



**INTERPERSONAL RELATIONS, CREATIVITY AND PROFESSIONAL
RECOGNITION: A REFLECTIVE ANALYSIS**

**RELAÇÕES INTERPESSOAIS, CRIATIVIDADE E RECONHECIMENTO PROFISSIONAL:
UMA ANÁLISE REFLEXIVA**

**RELACIONES INTERPERSONALES, CREATIVIDAD Y RECONOCIMIENTO
PROFESIONAL: UN ANÁLISIS REFLEXIVO**

DUSAN SCHREIBER

Doctor

Universidade Federal do Rio Grande do Sul – Brasil

ORCID: 0000-0003-4258-4780

dusan@feevale.br

SERJE SCHMIDT

Doctor

Universidade Feevale

ORCID: 0000-0002-5710-1828

serje@feevale.br

MARIA CRISTINA BOHNENBERGER

Doctora

Universidade Feevale

ORCID: 0000-0002-4018-1796

cristin@feevale.br

CRISTIANO MAX PEREIRA PINHEIRO

Doctor

Universidade Feevale

ORCID: 0000-0002-2038-8191

maxrs@feevale.br

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ABSTRACT

Objective: Objective of this research was to identify segments of individuals in relation to creativity and collaboration and their relationship with professional recognition.

Design / methodology / approach: To achieve the objective, the authors opted for a quantitative approach with undergraduate students of different levels of creativity. A cluster analysis was conducted as the main method, supported by exploratory factor analysis and analysis of variance.

Results: The results showed that young professionals (aged between 22 and 30 years) and with a professional experience of up to 5 years, value the interaction and sharing of knowledge and experience among peers, in order to improve their individual performance, mainly in activities that demand creativity.

Originality / value: The research is justified due a small amount of scientific works that performed a comparative research between individuals who carry out activities that demand creativity and individuals who carry out tasks that require less creativity, to assess the influence of interpersonal relationships.

Keywords: Creativity; Innovation; Collaboration; Interpersonal Relations; Professional Recognition.

RESUMO

Objetivo: O objetivo do estudo foi o de evidenciar como as interações sociais podem influenciar os indivíduos que exercem atividades que demandam a criatividade.

Design / metodologia / abordagem: Para alcançar o objetivo os autores optaram pela abordagem quantitativa com acadêmicos de cursos de graduação de diversos níveis de criatividade. Uma análise de clusters foi conduzida como método principal, suportada por uma análise fatorial exploratória e análise de variância.

Resultados: Os resultados evidenciaram que os profissionais jovens (com faixa etária entre 22 e 30 anos) e com tempo de experiência profissional de até 5 anos, valorizam a interação e compartilhamento do conhecimento e experiência entre os pares, com o intuito de aprimorar seu desempenho individual, principalmente em atividades que demandam a criatividade.

Originalidade / valor: A pesquisa se justifica na medida em que há escassez de trabalhos científicos que realizaram pesquisa comparativa entre os indivíduos que exercem atividades que demandam a criatividade e os indivíduos que tem realizam tarefas de menor exigência da criatividade, para avaliar a influência de relações interpessoais.

Palavras-Chave: Criatividade; Inovação; Colaboração; Relações interpessoais; Reconhecimento profissional.

RESUMEN

Objetivo: El objetivo del estudio fue mostrar cómo las interacciones sociales pueden influir en las personas que realizan actividades que demandan creatividad.

Design / metodología / abordaje: Para lograr el objetivo, los autores optaron por un enfoque cuantitativo con estudiantes de pregrado de diferentes niveles de creatividad. Se realizó un análisis de conglomerados como método principal, apoyado por un análisis factorial exploratorio y un análisis de varianza.

Resultados: Los resultados mostraron que los jóvenes profesionales (de entre 22 y 30 años) y con una experiencia profesional de hasta 5 años, valoran la interacción y el intercambio de conocimientos y experiencias entre pares, con el fin de mejorar su desempeño individual, principalmente en actividades que demandan creatividad.

Originalidad / valor: La investigación se justifica en la medida en que existe una escasez de trabajos científicos que realicen investigaciones comparativas entre individuos que realizan actividades que demandan creatividad y personas que realizan tareas que requieren menos creatividad, para evaluar la influencia de las relaciones interpersonales.

Palabras-Clave: Creatividad; Innovación; Colaboración; Relaciones interpersonales; Reconocimiento profesional.

INTRODUCTION

Globalization can be seen as a multidimensional phenomenon that influences people, social groups and culture, prompting new behaviors and artistic expressions as well as political discussions and changes in patterns of consumption. It also impacts on the social and economic matrix, establishing new demands and consequently, new strategies. One of the changes that has prompted strategic repositioning in organizations is the need to innovate in products, processes, marketing, or business models.

However, innovation is no trivial matter. It is enough simply to launch a new product that has been designed by ingenious technicians and specialists, working for hours on end in a controlled R&D environment. To be successful, a new product must go through a process of complex development, consisting of a series of stages that are necessarily done consecutively. During this process, the practicality of the new concept or prototype is exhaustively tested, to avoid mistakes or damages that would be irreparable for the organization. It is important to highlight that just as in the development of a new product, innovation in processes, marketing or even a new environmental model also requires a collaborative work environment, with creative and motivated people.

