

A NEW CORPORATE ENTREPRENEURSHIP KNOWLEDGE SCHEMA AS A RESEARCH FIELD

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ABSTRACT

Some authors have recognized the study of corporate entrepreneurship as an organizational growth strategy favored by employee creativity and innovation. This study seeks to review and synthesize the current status of research, understanding corporate entrepreneurship as a research field and not as a simple construct. To this effect, bibliometric analysis has been conducted on literature, indexed by Web of Science for the past 15 years (2001-2016) using the VOS viewer version 1.6.4 software. The study sample corresponds to 556 works studied through a concurrency analysis of terms that originates a network of 87 terms with a minimum concurrency of 14, and supports the construction of a conceptual corporate entrepreneurship model. Later on, this conceptual map is being verified at an empirical level through quantitative structural equations and qualitative technics by Gioia's method. To finally propose a conceptual framework triggered by stakeholders' needs and synthesized through collaborators or employees, as a system determined by (1) organizational backgrounds, (2) entrepreneurial orientation or behavior and its link with (3) organizational performance based on the satisfaction of stakeholders' needs, as it is conceptualized by the social responsibility.

INTRODUCTION

Current competitive context has favored discussions regarding Corporate Entrepreneurship (CE), acknowledging it as corporate growth strategy (Morris et al., 2010) contributing to the development of organizational environments which promote collaborators' interest and commitment with innovation (Kuratko, 2010). Nevertheless, despite the growing interest in the subject matter, CE studies have focused on entrepreneurial orientation or behavior affecting the comprehensive review of this corporate phenomenon (Rochdi et al., 2017; Wales, 2015).

Accordingly, various historical reviews have been conducted regarding entrepreneurial orientation or behavior (Covin & Miller, 2014; Miller, 2011; Wales, 2015) while CE comprehension continues being an outstanding issue (Morris et al., 2010). It is marked by a non-cumulative fragmented dynamic (Ireland et al., 2009), and a few times, it is connected to a corporate setting (Kuratko, 2010). In brief, the research question is the following: How do we comprehend CE in theoretical and practical settings? To answer this question, this study proposes to review and synthesize some CE-related studies using the referencing of their historical principles, the construction of a new knowledge schema to represent the current focus of research, the verification of theoretical paradigms from which this study can research the topic and CE prospecting. This is to provide an integration guideline, which contributes to the comprehension of the current situation of CE and the discussion of the topic and to propitiate practical setting verification. For this end, we structure this study in seven sections. The first one

corresponds to this introduction. In the second and third parts, we develop a bibliometric analysis that serves as the base for the construction of the conceptual model for the corporate entrepreneurship. Therefore, on the fourth and the fifth section we develop an empirical verification of the proposed conceptual model and to the results and analysis of the quantitative and qualitative data of the study. This in orders to finally present, in the sixth and seventh paragraphs, the connection between corporate entrepreneurship and other theoretical paradigms, as well as the discussion, the conclusions and recommendations of the study.

HISTORICAL PRINCIPLES AND CONCURRENCY ANALYSIS OF CORPORATE ENTREPRENEURIAL STUDIES

The historical development of entrepreneurship began in the 16th century, but only in the 20th century (Radović-Marković & Salamzadeh, 2012), Peterson and Berger (1971) opened the road to analyze and study entrepreneurship in organizations, from then on, a series of definitions for CE emerged (Kuratko, 2010), going through different stages to study this organizational phenomenon. Thus, in the seventies, last century, CE researchers focused their attention on understanding how entrepreneurship developed in companies and how the so-called risk teams were consolidated. Then, in the eighties, researchers focused their efforts on designing CE as a renewal process in organizations (Burgelman, 1983a: 1983b:1984). This led research in the nineties to focus on identifying and studying company skills, which generates innovation (Zahra, 1991). Then, we could say that in the first 10 years of the 21st Century, CE research has focused on seeking how to combine theoretical approaches developed update and upcoming efforts. Researchers have done so to find, understand and explain how organizations obtain sustainable, profitable and competitive advantages over time (Hornsby et al., 2009; Morris et al., 2010).

