea of the pervasiveness of working life into private life, where individuals who take home their job problematics, are also those who share the same problematics with colleagues during working time, and vice versa.

Running a factor analysis (Figure 14) it can be seen how under the first factor are grouped expected creativity, engagement, private-life time spent thinking of work, and leader sensitivity. These are all elements that refer to the wellness of the employee in a working environment that values suggestions by employees. Expected creativity and leader sensitivity are two aspects of leadership related to the welcoming of personal contributions that can be useful to improve the current situation in the organization, while the other two items are joint by the common passion for the job that becomes pervasive in the life of employees, resulting then in the will to personally contribute. These seem to be the conditions that influence how much an employee feels that creativity and suggestions coming from him are welcomed and valued by the organization; the variables influencing the perception of a positive work environment that values creativity and sources of improvement.

Under the second component fall both the application of creative behaviors on the job, in search for improvements and trying to make it more pleasant, openness to experience, and possibly the inverse of leadership as a role model. The first two variables are in line with the definition of the items themselves, being them two
aspects of the same attitude of little gradual modification of job characteristics trying to make it better. The inclusion of openness to experience seems to suggest, again, that this attitude is something closer to an openness to possibilities, to catch possible unexpected positive outcomes, the attitude at the base of serendipity. The leadership item is in between factors 1, 2, and 3, and it should be consequently considered less strongly, as it could probably be eliminated. Despite this, including it in the group, it could be followed the line of reasoning and consider this openness to the possibilities that can come out during the execution of the job, as a free exploration that is somehow aversive to the guiding and definitional role of a leader.

<table>
<thead>
<tr>
<th>Rotated component matrix$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>createxp</td>
</tr>
<tr>
<td>engagemn</td>
</tr>
<tr>
<td>privajob</td>
</tr>
<tr>
<td>leadsens</td>
</tr>
<tr>
<td>creaplea</td>
</tr>
<tr>
<td>creatjob</td>
</tr>
<tr>
<td>opennexp</td>
</tr>
<tr>
<td>leadersh</td>
</tr>
<tr>
<td>creatpri</td>
</tr>
<tr>
<td>collshare</td>
</tr>
<tr>
<td>creatind</td>
</tr>
<tr>
<td>suggesti</td>
</tr>
<tr>
<td>autonjob</td>
</tr>
</tbody>
</table>

Method of extraction: Principal components analysis.
Method of rotation: Varimax with Kaiser normalization.
a. Convergence for the rotation executed in 7 iterations.

Figure 14
The third component comprises expression of creativity in private life, sharing with colleagues and individual creativity. The grouping of the first and third item is not surprising as it would have been expected by the definition itself of the variables coherently with a view of a creative personality that is moved by an inner creative push that is unloaded out of working hours. More surprising is the inclusion of sharing with colleagues, which seems to give the idea that talking of problematics and possible solutions with colleagues is a way of expressing creativity in the mind of respondents.

Finally, under the fourth component are grouped the amount of suggestions made or thought to be made and the inverse of autonomy on the job. To give a meaning to this result, it could be said that underling these variables is the degree to which employees are pushed by the definition of their job to give suggestions that can improve work characteristics.

3.4 Analysis of open questions

Concerning the open questions, I decided to dedicate them a section on their own, since these responses have already been considered during the analysis of the first part of the questionnaire, but what I am interested in seeing here are the concrete examples made by employees, which constitute that knowledge derived by their direct experience that cannot be obtained elsewhere.

Question 1

Answers to the first question are to some degree differentiated according to the department and working context, but they can all be summarized according to the general principles applied to the specific job.
Creativity is applied in great degree in optimizing existing processes, simplifying them and trying to reduce the time required by them by making changes according to personal experience. Linked to this is the proposal of new solutions, ideas and projects that can benefit and improve the functioning of current job performance and working conditions. A part of this is acquiring knowledge to see if it is possible to find new ways of performing their job instead of relying on the classical and already known ones, and modifying everyday activities in little ways to see if it can be obtained a better outcome. Also, solving problems and adapting to the rapid change of situations in daily activities and to the specific situation faced. This application of creativity to everyday activities is tightly linked to the specific job, as it can range from suggesting ways to improve currently used tools like software, to processes, to different ways of approaching and dealing with clients during phone calls.

