

Self-Control, Self-Management and Entrepreneurship in Brazilian Creative Industries

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Abstract: Creative entrepreneurship has gained ground in recent years with the advent of creative industries. The capabilities to set targets and individually self-regulate have been indicated as predictors of entrepreneurship. This study aims to identify validity characteristics of a self-regulation scale and to test if score differences are related to whether or not one is an entrepreneur, personal characteristics, or the activity sector. A total of 596 professionals from creative industries in Brazil participated in this study. The self-control and self-management scale (SCMS) has been applied; it has been translated and adapted to Portuguese. Cross-validation analysis has been done. The results support the three-factor structure of the scale. Entrepreneurs tended to indicate higher means in the self-evaluation factor than non-entrepreneurs. Activity sector, gender and schooling demonstrated a significant difference in the self-monitoring factor.

Keywords: entrepreneurship, self regulation, job performance

Autocontrole, Autogerenciamento e Empreendedorismo em Indústrias Criativas Brasileiras

Resumo: O empreendedorismo criativo ganhou importância nas últimas décadas com o surgimento das indústrias criativas. A definição de metas e a capacidade individual de autorregulação são apontadas como preditores de empreendedorismo. O objetivo deste estudo foi identificar características de validade de uma escala de autorregulação e testar a hipótese de haver diferenças de autorregulação em função de a pessoa ser ou não empreendedora, suas características pessoais e setor de atuação. Participaram 596 profissionais das indústrias criativas brasileiras. Eles responderam à Escala de Autocontrole e Autogerenciamento (SCMS), traduzida e adaptada para o português. Os dados foram submetidos a uma validação cruzada. Os resultados apontam para a consistência da estrutura tri-fatorial da escala. Empreendedores tenderam a médias mais altas no fator Autoavaliação do que não empreendedores. Setor de atividade, sexo e escolaridade apresentaram diferenças significativas no fator Automonitoramento.

Palavras-chave: empreendedorismo, autorregulação, desempenho no trabalho

Autocontrol, Autorregulación y Emprendedorismo en Industrias Creativas Brasileñas

Resumen: El movimiento emprendedor creativo ha ganado importancia en las últimas décadas por el surgimiento de las industrias creativas. La definición de metas asociada a la capacidad individual de autorregulación son apuntadas como predictores de las acciones de emprender. Este estudio tiene por objetivo identificar la validez de una escala de autorregulación y testar la hipótesis de haber diferencias en función de la persona ser o no emprendedora, sus características personales y sectores de actuación. Participaron 596 profesionales de las industrias creativas brasileñas que contestaron a la Escala de Autocontrol y Autorregulación (SCMS) traducida y adaptada al portugués. Los datos fueron sometidos a una validación cruzada. Los resultados señalan hacia la consistencia de la estructura tri-factorial de la escala. Resulta que emprendedores presentaron medias más altas en el factor Autoevaluación que los no emprendedores. El sector de actuación, sexo y nivel educacional presentaron diferencias significativas en el factor Automonitoreo.

Palabras clave: emprendedor, autorregulación, rendimiento laboral

The central theme in this article refers to the self-regulation processes in entrepreneurship in creative industries and its relation with some sociodemographic variables. These industries comprise a set of sectors whose activity is to produce goods and services characterized by a symbolic content and economic tangibility. Therefore, their output arises from the

fusion between immaterial (ideas, signs, culture, creativity), “physical” (a book, a theatre play, a sculpture) and economic (property rights, consumption networks) inputs. They are circumscribed by the traditional cultural sectors, such as theatre, literature, plastic arts, heritage (musea, preservation, craftsmanship, folklore) and by hybrid sectors, such as architecture, fashion, tourism, as well as the classical cultural industries, such as cinema, television, journalism (Caves, 2000; Towse, 2010; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2009).

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At the heart of the dynamics of these sectors are the creative professionals – artists and other cultural workers. Like in any other economic sector, these professionals perform actions that can be described as entrepreneurial. Being an entrepreneur in this context involves the action of combining two types of resources: on the one hand the creative resource, and on the other the economic resource (De Bruin, 2005; Towse, 2010, 2011). The first refers to the production of ideas, the conception of works, goods or services of esthetic/cultural values; the second involves processes of adding value to these same works, good and services.