The organization needs to identify talents, stimulate creativity and coordinate the interaction among its members, based on interpersonal relations that can contribute to the work being done by motivated teams, working independently. This means building an organizational environment that is suitable and favorable for the expression of creativity, and that encourages openness to new ideas and concepts. Thus, individuals feel free to express their perceptions, opinions and views based on their own individual, and often unusual interpretations of reality, as well as on their current or past professional experiences. The organization should also develop an aptitude to encourage new projects and tolerate failures, provided they help increase knowledge for innovation.

Interpersonal relations in the organizational environment have been the subject of numerous studies, since last century (Allen, 2006; Crabtree, 2004; Xia, Yuan, & Gay, 2009). Interpersonal relations are important for achieving results through higher productivity, mitigation of losses of consumables and secondary supplies, time optimization, and the coordination of activities, tasks, procedures and processes, whether in operations, control or management (Zagenczyk, Scott, Gibney, Murrell, & Thatcher, 2010).

Similarly, based on the need that organizations have to promote innovations, the growing importance of stimulating creativity was seen, at both individual and collective levels, with the aim of contributing through new ideas, perspectives and views that differ from the surrounding reality, for the process of organizational innovation (Alberton & Carvalho, 2017; N. Anderson, Potočnik, & Zhou, 2014; Martens, 2011). Most of the studies carried out so far have pointed out the need to change management models in order to provide an environment that is favorable to the production of ideas, creativity and innovation. However, it was observed that there is a lack of scientific works that conduct comparative research between individuals whose tasks demand more creativity and those whose tasks demand less creativity, in order to assess the influence of interpersonal relations (Muzzio, 2017).

The scientific literature on personnel management in organizations highlights the importance of choosing professionals that will help them achieve success in collective and collaborative work. From this perspective, the influence of interpersonal relations is highlighted, and these relations are usually the structuring axis that provides cohesion, enabling the teams to plan and perform synchronized activities with high levels of productivity and success.

This research aims to contribute to this topic by highlighting how social interactions can influence individuals who perform activities that demand creativity. For this purpose, the authors chose to carry out a study with college students of a large community teaching institution in Southern Brazil. Most of the students who take evening classes at private universities work in professional activities during the day. This gives them opportunities to observe and interpret the organizational environments where they work. This study adopted a quantitative approach. The research participants were students of graduation courses that require intensive use of creativity, and students of more traditional courses. Both groups performed tasks concerning organizational management and control. The analysis was conducted at an individual level, seeking to investigate the respondents' perceptions in relation to the influence of social interaction and interpersonal relations on their professional activity. It is understood that creativity is not exclusive to any specific college course, nor is it a skill of that is restricted to a particular type of professional activity. Therefore, the authors chose to differentiate professional activities by different levels of creativity required to carry out those activities.

The article starts with the theoretical review of Creativity and Interpersonal Relations, based on seminal and contemporary authors. This theoretical review led to the creation of a collection tool for empirical data. The third part of this article details the methodological procedures adopted during the research. In light of the theoretical review, the analysis of empirical data is given in the fourth chapter, which is completed with final remarks, followed by the bibliographic references.

CREATIVITY

In ancient times, individual creativity was manifested through various contexts and situations daily life. It was seen as a divine gift that was attributed only to some people (Runco, 2004). Especially in Western cultures, creativity was the object of attention and curiosity expressed in a number of forms and, sometimes, associated with genius. It has prompted numerous studies and reflections, especially in the areas of human knowledge, such as Psychology (psychoanalysis), Philosophy and Sociology (Caniëls, De Stobbeleir, & De Clippeleer, 2014).

With the advance of research on the phenomenon, particularly from the 1950s on, it was demonstrated that creativity is a skill that all humans possess and can manifest, depending on their situation or social, historical or economic context (Fleith & Morais, 2017). Research has also shown that the intensity and form of manifestation of creativity can vary greatly, depending on environmental and contextual conditions, as well as on the individual's cognitive and behavioral inclinations (Gardner, 1994; Lehmkühl, 2015).

These scientific discoveries about the phenomenon of creativity have provided supports for its theoretical conception, with emphasis on its basic elements, favorable conditions for its emergence and encouragement, and systematization of areas of study, as well as the possible types of creativity (Morais & Fleith, 2017). According to Mano and Zagalo (2009), defining creativity is a significant challenge, as it must encompass the factors that motivate its emergence, its maintenance and development/perfection, and the individuals' cognitive, psychological and behavioral characteristics that might explain its expression.

Some of the main aspects that contribute to the definition of creativity are: (i) the unconscious process that comes from the individual's sexual instincts; (ii) the result of the process of combining ideas related to the same topic; (iii) an unconscious response to certain unmet/unfulfilled needs; and (iv) the product of a series of efforts to obtain individual self-realization (Alencar & Fleith, 2010). Confirming this perspective, the traditional approaches, which attempt to explain the origins of creativity, observed that individuals who are identified and characterized as creative predominantly showed divergent behavior, i.e., their interpretation of reality and, consequently, their ideas and suggested solutions to certain problems or situations, were not aligned with the patterns or paradigms that dominated the social, scientific or artistic setting in their respective time periods and/or geographical/social and cultural environments (Muzzio, 2017; Nakano & Wechsler, 2007; Neves-Pereira, 2018).

