

“Perception variables as explanatory factors for university graduates entrepreneurial action: An exploratory analysis”

Abstract

Following the Theory of Planned Behavior by Ajzen (1991), and after adapting the variables from the Entrepreneurial Intention Model by Liñán (2008), the main objective of this working paper is to measure entrepreneurial action for business graduated students instead of traditionally addressed intention. By relating it with “close valuation” as an exogenous variable of being an entrepreneur, the “abilities” of being one, “Subjective Norms” and “social valuation”, as well as the total mediator variables “personal attraction” and “perceived behavioral control”. Using Principal Component Analysis (PCA) seven factors were identified with its correspondent regression degree over “entrepreneurial action”.

Keywords: entrepreneurial intention, entrepreneurial action, Theory of Planned Behavior (TPB), business graduates

1. Introduction

The working paper presented herein, considers the explanatory variables for the business entrepreneurial intention used by Liñán (2008), with the objective to design a similar model made of different predictors, and to know, with a higher statistical confidence about the significance of perceptions and abilities towards entrepreneurial action. Relevant regressions were found between the constructs, giving the preliminary conclusion that Liñán’s (2008) model is applicable in measuring entrepreneurial intention for *Escuela Superior Politécnica del Litoral* (ESPOL) business graduated students, in Guayaquil - Ecuador.

The cited document gathers the Theory of Planned Behavior (TPB) by Ajzen (1991), and induces to think that by achieving a higher degree of explanation about *entrepreneurial intention*, a higher proportion of *entrepreneurial action* and *self-employment* is explained. Therefore, this study aims to explain the variables and factors that are related to the business graduated students’ *entrepreneurial actions*, using Liñán’s (2008) model, tries to validate the reliability of the constructs and quantify the relationship of its’ regressions. By applying the model to graduated professionals instead of registered students, it goes beyond *entrepreneurial intention* to *entrepreneurial action*.

Every individual’s own situation after graduation day, has generated latent perception variables in their heads e.g. the perceived degree of its own capacity in adopting an entrepreneurship behavior called *entrepreneur self-efficiency* (Bandura, 1982), the attractiveness to having an *entrepreneur behavior*, the general *subjective norms* of being a business owner and the students’ own evaluation about their capacity to control that entrepreneurial behavior in the future (Ajzen, 1991).

In this sense, each individual will take an *entrepreneurial action* accordingly to the existing precipitant event during life (Krueger, 2008), and this is the reason why, in this work, Liñán's (2008) model has been adapted to go further than *entrepreneurial action* alone, by modifying the measurement scale it becomes applicable to graduate students.

2. Description of the Problem

Business students are formed to be entrepreneurs in the future. Sadly, a considerable proportion of graduates do not accomplish this objective, settling down with just being employees and sometimes underestimating their capacities. From the institution's organizational framework point of view this is not a desirable outcome, since providing the market with professional leaders is their main concern. In this sense, the abilities to start a new business or social project are directly related to leadership. Also, few academic works measure entrepreneurial action using TPB ex post, that is, when the action has already happened. So, authors like Ajzen (1991) and Liñan (2008) have only gotten to the point of measuring intention. With this in mind, a research that addresses the way graduates think and act, finding significance regression relationships is desirable.

According to TPB, entrepreneurs who wish to start a business require a significant amount of "intentionally planned action", that involves an individually made procedure to process information and transform it into reality. Also, it believes the party needs a certain underlying attitudes, mixed with the perception of desirability and feasibility to predict intentions.

"In gathering information from respondents several years after they have founded the business, it is not clear how individuals' perceptions of the desirability and feasibility of pursuing an opportunity (as manifest in the successful establishment of the business) might have changed over time." (Diochon, M., Gasse, Y., Menzies, T. V., & Garand, D. J., 2002).

With this fact in mind, the objective of this working paper is to determine the explanatory variables for the *entrepreneurial action* of business graduate students, viewed as the accomplishment of initiating a business. It contributes to the former work by Liñan with aggregated scientific value, given that action comes after intention, as referred by the authors Bagozzi y Warsaw (1990), who stated that the action is a goal after a series of attempts to accomplish an objective, formalized in the Theory of Trying.

In an addition, in "Attitude-behavior relations: A meta-analysis of attitudinal relevance and topic" Kim and Hunter (1993) established that a large proportion of variance in behavior is explained by intentions, and at the same time, this is explained by personal desirability and social norms. If *perceived* feasibility is added, an additional 10% of the variance can be explained (Ajzen, 1987).

This working paper is justified by the following gaps in the literature:

1. The Entrepreneurship Abilities Model for registered university students (Cabana, Cortes, Plaza, Vergara y Marin, 2013) was based on hierarchical regressions. It would be interesting to go further and apply structural equations.
2. Krueger (2008) stated that “Researcher have observed the need for a better understanding of the bonds between intention and action, especially in a social context”¹. He also emphasizes the lack of knowledge with respect to the precipitators of entrepreneurial action, and proposes a model to formally study the perceived barriers, entrepreneur spirit and the role resilience plays in entrepreneurships.
3. The study about decisional preferences for risk and entrepreneurial intention (Lanero A, Sánchez J, Villanueva J y D’Almeida O, 2007) combines Shapero (1982) model of entrepreneur events with Bandura (1982) concept of self-efficiency, to determine how desirability, viability and self-efficiency influence entrepreneurial intention. The main hypothesis are questionable by the existence of methodological limitations in using students, and suggests for future researches to include individuals in real processes, in order to generalize results to other, non-student, entrepreneurs.

The interesting objective is:

Determine to what extent perceptions and abilities received by students influence their entrepreneurial action once graduated, and how was this translated into a specific action to create and innovate in business.

The results of this research will be of great use to universities, in guiding the design of their teaching and learning processes to accomplish the introduction of professionals with high degree of entrepreneurial action into society, which contributes to the development of new business opportunities, generates new jobs, and enhances economic and social activity.

