Do creativity techniques enhances employees soft skills?

As técnicas de criatividade melhoram as competências transversais dos trabalhadores?

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Abstract
This research aims to analyze how creativity techniques can enhance workers’ soft skills. In addition, this study aims to understand how the environment that surrounds company workers can affect their performance. Therefore, a quantitative methodology was developed through a questionnaire with 87 answers from employees of large companies in the area of Marketing and Management. The data was studied through reliability to find the relation between the creativity techniques, soft skills and the work environment, where the workers are inserted. The results show that most of the companies approached are comfortable using creativity techniques as a way of stimulating creative potential and enhancing the soft skills of workers, such as negotiation, problem-solving and innovation. It was also found that most only use the best-known techniques such as Brainstorming and Mind Map. These findings focus on the need to implement more creative techniques and an environment/sessions where workers feel comfortable exposing their ideas. It is recommended that companies start taking into account the creative potential of workers, as this allows a company to differentiate itself in an increasingly competitive working world.

Keywords: Creativity. Soft Skills. Creativity Techniques. Performance.

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**Resumo**

Esta investigação tem como objetivo analisar a forma como as técnicas de criatividade podem melhorar as competências transversais dos trabalhadores. Para além disso, este estudo pretende compreender de que forma o ambiente que rodeia os trabalhadores das empresas pode afetar o seu desempenho. Para isso, foi desenvolvida uma metodologia quantitativa através de um questionário com 87 respostas de funcionários de grandes empresas da área de Marketing e Gestão. Os dados foram estudados através da fiabilidade para encontrar a relação entre as técnicas de criatividade, as soft skills e o ambiente de trabalho, onde os trabalhadores estão inseridos. Os resultados mostram que a maioria das empresas abordadas se sente confortável em utilizar as técnicas de criatividade como forma de estimular o potencial criativo e valorizar as soft skills dos trabalhadores, como a negociação, a resolução de problemas e a inovação. Verificou-se também que a maioria utiliza apenas as técnicas mais conhecidas, como o Brainstorming e o Mind Map. Estas conclusões apontam para a necessidade de implementar técnicas mais criativas e um ambiente/sessões em que os trabalhadores se sintam à vontade para expor as suas ideias. Recomenda-se que as empresas comecem a ter em conta o potencial criativo dos trabalhadores, uma vez que isso permite que uma empresa se diferencie num mundo de trabalho cada vez mais competitivo.


**Introduction**

The growing complexity and dynamism of the work environment and the corresponding need for organizations to adapt to changing circumstances in the world of work make them ever more reliant on their employees’ ability to continually innovate and be creative, so that companies differentiate themselves. Creative behaviour at work is considered a vital way for organizations to gain a competitive advantage (Agars et al., 2008). According to Short and Keller-Bell (2021), technical skills are no longer enough to ensure a prominent position in the labour market, which is why organizations begin to recruit professionals who stand out for their soft skills because it is through them that employees can obtain the desired results.

Thereby, the present objective of this study is to understand the relationship between the creativity techniques, soft skills and the performance of the workers, mainly in the area of
Marketing and Management, through a quantitative methodology that will provide answers to the following research question: How can creativity techniques enhance workers’ soft skills and improve their performance in companies?

A depth study of this research problem can demystify why so companies fail to enhance the creative potential of workers, in a world of work increasingly marked by the demand for soft skills from them. Stoner (1999) mentions that a non-creative and innovative organization may not survive in the market. Bono (2003) also understands creativity and innovation, in the future, as indispensable and determining factors for the success of organizations. In the same line of thought, Oliveira (2014) states that it is the responsibility of the organization to create or inhibit an environment conducive to creativity, to generate a competitive advantage.

To conclude, soft skills such as negotiation, the ability to solve problems and the creativity of workers are currently indispensable not only for entering the job market but mainly for staying employed; they are non-technical behaviours necessary for the development of a professional career (Klaus, 2007).

It is important to point out that one of the biggest shortcomings of companies is not having a favourable environment for the practice of creativity by their workers, as a form of differentiation. Being creative is one of the ways that companies have a competitive advantage concerning others in the sector in which they operate.

Theoretical Background

2.1 Creativity

2.1.1 Creativity techniques

Creativity techniques are related to the behaviour that the leader must assume, through a sequence of steps, to promote creativity in a specific situation; everyone has the potential to be creative, but not everyone can exercise this potential, as they do not have the right opportunities to develop it (Runco, 2007). Creativity needs to be exercised with persistence, for which there are techniques and thinking strategies that help in the development of creative potential (Alencar, 2000).

Tschimmel (2002) argues that if we want to teach people a new way of thinking, we should not bother to teach. Instead, we give a tool whose use provokes new ways of thinking.
Also according to this scholar, there are several creativity techniques proposed by different authors, which are mental procedures’ systematizations of it. Therefore, to help “organize and optimize thinking, to avoid mechanical thinking based on individual experiences and previous responses, to organize and reorganize information and knowledge, to direct attention” (Tschimmel, 2002, p. 8).

Then, some creative techniques that can be applied in companies will be presented, to stimulate the creativity of workers, as well as to facilitate the problem-solving process. In table 2 it is possible to verify the creative techniques that can be applied in an organizational context, as well as their definitions.