However, scientific discoveries of the past few decades have highlighted that creativity is a more complex and multifaceted phenomenon (Parjanen, 2012; Pinheiro, 2009; Spadari & Nakano, 2015), that demands a new type of systemic and contextual approach, deconstructing the perception and comprehension of it as the result of an individual and divergent process, but also as the result of vectors of different magnitudes that, conceptually speaking, encompass dimensions of coexistence, such as nature, magnitude and purpose (Alencar & Fleith, 2010; Csikszentmihalyi, 1996; Oliveira, 2010). Moreover, various studies have shown that maintaining and stimulating creativity depend on social recognition, which in a certain way, weakens the emphasis on the individual's divergent behavior or attitude (Pinheiro, 2009).

Based on this new multidimensional, systemic and multidisciplinary perspective, various authors agree as to the identification of dimensions that contribute to creativity: (i) the ideation/emergence of an idea, which can also occur through a process of combining pre-existing ideas; (ii) the quality of an idea generated, especially its originality; and (iii) the social validation/marketing of the idea generated, through its level of usefulness (Amabile, 1996; Spadari & Nakano, 2015; Stoycheva & Lubart, 2001). Other authors have contributed with studies investigating the importance of aspects related to the creative process, such as tools, development, analysis and scope focused on its applicability in problem solving (Pinheiro, 2009; Runco, 2004; Sternberg & Lubart, 1997).

With the progress of research related to knowledge and its potential contributions to innovation and creativity, several authors have emphasized that learning, knowledge acquisition (absorptive capacity) and the effort spent on constantly improving process results (ideas or products) represent the main axes of creativity development (Alberton & Carvalho, 2017; N. Anderson *et al.*, 2014). In order to develop an individual's creativity in this new setting, the right conditions are needed, including knowledge, autonomy and resources (financial, material and technological). These

aspects should be systematized so that the creative process is understood as the result of a harmonious balance between the individual, the environment and the stimuli, as well as the need for a topic/theme that is challenging and compatible with their cognitive potential, to ensure motivation (Oliveira, 2010; Parjanen, 2012; Perry-Smith & Shalley, 2003; Sternberg & Lubart, 1997).

Several authors have argued that these conditions are more readily found in social/collective environments, corroborating the perception that creative individuals tend to be part of social groups of like-minded people, or that, at least, present some converging ideas and purposes (Neves-Pereira, 2018; Sternberg & Lubart, 1997; Veloso & Rodrigues, 2013). This perception led to a new line of investigation seeking to identify and describe the characteristics of the creative process in a group of individuals (Alberton & Carvalho, 2017; Alencar & Fleith, 2010; Bedani, 2012). One of the first observations underlined that when interacting with other individuals in social groups, the creative individual needs to be flexible, and must be motivated and guided by clearly-defined objectives (Amabile, 1996; N. Anderson *et al.*, 2014).

Considering the historical process of creation of social groups that resulted in today's society and its respective groups, with emphasis on organizations, whether profit-making or not-for-profit, professional or based on friendship or family ties, a set of underlying, traditional and secular processes and structures can be identified (Sternberg & Lubart, 1997; Stoycheva & Lubart, 2001). In order to ensure the perpetuity of these social structures, there had to be rules and norms to be followed by each member of the respective social group (Alberton & Carvalho, 2017; N. Anderson *et al.*, 2014; Byrne, Mumford, Barrett, & Vessey, 2009).

However, as society went through structural and structuring changes, the values and rules that were challenged by different social groups and sometimes, they were changed, to enable the reconfiguration of the social fabric (Fleith & Morais, 2017). During this historical process, it was necessary to review existing practices and to question the *status quo* and the prevailing paradigms about the reality, and people's relationship with it (Gomes, Rodrigues, & Veloso, 2016).

It is necessary to emphasize the importance of the social collectivity/group in order to support, promote and encourage the creative process of individuals who join those groups based on their world views and similar interests (Muzzio, 2017; Oliveira, 2010; Ribeiro, 2016). The inspiring insight of an individual will not be triggered if he is part of a social group where there is no convergence of interests, knowledge or goals, therefore the creative process will be bound to fail (Perry-Smith & Shalley, 2003; Sternberg & Lubart, 1997; Veloso & Rodrigues, 2013). For Parjanen (2012), organizational creativity encompasses two distinct, but interconnected levels: (i) the level of the members of the organization and (ii) the organizational level itself, depending on the characteristics of the organizational culture.

Besides external stimulus, the scientific literature on creativity also highlights that often, more importance is attributed to the internal stimulus that comes from the individual's intrinsic motivation to create; this is represented by the ludic dimension of the pleasure derived from the creative process and its outcome (Parjanen, 2012; Pinheiro, 2009; Stoycheva & Lubart, 2001; Torrance, 2018). This satisfaction, provided by creativity and the generation and application of creative ideas, may be one of the driving forces behind the virtuous cycle of creativity (Alberton & Carvalho, 2017; Amabile, 1996; Bedani, 2012).

According to Amabile (1996), Csikszentmihalyi (1996) and Gondim *et al.* (2015), internal motivation tends to be more effective than the set of elements used in the process of external motivation. From this perspective, and by way of conclusion on this theoretical review of creativity, it can be said that a successful creative process depends on a series of internal and external factors. Internal factors to the individual are represented by the set of personal characteristics, such as personality, experience of a specific knowledge area, technical skills, capacity for interpersonal relationships, and intrinsic motivation. External factors are found in the individual's social environment, which is represented by the set of cultural values, resources, autonomy, and tolerance to different ways of interpreting the current rules and norms, as well as the validation of recognition of the products that result from the creative process.