In addition, creative professionals act in a sector that, despite its heterogeneity, strongly depends on innovation and on the development of new works/services (Caves, 2000). This same activity context, due to its institutional characteristics, leads the professionals to work arrangements dependent on self-employment (Menger, 2001). In the literature, both of these characteristics, innovation and self-employment, are appointed as characteristics of entrepreneurship (Baron & Shane, 2008; Casson, 2010; Shane, 2003). In the third place, self-employment can also take form in the opening of a business. Although important, however, that is not the only characteristic to define entrepreneurship, especially in creative industries (Davidsson, 2005; Towse, 2010).

As Martin (1982) alerts, an artist is not always an entrepreneur. To be so, the artist needs to go beyond the creation of new ideas, something frequently attributed to artists (or professionals from creative industries): there is a need to explore the economic, social and/or cultural value of these ideas. That may materialize or not in the actual opening of a new business (company). Consequently, although economic parameters (opening a business) are frequently used to define entrepreneurship (Baron & Shane, 2008), in this article, we follow the suggestion by Carland, Hoy, Boulton and Carland (1984), with adaptations, according to whom entrepreneurship should be apprehended in a continuum that ranges from the individual who opens a new business to the person who manages an existing business/activity. This classification takes into account the context of the creative industries.

Thus, we consider entrepreneurs to be professionals who open a new business, but also professionals who engage in the management routines of third persons' business. This last possibility marks a differential as, in accordance with Martin (1982), this professional/manager goes beyond the production phase of the creative good/service, incorporating new competences into his/her repertoire, related to the exploration and practical feasibility of the idea, independently of the route chosen for that (beyond the mere opening of a company). Nevertheless, we also consider entrepreneurs to be professionals who, despite not having opened their own business nor managed other people's business, develop activities that signal the presence of the same competences, that is, they are directly responsible for the entire cycle or value chain of the creative activity in question. We assume that, in the Brazilian context, this takes form in the legal figure of the individual micro-entrepreneur (IME). In addition, this legal characteristic is typical of creative industries (Caves, 2000; Menger, 2001).

From the psychological viewpoint, how can one understand entrepreneurship? At least two research lines help

us to answer that question: one is related to the self-regulation of the entrepreneurial action, the main focus in this article; and the other to the profile of the entrepreneur.

As regards the first line, Psychology research has appointed that the control of personal actions and targets in relation to the opportunities lies at the origin of entrepreneurship, considered as a phenomenon based on individual actions driven by objectives and motivationally sustained (Chandler, DeTienne, McKelvie, & Mumford, 2011; Vale, Corrêa, & Reis, 2014). Besides setting targets, however, one also needs to control the trajectory that leads to their achievement. Hence, focused attention and efforts made according to the circumstances turn into key elements (Baron & Tang, 2011; Frese & Gielnik, 2014; Karoly, 2010; Mainela, Puhakka, & Servais, 2014; Shane & Venkataraman, 2000). Recently, Bendassolli and Borges-Andrade (2013) proposed a model to understand the entrepreneurial performance in creative industries. Until date, this model has not been tested. In the model, the regulatory processes are particularly relevant. These processes have already been a source of extensive theoretical concern, particularly by Bandura (1991) and Kanfer and Karoly (1972). In view of the importance of these authors in the technical literature, as well as the fact that they are at the base of the measuring tool whose revalidation will be proposed in this article, their ideas will be detailed.

From the perspective of Kanfer and Karoly (1972), human behavior is strongly influenced by the environmental conditions. Self-control (self-regulation) is the attempt to use human beings as agents to assume the management of their behavior and break the cycle of environmental control over them (heteroregulation). For these authors, the self-control and self-regulation process serves as a closed feedback system and involves three subsystems: self-monitoring, self-evaluation and self-reinforcement. Self-monitoring is a surveillance system that comes into a state of alertness when the behavior chain is not flowing well. The focus of attention is redirected and the current and expected conditions are evaluated. The result of this evaluation, if favorable or unfavorable, triggers self-reinforcement to get closer to the stimulus or aversion for distancing from the stimulus. The behavior is maintained or altered by the individuals' effort towards internal agencying.