One of the creative thinking methods for problem-solving was created in 1938 by Alex Osborn. Initially used in the areas of advertising and human relations, Brainstorming was quickly absorbed by areas such as education and business, to solve simple situations (Melo, 2008). According to Rodrigues (2009), the brainstorming technique is a technique used to help a team to create ideas in a short time. Osborn (1987) argues that brainstorming is an act of using the brain to disrupt a problem. Furthermore, it is the part of the process that requires imagining all possible conjectural ideas, as solutions or directives for other ideas that, in turn, may lead to the solution. The more ideas you come up with, the more likely you are to hit one or more that solve the problem (Osborn, 1987).

The technique consists of the interaction of individuals in a group or organizational environment to generate various ideas freely and without judgment. The judgment of these ideas can be delayed, since, initially, it is the immediate search for ideas in quantity and not in quality. It is also possible to use ideas from other members of the group to create new ideas, that is, a free association of ideas (King, 1999).

According to Dualibi and Simonsen Jr. (1990), brainstorming technique would be Brainstorming in reverse, that is, only the defects of a certain product or idea would be looked for. In the same way, as in Classic Brainstorming, it is forbidden to criticize the solutions that arise. Created by the Hotpoint Company, the main idea goes through the deconstruction of the product that promotes the creation or discovery of qualities (Proctor, 2010).

Storyboarding is a form of brainstorming which results in the development of ideas or solutions to a particular issue or problem. Storyboarding is a prototyping technique showing sequence or navigation through a series of images or illustrations (Elzairy, 2017). According to Barkman (1985), this technique also provides program planners with a device to organize information for proposals, presentations or productions, as well as a technique to continue the brainstorming process at different periods.
Litcanu et al. (2015) highlight that brainwriting is an alternative method to brainstorming. It is particularly useful with a group of people who are somewhat reticent and would be unlikely to offer many ideas in an open group session such as brainstorming. 6-3-5 brain-writing (also known as the 6-3-5 method or Method 635) is a group creativity technique used in marketing, advertising, design, writing and product development.

The technique involves 6 participants who sit in a group being supervised by a moderator. Each participant thinks up to 3 ideas every 5 minutes (Litcanu et al., 2015). Relative to brainstorming, brain-writing, potentially minimizes the effect of status differentials, dysfunctional conflicts, domination by one or two group members, pressure to conform to group norms, and digressions from the interpersonal focal topic.

Synectics is a creativity technique developed by Bill Gordon. According to Dualibi and Simonsen Jr. (1990), this technique is characterized by the association of apparently irrelevant ideas. The goal is quality, not quantity. This technique should only be applied in situations where the problem is well-defined. Synectics is a group method of problem-solving, which involves three main roles: a facilitator, who guides the process and reinforces appropriate behaviours, a client and the person (or people) who have the problem. According to Flynn (2019), the Synectics process consists of three major segments. The first is devoted to defining, elaborating, analyzing and understanding the problem. The second is devoted to applying the different operational mechanisms, metaphors and analogies, to the problem.

Gordon (2015), points out that the hypotheses of the Synectics Theory go through the fact that creativity can be expanded if people understand their psychological process. Furthermore, emotions are more important than the intellectual in the creative process and the irrational elements (emotions) must be understood to increase problem-solving success. This method emphasizes the importance of emotions, imagination, analogy and metaphors in generating creative ideas (Andreoni, 2021).

De Bono (1985) presented six thinking hats, each with its colour, corresponding to the way participants think and states that human cognition and human thinking consist of different types, approaches and orientations. Furthermore, this scholar believes that by defining the various approaches, people can become more productive and collaborative (1) by thinking from a different angle, represented by the colour of the hat, the participants’ initial reactions will be altered, and (2) by deliberately trying different hats (perspectives), teamwork can become more efficient and effective (Pietersma & Berg, 2018). Each thinking refers to a different style of thinking (De Bono, 1985). This scholar distinguishes into the six thinking hats: white hat (factual) which helps to analyze the information you already have; red hat...
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Lateral thinking is a method of organizing information to generate new ideas and approaches. De Bono (2007) states that such thinking is linked to changing patterns: a pattern can be a repeated concept, thought, image or idea, as well as a way of looking at things. According to De Bono (1985), the common way of thinking is through vertical thinking, a chain of thoughts forming a sequence, in which “one thing leads to another”. Vertical thinking is selective, analytical, sequential and exclusionary; lateral thinking is generative, provocative and random. De Bono (2007) also points out that the most basic principle of lateral thinking is that any specific way of looking at a situation is just one of several possible ways.

Mind Maps were created in 1960 by Tony Buzan as a response to the excessive time required for notes (Buzan & Buzan, 2010). Hogan (1994) defines Mind Mapping as a process of stimulating creative thinking, planning, summarizing and memorization, which allows the linkage between a set of ideas, which in turn generates new ideas. This technique enables the two cerebral hemispheres to be activated, promoting the development of the cognitive process (Tschimmel, 2002).