The main research question is: In what degree the entrepreneurial intention after graduation has transformed into action when working for a while in a private business? Contributing to answering this question will assist universities’ management decisions in adopting teaching and learning process suitable for delivering quality professionals into society with a high degree of entrepreneurial actions. Therefore, this work will serve as an instrument to be used by the academic community and independent consultants in innovation and business architects to identify strengths and weaknesses in organizations with respect to the necessary abilities to undertake actions.

General Research Question

1 Self-translation from Krueger (2008).

- Are Liñan (2008) modified constructs a valid perspective to illustrate entrepreneurial action for business graduate university students?
- What exogenous variables and factors discriminate within university graduates for a greater entrepreneurial action?
- In between what latent variables from Liñan (2008) modified model can regressions be found using entrepreneurial action as dependent variable?
- Does precipitator events significantly influence entrepreneurial action for graduate students?

General Objective

In a global sense, it is expected as a final consequence of this research work, to determine the variables with a greater effect over entrepreneurial action for business graduate students.

Specific Objectives

- To determine the reliability of Liñan (2008) modified constructs to measure entrepreneurial action and
- To determine if regressions can be found within the modified model using entrepreneurial action as dependent variable

3. Literature Review

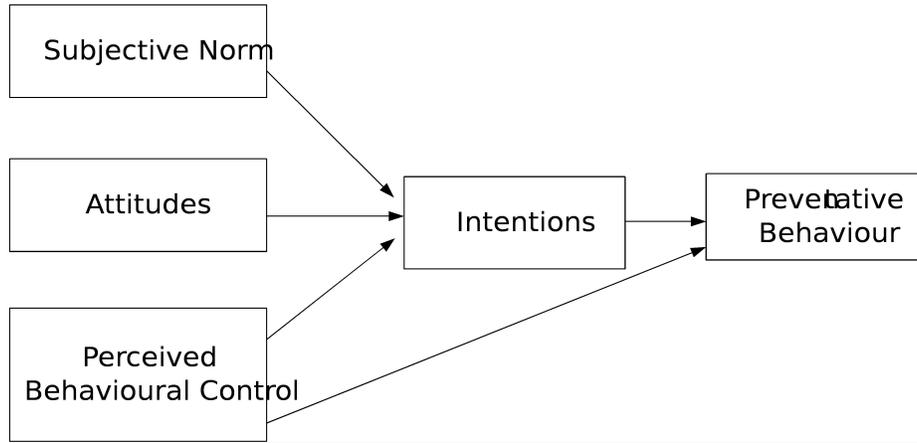
Firstly, we need to clarify what is meant by entrepreneur. It consists on an individual that has never own a business, neither in the past nor in the present, and according to McGee (2009), borne entrepreneurs are considered only those who had at least two of the following events:

“(1) to assist a seminar or conference to initiate its own business, (2) to participate in seminars centered on business plans, (3) to elaborate an initiating team, (4) to search a building or equipment for a business, (5) to save money for and investment in a business, and (6) to develop a product or service”. (McGee J; 2009)².

Taking into account that entrepreneurs plan and evaluate according to norms, the perspectives base on the Theory of Planned Behavior (TPB) (Ajzen y Fishbein, 1980; Ajzen, 1987; Ajzen, 1991) is useful to measure *entrepreneurship attitude* and *action*. The Theoretical Model by Fishbein y Ajzen (1980), is represented in Figure 1, and illustrates the different aspects regarding entrepreneurship which contributes to a more realistic perception of entrepreneurship activity (Ajzen, 2002).

Figure 1

Model of Planned Behavior



Source: Self-made based on Ajzen (1991)

It is clear then, that TPB assumes that intention depends on *attitude*, *subjective norms* and each individual *perceived behavioral control* (Ajzen 1991). In this sense, the first latent variable is *Attitude*, which comprehends beliefs and its own perception regarding his conviction about accomplishing an specific action, which at the same time is related to the expectation about the impact that this action will have on himself.

The second latent variable is the *Subjective Norm*, in other words, is the socially perceived norm, which is defined as the perception of an individual regarding values, norms or beliefs about those who he respects and consider important, as well as his wishes to comply with those norms. “Social norms predict less of entrepreneurial intention in individuals with a high locus on internal control³” (Krueger et al 2000) cited by (Basu y Virick; 2008).

Students and graduates who has been exposed to entrepreneurial programs, have more positive attitudes towards entrepreneurship, stronger subjective norms in favor of entrepreneurship initiative, as well as a higher perception of internal control over their behavior (Basu y Virick; 2008). This conclusion conduces to the hypothesis that entrepreneurship and management courses could be precipitator factors which influence perception about motivational variables, hence entrepreneurial intention and action.

The third latent variable is *Perceived Behavioral Control*, which addresses the perception of individuals with respect to the capacity to control his entrepreneur behavior, which conduces him to act in that direction and towards that behaviour (Ajzen 1991). This TPB model and definitions allow us to observe what Fayolle (2004) ratifies, there is an important breach in between the intention or attitude towards entrepreneurship and action or behavior. The intention process is composed of two

3 Self- translation from (Basu y Virick; 2008)

stages: the first is to exit the intention (the attractiveness of other situation is preferred) and when the intention level increases, it transforms in action.

Liñán (2004) has already addressed this situation when he affirms that intention towards a particular behavior is the best way to predict it (Ajzen, 1991). In this sense, it can be said that intention shows the degree of necessary effort to accomplish such behavior (Liñán; 2004). Also, in relation to *perceived social norms*, at the moment the individual decides to become an entrepreneur, he is influenced by people surrounding him the closest, and takes into account whether they would approve or not his decision. It can be inferred then, that *close valuation* about our surroundings positively influences entrepreneurial intention. (Morales M; 2011).