Bandura's social cognitive theory (1991) presupposes that human behavior is motivated and regulated by the individual cognitive capacity to exert self-influence. Self-regulation is a multifaceted phenomenon that drives individual thoughts, affects and actions. It operates through a set of subsidiary cognitive processes: self-monitoring, self-evaluation and affective self-reaction. The self-monitoring process guarantees self-observation, self-diagnosis and self-motivation. The attention paid to emotions, thoughts and current actions, as well as to the conditions all of this occurs in and its effects, produces information that allows individuals to assess their development towards the target. The self-evaluation process is based on personal standards of judgment about what is favorable or unfavorable, as a fundamental condition to manage activities that continue to exist (Simsek, Heavey, & Veiga, 2010). Affective self-reaction, then, is the main mechanism responsible for regulating the

course of action, serving as a feedback system, based on the anticipation of the adaption to activate motivation and behavior, until the cycle ends and reactive feedback can be provided, redirecting the action (Dewall, Baumeister, Schurtz, & Gailliot, 2010). People who fail in the selfregulation process do not persist in the accomplishment of frustrating tasks (Baumeister, Bratslavsky, Muraven, & Tice, 1998), a fundamentally relevant fact for entrepreneurial behavior.

Despite acknowledging that the target of being an entrepreneur depends on contextual variables, the self-regulation processes contribute to understand how the intrapsychic dynamics, in its interaction with the social midst, permits putting this target in practice (Bryant, 2009; Pihie & Bagheri, 2013). And, to investigate these processes, appropriate measures need to be used. One example is the Self-Control and Self-Management Scale (SCMS) (Mezo, 2009), which is revalidated in this article. One justification for its use in Brazil is the fact that there exist few similar measures in the Brazilian literature specifically focused on the selfregulation competences, one of the bases for entrepreneuring and entrepreneurial performance.

The SCMS was developed by Mezo (2009) and is based on the contributions by Bandura (1991) and Kanfer and Karoly (1972). Its items were based on cognitive-behavioral theoretical literature and revised based on content experts' suggestions. The SCMS contains 16 items, assessed on a six-point Likert scale (ranging from 1, when the subject considers that the item in question does not describe him/her at all, to 6, when (s)he considers that the item totally describes him/her). These items are distributed in three factors: (a) Self-Monitoring (SM), assessing how conscious the subject is with regard to the task-related actions, emotions and thoughts; (b) Self-Evaluation (SE), with items that measure the degree of difficulty of the selfaccomplishment standards, as well as the subject's own assessment of the results achieved; and (c) Self-Reinforcement (SR), whose items measure selfreward and selfpunishment strategies the subject perceives, which can be open (explicit) or closed (implicit) (Mezo, 2009).

Validity evidence for the SCMS was obtained in a multiethnic student sample in the USA ($N = 302$) (Mezo, 2009). Satisfactory levels of consistency (Cronbach's alpha) were found for the three subscales, which are: .74 (SM), .75 (SE), and .78 (SR). Mezo (2009) also presents content validity measures of the SCMS (positive significant intercorrelations, ranging from low to moderate); and construct validity measures, both convergent (verifying correlations with other similar constructs, obtaining moderate to high magnitudes), and discriminant (the subscales were not significantly correlated with any of the discriminant constructs used).

Besides the self-regulation mechanisms, there exists another research line in the literature that will be mentioned next, in view of its importance in establishing exploratory hypotheses for this study. This line investigated the entrepreneurial profile, particularly regarding sociodemographic aspects. To give an example, there exists a relative consensus in the assertion that entrepreneurs have a higher education level than non-entrepreneurs (Jaramillo Villanueva, Escobedo Garrido, Morales Jimenez, & Ramos Castro, 2012; Vale, Serafim, & Teodosio, 2011), despite

studies that alert to the fact that entrepreneurship is not a phenomenon restricted to the "elite", with entrepreneurs from poorer classes and homes whose parents have low education levels (Vale, 2014).

As regards sex, the results are controversial, suggesting the influence of the entrepreneurial context. A study on rural tourism in Galicia (Spain), for example, concluded that women demonstrate greater capacity towards productive diversification and are more focused on the economic return of investments than men (Dieguez-Castrillon, Gueimond-Canto, Sinde-Cantorna, & Blanco-Cerradelo, 2012). On the opposite, a study undertaken in Bogota, in which relationships between sex and entrepreneurship were analyzed in the beauty industry, concluded that, although this sector is historically linked to the female, men have invaded this territory and gained greater visibility, especially because they occupy position of higher status, leaving activities with lower salaries, like manicure, for women (Pineda Duque, 2014). In general, men are appointed as having a greater personal trend towards entrepreneurship (Carvalho & Gonzáles, 2006), and one of the explanations is the fact that work is more central in their lives (Brenner, Pringle, & Greenhaus, 1991).