Buzan (1996) argues that when using the Mind Map technique, individuals tend to lose less content, there is greater identification and absorption of information, greater power of correlation between information and reduced time to identify keywords. This process consists of taking notes in a non-linear way, where the main idea is inserted in the centre and, from this, several ramifications arise that, in a way, organize and hierarchize the topics of a subject and, at the same time, synthesize them, providing a global vision (Costa, 2012).

2.1.2 Facilitators and inhibitors creativity factors in the workplace

Alencar (1996) emphasizes the emergence of creativity within organizations due to the growing scientific and technological evolution that has made knowledge obsolete in a short space of time, demanding a capacity for continuous and permanent learning of this. Thus, in the impossibility of predicting what knowledge will be needed in the future, creativity emerges...
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as an indispensable skill to help the individual adapt to the new situations of uncertainty and complexity of the scenario of changes.

In Hall’s (1984) perspective, change and innovation are crucial processes for organizations, as they contribute to their growth, survival or even their death. According to Motta (1995), creativity is a characteristic that exists in all individuals and can be developed in new individual skills. Vasconcellos (1990) shares this fact and emphasizes that the creative potential of the individual is very little used by the company due to the lack of adequate mechanisms and stimuli.

Kao (1998) addresses the fact that the prevailing culture in the organization can stifle creativity. In most cases, it is necessary to cultivate a creative culture capable of valuing talent and the courage to take risks, as well as promoting friction, exchanges and debates. As an essential means of creative culture, Kao (1998) emphasizes communication. Amabile (1998) writes that creativity is truly enhanced when an entire organization supports it. Leaders have a fundamental role, as they must encourage and create an environment where creativity can be developed so that their employees feel free to express their ideas.

VanGundy (1987) emphasizes that for a creative culture to exist in companies, some characteristics are necessary, such as autonomy (freedom that people have to expose their ideas), a reward system for performance and competence, and support for creativity. Faria and Alencar (1996) also add factors such as communication, participation, salary and benefits as important components for stimulating creativity in organizations. According to Vasconcellos (1990), there is a set of administrative tools that facilitate creativity in the company and that involve providing positive support to employees who develop creative actions; use techniques to stimulate creativity such as brainstorming and recognizing and selecting people with creative potential.

Shalley et al. (2004, p. 935) also proposed that contextual variables can increase creativity by promoting intrinsic motivation of employees, which in turn “increases their tendency to be curious, cognitively flexible, risk-taking, and persistent in the face of barriers.” On the other hand, Burnside (1990) argues that there are factors such as insufficient time to carry out the work, the reluctance of managers and employees to change their traditional ways of doing things, and evaluation pressure that block the creativity of workers within the organization of organizations. Faria and Alencar (1996) also add the lack of technological and material resources and the lack of communication and interpersonal relationships as factors that block creativity.
2.2 Soft Skills

Moy (1999) suggests that the emergence of competencies is the result of the competitiveness of the markets, the rapid changes in the technological level, and the new organizational and work forms. Thus, proficiency in soft skills is the main requirement of the modern worker (NCVER, 2003). According to Mckay (2015), soft skills are the personal character traits or qualities each of us has; they make up who we are, generally encompassing our attitudes, habits and how we interact with other people.

The skills required by effective managers can be divided into three categories: technical, human and conceptual. technical skills are detail-oriented skills that are required for entry-level managers. Human skills are those interpersonal skills needed to be able to manage a group of people or interact in a one-on-one format. Team building and communication skills are examples of human skills. Conceptual skills are the planning and visioning skills needed by managers (Katz, 1974). Comstock (2016) considers that soft skills are skills that are not directly related to a specific professional area, thus being transversal. The author argues that these non-technical skills are advantageous when combined with technical or professional skills since they complement each other.

The term soft skills can be considered as a new possibility to name the set of skills and talents that a particular person can use in their work. In this set, we can see characteristics such as communication skills, interpersonal skills, leadership skills and problem-solving. This author also notes that hard skills were the primary skills to get and keep a job. However, due to the changes of the 21st century (advancement of technology and changes in forms of consumption), having only hard skills no longer guarantees the success of workers.

According to Dabke (2015), soft skills can be defined as intangible personality traits, attitudes and behaviours that highlight the qualities of an individual as a leader, but also as a facilitator, mediator and negotiator and, consequently, they are tools that help the individual to enhance his/her abilities.

Robles (2012) argues that there are several soft skills that workers must have within the organization, such as communication (oral, written, presentation and listening skills); courtesy (posture, business etiquette); flexibility (adaptability, ease of change); integrity (honesty, ethics, values); interpersonal skills; positive attitude; professionalism, responsibility; teamwork and work ethic. From another perspective, studies by Boyatzis (1982) and Stevens and Campion (1994), four categories of soft skills can be identified:
1. Leadership/people/relationship skills – These skills are those needed to negotiate with others, participate in a team environment, provide service to clients/customers/peers and resolve conflict. This is important because it will aid in helping individuals and organizations accomplish goals (Kantrowitz, 2005).