**Question 2**

Answers to this question will be first analyzed separately as they are very specific to the working context, to see in a second moment if commonalities exist.

**Sample 1**

Concerning Sample 1, answers were divided as follows:

- **Time.** 52.2% of employees expressed the need for more time out of the frenetic execution of everyday and well-known activities, to experiment and try out new ways of performing their tasks.
- **Autonomy.** 30.4% of them indicated the need for more autonomy and discretionary power, in order to decide
how to do their job, making it more suitable to their needs.

- **Incentives.** 21.7% expressed the need for more incentives in their working life, ranging from motivational aspects in everyday working life, to training courses.
- **Sensitivity.** 17.4% indicated the lack freedom to make suggestions and submit new ways of doing things, having the sensation that any new proposal is not welcome.
- **Serenity.** 4.3% expresses the need for a more serene and relaxed work environment.

No missing answers were given.

**Sample 2**

The question received the following answers:
- **Time.** 25.9% expressed the need for more time to be spent out of routines and frenetic activities.
- **Colleagues.** 18.5% indicates the need for more involvement and communication between colleagues.
- **Autonomy.** 14.8% affirms to need more autonomy and discretion power in how to perform their job.
- **Support.** 14.8% feels the need for more support and consideration, including sensitivity, to be listened more.
- **Incentives.** 14.8% indicates the need for more stimulations and a greater value given to creativity in the organization.
- **Equipment.** 11.1% of respondents expresses the need for better tools and resources to perform their job.
- **Training.** 7.4% would need more experience on the job and training.

No missing answers were given.
Sample 3
Respondents identified the following factors:

- **Autonomy.** 23.3% expressed the need for more freedom, which included autonomy on the job, discretionary power, control over their job.
- **Collaboration.** 7% indicated more collaboration, communication and involvement with colleagues or superiors.
- **Time.** 7% would need more time in order to apply creativity freely.
- **Equipment.** 7% indicated the need for better tools in order to apply creative behavior on their job trying to improve it.
- **Training.** 4.7% expressed the need for more training in order to increase their knowledge and share ideas with qualified and experienced professionals.
- **Sensitivity.** 4.7% feels the lack of freedom of expression and would like to feel more comfortable in expressing their ideas.
- **Serenity.** 4.7% would like a more serene, relaxed and positive work environment.
- **Experience.** 2.3% would need more experience.
- **Incentives.** 2.3% expressed the need for incentives.

51.2% didn’t answer to the question.

Sample 4
Answers to the questions can be summarized as follows:
• Time. 47.8% of employees indicated time as the main factor that would be needed in order to apply creative behaviors on their job.
• Training. 21.7% expressed the need for training in order to acquire knowledge concerning new methodologies and technologies in order to apply them to their job.
• Support. 21.7% of employees says they would need more support, including recognition of the efforts made, motivation and the feeling of being listened to.
• Serenity. 8.7% indicated the need for a more relaxed and serene work environment.
• Equipment. 4.3% expressed the need for better working tools.
• Freedom was mentioned by 4.3% of employees.
• Collaboration was indicated in 4.3% of cases.

No missing answers were given.

As can be seen from a comparison between the different samples, the answers given are strongly dependent on the characteristics of the job and on the working context. Nevertheless, the lack of time was often indicated as one of the most, if not the greatest, inhibiting factor of creativity, also in Sample 4, which is not a standardized job. The role of time is quite complex as time pressure can have positive effects in certain circumstances, leading to better performances on the short term. On the long term, tough, and especially in standardized job, it can act as an inhibitor of creativity. In this kind of jobs, daily activities are made of a narrow set of tasks to perform with a high frequency, and the pressure derived from the need to perform many repetitive tasks in a certain time leads to the definition of routines that are useful to optimize
processes and to save energies. When the application of these routinized activities takes the whole working time, though, little space is left to experimentation, as creative processes require these routines to be broken in order to try out new ways of doing things. Also, for these routines to be broken, employees must be allowed to do so, and here comes another element often emerged in the answers to the questionnaire: autonomy. Employees need a certain discretionary power over how to perform their job, to be allowed to modify their job execution in order to experiment new ways of performing the tasks involved. These are characteristics that cross the different kind of jobs, as they are definitional of a job performance. Obviously, in structured jobs it is left less autonomy over their execution by definition, and this element was often mentioned, while it was not mentioned at all in Sample 4.

