

PROACTIVITY: INFLUENCE OF CONDITIONS FOR CREATIVITY CONSIDERING AND THE MEDIATING EFFECT OF CREATIVE SELF-EFFICACY

PROATIVIDADE: INFLUÊNCIA DAS CONDIÇÕES PARA A CRIATIVIDADE CONSIDERANDO A MEDIAÇÃO DA AUTOEFICÁCIA PARA CRIAR

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Heila Magali da Silva Veiga¹

Elaine Rabelo Neiva²

Maria de Fátima Bruno de Faria³

ABSTRACT

The main goal of this study was to investigate the influence of the perception of favorable (manager support, challenging activities, strategy, coworkers, freedom, and physical environment) and unfavorable conditions (manager inadequate attitude, rules, and lack of time) for creativity upon the criterion variable, proactivity, taking into account the mediating effect of "Creative Self-Efficacy (CSE)". A convenience sample of 297 participants from different organizations took part in this study and the model proposed was tested through the modeling of structural equations, employing the individual level of analysis. The findings have shown that all the dimensions of the aforementioned variable make a significant contribution to proactivity, with the highest contribution being the manager support. The mediating hypothesis has shown that CSE mediates the relationship between the favorable conditions for creativity (manager support, challenging activities, strategy, and coworkers) and proactivity, indicating that the influence of context in proactivity is maximized by CSE.

Keywords: Proactivity. Conditions for Creativity. Creative Self-Efficacy.

1 Federal University of Uberlândia, Minas Gerais, Brazil, Psychologist and Full Professor, Institute of Psychology, Federal University of Uberlândia, Minas Gerais, Brazil. PhD in Organizational Psychology at University of Brasília, Brazil
E-mail: heila.veiga@gmail.com. ORCID: 0000-0002-7429-8124

2 University of Brasília, Brazil, Psychologist and Full Professor, Institute of Psychology, University of Brasília, Brazil. PhD in Psychology at University of Brasília, Brazil. E-mail: elaine.neiva@gmail.com. ORCID: 0000-0003-0503-3234

3 University of Rio de Janeiro, Programa de Pós-Graduação em Políticas Públicas, Estratégia e Desenvolvimento (PPED), Rio de Janeiro, RJ, Brazil, post doctorate in Production Engineering from Federal University of Rio de Janeiro, Master and Doctor in Psychology from University of Brasília. E-mail: fatimabruno@facc.ufrj.br. ORCID: 0000-0002-4438-4857

RESUMO

O objetivo central do estudo foi investigar a influência da percepção de condições favoráveis (suporte.gestor, atividades.desafiantes, estratégia, colegas, liberdade e ambiente.físico) e desfavoráveis (inadequação.gestor, normas e escassez.tempo) à criatividade na variável critério, proatividade, considerando o efeito mediador da AutoEficácia para Criar (AEC). Foi utilizada amostra de conveniência de 297 participantes de diferentes organizações e para testar o modelo foi empreendida a modelagem por equações estruturais, sendo o nível de análise individual. Os achados mostram que todas as dimensões da variável antecedente trazem contribuição significativa na critério, sendo a maior contribuição do suporte do gestor. A hipótese de mediação mostrou que AEC medeia a relação entre as condições favoráveis à criatividade (suporte do gestor, atividades.desafiantes, estratégia e colegas) com a proatividade, apontando que a influência do contexto na proatividade é maximizada pela AEC.

Palavras-Chave: Proatividade. Condições para a Criatividade. Autoeficácia para Criar

1 INTRODUCTION

Proactivity is an issue that has aroused the interest of academics and managers (BATEMAN; CRANT, 1999; THOMAS; WHITMAN; VISWESVARAN, 2010) and literature indicates that proactive behavior is associated with performance (CRANT, 2000; FULLER; MARLER; HESTER, 2012; PARKER; COLLINS, 2010; WILHER ET AL., 2017) taking into account both objective and subjective parameters (THOMAS, WHITMAN; VISWESVARAN, 2010). Creativity (HERMANN; FELFE, 2014; KIM; HON; CRANT, 2009), innovation (RANK; PACE; FRESE, 2004), implementation of ideas (BINNWIES; GROMER, 2012), evaluations made by supervisors (THOMPSON, 2005), career success (SEIBERT; CRANT; KRAMER, 1999), and empirical evidence point out that proactivity also helps in the search for a job, that is, it is positive-related to employability (UNSWORTH; PARKER, 2003). Further, currently these behaviors are being required from workers at widely different hierarchical levels (PARKER; BINDL; STRAUSS, 2010).

Besides being important for the performance in already established organizations, proactivity is also required from future entrepreneurs because in order to start a new business it is important to anticipate the market demands and to identify its needs and opportunities. In addition, studies emphasize that this concept explains the success of entrepreneurs in developing countries (KOOP; DE REU; FRESE, 2000; KRAUS ET AL., 2005; ROOKS; SSERWAMGA; FRESE, 2016). In all stages of the business development this variable is critical because “being proactive means having a long-term orientation and this helps to anticipate and be ready for opportunities and potential threats” (FRESE; GIELNIK, 2014, p. 426).

Therefore, proactive behaviors are usually considered relevant in several working contexts, and so it is important to design studies that promote knowledge about aspects related to this construct. It is important to mention that context plays a relevant role in the emergence of proactive behaviors in the working environment (CRANT, 2000; PARKER; TURNER; WILLIAMS, 2006). Among the investigated aspects are manager support, peer support, autonomy (PARKER; TURNER; WILLIAMS, 2006), work control and complexity (FRESE; GARST; FAY, 2007), organizational environment (VEIGA; PORTO; LABOISSIÈRE, 2011), and perception of incentives and barriers for creativity (VEIGA; TORRES; BRUNO-FARIA, 2011). There is considerable theoretical and empirical support from Organizational Psychology to sustain that contextual characteristics affect behaviors and attitudes

of the employees in the work environment (ANDERSON; POTOENICK; ZHOU, 2014; FRESE; GARST; FAY, 2007). However, additional studies are still required in order to better understand the impact of context upon proactive behaviors (BAER; FRESE, 2003; HONG ET AL., 2016).

