

An examination of the relationship between manager self-efficacy and entrepreneurial intentions and performance in mexican small businesses

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Abstract

Self-efficacy refers to the subjective beliefs that people have of their capability to perform a given task, a topic of continual research in the last two decades in different fields of human functioning. There is ample research about the relationship between self-efficacy and performance, and with entrepreneurship. Chen *et al.* (1998) in particular proposed a construct to predict the likelihood of an individual being an entrepreneur, which they tested in parallel samples of students and small business owners and executives; the construct consisted of five factors: marketing, innovation, management, risk-taking, and financial control. The present study was meant to validate the construct in a sample of small businesses in a small city of west-central Mexico, but results found show that the data converge in three factors that seem to relate to the difficulty and complexity of the task; such factors explain the business perceived performance, as well as the entrepreneurial intention of business owners and managers.

Keywords: small business, self-efficacy, business performance, entrepreneurial intentions.

Un examen de la relación entre la autoeficacia de los gerentes de las empresas pequeñas mexicanas con las intenciones emprendedoras y con el desempeño empresarial

Resumen

El concepto de autoeficacia se refiere a las creencias subjetivas que tiene la gente sobre su capacidad de desempeñar una tarea dada, y es un tópico sobre el que se ha investigado en forma continua en las últimas dos décadas en diferentes esferas del funcionamiento humano. Se ha realizado amplia investigación sobre la relación entre autoeficacia y desempeño, y con la intención emprendedora. Chen *et al.* (1998), en particular, propusieron un constructo para predecir la probabilidad de que un individuo sea un emprendedor, lo cual probaron en muestras paralelas de estudiantes y de propietarios y ejecutivos de empresas pequeñas; el constructo consiste en cinco factores: mercadeo, innovación, administración, toma de riesgos y control financiero. El presente estudio pretendió validar el constructo referido en una muestra de empresas pequeñas de una pequeña ciudad del centro-occidente de México, pero se encontró que los datos convergen en tres factores que parecen estar relacionados con la dificultad o complejidad de la tarea; tales factores ofrecen una explicación del desempeño percibido del negocio, así como las intenciones emprendedoras de los propietarios y gerentes de las empresas.

Palabras clave: empresas pequeñas, autoeficacia, desempeño empresarial, intención empresarial.

Introduction

Our interest in the study of small businesses is due to their importance for economy, which is widely recognized, and because growth rates are higher for smaller businesses, but their likelihood of survival is lower (ENSR, 2003). Growth at business level is meant as performance, and performance is measured by income or by profitability (ENSR, 2003), but low profitability might lead to business failure (Coad, 2007).

While growth has been considered a multidimensional phenomenon (Davidsson *et al.*, 2005), performance can be approached in multiple ways (Venkatraman and Ramanujam, 1986), and self-efficacy, which is the belief of people that they can produce desired effects (Bandura, 2000) that is central to most human functioning, might be a predictor of entrepreneurial pursuits (Markman *et al.*, 2005), and has

been found to have direct effects on venture growth (Baum and Locke, 2004). In our examination of the literature on entrepreneurial self-efficacy, we found a study by Chen *et al.*, (1998) which is most compelling to search for further knowledge on entrepreneurial self-efficacy (ESE), which refers to the strength of beliefs of an individual, of his capability of successfully perform the roles and tasks of an entrepreneur. Accordingly, our objective in this paper is to extend the use of this construct (Chen *et al.*, 1998), meant to predict the likelihood of an individual being an entrepreneur, to test whether the ESE construct is related to small business performance, and to explore the relationship between ESE and the entrepreneurial intentions of small business owners or managers, to make the venture grow.

We should note that in our review of the literature, we did not find previous studies about entrepreneurial self-efficacy concerning small businesses in Mexico, Latin-America or Spain.