Between the other factors, it is worth mentioning the role of incentives, which includes motivational aspects related to the importance given to employees’ job and the value given to creativity expressed by them in the organization. This is also related to the mentioned item of training and sometimes also to equipment. To be creative, employees need to know that the organization gives value to creativity expressed by them and this must be communicated, and not only with speeches made by superiors, but especially with the concreteness of everyday life. A sign of this value is given by the chances given to employees, which can include training to acquire knowledge that can be useful to apply to their job in order to make something new and improve the current condition. The lack of appropriated equipment can sometimes be seen as a reflection of this, when it is not dependent on momentary financial difficulties of the company but on a missing response to employees needs. Moreover, all of what has just been
mentioned is useless if no sensitivity to suggestions is shown by superiors, since, as expressed in the questionnaires in some cases, when subordinates perceive they are not listened to, they are going to stop trying to make improvements because it is useless, just a loss of energies. Last but not least, the mentioned lack of collaboration and communication between colleagues is an additional proof of the importance of sharing with colleagues and of teaming up to solve possible problems and find new possible solutions or ideas to improve.

**Question 3**

Concerning this question, it is observed a general coherence with what found in Question 1. Despite some say that they colleagues are not creative or not all of them depending on the single person and especially on the passion they put in their job, the reasons to assert that they are creative are the same as those expressed in Question 1. Specifically, the mainly mentioned reasons are because they find solution to existing problems and they try to improve their work in order to make it function better always looking for new solutions, even when they are faced with the same situation.

Also, it should be noticed that answers didn’t vary that much between the first three samples and Sample 4, since, despite in some cases it was mentioned that their job is creative by definition, in some other cases colleagues are not considered creative, and in general creativity is recognized in the forms listed in Question 1.
4 Conclusions

From the analysis, some interesting results emerge. First, we need to distinguish some evidences concerning the individual level referring to employees’ perceptions and behaviors. Second, some results are related to the organizational structure, and in a broad sense, to the work environment.

A brief summary of the main evidences follows. The first set of results are the more consistent; the second set are just preliminary evidences requiring further analysis and then the sequences is from individual units of analysis towards environmental and organizational factors which influence the job performance.

Relations between all the variables considered, showed to be strongly dependent not only on the work role, but also on the single department and its working context. Despite this and aware of the limitations concerning the methodology (statistical sampling strategy) some conclusions can be drawn.

The following are the main results:
1. Employees in standardized jobs do apply creative behaviors in the execution of their jobs.
2. The engagement of employees in their job has shown to be one of the most important factors - if not the most important - to be taken in consideration from an organization in order for creativity to emerge at least in standardized jobs.
3. The sensitivity of superiors as part of leadership style has shown to be an important factor in order for creativity to be expressed by employees in standardized jobs.
4. The lack of time and autonomy are the two main constraints that employees are facing in order to express creativity in their job.
For each point, a description follow:

1. According to the definition of creativity, employees do express creatively in their jobs, as they produce novel and useful ideas in order to solve working problematics they are faced to during their daily activities, and they carve out themselves a time to try to modify existing processes and predetermined schemes in order to improve their current working situation.

2. Engagement, coherently with what seen in literature, has shown to be one of most valuable resources to be exploited in the organization. In fact, it is related to all the aspects linked to the pervasiveness of work in individuals’ life. At the individual level, engagement strongly relates with private-life time spent thinking of work, and this link was found across all the samples of standardized jobs, while not in that of designers. Employees who are engaged in their job are going to dedicate to work issues a part of their time out of the contractual agreement. This is of particular importance as this time results related to the amount of suggestions made or thought to be made, and to the application of creative behaviors in the job seeking for improvements. Due to their engagement, employees experience that kind of inner motivation that resulted in literature to be a powerful source of creativity and that, according to this study, is the source of an additional effort made by employees, who contribute more with their capabilities to the improvement of their job and of the whole organization. Moreover, it is linked to the amount of sharing of job problematics with colleagues, meaning that an engaged employee teams up with colleagues to face and solve problems together, which is a powerful source of improvement for an organization.