Among the contextual antecedents, the chosen variable was “perception of the favorable and unfavorable conditions for creativity” because there is empirical support to state that the perception about such aspects of the work environment predicts proactivity (FAY; SONNENTAG, 2010), with only another study having investigated this relationship (VEIGA; TORRES; BRUNO-FARIA, 2011). This variable refers to the perception by the workers that the organization encourages and recognizes new ideas in the working environment. It is important to highlight that creativity in the organizations is not a very common issue in the studies about organizational behavior in Brazil (BORGES-ANDRADE; PAGOTTO, 2010; BRUNO-FARIA; VEIGA; MACEDO, 2008), prompting the need to include this variable in the research design.

Besides the impact of context, it is recommended to include mediating and moderating variables in studies conducted about proactivity (CRANT, 2000; PARKER; TURNER; WILLIAMS, 2006). In the proposed model of investigation, the authors have opted for the inclusion of the mediating variable “creative self-efficacy”, because high levels of this variable are associated to endurance and overcoming obstacles (BANDURA, 1977), and such aspects are considered fundamental to the concept of proactivity (FRESE; FAY, 2001). Some authors have included the self-efficacy variable as having a mediating role in the relationship between contextual variables and proactivity (FRESE; GARST; FAY, 2007; LANTZ; ANDERSON, 2009; PARKER; TURNER; WILLIAMS, 2006; SPEIER; FRESE, 1997), but few works have investigated self-efficacy in an specific domain (PRABHU ET AL., 2012). The importance of considering this variable is emphasized because the self-efficacy associated to a certain domain shows itself as the best predictor of performance in this domain (TIERNEY; FARMER, 2011). Furthermore, investigations suggest that creative self-efficacy is an intervenient variable in the relationship between a wide range of individual and contextual factors and creativity (GONG et al., 2009 apud TIERNEY; FARMER, 2011).

Considering the relevance of proactive behavior for academics and managers, the general aim of the present work is to investigate the influence of the perception of favorable and unfavorable conditions for creativity in proactivity, considering the mediating effect of the variable “creative self-efficacy”. The authors have found no previous work that has investigated these relationships.

2 THEORETICAL REFERENCE

2.1 Proactive behavior

The construct “proactive behavior” was inserted in the literature by German investigators (FRESE; KRING; SOOSE; ZEMPEL, 1996) and since then, several studies have been conducted in Europe, United States, Africa (FRESE ET AL., 2007; ROOKS; SSERWAMGA; FRESE, 2016), Pakistan (GHAFOOR ET AL., 2011), and in several other regions worldwide (FAY; SONNENTAG, 2010; GRANT; ASHFORD, 2008). Nonetheless, in Brazil the works about this construct are still scarce (VEIGA; TORRES; BRUNO-FARIA, 2013).

Besides proactive behavior there are other constructs in the literature that address proactivity in the working environment, and this diversity of underlying concepts and theoretical perspectives have hampered the consolidation of the area, since many of them are conceptually equivalent (BINDL; PARKER, 2010; PARKER; COLLINS, 2010; TORNAU; FRESE, 2013). There are a multitude of similar variables, some dealing with personal traits, such as a proactive personality (BATEMAN; CRANT, 1993) and others with behaviors, such as “proactive behaviors/proactivity”

(FRESE, KRING; SOOSE; ZEMPEL, 1996), “search for challenges” (taking charge), and “voice”. The aim of the present work is not to differentiate the constructs from their conceptual limits, with many works in the literature being already focused on this issue (FRESE, 2008; KAMIA; PORTO, 2009; LI; FRESE; HAIDAR, 2016; THOMAS, WHITMAN; VISWESVARAN, 2010; TORNAU; FRESE, 2013). Proactive behavior was chosen as the central variable of this work because among the several emerging concepts related to this topic it is one of those that is both theoretically and empirically sound (TORNAU; FRESE, 2013).

The criterion variable of the present study was introduced in the international literature by Frese and collaborators (1996), being called “personal initiative”, although in Portuguese investigators have opted for translating it as “proactive behavior /proactivity”, because in this language the term initiative refers to the idea of a dispositional trait while the focus of the variable is actually on behavior. Therefore, following the same positioning of other Brazilian authors (KAMIA; PORTO, 2009; VEIGA; PORTO; LABOISSIÈRE, 2011; VEIGA; TORRES; BRUNO-FARIA, 2013), this study has opted for adopting the term “proactive behavior/proactivity”. It is worth mentioning that even in works published in English this construct is also called proactive behavior, since “personal initiative” is also regarded as a form of proactive behavior (OHLY; FRITZ, 2007), which is defined as:

a pattern of behaviors that imply initiatives that go beyond what is demanded in the job requirements. It is characterized by five elements: consistent with the goals of the organization, focused in the long term, driven to a specific goal, persistence in the face of obstacles, and self-started (FRESE et al., 1996, p. 38).

In the presented definition there are five key elements that characterize proactive behaviors: (1) are consistent with the goal of the organization, (2) focused in the future, (3) driven by an objective, (4) persistent facing obstacles and setbacks, and (5) self-started (FRESE et al., 1996, p. 38). Proactivity does not refer to a single behavior, but otherwise to a behavioral syndrome (FAY; FRESE, 2001), therefore being more appropriate to consider it as the process that elicits a goal and the development of strategies to achieve it and to overcome the obstacles (PARKER; BINDL; STRAUSS, 2010). So, some authors advocate that the anticipation, planning, and search for results that will impact the working environment is more relevant to the definition of the construct than the fact of being an extra-role behavior (self-started), because in this process the exhibited behaviors might be both extra-role and prescribed behaviors (PARKER; BINDL; STRAUSS, 2010).

In conformity with the definition of the proponents of the construct (FRESE ET AL., 1996), proactive behaviors are defined as being “a set of behaviors directed to accomplish goals in which the worker spontaneously searches for changes in his/her working environment that target problem solution and the implementation of ideas that favor the organization” (KAMIA; PORTO, 2009, p. 361). This definition will be adopted in the present work and this variable considered at the individual level.

