

INTRAPRENEURSHIP BUSINESS INCUBATORS AND BUSINESS CREATION: EVIDENCE FROM MEXICO

Ana Isabel Ordóñez Parada, Universidad Autónoma de Chihuahua

Jesús Sáenz Olivas, Universidad Autónoma de Chihuahua

Xóchitl Bustillos Varela, Universidad Autónoma de Chihuahua

Yolanda Rosales Manjarrez, Universidad Autónoma de Chihuahua

ABSTRACT

The purpose of this investigation is to evaluate aspects that determine the probability an individual presents high levels of intrapreneurship. An intrapreneur worker combines ideas and uses existing resources to promote new lines of business, seeking sustainable economic benefits. The organization is renewed from within improving its competitiveness. Intrapreneur skills and competences were analyzed, as well as education level, gender, type of business activity and parental entrepreneurship influence, in owners and collaborators of companies generated in a business incubator. We examine data from a population sample of 75 companies incubated in the Business Center of the School of Accounting and Administration of the Autonomous University of Chihuahua. The research is an exploratory, applied, field study, with bibliographic support. A logistic regression model was developed. Results obtained indicate that academic degree and the offspring of entrepreneurship indicate a strong probability an individual presents high levels of intrapreneurship.

JEL: D83, H3, I22, I23, M13

KEYWORDS: Companies, Intrapreneurship, Skills, Competencies

INTRODUCTION

Since the beginning of globalization, the way we do business has changed. A vital component in the rate of economic growth is entrepreneurship which generates various productive activities that promote progress and improved living conditions of citizens. "Mexico is considered a country with a focus on efficiency, which implies that the size of the market is large, which makes it attractive for entrepreneurial activity" (González, 2014). For this reason, Intrapreneurship research agendas recognize its importance for success within organizations.

Gartner (1988), argues that "business should focus on the study of the activities and behavior of individuals trying to create new organizations." Antoncic and Hisrich (2000) mention that "Intrapreneurship can be defined as the process by which individuals within organizations pursue opportunities without regard to resources currently controlled them." According to the article "Intrapreneurship reviews the theoretical construct its implications and future research agenda." Trujillo and Guzman (2008) conclude that "Companies should seek to generate scenarios in which individuals can act in entrepreneurial way their companies, printing dynamics that facilitate the organization to evolve and consolidate in its market segments".

The objective of this research is to evaluate aspects that determine the probability of an individual presenting high levels of intrapreneurship. The research here measures different skills and abilities of intrapreneurship as well as the level of study, gender, type of business activity, parental entrepreneurship

influence. We focus on owners and collaborators of companies incubated in the Business Center of the Faculty of Accounting and Administration (FCA) of the Autonomous University of Chihuahua (UACH). The objective is to identify significant aspects that an individual presents to develop high levels of intrapreneurship.

This research extends the existing literature by analyzing the impact of education, and generational entrepreneurship in developing new intrapreneurship businesses. It also emphasizes the importance of Incubators in entrepreneurship and intrapreneurship development.

The study begins with a section dedicated to conceptualizing intra-entrepreneur skills and competencies. We identify, through bibliographic review, five constructs. These five constructs were used in our research. The second section describes the methodological design used to analyze the data. Data were obtained by applying a measurement instrument created by the doctors of the Technological Institute of Costa Rica, Dr. Tomás Vargas Halabí, Dr. Ronald Mora Esquivel, and Dr. Berman Siles Ortega (Vargas, Mora & Siles 2017). Their work is the product of the article Intrapreneurial competencies development and validation of a measurement scale, which was published in the European Journal of Management and Business Economics. The last section describes the results obtained after running a logistic regression analysis using the Minitab 17 statistical analysis software. The paper closes with some concluding comments.

LITERATURE REVIEW

According to Pinchot III (1985) an intrapreneur is a worker who carries out new business ideas within the organization, using existing resources. These ideas improve the competitiveness of the organization in the market. To distinguish between internal entrepreneur (intrapreneur) and entrepreneur they note: "an entrepreneur (internal) is the person who sets in motion an idea within an organization". "The (external) entrepreneur is the person who does it outside of an organization."

Apertura (1992) and Garzón (1996), point out the following individual characteristics of the intra-entrepreneur: "entrepreneurial spirit, vision and creative and innovative imagination, need for achievement, perseverance, dedication, openness to teamwork, holistic vision of the needs of the company, leadership, s/p". According to Garzón (2004), results obtained that facilitate intrapreneurial work are: tolerance to change, support, identity, individual autonomy, structure, reward performance, tolerance to conflict.