3. Another aspect to improve creativity is represented by the hierarchical roles. Management sensitivity and openness to
suggestions is part of the contextual factors of the working environment, but at an individual level it assumes a great importance. In fact, as we have seen, this particular aspect of leadership can act as a powerful barrier to the emergence of creativity. Given that leadership style is part of the contextual factors that allow or engender engagement, an organization could have potentially engaged and creative individuals, but, as it merged also in the open questions, if employees perceive that forms of creative expression like suggestions for potential improvements are not welcome, they are not going to express their creativity as they feel it is useless, resulting in frustration for them and in a loss of resources for the organization.

4. Coming to aspects relating more to the structure of the organization and the working context, we have seen that creative behaviors are concretely applied to employees’ jobs in ways that are strictly dependent on the nature of the job and on the tasks to be performed. Nonetheless, they can be summarized in the attempt to apply new methodologies of work to their job in order to optimize processes or to find alternative ways of performing tasks that can improve the performance. This experimentation, though, can happen more or less depending on several factors.

Time and autonomy are the two main constraints that employees are facing in order to express creativity in their job. Standardized jobs leave little space to experimentation as they are very routinized by their nature, while the expression of creativity would require these routines to be broken. Employees performing them are usually required to follow a certain procedure involving predetermined tasks and to repeat it frequently during working hours. When the frequency of repetition of the same tasks in a certain time is too high, or when no freedom is left to them in thinking of other ways to perform
their job, there is no time or chance for creativity to be applied. It is obviously not possible to set employees in this kind of work role free to do whatever they want, but if they perceive that the organization welcomes suggestions and values creativity, they are going to use their energies to carve out a time in working hours or even out of them, to find ways to apply their creative capabilities to job problematics.

Other evidences come from results, but have to be considered more carefully and require further analysis:

a) Individual creativity showed a positive relation with the amount of suggestions made or thought to be made only in the case of creative jobs, while in standardized jobs this link was completely absent.

b) Employees in standardized jobs possibly conceive creativity in two distinct ways: as a capability to use in case of necessity, or as an individual trait pertaining creative personalities. Creative personalities could require a particular care.

c) The relation between expected creativity and engagement is a constant that crosses standardized jobs and creative jobs, and it is possibly the observable result of a virtuous circle.

The previous statements can be explained as following:

a) This could be seen as an index that in jobs where creativity is required by the definition itself of the job, employees are more aware of their creative capabilities as they refer to a working standard, and consequently the amount of suggestions made in order to improve their work is tightly linked to their self-perceived capabilities. In standardized jobs, this relation doesn’t emerge as results seem to indicate that creativity is often perceived as a capability or set of skills that can be used just in case of necessity when faced with a problematic situation. It is
possible, then, that since creativity is not required by the nature of the job, employees are not faced with a standard of performance in creative terms, and they are consequently less aware of their creative capabilities in absolute terms, comparing to a standard that is lower than that of a professional. Also, it is possible that suggestions in creative jobs are considered the expected outcome deriving by their work, and consequently concern more the nature of the job, while in standardized job they concern possible improvements to their work not required by a contractual agreement. This hypothesis is in line with the curious result that the sample of designers - the creative job - had the lowest percentage above all samples of employees thinking that creativity was expected from them. Again, this seems to hint that in standardized jobs suggestions concern little improvements that can be made in performing everyday activities, which are not the result of a big creative effort, but rather the result of experience grown working in the same role with passion. In order to foster this kind of suggestions, then, it seems less important to have creative individuals, and more important to ensure that employees are engaged.