2. Communication – These skills are associated with listening, presenting, verbalizing and non-verbal communication. Riggio (1986) used the Social Skills Indicator (SSI) to assess social and communication skills. He found that higher scores on the SSI related to better job performance. Also, Riggio et al. (2003) found that groups chose leaders who had higher levels of communication skills (as measured by the SSI).

3. Management/organization – These skills include articulating goals, organizing people and resources, monitoring progress, and solving problems (Kantrowitz, 2005).

4. Cognitive skills and knowledge – These skills relate to creative thinking, making sound decisions and solving problems within the workplace (Conrad, 1999).

2.2.1 The importance of soft skills

Murti (2014) states that in the last 20 years, companies have been lamenting the lack of skills in new workers, referring that there is a shortage of skills. This author reinforces that soft skills are more difficult to teach and assess, as they are personal attributes, such as attitude towards work relationships and individual qualities, which are developed through relationships long before any formal education, however, are an important part of any job. The reality is that, currently, having a higher education or technical knowledge on the subject is not enough, and individuals need to have skills that increase the probability of a prospective job.

Hillage et al. (2002), argue that currently, we can see that soft skills are as important or more important than hard skills (technical skills) and that skills such as emotional intelligence, cooperation, creativity, communication, and interpersonal relationships are highly valued characteristics, by companies and their recruiters. Many of the young people who today apply for their first job do not have these skills, even having difficulty adapting to the work environment (Smith & Comyn, 2004). At the career level, soft skills provide the individual with a competitive advantage, since having these skills, in addition to technical skills, the individual is better prepared for the competitiveness of the labour market (Sharma, 2009).
2.2.2 Soft skills in the future

Tomás (2018) sustain that, taking into account the reality of the current world of work, if soft skills are extremely important today, it is believed that in the future they will be even more so since markets are increasingly competitive and require people who can fulfil those capabilities. Based on the World Economic Forum report, Moura (2016) presents the following ten soft skills: critical thinking (the ability to question various actions); creativity (the growing need to find solutions to solve problems); coordination (the coordinated worker is the one who does not get lost during tasks and deadlines); negotiation; emotional intelligence; solving complex problems; decision-making; cognitive flexibility; service orientation (especially in jobs where you deal directly with customers); people management.

Referring to the same theme, Marsh (2012) points out as soft skills of the future, the ability to understand and manage diversity, adaptability, emotional intelligence, strong team skills, personal responsibility, personal productivity and the ability to deal with hard situations. Following the same line of thought, Bodell (2014) supports five essential skills that a worker must have in the future to be an asset to companies: strategic imagination (the need for workers to imagine scenarios); provocative inquiry (ability to ask questions that make us reflect on the obvious); creative problem solving; agility (ability to respond to unexpected problems or difficulties); resilience.

Anderson (2014) assumes that companies recognize the need to maximize human capital, that is, maximize the potential of workers as well as the workforce. This author emphasizes that it is important to develop employees’ soft skills, since these skills are fundamental for the productivity, success and performance of an organization, essentially in a competitive business scenario. Chaves et al. (2009) also reinforce that since soft skills are so important for the working world, not only should the individual be concerned with developing them, but companies must invest in their employees, to create an environment where they can be stimulated. these skills.

2.3 Relationship Between Creativity and Soft Skills

Schulz (2008) expresses that creativity is often understood as a soft skill used only by artists, while in science or business, only structured logical thinking should be applied. This author also adds that the application of creativity results in “thinking out of the box”, which
means that conventional rules and restrictions are left aside to find innovative approaches to problem-solving.

Mastery of soft skills is becoming an essential element in company recruitment processes, while the combination of creativity-soft skills is one of the most common requirements stated by employers, as pointed out by Knell et al. (2007). Klaus (2010) points out that soft skills will help to get and keep a job and that success is not solely based on knowledge, but rather on how that knowledge is communicated. Creativity is one of the most important soft skills in the world of work today since it presents itself as a source of energy to perform and think about tasks and problems. Through them, actions are reinvented and motivate behaviour for change in an increasingly demanding world.

Di Spagna (2017) points out that some people are more creative than others. However, the kind of creativity required by a large number of professions can be perfected with time and practice, despite being a huge challenge. Despite creativity being required in a market as competitive as the current one, whoever demonstrates ease in developing solutions in a faster and more innovative way will be preferred by companies; in the business world, an employee with a creative mindset can bring new insights to solving a problem. According to this author, creativity, more than something innate, can be built through knowledge about the subjects, resilience and even professional experience.

Therefore, we intend to empirically test the following hypotheses:

H1. *Creativity techniques have a positive effect on problem-solving.*

H2. *Creativity techniques have a positive effect on creativity and innovation.*

H3. *Creativity techniques have a positive effect on negotiation.*

The research model and hypotheses are displayed in Figure 1.
Methodology

3.1 Methodological Approach

This is an empirical study that aims to understand how creativity techniques enhance employees’ soft skills. The research methodology must be adapted to the research objectives (Cooper & Schindler, 2006). Consequently, it was decided to apply an approach of a quantitative nature. This study will have a quantitative character, since the objective of the study will be to generalize the results to a certain population studied from a sample, thus achieving the establishment of causal relationships and prediction of phenomena (Carmo & Ferreira, 1998). For Schmetterer (2003) creative thinking can enhance business strategies. Creative business ideas serve to develop innovative ideas, not just those that sell products and build brands, but those that transform companies and entire product categories.