Concerning the age when the entrepreneurs start their activities, recent reviews have demonstrated their decline over time, especially as from the 1990's when activities emerged in the technology sector (Lange, Marram, Murphy, Marquis, & Bygrave, 2014). Hsua, Roberts and Easley (2007), for example, in an extensive study of alumni from MIT, USA, found that the mean age dropped from 40 years in the 1950's to 28 years in the 1990's. Other personal attributes of entrepreneurship are also appointed in the literature, such as obstination, capability to overcome challenges and take limited risks (Jaramillo Villanueva et al., 2012), and the capability to introduce novelties or changes in the enterprise and to construct social networks (Corrêa & Vale, 2014). Until date, however, studies on the entrepreneurial profile in the context of creative industries are scarce. In combination with the need to understand psychological self-regulation mechanisms operating in the professionals who work in these sectors, it justifies the development of this study.

Therefore, the objective in this study was to identify validity characteristics of a self-regulation scale and test the hypothesis of differences in self-regulation in function of whether the person is an entrepreneur or not, his/her personal characteristics and activity sector, using professionals from creative industries. The long-term goal of this initiative is to further the use of the scale to better understand these professionals' entrepreneurial performance. If the measures found by Mezo (2009) are confirmed, the first set of exploratory hypotheses is that these measures are associated with the age, education and sex of our respondents, as reported in the Global Entrepreneurship Monitor (GEM, 2013) among Brazilian entrepreneurs in general, and also based on an earlier review of studies on the entrepreneurial profile. The second set of preliminary hypotheses is that these measures can differ according to whether the person is an entrepreneur or not, and based on the type of activity developed in the creative industries. These hypotheses derive from the model proposed by Bendassolli and Borges-Andrade (2013).

Method

Participants

This study included 596 professionals who work in creative industries all over Brazil. The mean age was 39.16 years ($SD = 12.14$), and little more than half is male (58.4%). In the sample, 76% of the participants hold a higher education degree (44% undergraduate, 16% specialization and 16% Master's/Ph.D.). The activity sectors these participants declared, in the creative industries, are mainly distributed as follows (according to the adaptation of the system of creative activities proposed by UNESCO, 2009): heritage (33.6%) (historical, architectonic, museum, craftsmanship and folclore), scenic arts (22.0%), literary arts (11.4%), music (9.9%), audiovisual (7.7%) and visual arts (1.7%). Very specific sectors, which did not fit into this classification system, complete the sample as "others", not cited here because they were not used in the analyses, in view of the widespread pulverization of activities in this category and the difficulty to circumscribe them. The mean length of the professional activity is 15.17 years ($SD = 11.83$).

In the total sample, 47% are entrepreneurs, according to the previously presented criterion adopted here, and further explained in the procedures. Among these 47% of entrepreneurs, 69% own their own business, as employees; 16.4% are managers of other people's businesses/activity; and 14.6% are individual micro-entrepreneurs, that is, they hold a National Registry Number of Legal Entity (CNPJ) in their own name.

Instruments

Self-Control and Self-Management Scale. The SCMS was originally elaborated in English (Mezo, 2009). The back translation procedure was adopted, for which the scale was translated to Portuguese, then again to English, and then submitted to experts (researchers with expertise in tool validation; Pasquali, 2010) for comparison. These were responsible for examining the versions and suggesting the most appropriate tool in semantic terms. A first version in Portuguese of the SCMS was submitted to a pretest, involving 11 people with characteristics similar to the target population. After answering, they were interviewed to check for possible item comprehension problems. The suggestions obtained in this phase were assessed by the experts and incorporated, reaching the final version of the *Escala de Autocontrole e Autogerenciamento*. The tool still included other questions to obtain information on the respondents and their professional activities in the creative industries, described earlier.