b) It looks like employees conceive creativity in two different ways. On one side, as said above, it is seen as a capability to use when faced with a problem, which is the aspect I hypothesize to be related to the application of creative behaviors in the job searching for improvement. On the other side, there is creativity conceived as a personal attitude that only creative personalities – as defined in the first chapter – possess, and that is vented out of working time in many forms, which is the aspect that results related to the expression of creativity in private life. This last aspect of creativity should be taken in particular consideration as these individuals are those who apply creative behaviors in their job by modifying the execution of tasks in order to make it more
pleasant. Despite the fact that this can be the innocent attitude of a creative personality, results showed that this aspect is often to be seen as a way of evasion from uncomfortable duties, and it can be a sign of dissatisfaction that can result in lower performances or even burnout. This can be due to a lack of engagement due to a misfit between the expectation of the employee and the actual requirement and restriction of the work role. As we have observed, the creative behavior in the job both in search for pleasure and for improvement depends a lot on the degree of autonomy over the tasks to perform in one’s job, which is low in the case of standardized jobs. If in employees with a normal creative inclination this lack of autonomy can result just in a lower degree of experimentation searching for improvements, in creative personalities this lack of freedom could possibly lead to frustration.

c) A strong correlation emerges between engagement and expected creativity, which are also both related to sharing with colleagues of job problematics and autonomy in the job in the case of standardized jobs. In line with what just said, it is possible that what we are observing is a virtuous circle, where different factors influence each other toward a common goal. An individual who fits with his working job is likely to be more engaged; despite this, several factors can influence his working wellbeing. What we have observed is that employees who feel engaged in their job are also those who perceive that creativity is expected from them by their superiors and colleagues. Also, for standardized jobs, they are those who feel a certain degree of autonomy on their job and that share work problematics, suggestions and solutions with colleagues. Consequently, coherently with what seen in literature, it is plausible that when employees feel that a possible contribution coming from them is welcome and valued, and that they should not be too scared of
their possible mistakes, they are going to put into action certain creative behaviors on their job and sharing their ideas with colleagues in order to face difficulties or to improve the current working situation.

Many of these aspects outlined are strongly and mutually connected. Moreover, it seems to play a significant role the perception employees have that creativity is rewarded and valued inside an organization and particularly in their work environment. The perception is affected by the leadership attitude and style. The managerial orientation seems at least partially responsible for directing the collective efforts of employees toward a common goal. In part, it is also dependent on the attitudes of colleagues, as their engagement with their job and their behavior with the other employees allows everyone to team up and contribute to a positive work climate.

The organization should concretely demonstrate to employees that their work and their possible suggestions for improvements are welcomed and valued. This can depend on the attitude of superiors, who should listen with care to subordinates necessities, but also with initiatives like training to keep employees updated, or adequate equipment and working tools when the organization is not facing financial constraints.

Some of these findings are more consistent, while others suggest new further investigations. The evidence we gather appears as a promising starting point. The future challenges remains how to improve the working wellbeing of employees in standardized jobs. The equation standardized job and lack of creativity seems not to be supported by the results of my study.
5 References


**Web References**

(Miguel Helft, May 17, 2011, NYT):
[http://www.nytimes.com/2011/05/18/technology/18talent.html?_r=0](http://www.nytimes.com/2011/05/18/technology/18talent.html?_r=0)
Acknowledgements

Ringrazio in primo luogo il Professor Andrea Pontiggia per il supporto datomi nella definizione e nello svolgimento di questo studio e specialmente nella fase finale di questo elaborato.

Ringrazio anche le aziende che mi hanno concesso di sottoporre i questionari ai loro dipendenti per la disponibilità che mi è stata data, senza la quale questo studio sarebbe stato impossibile.

Ringrazio in particolar modo la mia famiglia per l’inestimabile supporto che mi ha dato durante tutto lo svolgimento di questa tesi e per tutto il sostegno datomi nell’affrontare tutte le difficoltà a cui ci siamo trovati di fronte specialmente nell’ultimo periodo, e senza la quale questa tesi non avrebbe visto la luce.

Ringrazio poi l’attuale XII comunità di San Giovanni Evangelista di Mestre per avermi sopportato, consolato e consigliato durante tutto questo periodo.