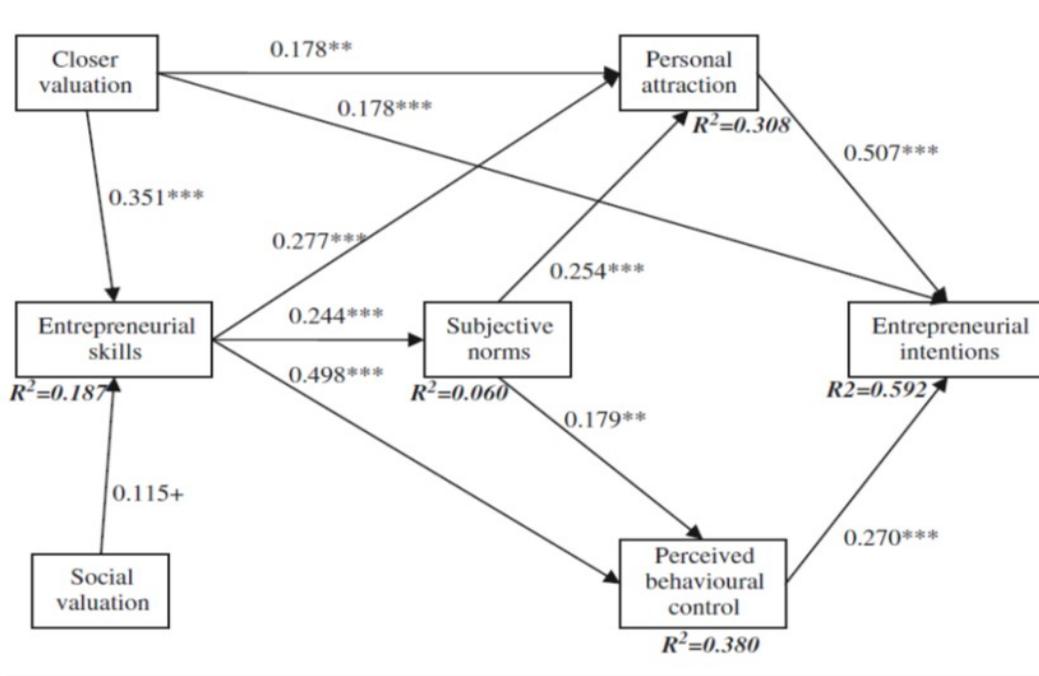
Observing what Sánchez (2005) affirms regarding “personal history as a vicar experience, personal characteristics as values, motivations, personality gestures and abilities can influence individuals towards the formation of entrepreneurial intentions. Likewise, political, economic and social factors, as well as subjective norms, opportunity perceptions and resources, contribute to the formation of self-employment intentions⁴” (Sánchez, Llanero y Yurrebaso, 2005).

While Liñán (2008) in his work about “Abilities and value of perception: How does intentions affect entrepreneurial intentions?”, based on Ajzen (1991) TPB frequently used model to explain the mental process of business creations, his main objective was to prove if perceived social valuation about entrepreneurship and perceived personal abilities had a significant impact on entrepreneurial action, directly or through determinant motivational factor (personal attraction, control over perceived behavior or subjective norms). With his contribution the author explains and predicts in what ways the cultural and social environment influence human behavior in *entrepreneurial intentions (IE)*. The main variables used in the model, as illustrated in Figure No.2, are *personal attraction (PA)* or perceived attitude, which is a personal evaluation of the individual, *subjective norms (SN)*, viewed as the social pressure or what others think about such behavior and, *Perceived Behavioral Control (PBC)*, that is, the capacity to do it and the degree of control over it.

4 Self- translation from (Sánchez, Llanero y Yurrebaso, 2005).

Figure 2

Modelo de Intención Emprendedora de como las habilidades empresariales afectan a la intención emprendedora



Source: Self-made based on (Liñán F; 2008).

4. Research Design

Research Hypothesis

Using Liñán (2008) entrepreneurial intentions TPB model as the theoretical framework, and a previous academic work with ESPOL students (Maluk O, 2014), the following hypothesis (see Table No. 1) are considered to measure graduates entrepreneurial action:

Table 1

Considered Model's Hypothesis and Variables

| Hypothesis | Variables | Dependent: |
|---|--|--|
| H1: Personal attraction towards professionalism has a positive impact on entrepreneurial action. | Exogenous: VALORCERC: Individuals Close Valuation regarding entrepreneurs. VALORSOCIAL: Social Valuation for entrepreneurs. Liñán (2008) partial mediators: | ACCIONEMPRESAR: The action of being an entrepreneur and final dependent variable of the conceptual model, which |
| H2: Perceived Behavioral Control has a positive impact on entrepreneurial action. | | |
| H3: Subjective Norms has a positive impact on personal attraction. | | |
| H4: Subjective Norm has a positive impact | | |

| | | |
|--|---|---|
| on Perceived behavioral control. | HABILIDADESEMP: Professional abilities regarding entrepreneurship. | replaces entrepreneurial intention by Liñán (2008), assuming that intention is in the past and thus, is a previous condition. |
| H5: Close valuation has a positive impact on personal attraction. | | |
| H6: Close valuation has a positive impact on subjective norms. | Endogenous motivational and mediator variables: | |
| H7: Social valuation has a positive impact on subjective norms | NORMASUBJ: Subjective perception about values and beliefs of those who close and respected. | |
| H8: Social Valuation has a positive impact on perceived behavioral control. | | |
| H9: Close valuation has a positive impact over entrepreneurship abilities. | | |
| H10: Social valuation has a positive impact on entrepreneurship abilities. | ACCEPTPERSON: Personal perception about the attractiveness of the entrepreneurship profession, the interest the individual has for being an entrepreneur. | |
| H11: Entrepreneurship abilities have a positive impact on personal attraction for the profession. | | |
| H12: Entrepreneurship abilities have a positive impact on subjective norms. | CONTROLCOMPERC: Individuals perception about entrepreneurs' behavioral attitude, that is, the awareness about the businesspersons' behavior. | |
| H13: Entrepreneurship abilities have a positive impact on perceived behavioral control. | | |