An entrepreneur possesses a set of skills, qualities and behaviors. Gibb and Hannon (2007) argue it is necessary to have the following skills and abilities to be a successful an entrepreneur: search for opportunities, initiative, commitment. Villa and Poblete (2007), mention that having an "entrepreneurial spirit" is the ability to apply knowledge, methods and tools with leadership, innovation, creativity, adaptation to the environment, self-motivation, decision-making, initiative and the vision of the future.

The measurement instrument used for the present investigation works with five constructs previously identified in the literature which evaluate the competencies and abilities of intrapreneurship in collaborators that are part of the companies. These are:

Promoter of opportunities: A promoter of opportunities is that person with behaviors aimed at encouraging, using, inviting others to generate opportunities for new initiatives in the company. An intrapreneur visualizes quickly, the environment, and identifies opportunities and threats, discovers those opportunities and works to convert threats into opportunities. They include change when information is scarce (Lombriser, 1994, p.207).

Proactivity: A proactive individual directs and promotes actions which generate efforts to obtain new ideas. The article "Intrapreneurial Culture and Innovation" by Gálvez (2011) indicates that "it is teamwork which

reaffirms the importance of stimulating the synergy produced by combining the creative capacity of employees of different levels and / or departments". The author argues the intrapreneurship factor with the greatest effect in companies, is teamwork.

Flexibility: To be flexible is to be tolerant, and not to be attached to already established or rigid procedures. Giving freedom to a collaborator in his work makes them feel they are part of the organization, generating autonomy and control over decisions. It is important to take workers into account, delegate authority and responsibility, and tolerate mistakes (Zahra et al., 1999). Productivity-based inventions generate increases in meaningful results and stimulate employees to face new challenges (Kuratko, Hornsby, and Bishop, 2005).

Driver of Business: It is the ability of an individual to carry out actions to convince other people to generate new ideas (Tushman and O'Reilly III, 1997). Organizational objectives and strategies are the foundation to manage innovation and change. Meanwhile, establishing the context and the requirements for innovation (Stewart and Fenn, 2006).

Assumption to risk (Risk Taking): Accepting risks may contain favorable rewards in case of success, but also severe results if the individual fails (Brockhaus, 1980). The intrapreneur is exposed in areas unknown to the organization, without knowing what the results will be (Covin and Slevin, 1991). Intrapreneurial capacities have different personal characteristics, such as achievement orientation, risk-taking capacity, autonomy or personal initiative (Krauss et al, 2005, Sayeed and Gazdar, 2003).

Business Center Incubator Faculty of Accounting and Administration (FCA) Universidad Autónoma de Chihuahua (UACH)

The Business Incubator at UACH was established in 2020 with the goal of assisting individuals (student, former students, members of the community, etc.) in starting a business. For those already having a business the Incubator assists them in agroindustry, information technology or commercial activities.

The Business Incubator offers a variety of services including: 1) generating, modify or improving a business; 2) help in creating a business model and plan; 3) assistance with decision making; 4) project execution; 5) training and advising on issues related to modern entrepreneurship, business model, strategic planning, marketing, production processes, legal aspects, finance and accounting.

Faculty members from the FCA provide training at specific times. They are not responsible for administration of the Business Incubator. They only contribute by providing training and advice. The Business Incubator is managed by a Professor from the FCA, currently, Mr. Carlos Espino Enriquez.

METHODOLOGY

The current research is a mixed, applied exploratory study with field and bibliographic research. A logistic regression model was used to analyze a sample of 75 companies. The sample was obtained using simple random sampling, with a confidence level of 95% of a total of 385 companies. The companies participating in the analysis were chosen from the FCA UACH Business Incubator database. A questionnaire entitled "Competences of the intrapreneur" Vargas, Mora & Siles (2017) was applied. This questionnaire considered the traits of intrapreneurial skills within the company. Specifically, the questionnaire gathers data related to knowledge, skills and competencies and behavior associated with the disposition of an individual to generate, develop and create new businesses for the company. The questionnaire is composed of 20 items classified into five dimensions: opportunities Promoter, Proactivity, Flexibility, Driver of Business and risk assumption (risk taking). Additional data related to educational level, gender, type of business activity and parental entrepreneurship influence were collected. The questionnaires were distributed online in 2019.

RESULTS AND DISCUSSION

The objective of the present study was to evaluate aspects that determine the probability an individual presents high levels of Intrapreneurship. A logistic regression model was used to determine significance of aspects that influence the probability of occurrence of this characteristic.