Methodology of the Literature Review

A review on CE literature i.e. “*Corporate entrepreneurship*” as the search criteria-, as a topic indexed by WOS (Web of Science) in the last 15 years (2001-2016), shows that 556 studies have focused on studying CE. Figure 1 is the result of conducting a bibliometric analysis (mathematical and statistical method applied to books, articles and other communication media, framed in the quantitative approach) to measure number, performance and even some structural indicators that measure publication-author-research field connections (Durieux & Gevenois, 2010). This bibliometric analysis aims to determine concurrent terms which serve as referents of initial interpretative coding and which will serve as input for the construction of a CE conceptual model.

In the context of this study, the concurrency of the terms found in the topic of various scientific articles indexed by WOS (Web of Science), is analyzed using VOSviewer® version 1.6.4. software. This program allows the development of a knowledge map based on the terms identified and classified in categories depending on the topic or year of publication (Calderón-Valencia et al., 2017). The following is a knowledge map classified by categories and some concurrent CE terms (Figure 1).

Specifically speaking about environmental factors, the same author presents a series of triggers that according to his proposal precipitate or activate a transforming process. Amongst them, he mentions hostility proper to corporate rivalry, dynamism and heterogeneity in market demand (Zahra, 1991). While other authors like Schindehutte et al. (2000) identifies 40 CE activities, classified into five different categories. Other authors go beyond when relating environmental triggers and corporate strategies led by corporate directors (Kuratko, 2010; Radović-Marković & Salamzadeh, 2012). Thus, it is possible to synthesize environment-related backgrounds and their triggers with different stakeholders in our current competitive context (Amaeshi et al., 2013; Schwartz & Carroll, 2003) and the effect the environment and triggers have on a company (Radović-Marković & Salamzadeh, 2012).

In the meantime, researchers have defined CE-related organizational strategies as a set of commitments and actions that are framed based on corporate behavior and innovation to develop current and future competitive advantages (Ireland et al., 2003); thus, it becomes an intentional decision or commitment of a company's highest hierarchical levels to sponsor Innovative corporate behaviors (Bird, 1988). It is a process, which is not only supported by strategy, but also by organizational structure itself according to authors like (Burgelman, 1983a).

In this context, when referring to an organization's structure, various factors are identified (Fang, 2013). These factors inhibit or promote entrepreneurial actions like culture (Brazeal, 1993; Burgelman, 1984), and structure (Dess et al., 1999). Furthermore, they include human resource management practices (Hornsby et al., 2009), capacities and resources (Kuratko et al., 1990), and the executive team's traits (Burgelman, 1984; Ling et al., 2008). Finally, they include an information system (Kuratko, 2010) or technological capacities (Martín-Rojas et al., 2016), and basic corporate characteristics, among others (Herranz et al., 2011).

On the other hand, the so-called process has had multiple approaches -for example as an autonomous or induced process (Burgelman, 1983a: 1983b) and as being organizational structure dependent (Duncan et al., 1988), to be linked with orientation (Lumpkin & Dess, 1996) or entrepreneurial Behavior. In recent decades, it has been characterized based on three dimensions: innovation, risk-taking and proactivity (Covin & Slevin, 1991; Morris et al., 2010). Thus becoming the product of the commented organizational and individual backgrounds (Dess et al., 1997; Kuratko, 2010), and the effect required to impact organizational performance (Burgelman, 1984).