Self-efficacy

Self-efficacy refers to the subjective beliefs that people have of their own capability to perform a given task, and that unless people believe they can produce the desired effects, they have little incentive to act (Bandura, 2000). Bandura and Locke (2003) relate the extensive research done on the issue through nine large-scale meta-analyses, which cover human fields from health functioning to athletic performance to work related performances. In the field of work-related performance, a meta-analysis comprising 114 studies (Stajkovic and Luthans, 1998) found self-efficacy to be strongly related to work-related performance, and that task complexity and situational factors tend to weaken the relationship between self-efficacy and performance. The development of a construct of self-efficacy for the study of entrepreneurship is fairly recent, with the leading works of Chen *et al.* (1998), made up of 22 items, and De Noble *et al.* (2007), made up of 23 items. Several measures of self-efficacy have followed, ranging from a single yes-no statement (Arenius and Minniti, 2005; Lee *et al.*, 2005) to using self-efficacy scales of general use (e.g. Chen *et al.*, 2001; Markman *et al.*, 2005; Urban, 2006).

The construct developed by Chen *et al.* (1998), that they named ESE (Entrepreneurial Self-Efficacy) proved to predict the likelihood of an individual being an entrepreneur, and rested on five factors: marketing, innovation, management, risk-taking, and financial control. While their study revealed interesting differences between students and executives in their self-efficacy level, their study did not

comment on the importance of the construct's specific underlying dimensions. The construct was tested on responses from 175 small business owners and executives, and their work has been extensively quoted in the literature about self-efficacy and entrepreneurship, although independent tests of their construct have revealed mixed results (McGee *et al.*, 2009). Drnovsek and Glas (2002) tested the construct in a sample of 32 Slovenian innovators and 96 Slovenian and Czech students, and concluded that its dimensionality was supported, although various measures were not within optimal model fit. Also Zhao *et al.* (2005) tested the construct on responses from 265 MBA students from five universities, but as one general measure—instead of the five proposed factors, together with a general construct they had been developing independently (which they based on specific entrepreneurial tasks); their study showed that both constructs were strongly related, but they do not comment about their having tested the five factors proposed by Chen *et al.* (1998), nor included the factors in their study. Fitzsimmons and Douglas (2005) tested the construct in a sample of 90 MBA students in Thailand, but they also did not comment on the five factors.

It has been argued that while the theory on ESE is quite robust, it remains empirically underdeveloped, and its dimensionality has not been fully established (McGee *et al.*, 2009). The contribution of the present study is to assess Chen *et al.* (1998), construct in a sample of small businesses located in different environment settings, and to find out whether the factors can be of use to explain performance and entrepreneurial intentions.

Business performance

The prevalent use of the performance concept in businesses has been of growth—typically employment, income and profitability, although in the case of profitability there has not been certainty for researchers to access its measure, because of accounting difficulties (ENSR, 2003). The study of performance in small business is important because low performance can be a predictor of failure (Coad, 2007).

Because self-efficacy has been commonly related to performance, it should not be a surprise that it has been the object of many studies. In the field of entrepreneurial self-efficacy, several empirical studies have found a positive relationship between a general measure of self-efficacy and performance, although its effect has not always been beneficial. Baum (2001) examined personal goals, Hmieleski and Baron (2008), and when combined with moderate optimism, exerts negative effects

under some conditions such as being together with goals and communicated vision (Baum and Locke, 2004).

Considering said findings about the existence of a relationship between a general measure of entrepreneurial self-efficacy and business performance, we presume the existence of a particular relationship between each of ESE construct's factors proposed by Chen *et al.* (1998), and performance. Accordingly we expect that:

H1: ESE factors will have a significant relationship to business performance.

Entrepreneurial intentions

Entrepreneurial intentions is a topic that has been defined as the state of mind that directs and guides the entrepreneur's acts towards the development and implementation of the business (Boyd and Vozikis, 1994), but can take the form of entrepreneurial decision to create and manage one's own business (Chen *et al.*, 1998). While it has been argued that intentions are not a sufficient impetus for actions (Bagozzi, 1992), a meta-analysis in the field of social psychology found a strong overall relationship between attitude and behavior (Kim and Hunter, 1993). Intentions imply what managers want to do.

Some of the literature on entrepreneurial intentions has been focused mainly to setting up a new business (Thompson, 2009) by students taking courses of entrepreneurship (see e.g. Chen *et al.*, 1998; Douglas and Fitzimmons, 2008 and Kickul *et al.*, 2009); several measures have been used which are designed to be answered by students. However, we argue that the concept can be extended to businesses that have gone beyond the inception stage, because the concept of entrepreneurship does not end when the business is established, but also encompasses the intentions to grow the business, as suggested by Krueger *et al.* (2000) and by Sadler-Smith *et al.* (2003).