To measure intrapreneurial skills, the "Competences of the intrapreneur" questionnaire was applied previously. Additional data were requested such as, gender, age, level of studies, if they were owners or workers of the company, sector to which the company it belongs and if they had parents or grandparents who owned some company (descendants of entrepreneurship). These variables served as predictor variables of the model. The response variable for the model was coded as SUCCESS. We determined a global average equal to or greater than 4, in the questionnaire, corresponds to a high level of skills and intra-entrepreneurial skills. In the first phase of the investigation, we proceeded to analyze information of each predictor variable of the model. Table 1 and Table 2 show the results for level of education by gender and age. Tables 3 and 4 show participants by company sector and entrepreneurial descent respectively. Table 5 provides some descriptive statistics.

Table 1: Gender

Female Population		Male Population	
Level of studies	Total	Level of studies	Total
Bachelor's degree	27	Bachelor's degree	24
Master's degree	7	master's degree	11
Doctor's degree	6	Doctor's degree	0
Total	40	Total	35

This table shows the education level according to the gender of the surveyed population. The majority of the people surveyed were female.

Table 2: Age

Age Range	Total
Under 18 years	0
Between 18 and 30 years	29
Between 31 and 40 years	27
Between 41 and 50 years	3
Between 51 and 60 years	16
Equal to or greater than 60 years	0
Total	75

This table shows the age range of the surveyed population. The age range of most respondents was between 18 and 30 years.

Table 3: Company Sector

Sector	Total
Commerce	19
Services	28
Industry	28
Total	75

This table shows the sector to which the company belongs, as well as the surveyed population that owns it or works in the company.

Table 4: Entrepreneurial Descent

Do your parents or grandparents own a company?	
Answer	Total
No	36
Yes	39
Total	75

This table shows the number of people who have entrepreneurial descent, to know these data they were asked if their parents or grandparents were owners of any company.

Table 5: Descriptive Statistics

Construct	Average	Variance	Coefficient of Variation	Minimum	Median	Maximum
Promoter of opportunities	4.12	0.37	14.76	2.33	4.17	5
Proactivity	3.78	0.24	15.67	2	3.67	4.75
Flexibility	3.69	0.55	20.16	1.25	3.75	5
Promoter/Driver of Business	4.06	0.36	14.73	2.5	4	5
Assumption of risk/Risk Taking	3.49	0.69	23.79	1.67	3.33	5
Five constructs Total	3.7	0.29	14.53	2.42	3.67	4.75

Table 5 shows descriptive statistics for the five constructs that make up the "Intrapreneur Competencies" questionnaire.

The Promoter of Opportunities construct consists of a total of 6 items. The Proactivity construct consists of three items, The flexibility construct includes 4 items. The business driver construct includes four items and the Assumption risk (risk taking) construct is includes 3 items. In total the survey generated 20 items. We use a Likert Scale where 1 = Never; 2 = Almost never; 3 = Sometimes; 4 = Almost always; 5 = Always. In Phase 2 of the study, a logistic regression analysis was run using the following coding for the study variables.

GEN= Gender of the respondent, having two possible levels (male, female).

ED= Age of the respondent, having four possible levels since there were no observations of individuals of two age ranges requested in the questionnaire (between 18 years and 30 years, between 31 years and 40 years, between 41 years and 50 years and more than 50 years).

STU= Degree of studies of the respondent, having three possible levels (bachelor's, master's, doctorate).

SEC = Sector of the company where you own or collaborate, having three possible levels (commerce, service, industry).

POGP= Refers to whether the respondent has parents or grandparents who own a company, having two possible levels (no, yes).

EX= It is the response variable of the model used to determine success. The respondent should have a global average (considering the five constructs) equal to or greater than four, in the questionnaire "Competences of the intrapreneur".

Once the data matrix was organized, a logistic regression analysis was run using the Minitab 17 statistical analysis software. Results of the first proposed model using all the variables are shown in Table 6. Table 6 shows the Chi-square statistic values. The results reveal that gender, age (*AGE*), and sector (*SEC*) are not statistically significant. Therefore, the variables are not included in the analysis shown in Table 7. We do find variables educational level (*STU*) and parents (*POGP*) (when their parents are entrepreneurs themselves too) to be significant.