Likewise, authors like Fang (2013) have proposed an organization's performance understood as a way to measure growth in sales, market share, profitability, performance and stakeholders' satisfaction (Cao et al., 2015). On the other hand, other authors relate an organization's performance based on management contributing to a defined strategy, abilities proper of a role (Porter & Lawler, 1968), basic competencies, system remuneration and reward (Sykes, 1992), intrinsic and extrinsic motivation (Baum et al., 2001) and an Education and Training System (Herranz et al., 2011). Moreover, this is done based on organizational results and renovation (Ginsberg, 1988), the start-up of new companies and financial performance (Hornsby et al., 1999), market share, creating value, improving corporate reputation, accumulating knowledge (Kuratko, 2010) and other sustainability indicators (Hernández Perlines, 2015). In short, Figure 2 collects a conceptual CE model proposal, understanding it as a research field based on bibliographical reviews of literature, indexed by WOS (Web of Science), KCI-Korean journal Database, Russian Scientific Citation Index and SciELO Citation Index from 2001 to 2016 and analyzed using VOSviewer version 1.6.4 software and via concurrency analysis.

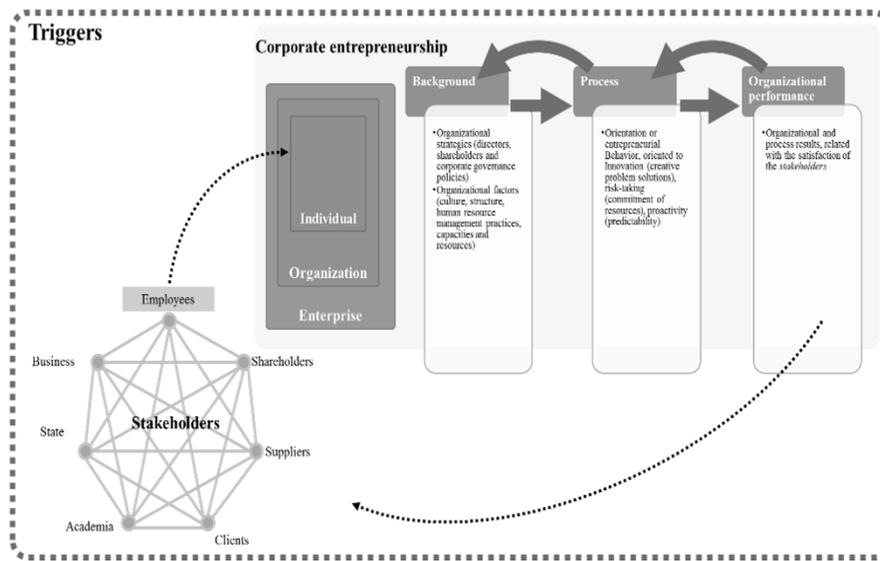


FIGURE 2
CORPORATE ENTREPRENEURSHIP CONCEPTUAL FRAMEWORK
CREATED BY THE AUTHORS BASED ON FANG AND WALES' PROPOSALS
EMPIRICAL VERIFICATION OF THE PROPOSED CONCEPTUAL MODEL

The proposed conceptual model was verified for corporate entrepreneurship with the following research protocol quantitative and qualitative describes in Table 1.

Table 1 RESEARCH PROTOCOL FOR THE EMPIRICAL VERIFICATION OF THE PROPOSED CONCEPTUAL MODEL.		
	Quantitative	Qualitative
Research question	What impact has the motivation and the knowledge on problems solving linked with social responsibility-SR?	
Research strategy	Ethnography	
Unit of Analysis	Motivation and knowledge	
Sample	50 employees of the commercial area of a company in the Colombian graphic sector (Bogotá et al.)	
Variables and categories	Dependent variable –y- (fit index (Hooper et al., 2008)) and independent variables –x- (quality of the generated ideas (linked to the SR), motivation (latent variable), time, qualification and dichotomous variables (gender, age, education level)	Signification and symbolic acts

Table 1
RESEARCH PROTOCOL FOR THE EMPIRICAL VERIFICATION OF THE PROPOSED CONCEPTUAL MODEL.