Based on the above discussion, and because we wish to develop a measure designed to be answered by business owners and managers, in this study we develop and explore a new measure of entrepreneurial intentions, and assess its relationship with Chen *et al.* (1998), measure of entrepreneurial self-efficacy. For these reasons we expect that:

H2: ESE factors will have a significant relationship to entrepreneurial intentions.

Method

Subjects

The data were obtained from 97 small businesses owners and managers with average age of 41.8 (sd = 11.7) and the average years of work experience of 14.31 (sd = 7.35). All participants stated that they were the primary manager and were involved in the day-to-day operation of their business.

In table 1 we present a comparison of demographics and characteristics among our sample and that of Chen *et al.* (1998), which reveal important differences in the average age of businesses, in the size of the business measured by the number of employees, and founders percentage. In their analysis, Chen *et al.* did not find that the ESE values were correlated with business characteristics, nor with managers or business owner's characteristics. Although in the literature we found that the business age does not seem to affect the need to develop management skills (Jayawarna, 2003), it has been found that managing practices may vary with the size of the firms (Birley and Westhead, 1989; Jayawarna, 2003). In consideration of said differences, we cannot rule out that the results of our analyses will not be sample specific.

Table 1
Comparison of demographics and characteristics
between our data, and Chen *et al.* (1998)'s data

Demographics and characteristics	Our data	Chen <i>et al.</i> 1998
Age of business (AVG)	12	28
Age of business < 5 (AVG)	3	20
Number employees (AVG)	9	135
Number employees <20 (PCT)	96	60
Age of respondent (AVG)	41.8	45.4
Owner age (AVG)	42.7	47.3
College degree (AVG)	53	AVG
Females (AVG)	35	18
Founders (AVG)	84	59
Services (AVG)	41.2	42.5
Manufacturing (AVG)	6.2	12.7

Source: Our data and Chen *et al.* (1998)'s data.

Survey procedure

Students enrolled in the seventh semester in a business school at a southwestern university in Mexico were given a class assignment to obtain a completed survey from small businesses in their urban area. The businesses all consisted of more than 4 and less than 51 employees. The survey was completed by the primary manager of each business who participated in the day-to-day operation. The survey was composed of demographic questions, items regarding business policy and performance, and 22 items about the self-efficacy construct. Students would contact the business and apply personally the survey to the manager. The manager completed the survey at that time, otherwise, the student would make an appointment to return and collect the survey within one week.

Measures

Data were gathered on gender, age, years of work experience, and whether the participant was the manager of the business involved in the day-to-day operation.

Managers also responded to seven items on a seven point Likert-type interval scale about facets of business performance such as: sales growth, cash flow, market share, return on sales, return on investment, return on assets, and profit. The verbal anchors for the performance items ranged from “low,” to “average,” to “high.”

The data from the survey were gathered at one point in time because, due to their operation demands, it was not feasible to return to the ventures at a later date to gather the information at two points in time. We did conduct the following steps to reduce biases including common method variance (Podsakoff *et al.*, 2003). To ensure confidentiality for each respondent, each participant was identified with a number for that business. This diminished social desirability, respondent leniency, and taking on perceptions consistent with the researcher. We had a 68% return rate, which is higher than most, because students made appointments with managers to collect the data. In some cases managers were too busy to fill out the survey or did not want to comply for other reasons. Mitchell (1985) states that anything that changes the test or the test context should reduce method variance. In this case, our ventures came from a wide variety of businesses, which should cancel chance imbalances (Isaac and Michael, 1990). For these reasons, we believe that a common format does not jeopardize the credibility of the statistical findings.

Self-efficacy

The entrepreneurial self-efficacy questionnaire developed by Chen *et al.* (1998) was translated into Spanish by one of the authors, and translated back to English to check for discrepancies, then revised thoroughly to ensure content validity, so that the meaning of the questions was the same than in the original questionnaire.