Source: Self-made based on TPB, Liñan (2008) and Maluk (2014)

Methodology

To measure entrepreneurial action, the same questionnaire for Liñán (2008) entrepreneurial intention was used (QEI, ver. 3.1), adapted and modified by the author, to be applied to graduated students who are exercising their profession. The items have been designed as a sample unit for university graduates. As previously stated, this research considered the entrepreneurial action is happening once entrepreneurial intention *has accomplished its mediation function. The relationship to be directly measured is with the originating variables, that is: Personal Attraction, Subjective Norm, Perceived Behavioral Control, Close Valuation, Abilities and Social Valuation.*

Population and sampling

Being the target sample unit ESPOL business university graduates, in order to select a representative sample, the population was defined as the past twelve year graduates from the Economic Faculty, that is, in between 2000 and 2012, which at the

moment are exercising their profession and correspond to a finite population with an approximate quantity of 2,300 graduates.

The online gathering process was made using a software called *Rotary Survey*, the link to the survey and the attached word document were sent to their respective email addresses and to the author's followers in social networks; specifically Twitter and Facebook. The resulting sample is considered to be representative, summing up to more than 3% of the graduates. No gender discrimination was applied, it was only based accordingly to effective response. In relation to sampling error, this was minimized by the use of the software, the internet and personal digitalization of digitalized questionnaires. Sampling duration was 30 days with an estimated dedication time of 40 minutes in average.

Analysis Techniques

In the data analysis process, the following consecutive sequential technique was used to test the considered hypothesis:

1. Descriptive statistics: The first step is determine the items sample means, variance and correlations matrixes.
2. Principal Component Factorial Analysis with Varimax rotation: In this second analysis, questionnaire items are separated by principal components which are orthogonal to each other, every construct independently, and then, observe whether they group into a single component for every assumption in the theoretical model. If they do not group, an elimination process is applied to the items in accordance with its commonality charge, correlations between items, every item's charge within its component and the increase in Cronbach's alpha by clearing inconvenient items.
3. Reliability Analysis: Simultaneously with the above process, the items' reliability in the commonalities is verified. That is, in the commonalities, the percentage with which every item contributes to the total component variance is identified, and the Cronbach's alpha indicator is used as the coefficient of reliability for each and every one of them.
4. Calculation of weighted average value for the latent variable: For each construct, the average of every observed item and remained within the single component is calculated. This value will be used in the multivariate regression analysis.
5. Means comparison Analysis: For the different latent variables, means comparison analysis is realized discriminating between graduates who have taken entrepreneurship courses from those who have not.
6. Linear Regression Analysis: Consists on the Ordinary Least Squares (OLS) stepwise regressions analysis, where successive steps are taken following the model pathway. This process allows the identification of regressions between the latent variables, the degree of statistical significance and the size of the existing relationships.

Also, it will be determined whether the model's mediators endogenous variables are acting accordingly, using the methodology set out by Chumpitaz, R. and Vanhamme, J. (2003), who cite the terms of mediation by Baron & Kenny (1986) for statistical tests in determining Total mediation. In this sense, following (Maluk O, 2014):

- a. First Condition: Make sure that variable X has a significant b1 effect on the variable Y, that is: $Y = a_1 + b_1 X + \text{error}_1$
- b. Second condition: Make sure that variable X has a significant b2 effect on the variable M, that is: $M = a_2 + b_2 X + \text{error}_2$
- c. Third condition: Variable M is presumed as a mediator, controlling the influence of X over Y, if b4 coefficient is significant in: $Y = a_3 + b_3 X + b_4 M + \text{error}_3$.
- d. Fourth condition: Variable M is presumed as a total mediator, if b3 effect over Y is not significantly different from zero.

We will be testing both the regression model and the degree of impact or significance of the exogenous and endogenous variables such to the final dependent variable.

The described procedure is used to contrast the regression model, as well as the impact of exogenous variables over the endogenous, and these, over the final dependent variable *entrepreneurial action*.

7. N-way ANOVA Analysis: A many predictor variable analysis is useful in order to appreciate what variables are affecting entrepreneurial action considerably, and by discriminating among those who have taken the entrepreneurship courses, a inter subjects table can be generated to determine whether or not is a significant factor.

Results

From the resulted data, Figure No.3 shows the descriptive statistics that had been obtained:

Figure 3

Descriptive statistics of considered variables

| Estadísticos descriptivos | | | | | |
|---------------------------|----|--------|--------|--------|------------|
| | N | Mínimo | Máximo | Media | Desv. típ. |
| ACCIONEMPREDER | 71 | 1.00 | 7.00 | 4.9695 | 1.40755 |
| ACCEPTPERSON | 71 | 1.00 | 7.00 | 6.0235 | 1.29139 |
| NORMASUBJ | 71 | 1.00 | 7.00 | 5.0704 | 1.49062 |
| CONTROLCOMPERC | 71 | 1.50 | 6.75 | 4.8380 | 1.14416 |
| VALORCERC | 71 | 1.50 | 7.00 | 4.9718 | 1.35722 |
| HABILIDADES | 71 | 2.75 | 7.00 | 5.7711 | .80484 |
| N válido (según lista) | 71 | | | | |

Source: Self- made in SPSS according to collected exploratory research data

Principal components:

The principal components method with Varimax rotation and Kaiser, separated the factors mentioned in this section, once the reliability analysis has been accomplished by separating those items with commonality convergent validity and low

reliability, that is a Cronbach Alpha lower than .7. Few item with an alpha slightly lower than .7 has been included in order to have more than two items in the construct. Social Valuation has been excluded because items do not converge into one factor, instead they are divided in two, with a low reliability Cronbach's alpha and negative covariance. It can also be observed, that latent variables show high values, with an average close to 5, especially *personal acceptance* or *personal attraction* to be an entrepreneur at 6.