Proactive behavior is influenced by contextual, individual, and intervenient variables (BINDL; PARKER, 2010; CRANT, 2000; DILIELLO; HOUGHTON; DAWLEY, 2011; FRESE, 2001; GRANT; ASHFORD, 2008; PARKER; BINDL; STRAUSS, 2010; PARKER; TURNER; WILLIAMS, 2006). Among the intervenient ones are those that might be regarded as “cognitive-motivational” (FRESE, 2001, PARKER; TURNER; WILLIAMS, 2006), “dispositional” (GRANT; ASHFORD, 2008), and “affectionate” (BINDL; PARKER, 2010). Among the investigated contextual predictors, the following might be listed: “organizational culture” (CRANT, 2000), “organizational values” (VEIGA et al., 2008; VEIGA; TORRES; BRUNO-FARIA, 2011), “organizational environment” (VEIGA; PORTO; LABOISSIÈRE,

2011), “control” (FAY; FRESE, 2001; FRESE, 2001), “autonomy” (GRANT; ASHFORD, 2008; PARKER; TURNER; WILLIAMS, 2006), “work complexity and control” (FRESE; GARST; FAY, 2007), and “manager support” (FAY; FRESE, 2001). In the list of individual aspects are “personality” (CRANT, 2000; FRESE, 2001) and “self-esteem” (FRESE, 2001). The investigated mediators were “identification with the job”, “self-efficacy” (FRESE, 2001; PARKER; BINDL; STRAUSS, 2010; TORNAU; FRESE, 2013), “conscientiousness” (Big Five), and “openness to change” (GRANT; ASHFORD, 2008).

Parker, Turner and Williams (2006) advocate that the environmental aspects are a distal cause of the proactive behavior while the cognitive-motivational variables such as “role-breath self-efficacy”, “control of expectations”, “guidelines for change”, and a “flexible role orientation” have a proximal effect, that is, they are mediators of the relationship between the perception of aspects of the working environment and the proactive behavior. The cognitive-motivational variable might involve one of these two factors: (a) be the result of presenting a proactive behavior or (b) the proactive behavior is a way of reaching the goals and expectations (PARKER; TURNER; WILLIAMS, 2006). Therefore, Fuller *et al.* (2012) sustain that the more proximal predictors of proactivity are the motivational processes, which might be clustered in two groups: those that belong to the “can do” group and the ones that belong to the “reason to do” group. In the first category might be listed variables such as “role-breath self-efficacy” and “locus of control”, among others. Such aspects are important because being proactive involves risks and, many times, not to be well-regarded by the others. For these reasons confidence in being able to succeed is important. Also, feeling qualified to do something makes the person motivated to achieve his/her objectives even when facing challenges. In the other categories are variables that emphasize the valences and reasons that explain why the person gets involved in such behaviors like intrinsic motivation and personal responsibility. Such factors are critical because besides evaluating the ability to do something the person needs to have reasons to do it.

2.2 Perception of Favorable or Unfavorable Conditions for Creativity in the Organizations

Context plays a major role in the emergence of proactivity (BAER; FRESE, 2003) and creativity (MCLEAN, 2005; REITER-PALMON, 2011) in the working environment. The many definitions of creativity, although not unanimous, agree in considering that this construct addresses the production of something new and adequate to a particular context (BRUNO-FARIA; VEIGA, 2015). This aspect associated to the degree of novelty is fundamental to distinguish the concepts of proactivity and creativity, because in the former novelty is not a necessary requirement. Despite this, both concepts are similar because they deal with the search for improvement in a given context. Further, proactive behaviors are essential in the process of successfully creating and implementing ideas (RANK; PACE; FRESE, 2004).

Reviewing the literature one finds several instruments to assess the contextual aspects that promote and/or impair creativity in organizations (AMABILE ET AL., 1996; EKVALL, 1996; LIN; LIU, 2012) and very few that specifically evaluate the contextual aspects for creativity (BAER; FRESE, 2003; VEIGA; PORTO; LABOISSIÈRE, 2011). Besides being too restrict, the available measures have proved inept. The Baer and Frese (2003) scale does not evaluate the descriptive aspects in the organizational context, being more similar to a measure of social norms. The scale developed by Veiga et al. (2011), despite being adequate for psychometric aspects, contemplates only three dimensions, while the studies have shown that several factors should be considered when investigating the impact of context (FRESE; GARST; FAY, 2007; MC LEAN, 2005).

Considering the problems reported using specific measures of contextual aspects for proactivity and that (a) there is a similarity between the concepts of proactivity and creativity;

(b) there is empirical support to assert that the contextual factors that promote creativity are similar to those that promote proactivity (EGAN, 2005; VEIGA; PORTO; LABOISSIÈRE, 2011), and that (c) a psychometric validated scale is available in the country to evaluate the conditions that are favorable or unfavorable for creativity in the working environment (BRUNO-FARIA; VEIGA; 2015), this study has selected as antecedent variable the “Perception of Favorable or Unfavorable Conditions for Creativity in the Organizations”. This variable is also called in the literature as “perception of support for creativity” and refers to the “perception by the workers that the organization encourages, respects, rewards, and recognizes the workers that exhibit creativity” (ZHOU; GEORGE, 2001, p. 686). Thus, the option was to consider this construct at the individual level because it refers to the perception of the contextual aspects by the individuals. Such strategy of considering the individual perception of a collective attribute is supported by the literature (PUENTE-PALACIOS; MARTINS, 2014).

The contextual variables that affect the production of ideas in the working environment might be divided between incentives (favorable conditions) and obstacles (unfavorable conditions). Among the incentives are listed “autonomy”, “availability of resources”, “mechanisms that accept new ideas”, “acceptance of mistakes”, “rewards”, “feedback” (DILIELLO; HOUGHTON; DAWLEY, 2011). Work complexity (variety of skills, meaning of the task, identity of the task, autonomy, and *feedback*) is a central aspect for the promotion of creativity and innovation in the work environment (ANDERSON; POTOCNICK; ZHOU, 2014; TIERNEY; FARMER, 2004). It is also important to highlight the role of autonomy, because as far as the worker believes to have control over the way he performs his/her job, he/she feels more intrinsically motivated and will more likely be involved in such behaviors (HENNESSEY; AMABILE, 2010).

Anderson, Potocnik and Zhou (2014, p. 1303) have reviewed several studies conducted about creativity from 2002 to 2013 and have identified antecedents of creativity and innovation at the individual, group (team), organizational, and multilevel levels. Among the variables found at the first level are listed (a) individual factors (traits, goal orientations, values, ways of thinking, self-concepts and identity, knowledge and skills, psychological states, motivation, and other factors; (b) context of the task (work complexity, goals and work requirements, and rewards); (c) social contexts (leadership and supervision, influence of clients, and other social influences [feedback, evaluation, justice, social networks]); (d) other factors (information privacy, willingness to take risks, commitment to the career). The following aspects are present at the team level: structure, composition, atmosphere of the team, process, and team leadership. The practices of people management are found at the organizational level like strategy, size, organizational culture, organizational atmosphere, and external environment. Finally, at the last level are multilevel investigations that meet antecedents from more than one level.

