

INTRINSIC AND EXTRINSIC MOTIVATIONS OF ENGINEERING STUDENTS TO CREATE A COMPANY

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Abstract

The entrepreneurial intentions of university students can be generated by the occurrence of a precipitating event, either in a positive or negative direction. These motivations are intrinsic (associated with the individual) or extrinsic (coming from abroad) and mark the entrepreneurial intention of university students since it is the stage of life where they are defining their life trajectory and where the greatest educational effort must be made to turn them into entrepreneurs. The objective of this study is to identify the different motivations (intrinsic and extrinsic) in university students of engineering programs, as it is the knowledge field with the greatest possibilities of generating technological ventures. The study population has been taken to include engineering students from the Universidad Nacional de Colombia in Medellín and the Instituto Tecnológico Metropolitano. For this purpose, an exploratory-descriptive design of field and transversal character is used through a quantitative methodological design through which 645 self-administered questionnaires were applied. The results show that, although the majority of students have experienced a precipitating or triggering event towards entrepreneurship, a very low proportion of them have actually carried out entrepreneurial activities. Likewise, among the findings we can observe that one of the most representative triggers in university students regarding entrepreneurship is related to economic independence and the possibility of having a significant increase in their income, as well as in the quality of life of themselves and their families, which acquires a greater impulse in the current Latin American scenario, due to the socioeconomic particularities of developing countries. Finally, with regard to the family environment, the respondents stated that they consider their families to be a great support and entrepreneurial reference when creating their own business. In this sense, the intention of entrepreneurship is strongly linked to the family figure, either because it has instilled entrepreneurship and as such is surrounded by family businesses that drive towards the creation of their own business; or it can also originate a motivation towards entrepreneurship by the fact that people want to provide their families with better economic stability and a better quality of life.

Keywords: event, entrepreneurship, intention, motivation, university students

1. BACKGROUND

Motivation is conceived not only as the search for satisfaction of needs, but also as the activation of goal-

oriented behaviors defined by individual characteristics and social coordination (Páez, Fernández, Basabe & Grad, 2001). Empirical evidence shows that motivations are diverse, since they integrate aspects such as personal and psychological characteristics, resources, environment, etc. (Shane, Locke & Collins, 2003).

Motivation can affect not only the acquisition of knowledge and skills, but also their use (Locke & Latham, 2004). Marulanda, Montoya & Vélez (2014) support this by explaining that motivation not only affects the acquisition of knowledge or skills in individuals, but also conditions the way in which said abilities are used.

Motivation can be classified into internal factors that drive the action and external factors that can act as stimulus. There are three aspects that may be affected: direction (choice), intensity (effort) and duration (permanence). Regarding entrepreneurship, and following the previous idea, Bonilla (2013) proposes the segmentation of motivations between intrinsic (situations or personal interests associated with the creation of companies) and extrinsic (situations or external factors that intervene in the desire to create company), which are not exclusive but complementary when making the decision to create a company.

Carey, Flanagan & Palmer (2010) mention that entrepreneurial activity can be motivated by different personal aspirations and motivations such as innovation, independence and financial success, which are part of an entrepreneurial behavior, which in turn can generate different types of entrepreneurs that will form companies to substitute their income or to develop them. The decision to create and start a company is seen as the product of motives and intentions that vary according to an individual's personality traits and business skills (Barba-Sánchez & Atienza-Sahuquillo, 2012). Once there is a motivation to undertake a new company, the entrepreneurial intention will likely be triggered, and finally the creation of the company will be carried out (Fayolle & Liñán, 2014).

For Latin American students, three groups of people have been identified as the ones that most influence the motivation of a young person to create a company: external persons, family members in general, and parents (Bolaños, 2006). According to Moriano, Gorgievski, Laguna, Ute & Zarafshani (2011) when an individual has an important reference in their life they will feel more motivated to act according to what they think. Therefore, one of the most important extrinsic motivators is the opinion of the family.