ACCIONEMPRESAR: The action of being an entrepreneur (see Figure No.4) with the items that compose a commonality with a 0.840 Cronbach's alpha.

Figure 4

Reliability scale for items in Entrepreneurial action Construct (ACCIONEMPRESAR)

| Estadísticos total-elemento | | | | |
|--|--|---|--------------------------------------|--|
| | Media de la escala si se elimina el elemento | Varianza de la escala si se elimina el elemento | Correlación elemento-total corregida | Alfa de Cronbach si se elimina el elemento |
| I.A1: A04:- He estado dispuesto a hacer cualquier cosa para ser empresario | 25.4085 | 50.074 | .620 | .813 |
| I.A1: A06:- Siempre me he esforzado para crear y dirigir mi propia empresa | 24.8451 | 48.990 | .721 | .792 |
| I.A2: A13:- Siempre he estado decidido a crear una empresa | 24.3803 | 48.639 | .760 | .785 |
| I.A2: A17:- Mi objetivo profesional es ser empresario | 24.1127 | 53.759 | .596 | .818 |
| A9INVERTIDA | 25.6338 | 56.921 | .357 | .864 |
| A19INVERTIDA | 24.7042 | 48.326 | .681 | .800 |

Source: Self-made in SPSS according to collected exploratory research data

ACEPTPERSON: The personal acceptance or professional attraction to be an entrepreneur (see Figure No.5), it is composed by one convergent validity factor and a commonality with 0.830 Cronbach's alpha. A02 and A12 items were removed for having negative covariance and converge in a second factor.

Figure 5

Reliability scale for items in Personal Acceptance Construct (ACEPTPERSON)

| Estadísticos total-elemento | | | | |
|--|--|---|--------------------------------------|--|
| | Media de la escala si se elimina el elemento | Varianza de la escala si se elimina el elemento | Correlación elemento-total corregida | Alfa de Cronbach si se elimina el elemento |
| I.A1: A10:- Si tuviese la oportunidad y los recursos, me encantaría crear una u otra empresa | 11.70 | 8.097 | .650 | .805 |
| I.A2: A15:- Ser empresario me supone una gran satisfacción | 12.03 | 7.313 | .768 | .694 |
| I.A2: A18:- Ser empresario me reportaría más ventajas que otra actividad | 12.41 | 6.302 | .676 | .797 |

Source: Self-made in SPSS according to collected exploratory research data

NORMASUBJ: The subjective norm about being an entrepreneur (see Figure No.6), it is grouped with convergent in a 3 items commonality, presenting a 0.788 Cronbach's Alpha as follows:

Figure 6

Reliability scale for items in Subjective Norm Construct (NORMASUBJ)

| Estadísticos total-elemento | | | | |
|---|--|---|--------------------------------------|--|
| | Media de la escala si se elimina el elemento | Varianza de la escala si se elimina el elemento | Correlación elemento-total corregida | Alfa de Cronbach si se elimina el elemento |
| I.A1: A03:- Mis amigos siempre han aprobado mi decisión de crear una empresa | 10.27 | 9.313 | .721 | .612 |
| I.A1: A08:- Mi familia más directa siempre ha aprobado mi decisión de crear una empresa | 10.08 | 10.821 | .490 | .858 |
| I.A2: A11:- Mis compañeros han aprobado mi decisión de crear una empresa | 10.07 | 9.352 | .690 | .645 |

Source: Self-made in SPSS according to collected exploratory research data

CONTROLCOMPERC: The perception of being able to control the behavior of being an entrepreneur (see Figure No.7), or control over that behavior, which is grouped into one factor with convergent validity, in a 4commonality with a 0.685 Cronbach's Alpha.

Figure 7

Reliability scale for items in Perceived Behavioral Control Construct (CONTROLCOMPERC)

| Estadísticos total-elemento | | | | |
|---|--|---|--------------------------------------|--|
| | Media de la escala si se elimina el elemento | Varianza de la escala si se elimina el elemento | Correlación elemento-total corregida | Alfa de Cronbach si se elimina el elemento |
| I.A1: A01:- Crear una empresa y mantenerla en funcionamiento ha sido fácil para Mi | 15.90 | 14.490 | .291 | .732 |
| I.A1: A07:- Puedo mantener bajo control el proceso de creación de una empresa | 14.00 | 12.429 | .565 | .558 |
| I.A2: A14:- Si tratase de crear una empresa, tendría una alta probabilidad de éxito | 13.69 | 14.103 | .537 | .593 |
| I.A2: A20:- Conozco todos los detalles prácticos necesarios para crear una empresa | 14.46 | 11.052 | .532 | .578 |

Source: Self-made in SPSS according to collected exploratory research data

VALORCERC: This factor represents closest friends and family assessment (see Figure No.8), it has convergent validity and it groups in a 3 items commonality, with a low Cronbach's alpha of 0.578, but if the item C1 is deleted, the reliability rises to 0.768. It is recommended to keep researching with a larger sample to statistically determine the reliability of the item.

Figure 8

Reliability scale for items in Close Valuation Construct

| Estadísticos total-elemento | | | | |
|---|--|---|--------------------------------------|--|
| | Media de la escala si se elimina el elemento | Varianza de la escala si se elimina el elemento | Correlación elemento-total corregida | Alfa de Cronbach si se elimina el elemento |
| I.C: C1:- Mi familia directa ha valorado la actividad empresarial por encima de otras | 9.94 | 7.368 | .191 | .768 |
| I.C: C4:- Mis amigos valoran la actividad empresarial por encima de otras | 9.97 | 5.771 | .516 | .279 |
| I.C: C7:- Mis compañeros valoran la actividad empresarial por encima de otras | 10.06 | 5.797 | .499 | .305 |

Source: Self-made in SPSS according to collected exploratory research data

HABILIDADES: These are the specific skills to be an entrepreneur, the grouped in a single factor with a commonality convergent validity, showing a Cronbach's Alpha of 0.766. Items grouped into another factor were eliminated, with a low Cronbach Alpha of 6 and negative covariance, these are D4 and D6 (see Figure No.9).