Regarding the obstacles to creativity in the organizations, Alencar (1998) has proposed that the different aspects might be classified in five categories: (a) structural, (b) social and political, (c) procedural, (d) of resources, and (e) individual and attitudinal. Social and political obstacles occur when there is too much emphasis in the power relations and in norms that reinforce conformism. Conversely, procedural barriers are related to the procedures and regulations that privilege the maintenance of the status. Another no less important obstacle concerns resources, which might be “lack of qualified professionals”, “lack of adequate equipment and/or technology”, and “insufficient time to create something new in the work environment”. In addition, are mentioned “excess of control” (MC LEAN, 2005) and “pressure” (HENNESSEY; AMABILE, 2010) as limiters of the creativity expression of workers.

Bruno-Faria and Veiga (2015) have performed a study of evidence of empirical validation of the parameter named “Indicators of Conditions to Develop in the Work Environment” (IC-

CAT). This instrument consists of two scales that evaluate favorable and unfavorable conditions for creativity expression in the work environment. The parameter of favorable conditions consists of 36 items distributed in six dimensions and that of unfavorable conditions covers three dimensions. Chart 1 presents all the factors and their definition.

FAVORABLE CONDITIONS	OPERATIONAL DEFINITION
Characteristics of the physical environment	Essential conditions of the physical work environment (such as light, space, equipment), that are required for the individual to focus in the accomplishment of his/her activities and to produce new ideas.
Atmosphere between coworkers	Addresses the relationship that is established between peers in the work environment. This relationship is characterized by incentives and compliments to the production of new ideas, exchange of information, and harmony.
Freedom of action	Evaluates if the worker feels free to give opinions about the way to perform his tasks and express ideas different from the other coworkers and managers.
Challenging activities	Refers to the complexity of the tasks performed by the worker. The focus is to check if the tasks enable search for new knowledge, use of several competencies, and the possibility of offering new solutions.
Organizational actions and strategies supporting new ideas	Comprises a series of organizational actions that promote the emergence of new ideas in work.
Immediate manager support	Encompasses manager actions that promote the expression of the creativity of the collaborators, such as praising the contributions of the subordinates and the opening to new ideas.
UNFAVORABLE CONDITIONS	OPERATIONAL DEFINITION
Overwork and Shortage of Time	Refers to the relation between time and amount of activities to be performed at work, preventing or hindering the appearance of new and valuable ideas.
Inadequate action by the manager	Covers aspects of inadequate actions by managers that impair or prevent the appearance of new ideas in individuals that are part of the working team.
Lack of flexibility of the rules and norms of the organization	Refers to the degree of standardization in the way of performing activities and the excess of rules in the organizations that hinder the expression of creativity in workers. It also involves the difficulty of exchanging information between the sectors and people from different organizational levels.

Chart 1. Description of the ICCAT factors.

2.3 Creative Self-Efficacy (CSE)

Self-efficacy is about the belief one has that he/she is qualified to perform something in a certain context (BANDURA, 1977). The relationship between self-efficacy and behavior in the work environment is well established (SPEIER; FRESE, 1997; TAMS, 2008; TIERNEY; FARMER, 2011). Nonetheless, the adoption of a particular self-efficacy measure is the best strategy to predict performance in a certain context (BANDURA, 1986). In this work, the focus is on the variable creative self-efficacy, which is defined as the “belief a person has that he/she is able to produce creative results” (TIERNEY; FARMER, 2002, p. 1138). This construct differs from the common definition of self-efficacy because it addresses a specific domain, that is, creativity. Also, as previously discussed, proactive and creative behaviors have similarities.

Self-efficacy is a required condition for creativity because it affects the motivation and ability to get involved in a given behavior (DILIELLO; HOUGHTON; DAWLEY, 2011; GHAFOR; QURESHI; AZEEMI; HIJAZI, 2011; MATHISEN, 2011; SHALLEY; ZHOU; OLDHAM, 2004). This variable plays an important role, especially for the emergence of proactivity, because having proactive

behaviors implies challenging the *status quo*, acting autonomously, and addressing uncertainties. Therefore, a high self-efficacy increases the probability of endurance of a person, even when facing obstacles (SPEIER; FRESE, 1997).

Among the contextual antecedents of CSE found in the literature are “autonomy”, “type of task and quality of the relationship with the supervisors” (MATHISEN, 2011), and “support from peers and managers” (DILIELLO; HOUGTON; DAWLEY, 2011). In another study creative self-efficacy was the main predictor of entrepreneurial creativity, which refers to the ability of identifying new information combinations in order to develop or enhance the product, service, process or practice to aggregate value to it; with this relationship being mediated by intrinsic motivation (DAYAN; ZACCA; DI BENEDETTO, 2013). In another study, CSE was a predictor of innovative behavior (production and implementation of new ideas in the work environment), with optimism being a moderator of this relationship, which means that workers with a high level of creative self-efficacy will have a higher level of innovative behavior when they present a high level of optimism (HSU; HOU; FAN, 2011).

In this work the authors have chosen to investigate the role of the variable creative self-efficacy as an intervenient variable in the relationship of conditions for creativity and proactive behavior, since many investigations (GHAFOOR; QURESHI; AZEEMI; HIJAZI, 2011; GONG; HUANG; FARH, 2009; SHIN; ZHOU, 2007) have shown that self-efficacy is an “important mediator in the relationships between countless individual variables, contextual factors, and creative performance in the work environment” (TIERNEY; FARMER, 2011, p. 277). Creative self-efficacy was a mediator in the relationship between orientation for performance and creativity (GHAFOOR; QURESHI; AZEEMI; HIJAZI, 2011), and self-efficacy was a mediator in the relationship between work complexity and proactivity (SPEIER; FRESE, 1997). This same variable has also mediated the relationship between cognitive abilities, conscientiousness (Big Five), and performance for simple tasks (CHEN; CASPER; CORTINA, 2001).

Although there are studies that have tested self-efficacy as a moderator, for example, in the relationship between organizational support and production of ideas (DILIELLO; HOUGTON; DAWLEY, 2011), the results of those meta-analyses reveal that the predictive power is low (JUDGE; JACKSON; SHAW; SCOTT; RICH, 2007). For this reason this work has chosen to test mediation.

Based on the analysis of the literature the following research hypotheses are raised:

H1: The perception of Conditions Favorable for Creativity in Organizations is positively related to proactivity.

H2: The perception of Unfavorable Conditions for Creativity in Organizations is negatively related to proactivity.