INTERPERSONAL RELATIONS

Most researchers on this topic acknowledge the importance of interpersonal relations for life in society, regardless of the historical period or type of social organization, with their different formats, cohesion and purposes (Almeida & Leitão, 2003; Ashkanasy & Daus, 2002; Berman, West, & Richter, 2002). However, despite this importance, there is no specific theory in the area of management that defines and explains this complex social phenomenon. The main contributions comes from the area of sociology, especially Social Capital Theory (Bourdieu, 1980), which deals with a multidisciplinary topic that currently receives contributions and inputs from different areas of knowledge, particularly Psychology, Sociology, Philosophy, Anthropology and Administration (Graziano, Jensen-Campbell, & Hair, 1996; Kalish & Robins, 2006; Van Vianen & De Dreu, 2001).

In conceived in the area of Administration, Organizational Studies, this topic has received attention, particularly in the past century with studies carried out in the industrial environment, especially on an operational level, seeking to obtain data and information (not always expressed as such) that will promote an environment that will improve productivity (Wilson, Dejoy, Vandenberg, Richardson, & Mcgrath, 2004) (Song & Olshfski, 2008). Emotions, the affect, and interpersonal relations in the organizational environment were initially seen as negative factors (Allen, 2006; Crabtree, 2004; Hills & Argyle, 2001; Kelman, 2006) that could trigger behaviors that might distract employees' attention and make them less productive in the workplace (Kelly & Barsade, 2001; Motta, 1986; Offermann, Bailey, Vasilopoulos, Seal, & Sass, 2004).

The empirical data obtained from one of these studies, conducted by university researchers over several decades at the beginning of the last century in an industrial sector in the United States, resulted in the proposal termed Human Relations Theory (Robbins, 2005). The study highlighted the manifestation of various aspects of human behavior in the organizational environment, and their influence not only on the individual's productivity when performing tasks, but also on the multiple facets that represent the complexity of the human being, whether in isolation or in their social interactions with others who share the same organizational space (Wilson *et al.*, 2004).

As these initial studies were expanded in the following years and decades, new evidence arose, corroborating the scientific observations that substantiated Human Relations Theory and adding new knowledge about the topic, confirming its complexity (Renjun & Zhang, 2005; Tsui, Egan, & O'Reilly III, 1991; Weiss, 2002; Zagenczyk *et al.*, 2010). Besides the cognitive and behavioral aspects that had been highlighted in the initial studies, new discoveries in neuroscience were added, demonstrating the multiple influences of the individual's context, especially when we recognizes that he belongs to a large number of social contexts that are characterized by different codes of behavior (ethical and social aspects), as well as the individual's need to be accepted and legitimized (Offermann *et al.*, 2004; Rafaeli & Sutton, 1987; Riordan & Griffeth, 1995).

Thousands of years ago, the instinct of self-preservation led human beings to join together with others, forming the first social groups, when individuals realized the advantages of joining efforts to hunt large animals or defend themselves, their family units or their territory (Odden & Sias, 1997). Obviously, there were also some disadvantages, such as the restriction of individual freedoms (Weiss, 2002), due to the need to follow the rules agreed upon among the members of the social group (Van Vianen & De Dreu, 2001; Wilson *et al.*, 2004). It may seem contradictory that the success of life in collectivity consists of the establishment of rules that guide the behavior of individuals who are part of a social group (Robbins, 2005).

Several researchers demonstrated that people who join social groups, with whom they share values and beliefs, tend to feel more motivated and encouraged to contribute not only with work, but with ideas and attitudes that can lead to a commitment to collective goals (Riordan & Griffeth, 1995; Robbins, 2005). In the organizational environment, identifying an individual with organizational values also leads to better operational performance, which comes from the dedication and effort of an individual who goes beyond what his contract and the regulations require (Monroe & Martinez-Martí, 2008; Odden & Sias, 1997).

Building a humanized work environment cannot be considered as something simple, trivial or easy to obtain (Offermann *et al.*, 2004; Robbins, 2005). Humanizing a work environment requires of complex and challenging structuring characteristics for most organizations, due to the need for objective guidance focused on prioritizing economic goals (Allen, 2006; Odden & Sias, 1997; Rafaeli & Sutton, 1987). Therefore, achieving it requires breaking down many of the paradigms that are still prevalent in many organizations and focusing on cost reduction, optimizing results meritocracy, individualism, competition for resources, and objective rationality (Maturana & Romesín, 1995).

The creation of an organizational environment that favors the establishment of interpersonal relations that prioritize inclusion, freedom to manifest emotions, spirituality, friendship, respect for individual differences, ethnical, gender and ideological diversity, patience, solidarity, mutual assistance, and a decrease of hierarchical power symbolism, among other factors, requires the adoption of new paradigms by organizations and the individuals in them. These paradigms become the norms for personal conduct and act as a filter to interpret the reality (Monroe & Martinez-Martí, 2008). Usually, this involves a radical shift, preceded by a revision of personal values, cultivated over many years or seen as true (Maturana & Romesín, 1995; Mayer, Caruso, & Salovey, 1999).