A quantitative approach gives rise to extensive analysis. Through this approach, we can tap into broad populations using standardized information collection tools, such as questionnaire surveys. This type of methodology has many advantages the possibility to collect a large quantity of data and since it is standardized, their comparison is easier; the
generalization of the sample results for the population. On the other hand, this method has inconveniences such as weight and cost; superficiality of the answers due to the standardization of the questions; individualization leads to loss of social relationships among respondents and difficulty in controlling the response time or who often admits delays in the investigation process (Campenhoudt & Quivy, 2008).

3.2 Sample Design and Data Collection

The sample was drawn from several companies located throughout the Portuguese territory, companies that are more focused on the world of Marketing and Management and with a high number of workers. This questionnaire was carried out from May 18th, to May, 29th, 2022. Thus, 87 complete and validated questionnaires were obtained.

3.3 Measures

The constructs of this study were measured with scales from previous research. The three dimensions of soft skills chosen were problem-solving, creativity and innovation and negotiation, as they are the ones that best fit the profile of these companies (Table 1). These dimensions were evaluated using a self-evaluation tool by ELe4Work (EC, 2019), on a scale of 1 to 7, with “1 – Totally disagree” and “7 - Totally agree”.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-Solving</td>
<td>1. I can identify and analyze problems in difficult situations and make a justifiable evaluation.</td>
</tr>
<tr>
<td></td>
<td>2. I see problems, complaints, and bottlenecks as opportunities rather than as issues.</td>
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<tr>
<td></td>
<td>3. I find ideas and look for alternative solutions.</td>
</tr>
<tr>
<td></td>
<td>4. When gathering information about an issue, I explore solutions that have worked elsewhere in the past.</td>
</tr>
<tr>
<td></td>
<td>5. I make conclusions based of valid proof.</td>
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<tr>
<td></td>
<td>6. I formulate ideas of a concept as a result of the reading, researching, discussing and brainstorming in highly specific, subject-focused work.</td>
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<tr>
<td></td>
<td>7. When solving a problem, I try to rethink my current understanding of an issue to develop a deeper insight into it.</td>
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<tr>
<td></td>
<td>8. I gather information from a wide variety of sources to stay current with what's happening in my field of work.</td>
</tr>
<tr>
<td></td>
<td>9. I always look for the causes of problems, so that I can understand what's really going on.</td>
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<td></td>
<td>10. I give proof and/or counterexamples.</td>
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<tr>
<td></td>
<td>11. I integrate alternate, divergent, or contradictory perspectives or ideas fully.</td>
</tr>
<tr>
<td>Creativity</td>
<td>1. I can extend a novel or unique idea, question, format, or product to create new knowledge.</td>
</tr>
<tr>
<td></td>
<td>2. I can transform ideas or solutions into entirely new forms.</td>
</tr>
<tr>
<td></td>
<td>3. I can incorporate new directions or approaches to complete a required task.</td>
</tr>
</tbody>
</table>
Creativity and Innovation

4. I can employ strategies to deal with the constantly changing professional landscape.
5. I can respond creatively to problems and opportunities.
6. I can evaluate creative process and product using domain-appropriate criteria.
7. I use framework and strategies for enabling a supportive environment for creativity and innovation, e.g. exchange ideas in web-forums, facilitate team processes in an atmosphere of mutual respect and support.

Negotiation

1. If something needs to be negotiated, I will immediately step forward to do it.
2. I come up with a plan so that I can steer the negotiation to go my way.
3. I'll do things so that both of us can get what we want from the negotiation.
4. I do things expressly to make sure that the negotiation stays friendly and comfortable.
5. I'll go out of my way to make sure that the outcome for the other person is fair.
6. I'll make sure that both of our needs are understood so that both of us can come out on top.
7. If the other person compromises his/her position; I will compromise my position in return.
8. I'll try to see things from the other person's viewpoint and be considerate of their needs.

Table 1. Soft Skills measurement (Problem Solving, Innovation and Negotiation)
Source: EC (2019).

On the other hand, to measure the creativity techniques used in companies, a questionnaire with a scale of 1 to 3 was used, with “1 - Not using” it and “3 - Using it many times” (Table 2). This dimension was evaluated according to the assessment tool by Rodrigues (2009).

