

## Abstract

Technical universities have the social responsibility of fostering entrepreneurial intention of their students. Moreover, it has been posited that modern universities should shift from their traditional primary role as educational providers and scientific knowledge creators to a more complex entrepreneurial university model that incorporates the additional role of the commercialization of knowledge and active contribution to the development of private enterprises in their local economy (Etzkowitz et al., 2000). Within technical education, an entrepreneurial university should be able to provide society with graduates with two-folded career expectations, that is, either work as an engineer for a multinational company, or being an entrepreneur. The actual distribution of career expectations within Spanish graduates is quite different, as stated in a survey by the Complutense University of Madrid (UCM, 2013): only 11% of respondents want to be self-employed. In contrast, 31.4% prefer to work in a private firm, and 32.4% prefer a career as a civil servant.

The scope of the present research work is to analyze if engineering subjects related with Industrial Management can trigger entrepreneurial intentions of engineering students. To that end, last year master students from the ETSII-UPM have been surveyed. They belong to three different tracks, namely (i) Industrial Management ("Organización Industrial"), (ii) Mechanical Engineering ("resto de especialidades de Ingeniero Industrial") and (iii) Chemical Engineering ("Ingeniero Químico"). Results obtained support that receiving a deeper entrepreneurial and business administration education fosters both entrepreneurial intention and its determinants (Morales-Alonso et al., 2015; Pablo-Lerchundi et al., 2015).

**Keywords** – entrepreneurial university, technology based companies, theory of planned behavior, career expectations, attitudes toward work

## Theoretical framework

In this research we rely on the Theory of Planned Behavior (Ajzen, 1991), see fig. 1. Ajzen proposed that the intention is determined by three socio-cognitive factors: attitude towards performing the behavior, subjective norms concerning action, and a belief in one's ability to perform the behavior successfully. Of these, the two former represent the desirability of the behavior, while the latter stands for feasibility. A questionnaire including items for measuring the three aforementioned triggers of intentions and also the entrepreneurial intention itself has been developed.

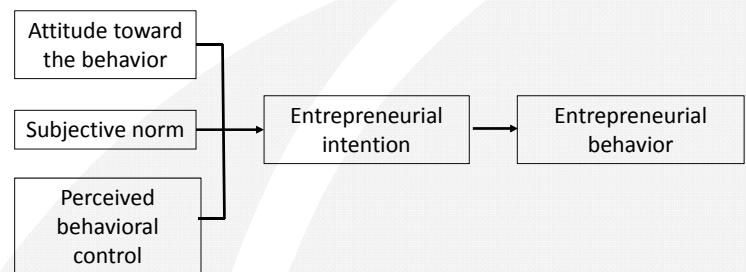


Figure 1. The Theory of Planned Behavior (Ajzen, 1991).

## Sample and Results

### Sample and measures

A total of 458 last year master students from ETSII-UPM were surveyed during the winter semester 2014. The distribution of students among degrees was 96 (21%) in Industrial Management, 209 (45%) in Mechanical Engineering and 153 (33%) in Chemical Engineering. Regarding gender, the sample is composed of 61% of men and 32% of women, being the average age of 22.6 years old. Of the surveyed students, 419 (91%) were born in Spain, stating that the incidence of temporary exchange students in the sample is small. A seven-point Likert scale has been used to measure all the items.

### Results

Students from Industrial Management rank higher in attitude, perceived behavioral control and entrepreneurial intention, being this result significant for the two last ones, ( $t=2.68; p<.01$  and  $t=1.97; p<.05$ ). Contrarily, subjective norm, which stands for family and social support towards entrepreneurship shows no significant differences across the degrees under study, which suggests that it is not influenced by the university degree.

## Conclusions

The results obtained suggest that studying a degree with a strong background in entrepreneurship and business administration is determinant for having higher perceived control for creating a new venture, and more importantly, a higher entrepreneurial intention. On the contrary, the degree in which a student is enrolled does not determine how family and society affect his entrepreneurial intention. Hence, universities willing to evolve towards entrepreneurial university, should foster Industrial Management related subjects.



Figure 2. Students from the Industrial Management degree.

## References

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