Business performance

The performance items were standard metrics used in reports of venture performance and were considered to be a one {*} dimension summed item measure (Timmons, 1999). The Cronbach alphas for these items were .83. A confirmatory factor analysis was conducted on the 7 items and resulted in only one factor with an eigen value greater than 1.

Entrepreneurial intentions

Most common measures for intentions in the field of entrepreneurship are composed of a few items, in which respondents are asked whether they have thought about starting their own business, when are they likely to start their own business or if they have a detailed plan for starting their own business (e.g. Drnovsek and Glas, 2002; Sequeira *et al.*, 2007; and Fitzsimmons and Douglas, 2005). Because in most previous studies the questionnaires were designed to be answered by entrepreneurship students, in our study we use a different approach to raise equivalent information from small business owners and managers. The measure was made up of six items, in which the respondents were told to assume that they had received \$500 000; that they had the discretion to decide how and where to invest, and would assign a percentage to the following options: 1) pay suppliers, 2) pay debt, 3) buy out a business, 4) grow the business, 5) start a new business or 6) deposit in the bank. We assume that the intentionality can be measured by the sum of percentages assigned by respondents to options 3, 4 and 5, because the questions are equivalent to the ones used in previous measures.

Our measure of entrepreneurial intentions can be based on Sadler-Smith *et al.* (2003), suggestion that an essential characteristic of entrepreneurial behavior is the intentions to grow the business; it also takes into consideration Krueger *et al.* (2000) conclusion that intentionality leads the timing of venture launching, which is not planned until he or she perceives that critical resources will be available,

among other issues. Accordingly, we propose that the willingness to assign funds to buy out a business, to grow the business or to start a new business, reflect a level of intentionality not lower than having a plan to start a new business, because it rests on the assumption that a critical resource is available.

Analysis of data

Entrepreneurial self-efficacy construct

To test the underlying factors of ESE construct proposed by Chen *et al.* (1998), in our data, a replication of data reduction was made by using the Principal Component method with Varimax Rotation, with an eigenvalue of 1 as a cut-off point. The procedure yielded a 3-factor solution (see table 2), which explained 68.28 of the total variance, with loading levels of at least .50; however, none of the three factors contained a combination of items that could come close to any of the six factors proposed by Chen *et al.* (1998). It can be noted that the three factors contain a number of loadings above 60 and close to 80, so that they can be considered reliable (Stevens, 2001).

In accordance with Chen *et al.* (1998), proposed factors, entrepreneurs or managers would perceive their level of self-efficacy in marketing, for example, depending on how confident they felt to perform tasks like “Set and meet profit goals” or to “Expand the business”. The analysis of table 2 shows that said two items do not load in the same factor, and by examining the items loaded in every one of the three factors, it seems that the respondents did not relate the items to an area of knowledge, but to a different scheme of attributes that is worth of analysis.

Examining the tasks and roles that loaded into the first factor (table 2), it is easy to note that all the items are common and of necessary practice to all running businesses, and managers will have varying competency levels, whether business is operating on stable conditions or not, when sales are declining, growing, or when the business is expanding; we named it “routine”. However, the items loaded in the second factor seem to be the kind of tasks or roles that an administrator performs when he steps out of the comfort zone, the transition which can lead to optimal performance (White, 2009), particularly in tasks related to the stress of expanding the business; we named the factor “expansion”. In the case of the third factor, the three items seem to relate to knowledge based processes, which can be framed within the model proposed by Leszczynska (2010), because mastering the task allows the

development of long term initiatives of the business, like developing and introducing new products and services, positioning a product, or reaching a market share goal. We named the third factor “knowledge”.

It is worth noting that Chen *et al.* (1998), based the design of their construct on the literature that defines entrepreneurship in terms of the roles and tasks that entrepreneurs perform. Likewise, recent studies which cite Chen *et al.* (1998), findings, proposed new alternative measures of entrepreneur SE, designed also on roles and task, which the authors relate to skills or competencies (e.g. Brice and Spencer, 2007; De Noble *et al.*, 2007; McGee *et al.*, 2009), but their factors also do not relate to an area of knowledge, as is the case of Chen *et al.* (1998). It has been argued that it is not important whether the entrepreneur actually has the knowledge or skills to perform a given task but that he is confident about his capacity to perform the task (Markman *et al.*, 2005).