Figure 9

Reliability scale for items in Managerial Abilities Construct (HABILIDADES)

| Estadísticos total-elemento | | | | |
|--|--|---|--------------------------------------|--|
| | Media de la escala si se elimina el elemento | Varianza de la escala si se elimina el elemento | Correlación elemento-total corregida | Alfa de Cronbach si se elimina el elemento |
| I.D: D5:- Desarrollo de nuevos productos y servicios | 17.51 | 6.025 | .588 | .699 |
| I.D: D2:- Creatividad | 17.31 | 6.388 | .572 | .708 |
| I.D: D3:- Resolución de problemas | 16.89 | 6.844 | .571 | .713 |
| I.D: D1:- Detección de oportunidades | 17.55 | 5.880 | .550 | .724 |

Source: Self-made in SPSS according to collected exploratory research data

Regressions:

The first regression is shown in Figure No.10, and illustrates the exposed relationship between ACCIONEMPRESAR and Liñan (2008) mediator variables, being ACCEPTPERSON and CONTROLCOMPERC, These are validated as mediators variables for the proposed research model, with strong regressions. It can be observed that ACCEPTPERSON or personal attractiveness for the profession, has the highest semi partial correlation as latent variable over ACCIONEMPRESAR, and then it follows CONTROLCOMPERC or perceived behavioral control.

Figure 10

Regression model between Entrepreneurial action as dependent variable and, Personal Acceptance and Perceived Behavioural Control as total mediation variables

Resumen del modelo^c

| Modelo | R | R cuadrado | R cuadrado corregida | Error típ. de la estimación | Estadísticos de cambio | | | | |
|--------|-------------------|------------|----------------------|-----------------------------|------------------------|-------------|-----|-----|------------------|
| | | | | | Cambio en R cuadrado | Cambio en F | gl1 | gl2 | Sig. Cambio en F |
| 1 | .679 ^a | .461 | .453 | 1.04091 | .461 | 58.996 | 1 | 69 | .000 |
| 2 | .736 ^b | .542 | .529 | .96605 | .081 | 12.109 | 1 | 68 | .001 |

a. Variables predictoras: (Constante), ACCEPTPERSON
 b. Variables predictoras: (Constante), ACCEPTPERSON, CONTROLCOMPERC
 c. Variable dependiente: ACCIONEMPREDER

Coefficientes^a

| Modelo | | Coeficientes no estandarizados | | Coeficientes tipificados | t | Sig. | Correlaciones | | | Estadísticos de colinealidad | |
|--------|----------------|--------------------------------|------------|--------------------------|-------|------|---------------|---------|-------------|------------------------------|-------|
| | | B | Error típ. | Beta | | | Orden cero | Parcial | Semiparcial | Tolerancia | FIV |
| 1 | (Constante) | .512 | .593 | | .863 | .391 | | | | | |
| | ACCEPTPERSON | .740 | .096 | .679 | 7.681 | .000 | .679 | .679 | .679 | 1.000 | 1.000 |
| 2 | (Constante) | -.274 | .595 | | -.460 | .647 | | | | | |
| | ACCEPTPERSON | .530 | .108 | .487 | 4.921 | .000 | .679 | .512 | .404 | .688 | 1.453 |
| | CONTROLCOMPERC | .423 | .122 | .344 | 3.480 | .001 | .616 | .389 | .285 | .688 | 1.453 |

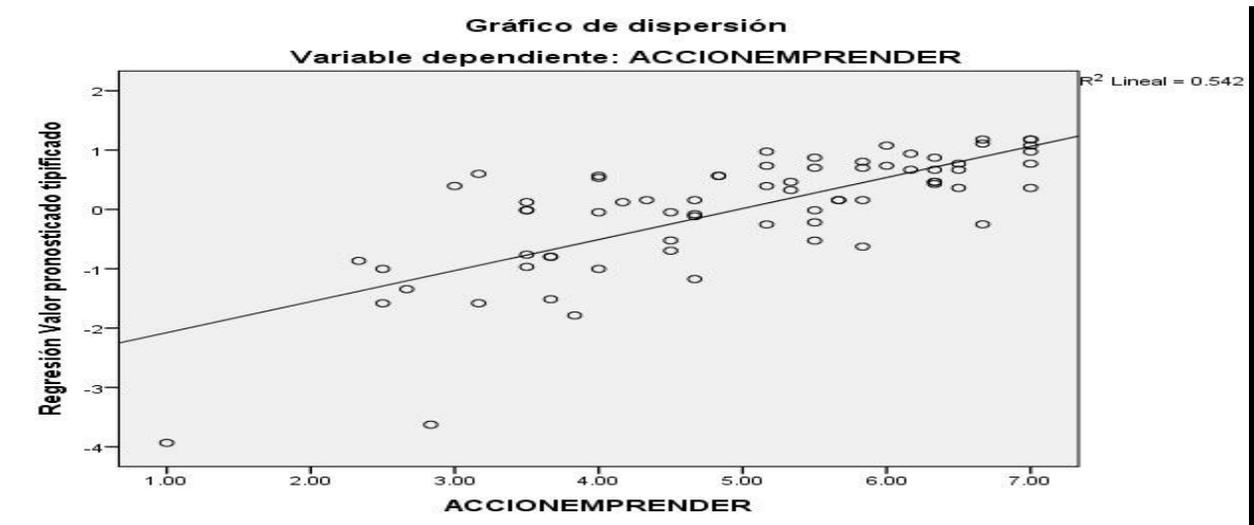
a. Variable dependiente: ACCIONEMPREDER

Source: Self-made in SPSS according to collected exploratory research data

The total model illustrated in Figure No.11 has a coefficient of determination of 0.542, capturing 54% of total variance, with two latent variables, one inflation variance factor between 1 and 2, and a 0.688 tolerance. Values that are considered acceptable.