H3: Creative self-efficacy is positively related to proactivity.

H4: The perception of Favorable and Unfavorable Conditions for Creativity is related to CSE.

H5: CSE mediates the relationship between conditions for creativity (incentives and obstacles) and proactivity.

3. METHOD

The present investigation is descriptive and has a transversal cohort (DRENTH, 1984). Regarding the study design, it might be basically classified as quantitative, since standardized instruments will be used to measure the variables of the model of investigation. When conducting a quantitative investigation, the level of the theory, level of measurement, and the degree of analysis should be considered because inconsistency between them might jeopardize the quality of the study

(KLEIN; DANSERAU; HALL, 1994). The level of the theory refers to the theoretical affiliation of the author in choosing to investigate a variable of the individual, group, or organization. The level of measurement addresses the way the data are collected, their origin, and the unit in which they are collected. Finally, the degree of analysis specifies the data treatment. In the present work, the investigated variables will all be accessed through the perceptions of the survey respondents. Thus, following the suggestions of Klein, Danserau and Hall (1994), it is assumed that they are being investigated at the individual level of analysis, since they are clusters of individual answers. If the construct is individual, the measurement and the theory should pay attention to the individual differences in order to maximize the between-individual variability.

The criterion variable of the present work is “proactive behavior”; the antecedent variable is “perception of favorable and unfavorable conditions for creativity”; and “creative self-efficacy” the measurement variable.

3.1 Sample:

A convenience sample of 297 participants, with 42.4% men, 56.2% women, and the remaining (1.3%) that has not reported their gender; with an average of 34.02 years (sd=10.52); that worked in public (46.1%) and private (40.7%) institutions and in the third sector (11.8), in a wide range of segments such as industry, commerce, services, education, among others. The participants occupied the most diverse positions such as manager, director, supervisor, technician, and administrative officer, with an average working time of 80 months (sd= 100.67) and an education that varied from unfinished high school to Ph. D., with most of them (53.8) with a finished higher education or attending it.

3.2 Instruments:

The Scale of Proactive Behaviors in the Organizations – ECPO (VEIGA, TORRES, BRUNO-FARIA, 2013) was used in this work. The ECPO consists of 13 items, with a reliability of 0.94, and to answer them the following Likert scale was used: 1= Never, 2= Seldom, 3= Some Times, 4= Often, 5= Always. Among the items that are part of this parameter we have the following: “I create opportunities to act in order to improve this organization” and “I actively participate in this company analyzing the best practices for work”. The second parameter is called ICCAT (Indicators of Conditions for Creativity in the Work Environment (BRUNO-FARIA; VEIGA, 2015) and consists of 60 items, which are distributed in two measures: favorable conditions and unfavorable conditions for the expression of creativity. To answer the items a Likert scale of five items was used, with 1= completely disagree, 2=somewhat disagree, 3=not sure, 4=somewhat agree, 5=completely agree. Tables 1 and 2 present the factors, item examples of this parameter, and the reliability obtained in this study.

Table 1. Factors, indexes of internal consistency (alphas), and items with higher factorial load in each factor of the Scale of Favorable Conditions for Creativity in the Work Environment

Name of the Factor	Alpha	Item with the highest factorial load
Immediate manager support	0.87	My manager encourages me to give suggestions regarding the improvement of the services and/or products that the organization provides.
Challenging activities	0.83	My tasks at work stimulate me to search for new knowledge for their accomplishment.
Organizational strategies and actions that support new ideas	0.87	My organization performs different actions to encourage the workers to express their creativity.
Atmosphere between coworkers	0.87	At my work place people show goodwill in helping each other.
Freedom of action	0.87	I feel free to give new ideas at work, even when they are very different from the ideas of others.
Characteristics of the physical environment	0.71	I have enough furniture to store my work material.

Table 2. Factors, indexes of internal consistency (alphas) and items with higher factorial load in each factor in the Scale of Unfavorable Conditions for Creativity in the Work Environment

Factor and n° of items in the final questionnaire	Alpha	Item with the highest factorial load
Inadequate attitude of the manager	0.85	When I propose a new idea the manager usually takes hold of it as if it was his/hers.
Difficulties of communication and rigid norms and rules in the organization	0.85	The current structure of the organization hinders the communication between the areas preventing information sharing.
Overwork and lack of time	0.76	The excess of work prevents me from having time to reflect about the best way to accomplish them.

The third parameter evaluates creative self-efficacy consisting in three items such as, for example, “I have confidence in my ability to solve problems creatively”. The scale presents a reliability (alpha of Cronbach) of 0.87. To answer it a seven point scale was used that varies from “completely disagree” to “completely agree” (TIERNEY; FARMER, 2002).

3.3 Procedures of collecting and data analysis

The present investigation was approved by the Committee of Ethics in Research with Human Beings of a Brazilian public university. It was individually answered and the participants chose the best day and time to answer the instruments that together with the Informed Consent Form were collected in different places to ensure anonymity of the responder. After the execution, the data bank was inspected according to the recommendations of Tabachnick and Fidell (2001) for later execution of the statistical analyses. Among the analyses performed the number of blank answers was checked (more than 5%), as well as the univariate and multivariate outlier, and normality.

First, the descriptive statistics were calculated, then the principal component analysis was made to check the factorability of the data matrix and a factorial analysis to confirm the factorial structure. Next the reliability indexes were calculated, followed by the regression analyses.

Hierarchical regressions were employed for each of the dimensions according to the recommendations of Baron and Kenny (1986), in order to investigate mediation. These authors list four necessary conditions for the occurrence of mediation: (1) the antecedent variable affects significantly the mediating variable; (2) the antecedent variable affects significantly the criterion variable in the absence of the mediator; (3) the mediating variable affects the criterion variable,

and (4) the effect of the antecedent variable upon the criterion variable is reduced with the introduction of the mediating variable.

In short, the mediating variable is the one that, when included in the regression equation, reduces the strength of the relationship between the predicting variable and the criterion variable. In the case of a pure mediating variable, the relationship between “A” (antecedent variable) and “C” (criterion variable) disappears with the insertion of “B” (mediating variable). In order to check if a given variable might be regarded as a mediator, one must first observe the β (beta) value of the variables “A” and “B”. The introduction of the mediating variable in the regression equation results in the reduction of the β (beta) value of the variable “A” and the β (beta) value of variable “B” becomes significant (ABBAD; TORRES, 2002, p. 21; TABACHNICK; FIDELL, 2001). Therefore, the relationship between the predicting variable and the criterion variable is weakened by the introduction of the mediating variable.