Table 2
Factor loadings and entrepreneurial roles and tasks

Items -factor (Chen <i>et al.</i> , 1998)	Component		
	1	2	3
Perform financial analyses -Financial control	.845		
Develop financial systems and internal controls -Financial control	.833		
Take calculated risks -Risk-Taking	.778		
Engage in strategic planning and develop information system –Management	.740		
Establish and achieve goals and objectives -Management	.669		
Set and attain profit goals –Marketing	.648		
Manage the company to reduce overall risks -Management	.645		
Set and meet sales goals –Marketing	.641		
Control costs -Financial control	.593		
Take responsibility for ideas and decisions -Risk-Taking	.556		
Conduct market analysis –Marketing	.501		
Break into new markets and geographic territories -Innovation		.758	
Work under pressure and conflict -Risk-Taking		.736	
Expand the business –Marketing		.700	
Manage time by setting goals –Management		.674	
Introduce new methods of production, marketing, and management –Innovation		.557	
Define organizational roles, responsibilities, and policies –Management		.548	
Develop and introduce new products and services -Innovation			.742
Set and meet market share goals –Marketing			.739
Establish a position in product market -Marketing			.718

We should note that we also replicated the reduction process using maximum likelihood extraction, which yielded a strong similar three factor model (Chi-Square 279.809, $df=133$, $Sig=.000$)

Entrepreneurial self-efficacy and performance

The issue of self-efficacy has been extensively investigated, and it has been clearly established in related literature that self-efficacy beliefs can contribute significantly to the level of performance in diverse fields of human functioning (Bandura and Locke, 2003), including work-related functioning (Stajkovic and Luthans, 1998). In the field of entrepreneurship, several studies have revealed a positive relationship between the level of entrepreneurial self-efficacy and firm performance, measured by growth of revenues or of employment (e.g. Baum and Locke, 2004; Hmieleski and Baron, 2008; Kickul *et al.*, 2009). While in studies where a multidimensional ESE has been used, the levels of the factors are compared among subsets of the data (see e.g. De Noble *et al.*, 2007; Moriano *et al.*, 2006) these studies did not analyze the importance of the individual factors to explain business performance.

As a previous step to test our hypothesis 1 about the relationship of the self-efficacy factors to business performance, our correlation analysis was run on our data, whose results are shown in table 3, which revealed a positive and significant relationship of performance with the three factors ($p < .001$), with levels between .46 and .51. To test this hypothesis, regression analysis was done on a model with performance as dependent variable, and the three factors as the independent variables (results in table 4), which shows that Factor 2 expansion, with a level of significance of .07 is the only one worth of consideration. This finding may have interesting implications to the study of entrepreneurial self-efficacy, because it points out to specific tasks, instead of a general measure that include a number of varying tasks, as in most previous studies.

Table 3
Mean (M) standard deviations (SD) and intercorrelations
among the three self-efficacy factors, performance and intentions

	M	SD	1	2	3	4	5
1. Factor 1- routine	4.55	1.22	.95				
2. Factor 2- expansion	4.26	1.25	.81***	.68			
3. Factor 3 - knowledge	4.35	1.23	.84***	.78***	.83		
4. Performance	3.42	0.60	.48***	.46***	.51***	.83	
5. Intentions	61.91	33.39	.18 ¹	.00	.19 ²	-.03	N/A

Note. N=97; numbers in the diagonal are Cronbach alphas.

* $p < .05$; ** $p < .01$; *** $p < .001$; (1) $p = .079$; (2) $p = .059$

Table 4
Linear regression of performance using the three
self-efficacy factors as independent variables

	B	Stand. error	Beta	Sig.
Factor 1 - routine	0.51	1.14	0.09	0.66
Factor 2 - expansion	1.74	0.96	0.32	0.07
Factor 3 - knowledge	-0.28	1.06	-0.05	0.80

$$R^2_{\text{adj}} = 0.11$$

We should note that, according to our interpretation of the regression analysis results, it makes sense that Factor 2—expansion, was found to explain positive business performance, because said factor reflects that the owner or manager who is satisfied with his venture's performance, seems to be a hardworking person, because he believes that he can successfully break into new markets, work under pressure, expand the business and so on. Conversely, it is not surprising that Factor 1—routine, does not seem to explain performance, because it might take more than regular procedures to attain extraordinary results; a similar reasoning applies to Factor 3—knowledge, which comprises tasks that seem to require complex abilities and personal traits.