	Quantitative	Qualitative
Gathering of data	- Technique: creative techniques (Radović-Marković & Salamzadeh, 2012; Vieira et al., 2012) - Variables: education level (Pernelle et al., 2014), Quality metric for generated ideas (Reinig & Briggs, 2013) (Likert scale, for SR criteria); time activity (Rashad et al., 2008); sex, age and score (Chiavenato, 2008). - Instrument: CMT test (15 motivational indicators (Knauff & Wolf, 2010; Toro, 1992)).	- Technique: Participating observation. - Instrument: interviews. - Medias: videos, recordings, photographs, history, written or multimedia news and geographical location of the company (Czarniawska, 1997).
Analysis of results	- Structural equations - Latent variables	- Dennis Gioia's method
Results	Significance of the relation between variables	Categories or paradoxes of the organization

We applied the research protocol to the commercial staff of the company in Bogotá, Medellin, and Barranquilla (Colombia) in 2014.

Results and Analysis of the Quantitative Focus

Before the analysis of the results, it is necessary to define the following concepts: (1) Structural equations are those, which point out the cause-effect relations between observable data. (2) Latent variables refer to those variables expressed by the individuals (Byrne, 2010). (3) Estimation methods refer to those used to calculate the estimators of the model, in this case the estimation methods are Maximum-Likelihood Estimation (MLE) and Generalized Least Squares (GLS). And (4) the goodness-of-fit refer to the global fit of the model, in this case the Root Mean Square Error of Approximation (RMSEA), of the structural sub-model (significance of the estimated coefficients) and the adjustment of the sub-model (factorial analysis) (Hooper et al., 2008).

Once defined the statistical concepts, we present in Table 2 the goodness-of-fit (RMSEA) of the four estimated models using AMOS® and SPSS ® software (Model 0: structural equation without latent variables. Model 1: structural equation with a latent variable determined by the 15 motivational indicators of the CMT test. Model 2: structural equation with a latent variable determined by six of the 15 motivational indicators of the CMT (structural sub-model). And Model 3: structural equation with a factorial analysis of the motivation latent variable (measurement sub-model)). Thus, a good adjustment is being obtained with a $0 < RMSEA < 0.05$; whereas an acceptable adjustment is $0.05 < RMSEA < 0.08$.

Table 2
COMPARISON OF THE RMSEA FOR THE DIFFERENT MODELS AND ESTIMATION METHODS

<i>RMSEA</i>	Maximum-likelihood estimation (MLE)	Generalized lower least squares (GLS)
Model 0	0.209	0.205
Model 1	0.243	0.143

Model 2	0.087	0.075
Model 3	0.041	0.030

Analyzing and interpreting the measurements of the global adjustment in the different models to suggest that: (1) it is pertinent to consider the structural equations with latent variables. (2) The adjustment of the sub-model has a positive effect over the fit-index for the same estimation method (*RMSEA* evolves with the adjustments (Models 2 and 3)). (3) In spite of the fact that the fit-indexes are lower with the GLS estimation method, in this case the analysis with MLE method is appropriate taking into account the size of the sample. (4) The significance of Model 2 with the MLE estimation method demonstrates that motivational factors (like self-realization-CMI4, achievement-CMI1, promotion-CME5, supervision-CME1, wages-CME4 and recognition-CMI5), have impact over the problems solving linked with SR. Finally, (5) there is a restriction, if one intends to analyze the practical context of the exploratory factorial analysis applied to Model 3.

Results and Analysis of the Qualitative Focus

In order to reference the results achieved within the qualitative focus, it is pertinent to define the coefficients-c, calculated with the software Atlas.ti® version 6 and the logic of the implicitly proposed method of Dennis Gioia (Langley & Abdallah, 2011). These coefficients show indexes of concurrence between two codes: those with a value close to 0 (zero) do not happen together and those with values close to 1 (one) happen together. Meanwhile in the Dennis Gioia method, the gathered data are presented in first order concepts, then these raw data are consolidated in wider categories or second order themes; and finally these themes are consolidated in categories using aggregate dimensions in order to obtain a mental map.

Once the concepts are defined, different data are collected (28 texts, 12 audios, 18 pictures and 26 videos). This information is codified according to categories like knowledge and motivation, as well as other emerging attributes that result with the coefficients-c. The findings are analyzed through the following mental map (Figure 3).