Procedure

Data collection. The data were collected electronically. Besides sociodemographic questions and the SCMS, three questions were asked to assess whether the participant self-classified as an entrepreneur. People who self-classified in one of the following conditions were considered as entrepreneurs

(Carland et al., 1984): (a) owner of a business in a sector of the creative industries, with employees or not; or (b) manager of third parties' business; or (c) individual micro-entrepreneur (IME), fiscal situation created by the Brazilian government to regulate autonomous professional activities with CNPJ. For this classification, the first question asked to the respondent was whether he owned a business in his activity sector. If he answered yes, questions about sociodemographic characteristics and the scale appeared. If not, finally, a question was asked about whether he was an IME. If yes, then the scale followed. For analysis purposes, only the participants who answered "yes" to one of these three questions were considered entrepreneurs. The participant who answered "no" to all questions was considered a non-entrepreneur.

In operational terms, first, a database was elaborated with names of potential participants. Therefore, websites of institutions related to the creative industries were investigated, as well as personal websites of the professionals working there. In addition, the snowball strategy was used, asking people who were part of and exerted some influence in any sector of these industries to pass their contacts or forward the invitation to potential research participants. More than 10 thousand names with e-mails of these professionals were obtained, distributed all over Brazil.

The next step was to forward, by e-mail, an invitation to participate in the research. This invitation presented the main objectives of the study and expressed the participation model. In addition, a link was forwarded for the person, if wanted, to access a hotsite specifically created for the research, where information was presented on creative industries, the objectives and phases of the project, and information about the team and the ethical aspects involved. At regular intervals, the response rate to the questionnaire was monitored. Each week, new invitations/reminders were sent, until reaching a saturation point when no new answers were verified. The data were collected at the end of 2012 until mid-2013, approximately.

Data analysis. The first step in the analysis was the exploration of the database. In this process, 43 cases were excluded, adding up uni ($z \geq 3.29$) and multivariate outliers (Mahalanobis distance, $p < .01$). The final number of respondents, presented earlier, already considers these exclusions. Most of the items presented absolute asymmetry and kurtosis coefficients between $|0-1|$. Nevertheless, the Mardia coefficient indicates that the multivariate normality principle was violated, an aspect taken into account in the analyses. The total sample was randomly divided in two parts to proceed with a cross-validation. Thus, with the first ($A_1 = 290$), exploratory factorial analysis (EFA) was performed; with the second ($A_2 = 306$), confirmatory factor analysis (CFA).

In the EFA, the process started with the investigation of the factorability of the data matrix (KMO and Bartlett test). Due to the (moderate) non-normality of the distribution, the Principal Axis Factoring (PAF) method was chosen, which is the most indicated under these circumstances (Costello & Osborne, 2005) and permits capturing only the variance the factors have in common. The same (obliquous/Promax)

rotation technique was used as in the original study by Mezo (2009). Each factor should have a factorial weight of at least $|\lambda = 0.35|$ to be considered in the model. The choice of the number of factors to be retained was based on Horn's parallel analysis, undertaken in the statistical software FACTOR 9.2.

As for the CFA with the second part of the sample ($A_2 = 306$), and due to the non-normal nature of the data and the ordinal measuring level of the variables, the robust maximum likelihood extraction method was employed with Satorra-Bentler's correction. The analyses were developed using a polychoric correlation matrix. To assess the quality of the adjustment, absolute indices were used, such as the difference of the chi-squared according to the degrees of freedom of the model (χ^2/df), whose expected value for good adjustment is lower than 2 (Arbuckle, 2008); and relative indices: the comparative fit index (CFI) and the Tucker-Lewis index (TLI). For the latter, values higher than .90 (Byrne, 2010; Kline, 2011; Marôco, 2010) are expected for the sake of a good adjustment. The standardized root mean square residual (SRMR) and the root mean square error of approximation (RMSEA) were also used. The expected values for the sake of good adjustment are inferior to .08 for the first and .06 for the second (Brown, 2006).

The consistency of the factors was assessed using Cronbach's alpha and the compound reliability indices (CR > .70). The extracted mean variance (EMV > .50) was used to check the convergent validity between the factors. The discriminant validity corresponds to the square root of the EMV. The resulting value should be higher than the

correlation (r) between each pair of factors (Table 2). The analyses were developed in the software LISREL 8.80. After confirming the appropriateness of the tool, the data from the entire sample of participants ($N = 596$) were used to check the hypothetic relations between the SCMS factors and the research variables, which are: entrepreneur x non-entrepreneur, activity sector in the creative industries, age, education and sex.