Self-efficacy and intentions

The correlation of the three self-efficacy factors with our measure of entrepreneurial intentions (see table 3 above) revealed that Factor 1 —routine— and Factor 3 —knowledge, have low correlation (less than .20), and the level of significance is not far from the recommended .05— and Factor 2 —expansion is not correlated. Said results differ appreciably from Chen *et al.* (1998) study, because they found a correlation value of 0.50 between intention and total ESE on student’s responses.

To test hypothesis 2 we did regression analysis on a model with intentions as dependent variable, and the three self-efficacy factors as the independent variables, and found that the coefficient of Factor 2 —expansion, has a negative sign and its level of significance is high, while the other two factors have a low level of significance (results in table 5 below). The negative effect of Factor 2 —expansion, is the opposite to what Boyd and Vozikis (1994) proposed, that the relationship between self-efficacy and intentions would be positive, but the results seem to provide clues to guide future research following the implications of a study by Krueger *et al.* (2000) of using intention models to study the decision to grow a firm, and to find out what specific self-efficacies influence the decisions towards potential investment’s feasibility.

Table 5
Linear regression of Intentions, using the three self-efficacy factors as independent variables

	B	Stand. error	Beta	Sig.
Factor 1 - Routine	8.72	5.49	.32	.115
Factor 2 - Expansion	-12.99	4.63	-.49	.006
Factor 3 - Knowledge	8.27	5.10	.30	.108

Discussion

The analysis of our data yielded three factors which do not appear to have any relationship with Chen *et al.* (1998), findings, while an approximation was expected, unlike the results of Drnovsek and Glas (2002), who reported a reasonable fit, but did not give specific details. We checked for errors in our methods, and whether personal or business characteristics could be a source of the problem, but did not

find a clue. Chen *et al.* (1998), recognized that a limitation of their study was the solicitation of real-world entrepreneurs, and Drnovsek and Glas (2002) that further validation was required.

By following Chen *et al.* (1998), argument that it is the relative level of specificity that matters, and that self-efficacy should be fairly stable yet not immutable, we should endeavor to propose an explanation of the importance of the three factors revealed by our data. When the self-efficacy measures are tested with entrepreneurship students, one would not be surprised when items do load in specific areas of knowledge, like marketing or finance, because the students are in the process of learning such subjects. If we take the case of a study by Barbosa *et al.* (2007), their 18-item construct loaded in 4 factors (opportunity, relationship, managerial and tolerance), which was tested on a sample of university students from Russia, Norway and Finland; the items loaded as expected, because previous studies had also been done with students. Zhao *et al.* (2005) recognized that formal learning was significantly related to entrepreneurial self-efficacy. However, in the case of small business owners or managers that might have been away from business courses for several years, their beliefs in their self-efficacy could take the type of answers we got: common task or roles task are they familiar with, task or roles that take hard training or have risky consequences, or those that require uncommon abilities. It can also be argued that the business owners and managers in our sample moderated their response according to the degree of complexity of the tasks, because information processing leads to choice which will vary as a function of task complexity (Payne, 1976).

About the results of our test on the effect of the three self-efficacy factors obtained from our data to explain performance, we should note that the reflected intercorrelation among the variables, seem to be in line with the results obtained in previous studies based on unidimensional scales of ESE like those of Baum (2001), Forbes (2005) or Hmieleski and Baron (2008). However, our finding that Factor 2-expansion, was the only explanatory factor in the regression analysis, given that the tasks involved can be regarded as of higher complexity, seem to be contrary to the results obtained by Stajkovic and Luthans (1998), who found that the relationship between self-efficacy and performance would be weaker when higher-complexity tasks were required. In other words, our findings reveal that those managers that believe they can perform complex tasks, will take decisions that will result in higher levels of performance of the business, and not the opposite. Also, this fin-

ding can be related to the proposal that growth in small business is rare (Orser *et al.*, 2000), because growth requires to perform complex tasks.