This type of behavioral, cognitive, perceptive and interpretative change can be quite challenging for many people (Kelman, 2006). The symbolic assumptions that represent reality are comprised of references and criteria of analysis and decision-making and when these are challenged, this can cause psychological suffering for many individuals (Kalish & Robins, 2006; Kelly & Barsade, 2001). This is especially true when the change occurs in what was previously a stable, protected, orderly environment with little exposure to adversity or to environmental and contextual differences.

Innovation, sustainability, shared consumption and co-creation of value are some of the terms that guide the action or the review of steps or processes in many organizations, including the development of environments to harmonize or humanize relations, based on the individual's relevance for new business models and organizational performance (Ashkanasy & Daus, 2002). From this new perspective, people's contributions to creating sustainable competitive advantage became the new market currency – one that is more unstable and uncertain (C. M. Anderson & Martin, 1995; Barrick, Stewart, & Piotrowski, 2002).

Encouraging people to contribute ideas and attitudes by sharing their knowledge and expertise, and advising and helping the new members of the organization by showing affection, emotion and feelings, and maintaining a good atmosphere, were the new direction taken by organizational actions, with economic activity depending predominantly on people, their talent, knowledge and intelligence (Berman *et al.*, 2002; Robbins, 2005). In order to innovate, think, suggest, and come up with new ideas, people need to collaborate with each other and not compete for results (Callahan, 2002). Intelligent individuals who think, and who are committed to the organization and to the collectivity, must not feel they are being exploited or compared to other employees (Crabtree, 2004).

Thus, the new organization, with a social environment focused on preserving moral and ethical values and respect for individual differences, moves away from the organizational model that, for centuries, was the ruling paradigm, based on hierarchy, order and obedience (Hui, Lee, & Rousseau, 2004). As society, with its founding values based on market stability and unchangeable rules, faces a new, changing and uncertain reality, organizations, as a social group, regardless of their purpose, shape or size, must also review their ways of operating, both in their internal and external environments, through changes to their strategies and structures (Graziano *et al.*, 1996; Lima, 1999; Offermann *et al.*, 2004).

Emphasis should be given to the seminal contributions of sociology, especially Social Capital Theory (Bourdieu, 1980), which defined it as a set of resources previously identified and applied, or potential resources, linked to a network of social relations established at different levels of institutionalization and recognition. The author suggests that as individuals choose to be part of social groups, they benefit. Bourdieu was, therefore, one of the first authors in the area of sociology to notice that social networks do not emerge naturally; they require intentional investment, aiming to institutionalize these relations by building trust, in order to enable access to individual benefits.

Other, more recent studies, such as those of Mohammed and Kamalanabhan (2019), Yuan, Yu and Liu (2019), Schreuder, Schalk and Batistič, S. (2020) have highlighted the importance of organizational climate, which is characterized by cordiality, stimulating social interaction, and contributing to knowledge sharing among the members, particularly tacit knowledge, which is key to innovation. From this perspective, the authors suggest promoting social events and moments to celebrate individual and collective accomplishments, with the aim of bringing people closer together and establishing affective bonds, which will help reduce conflicts and enable experiences and tacit knowledge to be shared.

In another study, Kroll, DeHart-Davis and Vogel (2019) highlight that individual perceptions of social capital are important determining factors for work engagement and organizational commitment. However, individual perceptions of social capital are shaped by the influences that comes from social interactions with team members, which suggests that teamwork provides a perceptive and interpretative filter for the organizational environment. Thus, the importance of teams is highlighted, for creating positive perceptions throughout the organization. Teams disseminate mental models among the members. Therefore, interventions at team level are a promising way of working with the social capital in the entire organization. The results also indicate the importance of collaboration, trust, and a focus on the organizational mission within the teams.

In recent decades, the topic has attracted the attention of various researchers, who have developed the theoretical approach of Micro-foundations. Among the first seminal authors to explored this topic were Barney and Felin (2013), who were interested in how individual factors are combined with collective factors, based on their understanding that individuals may be independent, with their own preferences and interests, as previously highlighted in other theoretical approaches, such as balance-based analysis, game theory and social choice. The attraction-selection-attrition (ASA) model of social interaction states that individuals screen themselves in organizations that match their interests, capacities and skills. The authors highlight that there are already articles in the literature that portray organizations as a type of cluster – a reflection of their leaders (opinion makers) that is determined by their origins, skills and experiences. There is also a phenomenon of organizational homophilia, an additive and combined approach of social groups, which emphasizes that *ex-ante* characteristics or values are more important than social influence and interactional processes. Individuals influence each other and their interactions can lead to added results that may be unpredictable, surprising or new emerging. Social interaction may take several forms and it can lead to either positive effects (when the whole is greater than the sum of its parts) or negative ones (when the whole is lesser than the sum of its parts). There is a general trend towards the positive

aspects of social interaction (often labeled as “synergies”), although pathologies of social interaction and its associated results may offer new perspectives for analysis.

In a complementary analytical perspective, Felin and Foss (2005) and Sozobilir (2018) state that social capital is positively related to organizational efficiency. The study regards social capital as an important organizational phenomenon that affects several organizational dynamics and results, including organizational creativity. It also demonstrates that social capital is an important construct to be taken into account by public organizations. Thus, when it comes to improving organizational creativity, public organizations must consider the importance of social capital and ensure that their organizational policies and practices favor the development and the increase of social capital. It is also necessary to understand the dynamic of social capital and remove every barrier that could undermine its development.