Ethical Considerations

The research project that originated this article was submitted to and approved by the Research Ethics Committee at the Universidade Federal do Rio Grande do Norte, under protocol CAAE: 12005912.3.0000.5537.

Results

The inspection of the correlation matrix produced based on the data for A_1 revealed the appropriateness to apply the EFA (KMO = 0.81; Bartlett's sphericity test $\chi^2_{[120]} = 1588.84$, $p < .001$). Horn's parallel analysis indicated the retention of three factors (Table 1). Only one item (I13 - "Overcoming uneasy moments. Foreseeing rewards.") did not obtain a factor loading higher than the established minimum limit ($> .35$), being excluded from the model. The three-factor structure explains 54.74% of the total variance. The consistency rates (alphas) are satisfactory and the factorial weights vary between $|.44|$ and $|.75|$.

Table 1
Factorial Structure of Scale of Self-Control and Self-Management, Explained Variance and Consistency Index

Keywords in items	SM	SE	SR
I01 Work achievement. Attention.	.50		
I02 Task focus.	.66		
I03 Awareness. Work achievement.	.71		
I04 Checking progress. Work achievement.	.75		
I05 Attention on thoughts. Hard work.	.67		
I06 Behavior monitoring. Work achievement.	.66		
I07 Important objectives. Failure to achieve.		.56	
I08 Incapacity to plan. Solving life problems.		.65	
I09 Achievement of meaningless objectives.		.64	
I10 Useless plans.		.70	
I11 Unclear work standards. Task evaluation hardness.		.72	
I12 Self-congratulation. Progress achievement.			.72
I14 Silent self-pride.			.78
I15 Making the right thing. Long-term well-being.			.44
I16 Gift self-giving. Progress achievement.			.59
Eigenvalues	4.49	2.55	1.71
Explained variances (%)	28.08	15.95	10.70
Cronbach's alphas	.81	.78	.75

Note. Extraction method: Principal Axis Factoring. Rotation method: Promax (with Kaiser normalization). SM = Self-Monitoring, SE = Self-Evaluating, SR = Self-Reinforcing.

The results of the CFA, obtained based on A_2 , also appoint the sense of the appropriateness of the factorial structure presented in Table 1. The indices were as follows: $\chi^2_{(87)} = 171.29$, $p < .001$, $\chi^2/gl = 1.96$; $CFI = .98$; $TLI = .97$; $RMSEA = .06$ (90% confidence interval = .04; .06), $P[\text{rmsea} \leq .05] < .19$; $SRMR = .06$. Table 2 presents the factorial weights and standardized errors, as well as the correlation between the latent variables.

Like in the case of the EFA factors, the consistency rates (alphas) are satisfactory: .82 (SM), .77 (SE) and .78 (SR), respectively. Similarly, the compound reliability (CR) indicates an excellent level of factorial consistency: .88 (SM), .85 (SE) and .82 (SR). With regard to the convergent validity (the items load in the expected factors), the EMV of the factors ranges around the expected value ($> .50$): .47 (SM), .53 (SE) and .54 (SR). The factors also present discriminant validity (are mutually distinct), since the square root of the EMV for each factor is higher than the correlation between each pair of factors (Table 2).

Table 2
Structural Model With Respective Standardized Estimates for Self-Control and Self-Management Scale

Factor	Question	Factor loading
SM	Q1	.66
	Q2	.67
	Q3	.84
	Q4	.85
	Q5	.75
	Q6	.73
SE	Q7	.64
	Q8	.76
	Q9	.74
	Q10	.75
	Q11	.76
SR	Q12	.81
	Q14	.81
	Q15	.69
	Q16	.64

Note. Correction between SM-SE (-.34), SE-SR (-.14) and SM-SR (.37) factors.

The factorial weights varied between $|.64|$ and $|.85|$, therefore being slightly higher when compared to the structure obtained earlier by the EFA (Table 1). Although LISREL presented some items for modification, the decision was made not to implement them, not even the items with greater potential to improve the adjustment ratios. First because, when developing simulations with some of those suggestions, only subtle improvements were identified in ratios like χ^2 and CFI. Second because no theoretical support was found to exclude items for example, or even to permit the correlation of item errors.