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity Techniques</td>
<td>1. Brainstorming</td>
</tr>
<tr>
<td></td>
<td>2. Reverse Brainstorming</td>
</tr>
<tr>
<td></td>
<td>3. Storyboarding</td>
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<tr>
<td></td>
<td>4. Brainwriting</td>
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<td></td>
<td>5. Synectics</td>
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<td></td>
<td>6. Six Thinking Hats</td>
</tr>
<tr>
<td></td>
<td>7. Lateral Thinking</td>
</tr>
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<td></td>
<td>8. Mind Map</td>
</tr>
</tbody>
</table>

Table 2. Creativity techniques measurement

Results

4.1 Descriptive Analysis

It is possible to group and synthesize the information collected, in a scientific investigation context, through descriptive statistics functioning as a kind of guiding line (Hall et al., 2011).
Regarding gender, 50.6% of respondents are women and 49.4% are men (Table 3).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid 1) Female</td>
<td>44</td>
<td>50.6</td>
<td>50.6</td>
</tr>
<tr>
<td>2) Male</td>
<td>43</td>
<td>49.4</td>
<td>49.4</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3. Gender

Most employees are between 45 and 55 years old (25.3%), 26 and 35 years old (21.8%) and 36 and 45 years old (20.7%) (Table 4).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid 1) 18 – 25</td>
<td>17</td>
<td>19.5</td>
<td>19.5</td>
</tr>
<tr>
<td>2) 26 – 35</td>
<td>19</td>
<td>21.8</td>
<td>21.8</td>
</tr>
<tr>
<td>3) 36 – 45</td>
<td>18</td>
<td>20.7</td>
<td>20.7</td>
</tr>
<tr>
<td>4) 45 – 55</td>
<td>22</td>
<td>25.3</td>
<td>25.3</td>
</tr>
<tr>
<td>5) &gt; 55</td>
<td>11</td>
<td>12.6</td>
<td>12.6</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>100.0</td>
<td>100.0</td>
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Table 4. Age

As you can see in Table 5, approximately 45% of the employees have more than 10 years of professional experience.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid 1) &lt; 1</td>
<td>10</td>
<td>11.5</td>
<td>11.5</td>
</tr>
<tr>
<td>2) 1 – 5</td>
<td>22</td>
<td>25.3</td>
<td>25.3</td>
</tr>
<tr>
<td>3) 6 – 10</td>
<td>16</td>
<td>18.4</td>
<td>18.4</td>
</tr>
<tr>
<td>4) &gt; 10</td>
<td>39</td>
<td>44.8</td>
<td>44.8</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 5. Professional experience

4.2 Reliability Analysis

Initially, an Alpha Cronbach analysis was carried out so that it is possible to guarantee the consistency and stability of the answers gathered, taking into account the heterogeneity of the respondents and consequently their opinions. For this, the scale proposed by Pestana and Gageiro (2008).

As can be seen in Table 6, the sample’s reliability is excellent for all variables.
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4.3 Factorial Analysis

The extraction of the factors was carried out through the analysis of main components (ACP), with Varimax rotation that allows obtaining factors that are easier to interpret and, theoretically, with more meaning; such extraction followed the recommendations of Hair et al. (2009).

The Kaiser-Meyer-Olkin (KMO) analysis was carried out to test the adequacy of the variables and the consistency of the collected data, as well as establish covariance relationships between variables in hidden factors, and the Bartlett sphericity test (Marôco, 2011). To evaluate the KMO, we used the scale proposed by Pestana et al. (2008).

4.3.1 Creativity techniques

We obtained a scale composed of 4 items distributed by 1 factor, which explains 85.04% (Table 7).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Loadings*</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT_2</td>
<td>1.75</td>
<td>0.669</td>
<td>0.859</td>
<td>0.746</td>
</tr>
<tr>
<td>CT_6</td>
<td>1.99</td>
<td>0.755</td>
<td>0.856</td>
<td>0.733</td>
</tr>
<tr>
<td>CT_4</td>
<td>1.63</td>
<td>0.684</td>
<td>0.817</td>
<td>0.667</td>
</tr>
<tr>
<td>CT_3</td>
<td>1.91</td>
<td>0.757</td>
<td>0.815</td>
<td>0.699</td>
</tr>
<tr>
<td>CT_8</td>
<td>2.56</td>
<td>0.710</td>
<td>0.804</td>
<td>0.666</td>
</tr>
<tr>
<td>CT_7</td>
<td>1.78</td>
<td>0.769</td>
<td>0.662</td>
<td>0.602</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>4,112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eigenvalue*</td>
<td></td>
</tr>
<tr>
<td>% Variance Explained *</td>
<td>68.54%</td>
</tr>
<tr>
<td>Total Variance Explained</td>
<td>85.04%</td>
</tr>
<tr>
<td>Cronbach's Alpha</td>
<td>0.788</td>
</tr>
</tbody>
</table>

| Kaiser-Meyer-Olkin measure of sampling adequacy | 0.679 |
| Bartlett's sphericity test                     | 141,408 |
|                                               | 11    |
|                                               | 0.000 |

Table 7. Creativity techniques’ final factorial structure
Extraction Method: Principal Component Analysis.
* Values after Rotation - Rotation Method: Varimax with Kaiser Normalization.
Factor saturations vary between 0.859 and 0.662. We analyzed the internal consistency of the factor and found that Cronbach’s alpha is 0.788. This value indicates that it has good internal consistency.

The KMO test indicates the existence of a good correlation between the variables (0.679).

For Bartlett’s sphericity test, a value of $\chi^2(11, n=87) = 141,408$, $p<0.001$, was registered, immediately referring to the distribution table of $\chi^2$ it appears that $\chi^2 > \chi_{0.95}^2$, so the null hypothesis is rejected, that is, the variables are correlated.