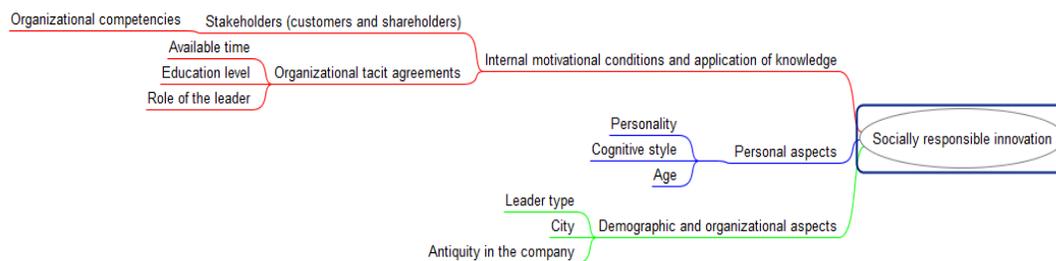


FIGURE 3
MENTAL MAP FOR THE PROBLEMS SOLVING LINKED WITH SR

Analyzing and interpreting these findings make it evident that: (1) there is an influence of the internal motivational conditions as well as of the use of knowledge over the problems solving linked to the SR. (2) It is pertinent to consider emerging attributes to describe the problems

solving like relations with the leader, cognitive conditions and type of personality. (3) It is necessary to conceive the problems solving linked to the SR as a topic in progress, a subject under construction, mediated by a bidirectional relationship between the internal motivational conditions and the use of knowledge. To conclude, (4) that the results of the qualitative study complement the findings of the quantitative study, the relation described in Figure 2 is confirmed and adjust with these additional findings, linked with the context and with the interpersonal relations existing between the actors in this context.

Finally, we applied the quality checklist proposed by Creswell et al. (2011) to verify the validity, integrity, legitimacy, suitability, aptitude and reliability of the findings. The resulting score was 7.8 of 10 possible point, a value that supports the empirical and theoretical validity of the findings.

CONNECTION OF CORPORATE ENTREPRENEURSHIP WITH OTHER THEORETICAL PARADIGMS: THE FUTURE OF RESEARCH

Connecting CE with other theoretical paradigms like institutional theory, institutional logic, network theory, organizational and population ecology, agency theory, resource dependence theory, dynamic capability theory, contingency theory, and organizational change among others, researchers have recognized that it is one of the main future research challenges (Miller, 2011). Accordingly, the proposal is to work together with CE and other theories related to the entrepreneurial phenomenon in pro of achieving better understanding of organizations, operation and how entrepreneurship is created within corporations. Below, the study synthesizes the theoretical framework from where they suggest researching CE, its basic premise and some studies that have adopted this theoretical framework to study CE (Miller, 2011; Wales, 2015).

- 1) Institutional Theory: Examine how an institutional, normative, political cognitive environment can influence CE (Gómez-Haro et al., 2011).
- 2) Institutional logic: Study social guidelines that influence values, organizational objectives and ideals, like CE (Biniari et al., 2015).
- 3) Network Theory: Review how a company's position in a network, a cluster or region can influence CE (Glaser et al., 2015).
- 4) Organizational and population ecology: Analyze how population density affects CE manifestations (Aldrich & Martinez, 2007).
- 5) Agency Theory: Examine agency costs, organizational structure and leaders that can influence CE (Albu & Mateescu, 2015).
- 6) Stakeholders theory: CE as a tool to promote the practical development of corporate ethics and social corporate liability (Robeson & O'Connor, 2007).
- 7) Theory of resource dependence and the theory of dynamic capability: Check and see which are the required resources and capacities to incentive CE and how to promote them (Swoboda & Olejnik, 2016).
- 8) Theory of contingency/neo bureaucratic Theory: Study the effect of organizational routines and procedures in reference to CE (Burgers & Covin, 2016).
- 9) Organizational change: Consider CE as a motor for change in an organization and understand organizational change as a manifestation of CE (Shepherd et al., 2013).
- 10) Dominating corporate logic: Analyze how different Collective mentalities determine CE (Covin & Lumpkin, 2011).
- 11) Learning theory: Understand how learning processes and context in general explain CE (Real et al., 2014).
- 12) Subjectivist theory: Analyze the influence of experience and knowledge on CE (Covin & Lumpkin, 2011).