It was seen that the researchers who analyze the organizational phenomena from the theoretical perspective of Social Capital have highlighted aspects from studies on interpersonal relations. E.g., an article by Bello-Pintado and Bianchi (2020) highlights the relevance of diversity in setting up team works, and the lay-out of tasks assigned to each member, in order to encourage the process of organizational innovation.

From this perspective, studies on the influence of emotions over organizational performance were identified, such as those of Vasconcelos, Garrido and Parente (2019) and Wu and Wu (2019), which highlight the possibility of a coexistence between positive and negative emotions in the organizational environment. The authors realized that positive emotional work increases the employees' involvement at work and, in turn, improves their innovative behavior. When leaders restrain their emotions and minimize criticism of their subordinates, this helps to increase motivation, work engagement, the expression of creativity and innovative behavior.

METHOD

This theoretical review of two topics relating to interpersonal relations and creativity shows the possible influence of one on the other. To investigate this hypothesis, the authors of this research chose a quantitative approach, using a construct based on a 5-point Likert scale of agreement. A link to the questionnaire, on Google Docs, was sent by email to 4633 undergraduate students at a large university in Southern Brazil.

Undergraduate students from two different graduation courses were chosen. The first group were from courses that, a priori, required creative capacity for the graduated professionals. The second group were from courses considered traditional, mostly focused on the activities of management, organization and control. The segmentation was performed by the authors during its planning phase, based on an analysis of the academic disciplines offered in each graduation course and made available by the higher education institution.

Also in the planning phase, the data collection tool was designed with 7 statements, divided into two different groups: (i) collaboration among work colleagues, and (ii) professional recognition among peers. Each set of statements emerged out of the *ex-ante* theoretical review of creativity and interpersonal relations, and the questionnaire was validated by four experts.

Measurement item	Scale	Theoretical basis
Interpersonal relations: partnership among work colleagues		
Working with people I like	Importance	(Alberton & Carvalho, 2017; Alencar & Fleith, 2010; Bedani, 2012)
The knowledge I share with people/organizations in my professional area helps me carry out my work better	Agreement	(Offermann <i>et al.</i> , 2004; Riordan & Griffeth, 1995; Robbins, 2005)
The people/organizations in my professional area that I am in contact with have knowledge that is relevant to me	Agreement	(Almeida & Leitão, 2003; Ashkanasy & Daus, 2002; Berman <i>et al.</i> , 2002)
I exchange many tips about work with other people/organizations from my professional area	Agreement	(Offermann <i>et al.</i> , 2004; Riordan & Griffeth, 1995; Robbins, 2005)
Professional recognition among peers		
Having opportunities to work creatively	Importance	(Oliveira, 2010; Parjanen, 2012; Perry-Smith & Shalley, 2003; Sternberg & Lubart, 1997)
Showcasing my work in important places	Importance	(Berman <i>et al.</i> , 2002; Callahan, 2002; Robbins, 2005)
Having my work recognized in the professional environment	Importance	(Almeida & Leitão, 2003; Ashkanasy & Daus, 2002; Berman <i>et al.</i> , 2002)

Figure 1. Measurement items

Source: Designed by the authors.

The scale of importance ranged from 0 (“Not important”) to 4 (“Essential”). The scale of agreement used a 7-point Likert scale, ranging from “I disagree 100%” to “I agree 100%”.

Exploratory factor analysis (EFA) was used to analyze the results in order to reduce model multicollinearity and attribute one single variable to each dimension: ColleagueCollab and ProfRecog. Based on the results of the EFA, additional variables were created for the components addressed in the literature (Hair Jr, Black, Babin, & Anderson, 2014). Additionally, the professions pointed out by the respondents were categorized according to the level of creativity required, based on the NESTA report, generating the CreatIntens variable.

The variables ColleagueCollab, ProfRecog and CreatIntens were included in a cluster analysis in order to identify the group of respondents with mutual characteristics in relation to the variables. The clusters identified were also analyzed through analysis of variance (ANOVA) in relation to their demographic parameters, such as age, schooling and career span, generating additional elements for their identification (Hair Jr *et al.*, 2014).

The next section details the research results and their analysis, in light of the above-mentioned theoretical review.

ANALYSIS OF THE RESULTS AND DISCUSSION

A total of 1737 questionnaire response were received back. Of these, 33 were considered as outliers and were ruled out, as the chi-square Mahalanobis’ distance probability result was lower than 0.001. The EFA performed on the 1704 remaining questionnaires was calculated through Principal Component Analysis, through which two statements were identified with low communalities (< 0.5):

Statement	Communality
Having the opportunity to work creatively	0.376
Working with people I like	0.305

Figure 2. Statements with low communalities

Source: SPSS output data.

Once the statements with low communalities were ruled out, EFA was performed again, resulting in satisfactory sample adequacy (KMO = 0.642; Bartlett’s sphericity test with a chi-square of 1671.25 and $p < 0.001$) and good total explained variance (73.32%). The rotation matrix presented the following components:

Statements	Component	
	1	2
t. The knowledge I share with people/organizations in my professional area helps me carry out my work better	0.820	-0.328
s. The people/organizations in my professional area that I am in contact with have knowledge that is relevant to me	0.782	
u. I exchange many tips about work with other people/organizations from my professional area	0.746	-0.302
d. Showcasing my work in important places	0.447	0.763
e. Having my work recognized in the professional environment	0.459	0.757

Figure 3. EFA resulting components

Source: SPSS output data. Remarks: Extraction method: principal components. Rotation method: Varimax with Kaiser normalization.