Using the SCMS factors as variables, next, the results of its association with the other research variables are presented, to test the preliminary hypotheses presented in the introduction of this article. No association was found between the factor Self-reinforcement (SR) and these variables.

As for the difference between entrepreneurs and non-entrepreneurs, an association was only found with the factor Self-evaluation (SE): $M_{\text{Entrepreneurs}} = 2.32$, $SE = 0.06$; $M_{\text{Non-entrepreneurs}} = 2.00$, $SE = 0.05$; $\Delta M = .31$, 95% CI $[.14, .48]$; $t_{[594]} = 3.64$, $p < .001$. This means that the participants who self-classified as entrepreneurs tended to present higher averages in this dimension. As these are negative items, higher averages indicate that the participants assess this self-regulation component more negatively.

Concerning the activity sectors, statistically significant relations were only identified in the factor Self-monitoring (SM). Professionals active in music ($\Delta M = .37$) and heritage ($\Delta M = .44$) tended to present significantly higher averages in the component items of this factor than the participants working in scenic arts ($F_{[6,589]} = 5.20$, $p < .001$). As for age, only the factor Self-monitoring (SM) showed a significant relation between averages ($r = .26$, $p < .001$). Significant differences exist in terms of sex in Self-evaluation (SE): women ($M = 2.00$, $SE = .06$) presented a lower average than men ($M = 2.25$, $SE = .05$; $\Delta M = -.25$; 95% CI $[-.42, -.07]$; $t_{[594]} = -2.84$, $p < .05$).

Finally, when considering the education differences, significant differences are found in two factors. In the factor Self-monitoring (SM): participants with a graduate degree tended to attribute higher averages than participants with a higher education degree only ($\Delta M = .35$; $F_{[4,585]} = 4.63$, $p < .01$). In the Self-evaluation factor (SE), participants holding secondary ($\Delta M = .57$) and higher education ($\Delta M = .36$) degrees tended to attribute higher average scores than participants holding a stricto sensu graduate degree ($F_{[4,585]} = 4.29$, $p < .01$).

Discussion

Two objectives guided this paper: testing the use of the SCMS in the Brazilian context, with professionals from creative industries; and exploring the differences in the scores of entrepreneurs and non-entrepreneurs, and the variables sex, education and age of these professionals.

As for the first objective, the results of the EFA and CFA supported the decision to extract a three-factor structure – like in the original study. The consistency ratios are satisfactory and similar to that of the North-American research, being slightly lower for the measure as a whole and slightly higher for the measures of the factors SM (Self-monitoring) and SR (Self-reinforcement). In addition, the factorial weights of the *Escala de Autocontrole e Autogerenciamento* vary similarly to those of the original SCMS.

The factor related to Self-monitoring (SM) is the factor that most explains the data variance, as found in the original study. Its six items were maintained. This refers to the extent to which the individuals certify their progress towards an objective, are aware of the relation between this

objective and what they do, pay attention to what they think at work, maintain the focus on their tasks, do not deviate their attention and know that they can monitor their action. This factor reached the highest Cronbach's alpha. Its items suggest that individuals perform self-observation, self-diagnosis and self-motivation, as proposed by Bandura (1991), triggering the elements of the second factor, as Kanfer and Karoly (1972) suggested.

The second factor, in terms of explained variance, is related to the Self-evaluation (SE), with items formulated through negative assertions, like in the original version. All five items were maintained. They refer to the individuals' assertions about the clarities of the work standards they establish and their plans to overcome problems in their life, about the utility of making plans, about the significance of the objectives they achieve and about the extent to which they are capable of achieving them. This factor resulted in the second best Cronbach's alpha. Its items are related to the part of the self-regulation, which indicates that something may not be flowing (Kanfer & Karoly, 1972), or that the standards of comparison established may not be appropriate (Bandura, 1991), which triggers the third factor.

The third factor is related to the Self-reinforcement (SR) strategies, and has the lowest Cronbach's alpha, although still acceptable. One of the items of the SCMS was lost and only four remained in this factor of the *Escala de Autocontrole e Autogerenciamento*. Its assertions mention self-pride, even if going against what other people think, praising oneself when progress is made and giving oneself some gift. These are directly related to the positive or negative results of the assessment mentioned by Kanfer and Karoly (1972), who propose to maintain or alter the behavior based on the individual's internal agencying. They consist of an affective self-reaction, which influences the people's motivation and the quality of their actions (Bandura, 1991).