**4.3.2 Soft skills**

In the factor analysis of the Soft Skills construct, 3 factors were extracted (1. Problem-Solving, 2. Creativity and Innovation, and 3. Negotiation), and it was not necessary to eliminate items. We obtained a scale composed of 26 items that explain 69.42% of the total variance (Table 8).

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Loadings*</th>
<th>Loadings*</th>
<th>Loadings*</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS_4</td>
<td>5.89</td>
<td>1.050</td>
<td>0.865</td>
<td></td>
<td></td>
<td>0.820</td>
</tr>
<tr>
<td>PS_6</td>
<td>5.95</td>
<td>0.875</td>
<td>0.804</td>
<td></td>
<td></td>
<td>0.724</td>
</tr>
<tr>
<td>PS_2</td>
<td>5.76</td>
<td>1.056</td>
<td>0.798</td>
<td></td>
<td></td>
<td>0.744</td>
</tr>
<tr>
<td>PS_1</td>
<td>5.78</td>
<td>0.895</td>
<td>0.796</td>
<td></td>
<td></td>
<td>0.768</td>
</tr>
<tr>
<td>PS_5</td>
<td>5.99</td>
<td>0.958</td>
<td>0.788</td>
<td></td>
<td></td>
<td>0.741</td>
</tr>
<tr>
<td>PS_7</td>
<td>5.83</td>
<td>1.048</td>
<td>0.763</td>
<td></td>
<td></td>
<td>0.670</td>
</tr>
<tr>
<td>PS_3</td>
<td>5.85</td>
<td>0.983</td>
<td>0.754</td>
<td></td>
<td></td>
<td>0.651</td>
</tr>
<tr>
<td>PS_10</td>
<td>5.97</td>
<td>0.991</td>
<td>0.720</td>
<td></td>
<td></td>
<td>0.667</td>
</tr>
<tr>
<td>PS_9</td>
<td>5.92</td>
<td>0.991</td>
<td>0.716</td>
<td></td>
<td></td>
<td>0.663</td>
</tr>
<tr>
<td>PS_11</td>
<td>6.05</td>
<td>1.044</td>
<td>0.695</td>
<td></td>
<td></td>
<td>0.550</td>
</tr>
<tr>
<td>PS_8</td>
<td>5.76</td>
<td>0.862</td>
<td>0.646</td>
<td></td>
<td></td>
<td>0.593</td>
</tr>
<tr>
<td>CI_7</td>
<td>4.59</td>
<td>1.360</td>
<td>0.863</td>
<td></td>
<td></td>
<td>0.769</td>
</tr>
<tr>
<td>CI_5</td>
<td>5.55</td>
<td>0.846</td>
<td>0.778</td>
<td></td>
<td></td>
<td>0.696</td>
</tr>
<tr>
<td>CI_6</td>
<td>5.51</td>
<td>0.888</td>
<td>0.767</td>
<td></td>
<td></td>
<td>0.635</td>
</tr>
<tr>
<td>CI_4</td>
<td>5.64</td>
<td>0.952</td>
<td>0.763</td>
<td></td>
<td></td>
<td>0.758</td>
</tr>
<tr>
<td>CI_2</td>
<td>5.51</td>
<td>1.066</td>
<td>0.695</td>
<td></td>
<td></td>
<td>0.800</td>
</tr>
<tr>
<td>CI_3</td>
<td>5.69</td>
<td>0.992</td>
<td>0.602</td>
<td></td>
<td></td>
<td>0.606</td>
</tr>
<tr>
<td>CI_1</td>
<td>5.60</td>
<td>1.062</td>
<td>0.572</td>
<td></td>
<td></td>
<td>0.602</td>
</tr>
<tr>
<td>N_3</td>
<td>5.78</td>
<td>1.016</td>
<td></td>
<td>0.817</td>
<td></td>
<td>0.756</td>
</tr>
<tr>
<td>N_5</td>
<td>5.80</td>
<td>0.950</td>
<td></td>
<td>0.810</td>
<td></td>
<td>0.740</td>
</tr>
<tr>
<td>N_2</td>
<td>5.70</td>
<td>1.024</td>
<td></td>
<td>0.794</td>
<td></td>
<td>0.770</td>
</tr>
<tr>
<td>N_4</td>
<td>5.82</td>
<td>0.829</td>
<td></td>
<td>0.780</td>
<td></td>
<td>0.728</td>
</tr>
<tr>
<td>N_8</td>
<td>5.91</td>
<td>1.063</td>
<td></td>
<td>0.765</td>
<td></td>
<td>0.700</td>
</tr>
<tr>
<td>N_1</td>
<td>5.62</td>
<td>1.037</td>
<td></td>
<td>0.757</td>
<td></td>
<td>0.711</td>
</tr>
</tbody>
</table>
As we can see from the table above, the factorial structure of this construct is composed of the following factors:

a) The first factor groups 11 items, whose saturations vary between 0.865 and 0.646.

b) The second factor consists of 7 items and their saturation ranges from 0.863 to 0.572.

c) The third factor groups of 8 items and their saturation ranges from 0.817 to 0.707.

The Cronbach’s alpha is 0.948 for the 1st factor, 0.835 for the 2nd and 0.929 for the 3rd, showing excellent internal consistency for the 1st and good for the rest.