Since the investigation has adopted only one source of data an analysis need to be carried out to check for the influence of variance of the common method. The method used was the confirmatory factorial analysis by structural equations in order to compare the different models (BENTLER, 1989). The model was tested by modeling the structural equations.

4 RESULTS

The findings of the present study reveal that the mean of the three investigated variables was higher than the average point in the scale, with the lowest value of the standard deviation found in the variable proactivity (mean= 3.76; sd=0.79). Among the favorable conditions for the expression of creativity the most frequent, in the perception of the participants, was “challenging activities” (mean= 3.94; sd=0.90). In turn, the most unfavorable condition was “rigid rules and norms” (mean=2.94; sd=0.95), as shown in Table 3.

Also in Table 3 are shown the results of the Pearson correlation analysis, which reveal that the proactivity was significantly related to all the variables included in the study design, with this relationship being positive for conditions favorable for creativity and CSE; and negative for unfavorable conditions for creativity. The highest correlation of the criterion variable was with “manager support” ($r=0.575$; $p<0.001$), followed by “freedom” ($r=0.549$; $p<0.001$), and “peer support” ($r=0.548$; $p<0.001$), all belonging to the variable “conditions favorable for creativity”.

Table 3. Descriptive statistics and Pearson correlation of the investigated variables

variable	mean	SD	1	2	3	4	5	6	7	8	9	10	11
1.EST_Manag. Support	3,55	1,07	1										
2.EST_Challenging act.	3,94	0,90	0,603**	1									
3.EST_Strategy	3,21	1,06	0,751**	00,649**	1								
4.ESTPeers	3,65	1,00	0,697**	0,581**	0,640**	1							
5.EST_Freedom	3,91	1,02	0,793**	0,589**	0,641**	0,666**	1						
6.EST_Physical Enviro.	3,60	0,90	0,390**	0,248**	0,369**	0,409**	0,434**	1					
7.BAR_Inadeq. Manager	2,52	0,97	-0,684**	-0,293**	-0,526**	-0,497**	-0,594**	-0,333**	1				
8.BAR_Rigid Norms	2,94	0,95	-0,530**	-0,360**	-0,520**	-0,497**	-0,556**	-0,384**	0,670**	1			
9.BAR_Overwork	2,92	0,96	-0,286**	-,080	-0,187**	-0,276**	-0,267**	-0,292**	0,414**	0,397**	1		
10.Proactivity	3,76	0,79	0,575**	0,539**	0,526**	0,548**	0,549**	0,230**	-0,327**	-0,319**	-0,207**	1	
11.CSE	5,82	0,92	0,151**	0,277**	0,270**	0,181**	,083	,003	-,017	-,028	-,025	0,459**	1

** $p<0,01$

Next, the recommendations of Baron and Kenny (1986) were followed for the mediation test. Separate regression analyses were made for each of the dimensions of the antecedent variable, but the results are presented together in Table 4. The findings reveal that all the dimensions of the antecedent variable – conditions for creativity – make a significant contribution to proactivity, with “manager support” being that with the highest explanatory power ($R^2= 0.331$; $B= 0.43$; $\beta= 0.575$; $p<0.01$). Therefore, the first condition established for mediation was attained.

Table 4. Summary of the regression analysis

Antecedent Variable	Criterion Variable Proactivity		
	R ²	B	B
EST. Manager support	0.331*	0.43*	0.575*
EST. Challenging activities	0.291*	0.478*	0.539*
EST. Strategy	0.277*	0.396*	0.526*
EST. Peers	0.300*	0.435*	0.548*
EST. Freedom	0.302*	0.428*	0.549*
EST. Physical Environment	0.053*	0.203*	0.230*
BAR. Inadequate manager attitude	0.107*	-0.271*	-0.327*
BAR. Rigid norms	0.102*	-0.267	-0.319*
BAR. Overwork	0.043	-0.172*	-0.207*
AEC (Creative Self-Efficacy) mediator	0.211*	0.396*	0.459*
EST. Manager support x CSE	0.469*	0.383*	0.514*
		0.329*	0.382*
EST. Challenging activities x CSE	0.39*	0.389*	0.441*
		0.291*	0.337*
EST. Strategy x CSE	0.390*	0.330*	0.440*
		0.294*	0.341*
EST. Peers x CSE	0.428*	0.375*	0.473*
		0.322	0.373*

* $p<0.05$

The second condition for mediation was to check if the antecedent variable “conditions for creativity” predicted the mediating variable, CSE. The results summarized in Table 5 show that there was no significant contribution by any of the unfavorable conditions for creativity or by the only favorable condition, freedom of action. The other four dimensions of favorable conditions for creativity were predictive of CSE, with the highest B and β values obtained in “manager support” ($R^2= 0.023$; $B= 0.131$; $\beta= 0.151$; $p<0.01$). Therefore, it is possible to state that the second criterion of mediation has been attained for the parameters “manager support”, “challenging activities”, “strategy”, and “peers”. The third step was to check if the mediating variable predicted the criterion variable. As Table 4 shows, the B and β values are statistically different from zero and the variable explains 21% of the variance of proactivity ($R^2= 0.211$; $B= 0.396$; $\beta= 0.459$; $p<0.01$). Thus, the third condition was attained.

The fourth condition addresses the weakening of the effect of the antecedent variable with the introduction of the mediating variable for the four investigated favorable conditions for creativity. As Table 4 shows there was a decrease in the values of the indexes (B and β) with the introduction of the mediating variable in the regression analysis. The model with the highest explanatory power was “manager support” ($R^2= 0.469$; $p<0.01$). For this parameter the values of the B and beta coefficients were previously 0.43 and 0.575, being reduced to 0.38 and 0.51

with the introduction of the mediating variable. Finally, the Sobel test was executed to check if the mediating variables have significant indirect effects. The results of this test were significant only for “challenging activities” (Sobel=1.93; $p=0.026$) and for the factor “strategy” (Sobel=1.76; $p=0.039$). The other indirect effects were not significant.