Intrinsic motivations highlight aspects such as motivations generated by needs, such as avoiding unemployment (Reynolds, Camp, Bygrave, Autio & Hay, 2001 cited by Moya, Revuelto & Medina, 2012). Therefore, economic crises have been described as an opportunity or event that potentializes the creation of new companies (Cardozo, 2011; Díaz, 2012), since resilient behaviors emerge in the face of these negative events (Díaz, 2012). Identifying more profitable opportunities to obtain a better quality of life also works as a motivator (Reynolds et al., 2001 cited by Moya et al., 2012).

It is important to understand the existing differences regarding entrepreneurship between one region and another, which can be explained by the influence that social support has on entrepreneurs. Those who come from more individualistic cultures, such as Western Europe, tend to be more autonomous and independent, so analysis and decision making are usually made by the same individuals (Oyserman & Lee, 2008, cited by Moriano, Gorgievski, Laguna, Ute & Zarafshani, 2011), that is, they are characterized by intrinsic motivations; while subjects of more collective cultures tend to seek actions and decisions that cater group expectations, meaning they are more motivated to meet please those close to them (Begley & Tan, 2001, cited by Moriano et al., 2011), which makes social support have greater impact on their entrepreneurial activity and are more inclined to extrinsic motivations.

Naktiyok, Karabey & Gulluce (2010) propose that college environment, characterized by freedom and autonomy, stimulates independence, personal responsibility and innovation, creating a setting that reinforces the motivation to undertake start-ups. Student bodies are diversely influences when deciding to start a new business, this highlights the need to carry out studies that can provide information both at the individual level and at the institutional and social environment in which they operate, particularly university students (Ferreira, Raposo, Rodrigues, Dinis & Do Paço, 2012).

2. METHODOLOGY

This research is approached with an exploratory-descriptive field design, it is transversal in nature, and a quantitative method is used. The data collection instrument used was a self-administered questionnaire with closed and categorical questions, investigating motivating events of the enterprise.

The surveyed sample was of 645 students enrolled in engineering programs of the National University of Colombia - Medellín Campus and the Metropolitan Technological Institute. Initially, a pilot test was carried out with 20 individuals to subsequently make the necessary adjustments and apply it to the selected population.

The tabulation of the data and its analysis in SPSS Version 23 software was carried out with 636 suitable questionnaires to then build mental maps according to the external and internal motivations for entrepreneurship in the students of said institutions.

3. RESULTS

In Fig. 1 the answers of ITM students are contrasted on the question related to past experiences when they had been motivated to create their own businesses. In this case, ITM students consider dissatisfaction with labor as a determining factor, mainly due to high unemployment rates and the low value given to the different tasks they perform within organizations, in addition to inequality in terms of physical resources and economic income.

Another important factor is the support of friends and family. Entrepreneurial referents also motivate young people, and the most important referents are familiar. The following constituent is associated with promotion programmes, of which the most mentioned is the seed capital program of the Mayor's Office of Medellin, which is a smaller economic support for the creation of innovative ideas. Finally, there is the motivational factor of new technologies, since young people consider automation and ICT are contributing greatly to the growth of companies and the emergence of new options for their creation.

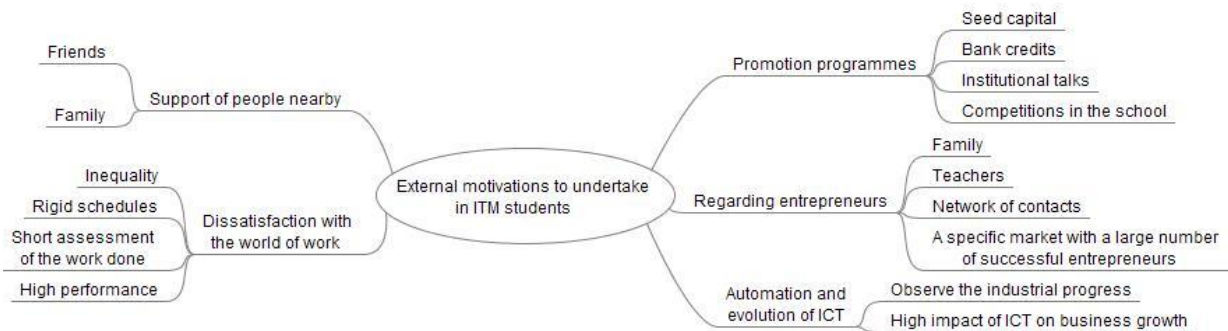


Fig. 1. External motivations to business creation the ITM students. Source: Own preparation in Freemind software 1.0.1