Table 6. Variance Analysis

Source of Variation	Chi Square	P -Value
GEN	0.2	0.654
AGE	4.56	0.892
STU	9.82	0.007
SEC	1.42	0.492
POGP	26.09	0

Table 6 shows the values of the Chi - square statistic, to determine significance of variation source of the logistic regression model. The variables gender (*GEN*), age (*AGE*) and Business Sector (*SEC*) do not present statistical significance when presenting values higher than 0.05 in its p-value. Therefore, the analysis is run again without considering these three variables. The results are shown in Table 7.

Table 7 shows the values of the Chi-square statistic. We find the variables study (*STU*) and parents *POGP*, present statistical significance for the logistic regression model by presenting P-values lower than 0.05. The regression intercept presents statistical significance with a p-value less than 0.05. In summary, this table indicates the probability of success of a person interested in starting a business or who has already established a business relates to having an academic degree and if they have relatives who have established a business.

Table 7. Analysis of Variance for Study and Parents

Source of Variation	Chi - Square	P -Value
STU	9.78	0.008
POGP	27.13	0.000

Table 7 shows Chi - square statistics. Results show the *EST* and *PAD* variables have statistical significance for the logistic regression model with p-values lower than 0.05. The data also shows the regression equation intercept presents statistical significance with a p-value lower than 0.05. Therefore, the model remains validated.

After we validated statistical significance using the logistic regression model, the equation is formed as follows:

$$P(Event \exp(Y') / (1 + \exp(Y'))) \tag{1}$$

$$Y' = -3.02 + 0.0 \text{ STU_Doctorate} + 1.512 \text{ STU_Bachelors} + 3.21 \text{ STU_Masters} + 0.003 \text{ PAD_No} + 2.956 \text{ PAD_Yes} \tag{2}$$

Finally, when the logistic regression equation is obtained, we proceed to calculate probabilities of success associated with the model variables shown in Table 8. Table 8 shows the probabilities of success associated with individuals having high levels of intrapreneurship, The best probability for high levels of intrapreneurship, occurred in people having a master degree, who have parents or grandparents who own companies. These individuals obtain a 96.13% probability of success. Individuals having a bachelor’s degree and having parents or grandparents who own a business follow with an 81.93% probability of success. Finally, the lowest probability of success, with a value of 4.64%, was for people who have a doctorate and who do not have parents or grandparents who own businesses.

Table 8. Probability of Success

Educational Level (STU)	Parents	Probability
Bachelor's degree	Yes	0.8193
Bachelor's degree	No	0.181
Master's degree	Yes	0.9613
Master's degree	No	0.1636
Doctor's degree	Yes	0.5388
Doctor's degree	No	0.0464

Table 8 shows the probabilities of success associated with a person having high levels of intrapreneurship depending on the academic degree they have and depending on whether they have family members, grandparents or parents who own a company.

CONCLUSIONS

This paper examines factors that associated with a high level of intrapreneurship. In the statistical analysis, this research found two significant factors that predict success: Education level and if an individual comes from an offspring of parents or grandparents who own a company. Factors such as gender, age and the sector of the company in which they collaborate do not imply high levels of intrapreneurship.

The greater probability that an individual presents high levels of intrapreneurship, occurred in people who have a master's degree who have parents or grandparents who own businesses. This combination led to a 96.13% probability of success. Individuals who have a bachelor's degree and have parents who own businesses produced an 81.93% success rate. Finally, the lowest probability of success, with a value of 4.64%, occurred for individuals with a doctorate and who do not have parents or grandparents who own businesses.

Future studies might replicate this study in other populations. Future research might also add other explanatory variables to create a better model.

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Ana Isabel Ordóñez Parada has a PhD in Public Administration, Associate professor at the Universidad Autónoma de Chihuahua, Faculty of Accounting and Administration, Circuit Universitario 1, Campus II UACH, 31125 Chihuahua, Chih., México.

Jesús Sáenz Olivas has a Master in Human Resources Administration, Associate professor at the Universidad Autónoma de Chihuahua, in the Faculty, of Accounting and Administration., Circuit Universitario 1, Campus II UACH, 31125 Chihuahua, Chih., México.

Xóchitl Bustillos Varela has a PhD in Public Administration, Associate professor at the Universidad Autónoma de Chihuahua, in the Faculty, of Accounting and Administration., Circuit Universitario 1, Campus II UACH, 31125 Chihuahua, Chih., México.

Yolanda Rosales Manjarrez has a Master in Public, Administration, Associate professor at the Autonomous University of Chihuahua, in the Faculty, of Accounting and Administration., Circuit Universitario 1, Campus II UACH, 31125 Chihuahua, Chih., México.