Table 5. Summary of the regression analyses between antecedent and mediating variables

Antecedent Variable	Mediating Variable CSE		
	R ²	B	B
EST. Manager Support	0.023	0.131*	0.151*
EST. Challenging activities	0.077*	0.283*	0.277*
EST. Strategy	0.073*	0.235*	0.27*
EST. Peers	0.033*	0.167*	0.181*
EST. Freedom	Ns		
EST. Physical environment	Ns		
BAR. Inadequate attitude of manager	Ns		
BAR. Rigid norms	Ns		
BAR. Overwork	Ns		

The described findings show that CSE has mediated the relationship between creativity and proactivity just for the conditions favorable for creativity (except for freedom of action). So, the unfavorable conditions for creativity were excluded in the following analysis. In order to test the model that investigated the mediating relation of CSE in the relationship between favorable conditions for creativity and proactivity, a modeling analysis by structural equations was executed using the software Amos 18. The results of the indexes show a model with adequate adjustment. The value of CFI was 0.93, SRMR was 0.05, and RMSEA was 0.084. A summary of the model is shown in Figure 2.

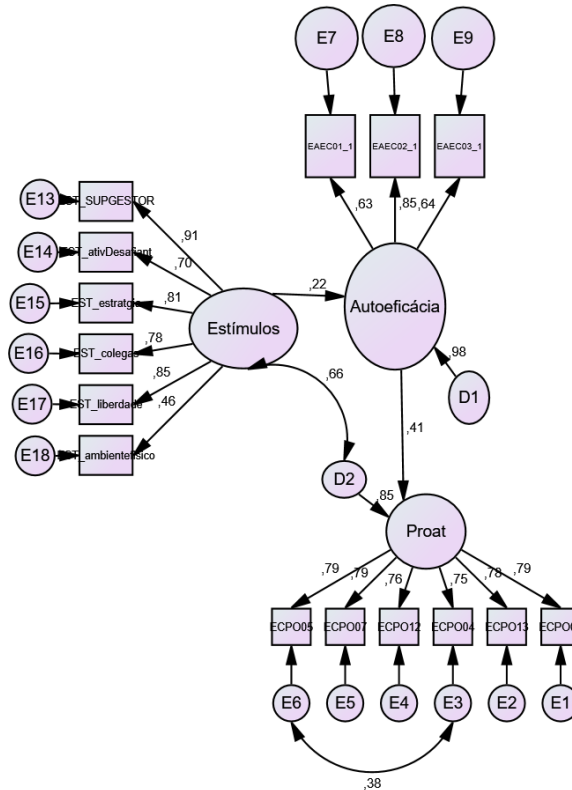


Figure 2. Structural specification of the model.

In order to check the validity of the mediating test, the mediating model was regarded as complex and the check for mediation conducted in this study was made through structural equations, with the magnitude and significance of the indirect effects being tested by bootstrapping (PREACHER; ZYPHUR; ZHANG, 2010). The indirect effects are estimated from a sample of the population and are a result of the regression coefficient estimates. Significant indirect effects are a measure analogous to the use of other methods that indicate the significance of the interacting effects of regression (PREACHER; SELIG, 2012). For that, analyses with submodels were executed aiming to check for the signal, magnitude, and significance of the coefficient, besides assessing the mediating relationship (PREACHER; ZYPHUR; ZHANG, 2010; PREACHER; SELIG, 2012). The results of the test of models via bootstrapping show indirect effects for the variable self-efficacy.

5 DISCUSSION

The data support the first hypothesis since they show that favorable conditions for the expression of creativity are positively related to proactive behaviors in the work environment. In accordance with the literature, this study has shown that the promotion of such behaviors require manager support (ALENCAR, 1998; PARKER, BINDL, STRAUSS, 2010; VEIGA; PORTO; LABOISSIÈRE, 2013), challenging activities (BINDL; PARKER, 2010; PARKER, BINDL, STRAUSS, 2010; SPEIER; FRESE, 1997), peer support (PARKER, BINDL, STRAUSS, 2010; PARKER, WILLIAMS, ET AL., 2006), organizational strategy (ALENCAR, 1998; ANDERSON; POTOČNIK; ZHOU, 2014), freedom of action (PARKER, BINDL, STRAUSS, 2010), and physical environment.

Analyzing the influence of each individual parameter, the one with the highest significant contribution was “manager support”. The influence of the leader upon the emergence of proactivity was also found in other studies (GILSON, 2008; TIERNEY, 2008; UNSWORTH; PARKER, 2003; VEIGA; PORTO; LABOISSIÈRE, 2013). However, new investigations are required to increase the understanding about such relationships. Among the gaps that need to be filled is the knowledge about the effect of the beliefs of supervisor /leader upon such behaviors, since leaders tend to be more favorable to proactive behaviors when they consider such behaviors not as a threat to their own work or when they will benefit the whole organization and not only the proponent of the idea (GRANT; PARKER; COLLINS, 2009). Further, proactive supervisors are more likely to endorse such behaviors than passive managers (FULLER; MARLER; HERSTER, 2012).

The influence of the parameters “challenging activities” and “freedom of action” upon proactivity is supported by literature. Several studies have consistently shown that “autonomy” and “work complexity and control” are a result of the degree of choice of the individual upon the way he/she executes his job, and such aspects are positively associated to proactivity (AMABILE ET AL., 1996; BINDL; PARKER, 2010; FRESE; GARST; FAY, 2007; UNSWORTH; PARKER, 2003). The perception of the tasks as exciting, best demanding, thought-stimulating, and requiring new knowledge and abilities are related to higher levels of proactivity.

Peer support is essential for the emergence of both creativity and proactivity, since in many situations it is required in order to reach the proposed objectives (GILSON, 2008; UNSWORTH; PARKER, 2003). When investigating the relationship between the perception of incentives and obstacles for creativity in the organizations and proactive behavior, Veiga, Torres and Bruno-Faria (2011) have noted that “peer support” and “diversity of tasks” provided the only significant contribution. These findings corroborate literature because it is more likely that workers will present initiative behaviors in the working environment when they believe they are heard, and when they trust in their peers (CLEGG; UNSWORTH; EPITROPAKI; PARKER, 2002; PARKER;

TURNER; WILLIAMS, 2006). Also, the “diversity of tasks” is associated to proactive behavior because workers tend to be more proactive when they feel they control the work (PARKER; WALL; JACKSON, 1997) and develop complex (FRESE; GARST; FAY, 2007) and challenging activities (CUNNINGHAM et al., 2002). The results of this study are in accordance with those found in the present investigation.

As hypothesized (H2), the unfavorable conditions for the expression of creativity are negatively associated to proactivity. Among the assessed aspects, the “inadequate manager attitude”, with behaviors such as taking hold of ideas of the subordinates or not listening to the ideas of his/her employees is detrimental to the promotion of proactive behaviors. Furthermore, rigid norms, overwork, and lack of time block the search for improvements in the work. These findings conform to previous studies (FRITZ; SONNENTAG, 2009; OHLY ET AL., 2006).