Considering internal motivations (Fig. 2), it was found that the drive for independence was their main motivation backed by the desire to have an important economic growth and also the ability to manage their own resources such as time and money. Another relevant factor is the motivation to start a new business applying acquired knowledge, either specifically in the development of business ideas, or regarding knowledge of other areas.

The desire to help others was the next most important motivation. Respondents expressed wanting to contribute to their families' economic stability, in addition to contributing solving social problems and generate employment. As for professional growth, being socially recognized as successful entrepreneurs motivates them, as well as being able to apply technological solutions and properly manage resources.

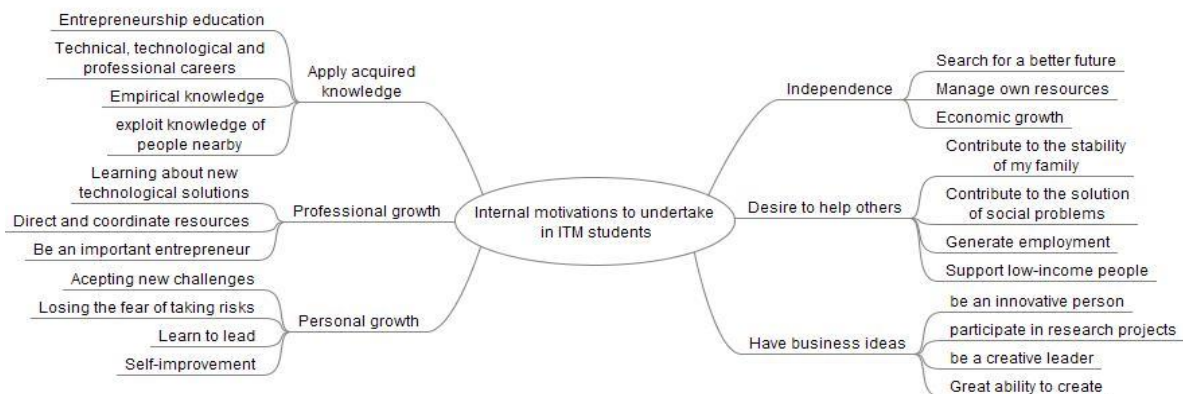


Fig. 2. Internal motivations to business creation the ITM students. Source: Own preparation in Freemind software 1.0.1

Fig. 3 examines the external motivations of students surveyed at the National University of Colombia (Unalmed), where the main factor is dissatisfaction with the labor market, mainly due to high unemployment rates, low economic remuneration and lack of opportunities for recent graduates. The next factor is business opportunities, since students are able to identify improvements that can be made to the products and services. Entrepreneurial referents are also important, as is the support of the people close to them, mainly friends and family.