Figure 11

Entrepreneurial action linear regression



Source: Self-made in SPSS according to collected exploratory research data and described procedure

In Figure No.12 results from linear regression between ACCEPTPERSON and VALORCERC are shown, being excluded HABILIDADES. It can be said that there exist a low statistic relationship. In a way, this is explained given that professional graduates have a minor perceptions about the influence that closest family and friends assessments have over their decisions.

Figure 12

Regressions between Personal Acceptance and Close Valuation

Resumen del modelo^b

| Modelo | R | R cuadrado | R cuadrado corregida | Error típ. de la estimación | Estadísticos de cambio | | | | |
|--------|-------------------|------------|----------------------|-----------------------------|------------------------|-------------|-----|-----|------------------|
| | | | | | Cambio en R cuadrado | Cambio en F | gl1 | gl2 | Sig. Cambio en F |
| 1 | .302 ^a | .091 | .078 | 1.24000 | .091 | 6.922 | 1 | 69 | .010 |

a. Variables predictoras: (Constante), VALORCERC
b. Variable dependiente: ACCEPTPERSON

Source: Self-made in SPSS according to collected exploratory research data

Figure No.13 shows the exposed SPSS resulted 0.094 R squared relationship between (CONTROLCOMPERC) and (HABILIDADES) as follows:

Figure 13

Regressions between Perceived Behavioral Control and abilities

Resumen del modelo^b

| Modelo | R | R cuadrado | R cuadrado corregida | Error típ. de la estimación | Estadísticos de cambio | | | | |
|--------|-------------------|------------|----------------------|-----------------------------|------------------------|-------------|-----|-----|------------------|
| | | | | | Cambio en R cuadrado | Cambio en F | gl1 | gl2 | Sig. Cambio en F |
| 1 | .306 ^a | .094 | .081 | 1.09704 | .094 | 7.143 | 1 | 69 | .009 |

a. Variables predictoras: (Constante), HABILIDADES
b. Variable dependiente: CONTROLCOMPERC

Coefficientes^a

| Modelo | | Coeficientes no estandarizados | | Coeficientes tipificados | t | Sig. | Correlaciones | | | Estadísticos de colinealidad | |
|--------|-------------|--------------------------------|------------|--------------------------|-------|------|---------------|---------|-------------|------------------------------|-------|
| | | B | Error típ. | Beta | | | Orden cero | Parcial | Semiparcial | Tolerancia | FIV |
| 1 | (Constante) | 2.325 | .949 | | 2.450 | .017 | | | | | |
| | HABILIDADES | .435 | .163 | .306 | 2.673 | .009 | .306 | .306 | .306 | 1.000 | 1.000 |

a. Variable dependiente: CONTROLCOMPERC

Source: Self-made in SPSS according to collected exploratory research data

Figure No.14 shows SPSS resulted R squared 0.084 relationship between (NORMASUBJ) and (VALORCERC) as follows:

Figure 14

Regressions between Subjective Norm and Close Valuation

Resumen del modelo^b

| Modelo | R | R cuadrado | R cuadrado corregida | Error típ. de la estimación | Estadísticos de cambio | | | | |
|--------|-------------------|------------|----------------------|-----------------------------|------------------------|-------------|-----|-----|------------------|
| | | | | | Cambio en R cuadrado | Cambio en F | gl1 | gl2 | Sig. Cambio en F |
| 1 | .289 ^a | .084 | .070 | 1.43717 | .084 | 6.304 | 1 | 69 | .014 |

a. Variables predictoras: (Constante), VALORCERC
 b. Variable dependiente: NORMASUBJ

Coefficientes^a

| Modelo | | Coefficients no estandarizados | | Coefficientes tipificados | t | Sig. | Correlaciones | | | Estadísticos de colinealidad | |
|--------|-------------|--------------------------------|------------|---------------------------|-------|------|---------------|---------|-------------|------------------------------|-------|
| | | B | Error típ. | Beta | | | Orden cero | Parcial | Semiparcial | Tolerancia | FIV |
| 1 | (Constante) | 3.491 | .652 | | 5.354 | .000 | | | | | |
| 1 | VALORCERC | .318 | .127 | .289 | 2.511 | .014 | .289 | .289 | .289 | 1.000 | 1.000 |

a. Variable dependiente: NORMASUBJ

Source: Self-made in SPSS according to collected exploratory research data

Lastly, Figure No.15 shows SPSS resulted R squared relationship between (NORMASUBJ) and mediator variables (ACEPTPERSON) and (CONTROLCOMPERC) with 2.86 and 2.94 respectively.