The variable “creative self-efficacy” was positively related to proactivity, confirming **hypothesis 3**. In order to exhibit proactive behavior a person needs to identify an opportunity of improvement and establish a course of action to implement what he/she has envisaged. In this process, however, obstacles might be present. Self-efficacy is relevant because it increases the possibility of endurance even in the face of difficulties (FAY; FRESE, 2001; SPEIER; FRESE, 1997), being associated to the presentation of ideas (DAYAN; ZACCA; DI BENEDETTO, 2013) and innovation (HSU; HOU; FAN, 2011). Moreover, role breadth self-efficacy has proven to be a predictor of proactive behavior, evaluated by a coworker (OHLY; FRITZ, 2007).

Hypothesis 4 has investigated the relationship between conditions for creativity and creative self-efficacy. This was partially confirmed because a significant contribution was not found for unfavorable conditions and for the favorable condition “freedom”. By their turn, “manager support”, “challenging activities”, “strategy”, and “peer support” presented significant values, although their explanatory powers have been too small. Another studies point out that contextual aspects such as autonomy (MATHISEN, 2011), and manager and peer support (DILIELLO; HOUGHTON; DAWLEY, 2011) are antecedents of CSE.

Finally, the hypothesis of mediation has shown that creative self-efficacy mediates the relationship between some favorable conditions for creativity – “manager support”, “challenging activities”, “strategy”, and “peers” – and proactivity, pointing out that the influence of the context in the proactivity of workers is maximized by CSE. Therefore, such parameters have a partial effect upon proactivity through creative self-efficacy. The confirmation of **hypothesis 5** is in accordance with the literature, showing that contextual variables (“manager support”, “challenging activities”, “freedom of action”, “peer support”, “organizational strategy”, and “physical environment”) are distal influencers of proactivity through the proximal variable of “creative self-efficacy” (AXTELL; PARKER, 2003; FRESE; FAY, 2001; HONG ET AL., 2016; PARKER; TURNER; WILLIAMS, 2006).

The mediating results confirm the influence of CSE in the relationship between context and the criterion variable, proactivity. This shows that the impact of the environmental dimension upon proactivity is subtracted from the “creative self-efficacy”, that is, part of this influence is explained by self-efficacy. Proactive behaviors, such as implementation of ideas and problem solving are more likely to occur in organizational environments with a high level of autonomy, because this allows the workers to be more self-confident since it reminds the worker that he/she has the ability and chance to take initiative and change the way the work is done (GRANT; ASHFORD, 2008). The presence of challenging activities and freedom of action allow workers to search for new knowledge and take control of the situation, affecting his/her creative self-efficacy and this, in turn, affects directly proactivity.

FINAL CONSIDERATIONS

The objectives proposed in the present work were attained and the variables included in the study design brought significant contribution to the explanation of proactivity, the only exception being the parameter “overwork and lack of time” that is part of the variable “conditions unfavorable for creativity”. Four dimensions of the variable “favorable conditions for creativity” (“manager support”, “challenging activities”, “strategy”, and “peers”) had direct and indirect effects upon proactivity through self-efficacy. The recorded effects are in line with the literature and reinforce the importance of taking into account the beliefs the person has about his/her ability of generating something new in the relationship between the perception of the contextual aspects and the proactive behaviors (BINDL; PARKER, 2010; UNSWORTH; PARKER, 2003).

Proactive behavior is the major predictor of creative ideas (HERMANN; FELFE, 2014) and of suggestion of improvements (FRESE; TENG; WIJNEN, 1999) in the organizations, and is also a requirement for entrepreneurship since the search for opportunities and their exploration are two central aspects of this phenomenon (SHANE; VENKATARAM, 2000). Therefore, such behaviors are highly praised in the current labor world.

Considering the importance of proactivity in the current labor world, the development of strategies to develop such behaviors is critical, like for instance, training (BATEMAN; CRANT, 1999). The literature reports many successful trainings for the development of proactivity both between entrepreneurs (GLAUB; FRESE; FISCHER; HOPPE, 2014; GOOSAIN; FRESE; FRIEDRICH; GLAUB, 2013) and students (KOOP; DE REU; FRESE, 2000). The CSE might be also developed through cognitive training, which might be especially effective in the work environment (MATHISEN; BRONNICK, 2009).

The present work presents limitations that must be highlighted. One aspect that should be mentioned is the common variance of the method (CHANG, WITTELOOSTUIJN, EDEN, 2010; PODSAKOFF, MACKENZIE, LEE E PODSAKOFF, 2003). Methodological safeguards were adopted in the selection, application, and analysis of instruments to reduce such effect. However it is impossible to eliminate it. In view of that, the authors recommend that subsequent studies adopt longitudinal and experimental designs. Another limitation is the fact that it used a convenience sample that was not representative of any organization. As a result, it is important to test the relationship with other strategies of sample selection.

As a practical implication for managers, the present work suggests that for the promotion of proactive behaviors in the work environment it is imperative that the organization presents as part of its guidelines the valorization of initiative, search for innovation, and experimentation. In this respect, examples are the creation of bank of ideas, incentives to experimentation, training, and prompt access to external professionals. Besides that, the work environment itself should provide conditions such as the materials required to execute the job, the access to information and technological resources, and an ergonomically adequate physical environment. Also, in accord with an organizational strategy that values initiative and search for solutions, the tasks should enable a person to use his/her competencies and give opinions about the ways of doing the job. Two mandatory aspects might be added, the peer and manager support in the search for improvements in work conditions. In this context, creative self-efficacy, that is, the belief of a person that he/she is able to perform something creative is a variable that explains proactivity and, as supported by the literature; both self-efficacy and proactivity might be improved through training.

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Contribution of authors

Contribution	[Author 1]	[Author 2]	[Author 3]
1. Definition of research problem	√		
2. Development of hypotheses or research questions (empirical studies)	√		
3. Development of theoretical propositions (theoretical work)	√	√	√
4. Theoretical foundation / Literature review	√		
5. Definition of methodological procedures	√	√	√
6. Data collection	√		
7. Statistical analysis		√	
8. Analysis and interpretation of data	√	√	
9. Critical revision of the manuscript			√
10. Manuscript writing	√	√	√
11. Other (please specify)			