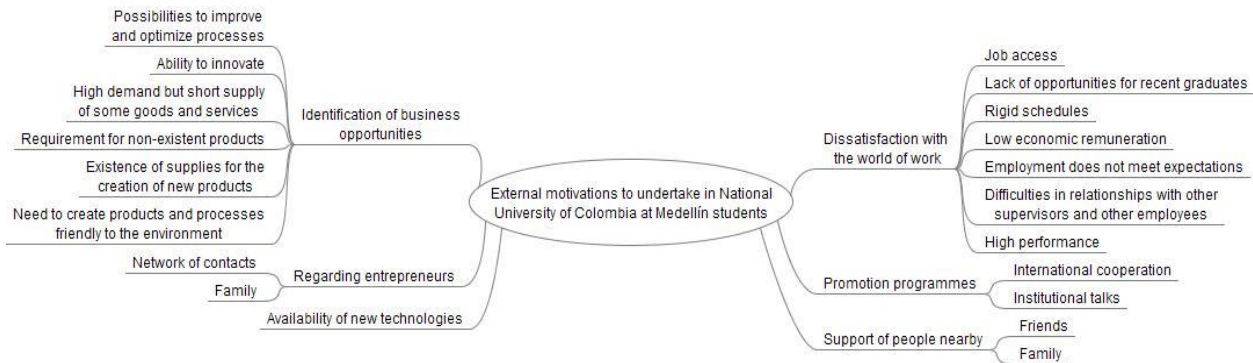


Fig 3. External motivations to business creation the Unalmed students. Source: Own preparation in Freemind software 1.0.1

In internal motivations, it can be observed in Fig. 4 that the majority of young people surveyed in Unalmed state that the desire to be independent was their main motivation, since they seek to achieve economic growth, have the ability to manage their own resources and achieve job stability. Additionally, applying the knowledge acquired from engineering and other professional careers is also a source of motivation for these students, although the desire to help others is an additional relevant factor, since they have a great interest in providing economic stability to their families, to be able to constitute themselves as a source of employment generation, and to make massive the manufacture of some goods that may be difficult for low-income people.

In addition, personal growth is also important, as respondents say they want to have the ability to develop and persevere in the implementation of their business ideas, and to make investments that improve their future income. Finally, the motivation to undertake to have professional growth is focused on the desire to generate useful knowledge for humanity.

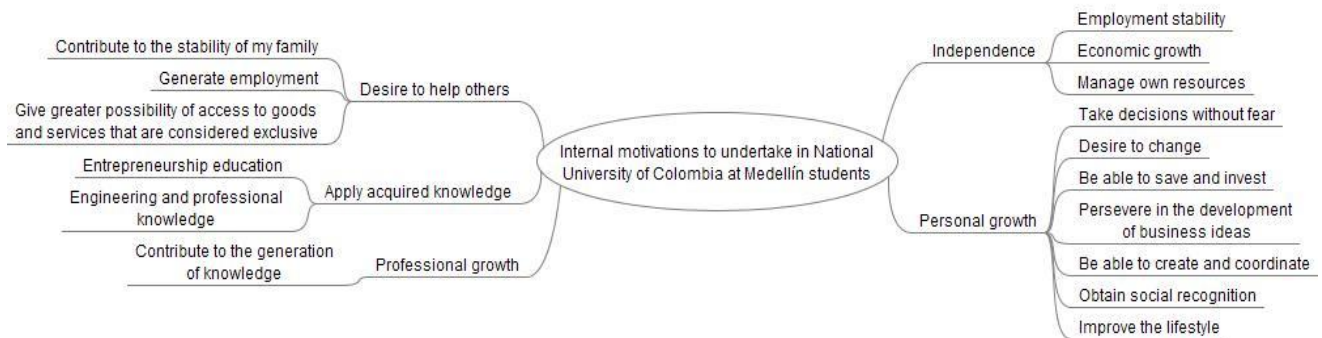


Fig. 4. Internal motivations to business creation the Unalmed students. Source: Own preparation in Freemind software 1.0.1

4. CONCLUSIONS

Both for Unalmed students and ITM students, working independently is one of the most important intrinsic motivations when creating a company, because they value being able to manage their own resources and achieve economic growth, which in turn allow to contribute to the stability of their families and the generation of employment.

Regarding extrinsic motivations, for the students of both institutions the dissatisfaction with the labor market is the most important motivating factor to create a company, because they want to perform extra activities,

that due to the rigidity of the schedules, in the service to third parties can not perform.

Although dissatisfaction with the labor market, entrepreneurial referents, promotion programs and the support of people close to them are motivating factors for the students of both institutions, for Unalmed students it is also motivating the identification of business opportunities and availability of new technologies, while ITM students are motivated by the automation and evolution of ICTs, which shows that depending on the institution, motivations regarding the creation of companies may vary.

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