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

To review the approach of CE research, understand it as a research field and not as a construct, according to Fang (2013) suggestion, is pertinent to begin a review of the historical principles that dated back to the seventies in the 20th century. It was a time when researchers started to pay attention to the topic. Subsequently, in this article, the authors propose the implementation of bibliometric techniques. This includes the implementation of mathematical and statistical methods to books, articles and other media. It is done to measure quantity, performance and even some structural indicators, which measure connections between publications, authors and research areas (Durieux & Gevenois, 2010). VOS viewer software supports this approach, building a new approach in its knowledge schema. Moreover, this schema is triangulated with an empirical verification and the previous studies conducted by other researchers (Fang, 2013; Ireland et al., 2009; Kuratko, 2010). This is done to finally propose a conceptual framework triggered by stakeholders' needs and synthesized through a collaborator, as a system determined by organizational backgrounds, entrepreneurial orientation or behavior understood as a process and its link with organizational performance based on the satisfaction of stakeholders' needs as it is conceptualized by the SR. This proposal constitutes a theoretical contribution, according to Whetten (1989) proposal, because it improves the already available knowledge (Fang, 2013; Ireland et al., 2009; Kuratko, 2010), adding factors-like motivation and knowledge- to an existing model.

On the other hand, researchers review theoretical paradigms from which they currently study CE, and in which they recognize the predominance of the resource dependence and dynamic capacity theory, and the opportunity to study CE in depth based on other theories or their combination (Miller, 2011). It also includes the possibility (future research) to conduct in depth studies that have as a theoretical framework theory that have not been explored much like institutional logic, the network theory, organizational and population ecology, the corporate dominant logic and the subjectivist theory of corporate initiative.

Implications and Limitations

Accordingly, the opportunity of future in-depth CE studies from various theories is highlighted, like the combination of several theories to study CE to obtain greater understanding of this corporate phenomenon (Miller, 2011). Likewise, they suggest that when analyzing CE, it is possible to guide a study towards those theories that have not been explored much. They include institutional logic, the stakeholders Theory (the referent of this study (González, 2007)); network Theory, organizational and population ecology, dominant corporate logic and the corporate initiative subjectivist theory in accordance with the information resulting from the theoretical review. Likewise, researchers suggest that in future studies focused on studying CE, theoreticians' efforts target the inclusion of different stakeholders as CE triggers, and their implications on backgrounds, processes and organizational performance (Escobar-Sierra et al., 2017). This recommendation stems from the fact that CE cannot be analyzed from an idea of a closed Black Box, but instead, it must include a social context and the different actors in which the organization works. In addition, they especially suggest emphasizing on future CE studies based on human talent management theories framed in corporate social liability, innovation, diversity and Knowledge Management.

Finally, this paper suggests that future CE research areas of study should be based on ideas developed in this research. It highlights the importance of conducting these types of in-

depth studies at an empirical level. The study proposes the possibility of including in its analysis, backgrounds like governance, environment (Kuratko, 2010) and ethics (Schwartz & Carroll, 2003). They are domains of social liability, sustainability, and even the opportunity to include psychological and demographic traits of collaborators as part of the organizational factors (Escobar-Sierra et al., 2014). On the other hand, when referring to organizational performance, the study proposes to include results related to corporate strategy implementation (Morris et al., 2010), like Corporate social liability. Meanwhile, at a methodological level, the study proposes a combination of different levels of study. The triangulation of qualitative and quantitative approaches and the analysis of unsuccessful cases in CE can be individual, group, organizational and even sectoral.

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