The second objective in this study was to investigate, exploratorily, the relations between the scale factors and the characteristics associated with Brazilian entrepreneurs, described by GEM (2013) and by some authors of the second research line presented in the introduction, related to the entrepreneurial profile. Higher scores were found for Self-monitoring (SM) among older people holding a graduate degree. The skills involved in self-monitoring are more likely to learn promoted by life experience or academic experience. Self-monitoring refers to concentration, focus and accompaniment of the course of action. As entrepreneurship involves behaviors focused on the achievement of objectives (Frese & Gielnik, 2014), it is expected that higher levels of this competency positively influence the action of entrepreneuring in creative industries, supporting evidence from the literature in relation to other sectors (Baron & Tang, 2011; Karoly, 2010; Mainela et al., 2014; Shane & Venkataraman, 2000).

Higher scores for Self-evaluation (SE) were found among women and people with a secondary education degree. Being an inverted measure, this means that these people assess that they accomplish fewer actions, like reaching objectives, making clear plans and pursuing objectives when compared to people with higher education levels (graduate education).

One possible interpretation is that the complexity deriving from education permits further development of this self-regulation competence. Drawing a bridge to entrepreneurship, this can reaffirm what was raised in the introduction about the positive role of education in entrepreneurship (Jaramillo Villanueva et al., 2012; Vale et al., 2011).

As regards the difference between the sexes, in principle, this finding could be considered a potential explanation of the trend Carvalho and González (2006) appoint, and which is confirmed in the Brazilian case (GEM, 2013), that entrepreneurship is more prevalent among men (assuming the isolated positive impact of this self-regulation competence on entrepreneurship). Nevertheless, this interpretation needs to be put in perspective. First because, as we saw in the introduction, there does not seem to exist a consensus about a direct relationship between entrepreneurship and sex; therefore, further empirical explorations would be necessary. Second, as the scale scores are based on self-perception, the women's assessment about themselves may be more about sharpened self-criticism than about the perception of a lesser capability towards self-evaluation and, therefore, self-regulation. Third, because, as shown next, this characteristic was also found among entrepreneurs.

As mentioned, higher Self-evaluation (SE) scores were also found among the participants classified as entrepreneurs. That was the sole characteristic that significantly distinguished entrepreneurs and non-entrepreneurs. That is, the first assess themselves more negatively. It is not clear, however, if it is a more negative assessment that turns them into entrepreneurs, or whether that work condition makes them more critical about what they do in these industries. The self-criticism competence could be associated with other personality characteristics reported as important in entrepreneurship – to give an example, those related to the model of the five personality factors, as the entrepreneurs may be more aware of themselves and their activity than non-entrepreneurs (Frese & Gielnik, 2014). Nevertheless, entrepreneurs might perceive that they accomplish less because, paradoxically, they have a greater need for self-accomplishment, with strategies to achieve higher objectives (Simsek et al., 2010).

Finally, in certain sectors of the investigated industries, distinguished SM scores appeared: there are less self-perceived Self-monitoring skills among professionals active in scenic arts when compared to professional working in music and heritage. Would the activities implied in scenic arts require less control of their own behavior from their professionals in terms of surveillance? As there was no distinction in this issue between entrepreneurs and non-entrepreneurs, this result may be related to the characteristics of this activity or to the specific profile of the people in this sample. Further studies could look at the impact of the characteristics of the activity sectors in the creative industries on the self-regulation competences.

These findings should be considered against the background of some research limitations, namely the convenience sampling, which may not represent the universe of the professionals from the creative industries, as access to individuals who do not use the Internet. In addition, answers

to the items on this scale could be influenced by social desirability, even if this had been tested when the SCMS was constructed, as there may be cultural differences between professionals from the creative industries and students and between Brazilian and North-American respondents. Despite these limitations, however, the findings indicate that the validity of the *Escala de Autocontrole e Autogerenciamento* is evidenced among entrepreneurs from Brazilian creative industries. At least two of its three factors can be used in the future in a more accurate investigation of the relations between self-regulation and performance of these entrepreneurs.

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