Figure 15

Regressions between Subjective Norm and model's mediator variables

Resumen del modelo

| Modelo | R | R cuadrado | R cuadrado corregida | Error típ. de la estimación | Estadísticos de cambio | | | | |
|--------|-------------------|------------|----------------------|-----------------------------|------------------------|-------------|-----|-----|------------------|
| | | | | | Cambio en R cuadrado | Cambio en F | gl1 | gl2 | Sig. Cambio en F |
| 1 | .535 ^a | .286 | .276 | 1.09883 | .286 | 27.685 | 1 | 69 | .000 |

a. Variables predictoras: (Constante), NORMASUBJ

Coefficientes^a

| Modelo | | Coefficients no estandarizados | | Coefficientes tipificados | t | Sig. | Correlaciones | | | Estadísticos de colinealidad | |
|--------|-------------|--------------------------------|------------|---------------------------|-------|------|---------------|---------|-------------|------------------------------|-------|
| | | B | Error típ. | Beta | | | Orden cero | Parcial | Semiparcial | Tolerancia | FIV |
| 1 | (Constante) | 3.673 | .465 | | 7.892 | .000 | | | | | |
| 1 | NORMASUBJ | .464 | .088 | .535 | 5.262 | .000 | .535 | .535 | .535 | 1.000 | 1.000 |

a. Variable dependiente: ACEPTPERSON

Resumen del modelo

| Modelo | R | R cuadrado | R cuadrado corregida | Error típ. de la estimación | Estadísticos de cambio | | | | |
|--------|-------------------|------------|----------------------|-----------------------------|------------------------|-------------|-----|-----|------------------|
| | | | | | Cambio en R cuadrado | Cambio en F | gl1 | gl2 | Sig. Cambio en F |
| 1 | .542 ^a | .294 | .284 | .96835 | .294 | 28.725 | 1 | 69 | .000 |

a. Variables predictoras: (Constante), NORMASUBJ

Coefficientes^a

| Modelo | | Coefficients no estandarizados | | Coefficientes tipificados | t | Sig. | Correlaciones | | | Estadísticos de colinealidad | |
|--------|-------------|--------------------------------|------------|---------------------------|-------|------|---------------|---------|-------------|------------------------------|-------|
| | | B | Error típ. | Beta | | | Orden cero | Parcial | Semiparcial | Tolerancia | FIV |
| 1 | (Constante) | 2.728 | .410 | | 6.652 | .000 | | | | | |
| 1 | NORMASUBJ | .416 | .078 | .542 | 5.360 | .000 | .542 | .542 | .542 | 1.000 | 1.000 |

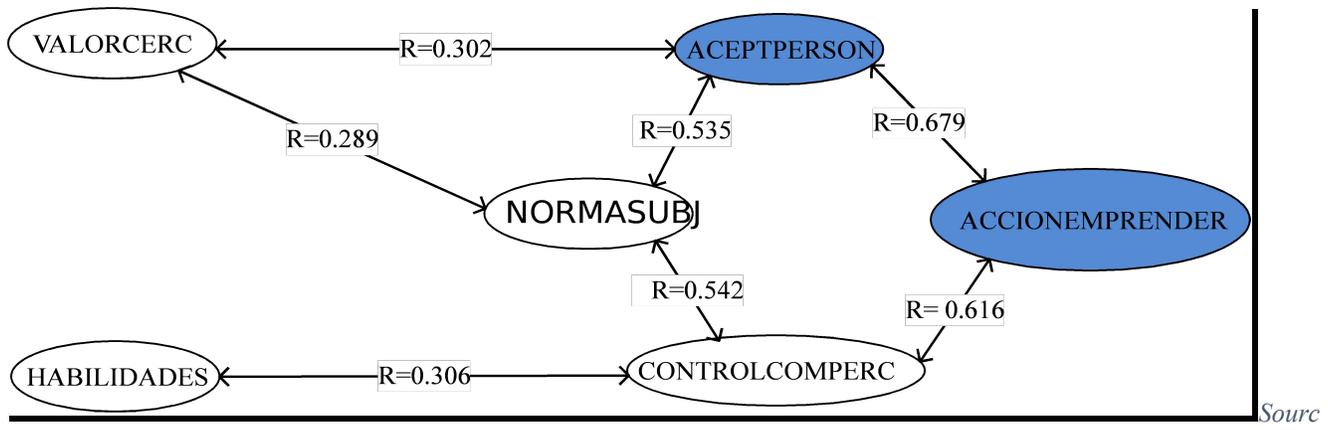
a. Variable dependiente: CONTROLCOMPERC

Source: Self-made in SPSS according to collected exploratory research data

As final exploratory results for ESPOL business graduates entrepreneurial action, Figure No.16 illustrates the summary regarding the relationships found in the data amongst the variables, and establishes the exploratory determinants of *entrepreneurial action*, main objective of this working paper.

Figure 16

Resulted regression model



Source: Self-made according to collected exploratory research data

5. Conclusions and recommendations for future research

The first conclusion relating to the hypothesis is that H1, H2, H3, H4, H5, and H6 cannot be rejected (they are validated) about the existence of regression between the model's latent variable. In this sense, it can be said that hypothesis H7, H8, H9, H10, H11 and H12 are rejected.

In relation to the objectives, these have been met as follows: Firstly, in order to determine the reliability of the modified constructs by Liñán (2008) to measure *entrepreneurial action*, it was found that their exists convergent validity with factors loads higher than 0.7 for the resulted constructs in the final model, with a Cronbach's alpha above 0.685. These results are considered very satisfactory considering this is an exploratory analysis.

The second objective is to determine if there are regressions within the modified model for *entrepreneurial action*, the findings has been integrated into a final exploratory model, with two exogenous variables *close valuation* and *abilities*, total mediator variables from Liñán (2008) model *personal attraction* and *perceived behavioral control*, and these two related with a partial mediator variable called *subjective norms*. The final dependent variable is *entrepreneurial action* measured thorough the grouping items in a solely component, with convergent validity and high reliability.

For future researchs it is recommended to increase sampling size to over 100 and validate the model using Structural Equation Modeling (SEM). Also, it is desirable to incorporate into the analysis precipitator events and additional moderating factor.

Personal Attraction over the entrepreneurship profession as a mediator variable has the stronger regression with *entrepreneurial action*, followed by *perceived behavioral control*, differing with Liñán (2008), *abilities* of being an entrepreneur and *close valuation* has nothing to do with the action of being an entrepreneur. Given these results, this working paper has opened a window to venture with TPB directly in the business context, especially those events related to entrepreneurship and its action.

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