The first component shows thematic convergence, i.e., it highlights the importance of interpersonal relations among those who work in the same area of knowledge, for improving the respondent's professional performance. This confirms the revised theory on the topic (Amabile, 1996; N. Anderson *et al.*, 2014) and highlights the importance of sharing knowledge among people in the same profession for increasing the sense of satisfaction and accomplishment in the corporate environment.

The second component reflects the respondents' perceptions on the importance of peer opinion of their professional work, interpreting it as a means of encouragement and motivation in the search for improvement. It is also clear that the contact with the client/target public serves, basically, to obtain information for the same purpose, i.e., to understand the reasons behind low levels of performance and, thus, be able to improve, but not with the overriding objective to better serve the target audience. Thus, it can be said that that the professional's goal is endogenous and not exogenous. This statement confirms the literature on creative professionals' (Csikszentmihalyi, 1996; Erez & Nouri, 2010).

Components 1 and 2 were converted into two variables resulting from the simple arithmetic mean value of the two statements with the highest factor load: ColleagueCollab (mean of [t] and [s]) and ProfRecog (mean of [t] and [s]). As the variables have different scales, these scales were converted to fit the interval between -1 and 1, as shown in Figure 4, below.

Cluster analysis variable	Original scale	Converted scale
ColleagueCollab	Lickert -3 to 3	-1 to 1
ProfRecog	Importance 0 to 4	-1 to 1
CreatIntens	Percentage	-1 to 1

Figure 4. Scale conversion

Source: SPSS output data.

Cluster analysis, by the centroid clustering method, came back with a major cluster with more than 1300 individuals and another minor cluster with 4 to 2 individuals. Thus, in order to split the sample into more equal groups in terms of number of individuals, the Ward method was used. Three solutions were required, each containing between 2 and 4 clusters. It was found that the solution with four clusters was more suitable.

ANOVA was performed with the chosen solution, including three other variables in addition to those included in the cluster analysis: age, level of education and time spent in the profession. It should be noted that the mean values below are in their original scales.

Variable	Original scale
Age	= actual age
Level of education	1 = graduation, 2 = specialization, 3 = master's, 4 = doctor's
Time in the profession	1 = Up to 2 years; 2 = From 3 to 5 years; 3 = From 6 to 8 years; 4 = From 9 to 11 years; 5 = More than 11 years
Creative intensity (NESTA)	Percentage of creative jobs in the professional activity

Figure 5. Scales used in ANOVA

Source: designed by the authors.

Variance analysis came back with the following meaningful differences between the clusters:

Cluster	Creative intensity (NESTA)	ColleagueCollab	ProfRecog	Age	Level of education	Time in the profession
1	0.199	1.418	2.574	26.532	1.097	2.037
2	0.607	1.772	3.244	25.452	1.059	1.890
3	0.187	1.805	3.758	23.443	1.054	1.671
4	0.608	1.408	1.900	25.500	1.117	1.992
sig.	0.000	0.000	0.000	0.000	0.404	0.140

Figure 6. ANOVA results

Note: Gray-shaded means show a non-significant result.

By organizing the data above differently, the layout of the clusters can be seen more clearly.

		Colleague Collaboration	
		LOW	HIGH
Creative intensity in the profession	LOW	<u>Cluster 1</u> Professional recognition: AVERAGE Age: HIGHER	<u>Cluster 3</u> Professional recognition: HIGH Age: LOWER
	HIGH	<u>Cluster 4</u> Professional recognition: LOW Age: AVERAGE	<u>Cluster 2</u> Professional recognition: HIGH Age: AVERAGE

Figure 7. Cluster characterization

Source: designed by the authors based on Cluster Analysis.

Figure 6 shows the layout of four respondent clusters, which are characterized by age group, creative intensity in the profession, valorization or the need for professional recognition, and collaboration among colleagues. The data show relevant differences that deserve a more detailed analysis.

The respondents in clusters 2 and 3 emphasize a high need of collaboration among colleagues, as well as professional recognition. The only difference is that in relation to the creative intensity of the professional activities performed, it is high in the second cluster and low in the third cluster. This difference could be explained by the respondents' age group, which is lower in the third cluster, being comprised of young individuals who are probably starting their professional careers, and therefore need more support and feedback on their professional performance, regardless of what professional activity they work in.

Cluster 2, which is characterized by working in professions that require high levels of creativity, of average age, values collaboration among colleagues, and sees professional recognition as essential for the development of their work. From the perspective of sharing knowledge and experiences, the valorization of collaboration among colleagues confirms the theoretical element that is reviewed under this specific aspect (Riordan & Griffeth, 1995). The perception of the need for acknowledgement of their work in their specific professional area, i.e. by their peers, also confirms the results of the literature review (Lucas, Diener, & Suh, 1996; Motta, 1986).