In their study, Chen *et al.* (1998) conclude that the lack of relationship they found between ESE and performance may be due, among other things, to the complexity of the relationship. We should note that they measure performance in terms of the number of employees and sales, while we use a measure in which the owner or manager compares his or her business performance in terms of sales, profits, etc., against its competitors. Among other implications, we argue that the entrepreneur or manager will be satisfied with his or her business performance when sales did not increase, if he presumes that sales of their competitors decreased.

The results of our test of hypothesis 2, on whether the three self-efficacy factors obtained from our data would explain entrepreneurial intentions, originated interesting results, even though the level of significance in our analysis falls short of the desired values, because we believe that the results are of economic significance in the sense proposed by Varian (1990, cited by Keuzenkamp, 2000 p.209). In our opinion the results seem to be in line with previous research about growth of small firms, because one of the growth factors proposed is that of competencies (Baum and Locke, 2004), which is a concept that enclose skills, knowledge or attitudes (Van der Klink and Boon, 2002) and is closely related to tasks and roles. The regression analysis shows that if the level of belief of the owner or manager on his capacity to perform routine tasks or roles (Factor1), or to perform tasks or roles related to knowledge and long term goals (Factor 3) increases, his willingness to assign new resources to the business will increase, a positive relationship in line with findings on a general measure of entrepreneurial self-efficacy in a study by De Noble *et al.* (1999). On the contrary, if the level of belief of the owner or manager on his capacity to expand the business and of working under pressure or conflict (Factor 2) increases, his willingness to assign new resources to the business will decrease, contrary to common sense. One possible explanation could be that, while the owner or manager level of belief in his capacity to expand the business increases, he or she may notice that the business opportunities or the business environment are not appropriate; if, notwithstanding his or her lower capacity, the owner or manager increases his intentions to assign resources to grow or expand the business, it could be because of overconfidence which drives the entrepreneurial intentions (Fitzsimmons and Douglas, 2005).

Limitations and future research

A survey-based study like this has inherent limitations, notwithstanding the steps we took to reduce the potential effects of common variance method. A potential limitation of the study was a lack of participant training for understanding the measurement of variables. Corroboration of our outcome measures by outside observers (e.g., other researchers, venture customers, venture competitors) would be an interesting validity check.

About our proposed measure of entrepreneurial intentions in ventures, which revealed interesting relationships with the self-efficacy factors found in our sample, it raises the need to test it in different samples and to search for alternative measures that lead to a widely accepted construct, because of the importance of influencing intentions as a mean for economic and community development (Krueger *et al.*, 2000).

Then, because Chen *et al.* (1998), construct did not yield the five factors in our data, testing it in other samples would advance the search of a widely accepted construct. As for the three factors yielded by our data, it raised the need to explore the study of entrepreneurial self-efficacy factors together with some competencies assessment, after the method employed by Brice Jr. and Spencer (2007). Said study might reveal important cues of interest for business schools, to focus the learning on the most relevant competencies required by an entrepreneur. Furthermore, a qualitative assessment of the three factors might reveal interesting cues to advance on our knowledge on entrepreneurial self-efficacy.

Conclusion

Although Chen *et al.* (1998), entrepreneurial self-efficacy construct, when used with our data from small business did not load into the five factors proposed by the creators, it did reveal interesting clues that can be of use to advance in our understanding of the role that the self-efficacy concept can play in explaining small business performance and development. The three factors that were generated by our data revealed that the owners and managers associate their tasks and roles in accordance with their perceived degree of difficulty or complexity, and not with particular fields of knowledge like marketing or management. We also found that one of the three self-efficacy factors, the one named expansion, which involves more hard work and less knowledge, positively explains performance, but negatively affects entrepreneurial intentions.

We believe that the most interesting finding of our study is that high performance requires of higher belief levels of the owner or manager about his or her capacity to perform stressing and high involvement tasks and roles, which lead us to propose that said capacity should be within management competency assessment. However, the owner's or manager's entrepreneurial intentions —defined as his willingness to assign resources for growth or development of his business— will increase when his level of belief of his capacity to perform difficult or complex tasks diminishes. Inasmuch as such effect seems to be contrary to common sense, it seems to be in line with Arenius and Minniti (2005) suggestion that entrepreneurial decisions would often be based on subjective or biased perceptions. To say it differently, high performance requires hard work, but the entrepreneurial intentions will mostly arise from people that are overconfident (Fitzsimmons and Douglas, 2005), but are willing to exploit an opportunity (Shane and Venkataraman, 2000).