The KMO test indicates also the existence of a good correlation between the variables (0.886).

For Bartlett’s sphericity test, a value of $\chi^2(325, n=87) = 1783.110$, $p<0.001$, was recorded, immediately referring to the distribution table of $\chi^2$, it appears that $\chi^2 > \chi_{0.95}^2$, so the null hypothesis is rejected, that is, the variables are correlated.

### 4.4 Hypotheses Results

We observed the correlations between Creativity techniques, problem-solving, creativity and innovation and negotiation. For this we used the Pearson correlation coefficient, measuring the intensity according to Bryman and Cramer (2005).
Do creativity techniques enhance employees' soft skills?

Table 9 shows that Creativity Techniques (CT) appear positively and moderately related to Problem-Solving ($r=0.676$, $p<0.01$), Creativity and Innovation ($r=0.544$, $p<0.01$), and Negotiation ($r=0.598$, $p<0.01$). Thus, all hypotheses are supported.

<table>
<thead>
<tr>
<th></th>
<th>PS</th>
<th>CI</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>676</td>
<td>544</td>
<td>598</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>N</td>
<td>87</td>
<td>87</td>
<td>87</td>
</tr>
</tbody>
</table>

Table 9. Correlations
*Correlation is significant at the 0.001 level (2-tailed).

Discussion

After analyzing the questions from the questionnaire using the reliability analysis that made it possible to relate the three constructs, work performance, soft skills, and creative techniques of companies in the field of Marketing and Management, it is possible to observe:

H1: Creativity techniques have a positive effect on problem-solving (Supported).

The nature of jobs has evolved over the past few decades from repetitive production tasks to activities that require critical thinking knowledge and skills. For new workers, providing meaningful and challenging problem-solving opportunities, along with the authority to solve, is a decisive factor in promoting motivation and job satisfaction; the millennial generation grew up with an affinity for activities in which they are challenged (Kepner, 2022). As corroborated by Shalley et al. (2004), a greater motivation of workers helps them to overcome the challenges to which they are proposed more easily.

Most of the respondents in this study show that they have a favourable working environment to stimulate this soft skill (problem-solving). The workers of Management and Marketing companies are inserted in environments where they can find alternatives to the problems encountered and accept criticism as a way to improve.

H2: Creativity techniques have a positive effect on creativity and innovation (Supported).

It was found that employees' performance is influenced by innovation (Sadikoglu & Zehir, 2010). Innovation through employees' generation of ideas for new products and services would eventually improve competitiveness, increase efficiencies and effective work management and lead to productivity enhancement (Walker et al., 2010).

Most respondents are inserted in an environment where they can enhance this soft skill. Workers can respond creatively and innovatively to emerging problems and incorporate new...
Do creativity techniques enhances employees soft skills?

approaches to complete a required task. Furthermore, as mentioned by Hall (1984), innovation is a crucial skill for the growth and success of a company.

H3: Creativity techniques have a positive effect on negotiation (Supported).

According to Olang (2017), negotiation is the most frequently used strategy for solving conflicts and it is successful when the interests of the conflicting sides are partly common and partly different. Therefore, negotiation is the key to corporate performance since it helps to secure a consensus in resolving conflicts by making sure all members understand the reasons behind the compromises made by individual members (Okotch, 2014).

Through quantitative research, it was possible to verify that most employees of Management and Marketing companies can negotiate something, creating methods and plans to do so. In addition, they can use these plans in a way that the negotiation is favourable for all parties involved and takes into account the needs.

Conclusions

This study aims to analyse the impact of creativity techniques on employees' soft skills. How various creativity techniques, such as Brainstorming, and Six Thinking Hats, among others, can enhance the soft skills of workers in a company.

The soft skills used in this study were (1) problem-solving, (2) creativity and innovation, and (3) negotiation. According to the results, many company workers still do not feel very comfortable solving a problem creatively, as well as being unable to act effectively when a change arises. In addition, most companies do not regularly use creativity techniques as a way to encourage workers and as a way for them to leverage their ideas, and most of them use Brainstorming and Mind Map as a resource.

The theoretical overview provided knowledge about the relationship between creativity and the environment that can enhance workers’ soft skills, so it was possible to relate each point and understand the influence on professional performance.

One of the limitations of this work is the non-probable sample of convenience due to it not being a random sample but rather specific to the companies in the world of Management and Marketing, the sample size as it was not answered by the majority of companies, this research can not be generalized for all companies.

For future research, we recommend extending the study to all companies in the Marketing and Management world, namely small and medium-sized companies, and see if...
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...there are any changes in the results. In addition, I also recommend exploring other companies that are not only linked to these areas.

It is important to emphasize that a good climate at work, namely, a climate that provides stimulation and openness to creativity, should be reinforced. This is the only way companies can differentiate themselves from the rest, obtain new and better results and more motivated workers.

**Acknowledgements**

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**References**


Do creativity techniques enhance employees' soft skills?


Buzan, T., & Buzan, B. (2010). The Mind Map Book: Unlock Your Creativity, Boost Your Memory, Change Your Life. BBC.


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