For Riordan and Griffeth (1995), professional environments enable the establishment of friendship bonds and affective relationships, which may make people more engaged in achieving collective and organizational objectives. As people become involved through affective bonds, they tend to show interest in being connected to that particular social group, which can help improve their performance, through their commitment with the other members of the group. Robbins (2005) confirms this perception, highlighting the importance of a humanized organizational environment that promotes and maintains interpersonal relations by reinforcing friendship and affective bonds and creating an environment pleasant and welcoming.

In his classical work on organizations, Motta (1986) critically and reflexively analyses their progress and structures based on their relations of power and, often, domination. He also highlights the importance of recognition of individual performance, both to guide the professional on his career path and direct his actions, and to place him within the organizational context and ensure his wishes and desires are met, at both professional and personal levels. Lucas *et al.* (1996) contributes to this topic by suggesting metrics to assess levels of satisfaction, frustration, self-esteem, optimism and pessimism among those in the organizational environment, in order to demonstrate the influence of these factors on performance.

The response of the individuals who comprise clusters 1 and 4, meanwhile, suggest low valorization of collaboration among colleagues. As for professional recognition, the respondents in cluster 1 needed an average amount of recognition, while those in cluster 4 needed very little. These attitudes may be explained by other characteristics that are present in two groups, such as the level of creativity of the profession, and age group. The average age of the respondents in cluster 1 is higher, i.e., they are more mature professionals who tend to work in areas with a low demand for creativity. The respondents in cluster 4 are individuals who are characterized by more intense creativity. This low valorization of collaboration among peers may suggest more competitive professional environments, where interaction and the exchange of experiences is more inhibited. This was also seen in the literature review of the subject (Monroe & Martinez-Martí, 2008).

It is important to emphasize and analyze the differences and similarities between the responses of the individuals in clusters 2 and 4, who perform tasks characterized as requiring higher levels of creativity. In both clusters, the individuals were in the average age group. However, valorization of collaboration among peers and professional recognition were both perceived as important by the respondents in cluster 2 and unimportant by those in cluster 4. This difference could be explained by their social, behavioral and cognitive profiles, based on individual and idiosyncratic experiences, as mentioned by Odden and Sias (1997) and Crabtree (2004).

On the other hand, the similarity between clusters 2 and 4 may suggest that professionals who carry out tasks which might seem traditional terms of innovation also rely on creativity to solve problems, within their specific roles. Due to the growing complexity, uncertainty and ambiguity of the job market, the adoption of new technologies, and the higher levels of difficulty of jobs requiring undergraduate degrees (managers, engineers, medical doctors, etc.), it is supposed that some levels of creativity would be required for these professions (Sozobilir, 2018).

Based on the results of this study, it is seen that interpersonal relations that are represented by the valorization of contact among peers i.e., professionals who share the same area of knowledge and influence the respondents' behavior and performance, as mentioned by several authors in the literature (e.g. Chiaburu & Harrison, 2008). It is also clear that because professionals value contact with their peers, who are their target audience, in order to obtain feedback about their performance and thus improve it, they do not think it is appropriate to work in professional environments permeated by affective relations, due to the possible difficulty of going against the social group. This contradicts the findings of authors who emphasize the need for a harmonious, conflict-free environment based on friendship and affection (Berman *et al.*, 2002; Robbins, 2005).

Based on our results, it was possible to identify respondents whose professional activities require creativity, through the characteristics identified in their organizational process: the absence or lack of previous planning, and learning by trial and error, characteristics that are typical of creative work, according to the literature review (Alencar & Fleith, 2010; Csikszentmihalyi, 1996; Oliveira, 2010). From this perspective, interpersonal relations may have a significant influence on the work of creative professionals.

FINAL REMARKS

This research obtained responses from 1704 respondents, undergraduate students of a large community teaching institution in Southern Brazil. Its purposes was to determine the influence of interpersonal relations on creativity in the work environment, characterized by the way the creative professionals work and the respondents' perceptions of interpersonal relations and its importance in the performance of their professional tasks.

This study found that the young professionals who took part in the research (aging between 22 and 30 years old), with professional experience of up to five years, value interaction and knowledge sharing among their peers with the aim of improving their individual performance. There was also interest in contact with the target audience, both internal and external to the organization where they work, to help them understand what aspects of their professional performance still need to be improved.

The work of creative professionals is typified by a lack of planning, preferring to base their work on trial and error, but which contributes to learning. This improvisation is compensated for by social interaction, and the exchange of knowledge and experience. The same was not true for the professionals working in professionals with lower levels of creativity, or those in more competitive environments, where knowledge sharing and social interaction are inhibited.

The professionals who replied to the survey didn't express any concern about the target audience's opinion to better serve them, which, based on the characteristics of the group of respondents, can be interpreted that it is mostly comprised of younger people. Moreover, it was possible to see that these professionals value a work environment that is favorable to their professional learning, but free of affection and friendship bonds.

Based on the results of the research, we see that the proposed objective was reached, as this work contributes to knowledge of the subject. This research also contributes to the literature, filling a need for comparative research between individuals who perform tasks requiring more, or less creativity and assessing the influence of interpersonal relations.

However, this research has some limitations. Although relatively large, the sample size is not sufficiently heterogeneous to enable the results to be generalized for other environments. Age, length of time in the profession, and geographical and cultural limitations, among other characteristics of our sample, had low variability, and this aspect should be considered when interpreting the results.

A suggestion for future studies is to investigate creativity and interpersonal relations in different empirical environments, comparing the results with those of the present study.

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