We consider that our findings contribute to understand the dynamics of small businesses permanence and development, particularly in Mexico, given their context and characteristics. Perhaps the most important finding has to do with tasks and roles related to business expansion and with knowledge, which the owner or manager—or better, the management team— should be able to successfully perform, in order to reduce the risk of failure in new ventures. Said proposal would also be of interest to Mexican business schools, because they should consider playing a central role in the mastering of said tasks.

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Anexo

Name of business in the sample (Located in the city of Colima, State of Colima, Mexico)			
1.	Juguetería de Karmin	50.	Bio Implantes de Occidente
2.	Jugos Mary	51.	Desarrolladora San Carlos
3.	Carnicería Gudiño	52.	Bloquera D'Torres
4.	Ninos Pizza	53.	Deconrefoc
5.	Carnicería Morales	54.	El Ejecutivo Men's Club
6.	Polipapelería	55.	Reyvac
7.	Automotriz Contreras	56.	Moda Bose
8.	Distribuidora de Carne Becerra	57.	Sillón 76 Lounge Bar
9.	Carnicería Gaytán	58.	Hospedajes Del Rey
10.	Jugos Mony	59.	Distribuidora Nupcial
11.	Balatas y Refacciones Gutiérrez	60.	Viajes Alaska
12.	Cenaduría Morelos	61.	Tinto Mar
13.	Papelería Manzanillo	62.	Pinturas Berel
14.	La Buena Mesa	63.	Afica Asesores
15.	ACCSA Aspersores Agrícolas	64.	Centro Fester de Colima
16.	Cremería Sello Rojo	65.	Panadería el Pato
17.	Central Médica de Especialidades	66.	Diez Creatividad Empresa
18.	Transportes Aeromar	67.	Cafetería bachillerato 1,2 y 3
19.	Carnicería Baltazar	68.	Ropa de Industria del Pacífico
20.	La Placita	69.	Papelería PCO
21.	Laboratorio Vargas	70.	Maderería Niños Héroes
22.	Radiadores Baja California	71.	Llantifró
23.	Restaurant Bar Charco La Higuera	72.	Solomlux
24.	Cremería y Carnes Frías	73.	Kokimoto
25.	Tractores Costa de Colima	74.	Tortillería San Isidro
26.	Elegancia y Distinción en Calzado	75.	Pescadería Venamei
27.	Lonchería la Preferida	76.	Café Uno Dos Tres
28.	Impresos Serrano	77.	Zapatería Patria
29.	Taller Herrera Cortés	78.	Cocina La Central
30.	Pescadería Silva	79.	Muñoz y Asociados
31.	Un Paso Hacia la Recuperación	80.	Ferretería Tubare
32.	Centro de Desarrollo Infantil Gandhi	81.	Cremería La Michoacana
33.	BAPACE	82.	Merza Pack
34.	Fábrica de Pintura AvanteMex	83.	TV Azteca
35.	Bainzai of Chuy Lee	84.	Farmacia del Refugio
36.	Vegetales y Frutas Freson	85.	La Polar
37.	Patelería Viera	86.	El Vivero
38.	Cafetería Servicios Estudiantiles	87.	Electrónica Saturno de Colima
39.	MR. CD	88.	El Trébol
40.	Tortillería Verónica	89.	Goval del Pacífico
41.	Tortas Nadadoras	90.	Marcos y Molduras
42.	Tortillería Lupita	91.	Auto Eléctrico Venadero
43.	Servicios Universidad	92.	Agroservicios de la Costa
44.	La Casa del Deportista	93.	Tortillería Reyes
45.	La Hormiguita	94.	Taquería el Rey del Taco
46.	Farmacia del Refugio	95.	Taller de Costura ella
47.	Arrendadora Santiago	96.	Tortillería de colores I Y IX
48.	Demetrio Pérez Zamora	97.	Frutas Selectas Villali
49.	Democeramic		