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Influence of the entrepreneur's social identity on business performance through effectuation

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ABSTRACT

The business founder's social identity is crucial to explaining his or her behaviour and attitude in business decision-making. Drawing on three types of entrepreneurial social identity identified by Fauchart and Gruber (2011), this study examines how social identities influence the entrepreneur's way of managing his/her firm and its consequences for business performance. Based on a survey of newly created firms, the results support the conclusion that effectuation channels the effects of specific identities – Darwinian and missionary – on business performance.

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1. Introduction

The decisions the entrepreneur makes in the first years of activity are crucial, as they can limit the firm's evolution (Boeker, 1989; Cardinal, Sitkin, & Long, 2004) and have implications for its performance (Bamford, Dean, & Douglas, 2004; Boeker, 1989; Park & Bae, 2004). Further, although entrepreneurs' way of understanding the business in its initial stage impacts firm-level results significantly, this relationship received little study (Fern, Cardinal, & O'Neill, 2012). Contrary to what one might think, limited growth is not always associated with inability to grow; it may actually reflect the entrepreneur's lack of desire to grow his/her firm (Cliff, 1998). For example, Baum and Locke (2004) propose that the goals businesspeople establish for firm growth are significant factors that influence the firms. Specific findings (Barringer, Jones, & Neubaum, 2005) suggest the importance of incorporating entrepreneurs' different attitudes and aspirations for growth in research. Our study examines the impact of these aspirations on the growth of newly created firms (Davidsson & Honig, 2003). Aspirations are desires, goals, or ambitions—something desired that the individual does not

possess at the moment. How we want to see ourselves, or whom we wish to resemble, strongly influences our behaviour.

Various studies highlight identity as an important predictor of entrepreneurs' decisions and actions (Cardon, Wincent, Singh, & Drnovsek, 2009; Conger, York, & Wry, 2012; Hoang & Gimeno, 2010), but only a few tackle social identity in the context of entrepreneurship. Since firm creation is an inherently social activity (Whetten & Mackey, 2002), entrepreneurs' behaviour is shaped by how they perceive themselves in relation to others (Fauchart & Gruber, 2011).

Alsos, Clausen, Hytti, and Solvoll (2016) argue that a key aspect of entrepreneurship research studies the activities and behaviours undertaken (Davidsson & Honig, 2003). It is precisely Social Identity Theory that helps us to understand and explain the heterogeneous behaviours that founders pursue in the process of setting up a firm. Although different patterns exist, these authors stress effectuation and causation as two different focuses for new firm creation (Saravathy, 2001)—focuses described as one of the most important contemporary perspectives in entrepreneurship research (Fisher, 2012; Perry, Chandler, & Markova, 2012).

Effectuation Theory, as analysed by Saravathy (2001, 2008), understands the entrepreneurial process as a set of given means that can be combined in a range of different possible effects. This theory traditionally perceives individual identity as one precondition or means initiated by the entrepreneurial process, assuming

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that individuals from day one possess a relatively clear and coherent perception of who they are and act based on this perception (Sarasvathy, 2001).

Numerous studies have tried to answer questions about the different nuances relevant to identification and setting up of business opportunities (Shane & Venkataraman, 2000; Shane, 2003), but they ignore the crucial role of the differences in the entrepreneur's conceptions of this role, what the individual's subjectivity adds as he/she becomes founder of a firm (Hoang & Gimeno, 2010). Introducing the concept of the founder's identity can incorporate the individual's thoughts, feelings, and beliefs as an entrepreneur (Rosenberg, 1979).

Starting from the theoretical framework presented, our study contributes to the literature in three ways. First, it extends research on entrepreneurial behaviour and how such behaviour is reflected in decision-making, strategies, and ways of managing the entrepreneur's activity (Alsos et al., 2016; Fauchart & Gruber, 2011; Powell & Baker, 2014; Sieger, Gruber, Fauchart, & Zellweger, 2016). Analysing this relationship can provide evidence on how a particular identity explains an organization's performance during the first years of its life cycle (Baron-Cohen et al., 1999), extending studies that suggest an important link between business identity and business actions (Cardon et al., 2009; Hoang & Gimeno, 2010).

Second, we advance the literature on effectuation (Alsos & Clausen, 2014; Sitoh, Pan, & Yu, 2014; Smolka, Verheul, Burmeister-Lamp, & Heugens, 2016), a field that includes very few empirical studies and that continues to debate future development of the effectuation literature (Read, Sarasvathy, Dew, & Wiltbank, 2016; Reuber, Fischer, & Coviello, 2016).

Third, by measuring effectuation as a formative construct composed of reflective second-order dimensions (Chandler, DeTienne, McKelvie, & Mumford, 2011; Smolka et al., 2016) without including the measurement dimensions it may share with causation (Chandler et al., 2011), we obtain significant evidence of behaviour derived from this logic.

With this model, we aim to help entrepreneurs to develop optimal strategies for improving their capability to compete in the market.

2. Hypotheses

The influence of identity on behaviour and economic results provides additional explanatory power to analysis of the business initiative, supporting our study. Research in this field starts from the seminal contributions of Schumpeter (1912) and Knight (1921), whose range comprehends the most essential attributes of the entrepreneur: innovation, opportunity recognition, and tolerance of some degree of risk (Baumol, 1968).

In the business environment, the actions and behaviours of a founder or founding team in creation and subsequent development of a firm evolve together, since business activities are infused with meaning resulting from expression of individual identity. As various authors suggest, identities are the main sources of motivation for human behaviour, along with business roles, "a set of socially maintained expectations for behaviour that are linked to positions external to an individual" (Murnieks & Mosakowski, 2007, p. 2).

We complement this focus with Effectuation Theory (Sarasvathy, 2001) and Social Identity Theory (Tajfel, 1972; Tajfel & Turner, 1979), from the field of social psychology, to increase understanding of the reason for the substantial differences between creation processes and the results in different firms. This body of research provides a theoretical link to explain how social identification leads individuals to behave and act in ways that confirm their identities (Hogg & Terry, 2000; Tajfel & Turner, 1979). Instead of evaluating businesspeople and their

characteristics externally, research on business social identity focuses on how individuals identify and understand themselves as businesspeople (Alsos et al., 2016).

Our model is based on Fauchart and Gruber (2011), who identify three main types of business social identity: "Darwinian", "communitarian", and "missionary", using a systematic evaluation of social identities derived from Social Identity Theory (Brewer & Gardner, 1996). The three identities reflect individuals' social relationships in terms of personal and symbolic interaction with others and level of social inclusion. Founders with different social identities not only possess systematically different conceptions of what it means to be an entrepreneur; founders' different self-conceptions strongly influence how they act and behave in establishing their firms (Fauchart & Gruber, 2011).

Darwinian identity describes the "classic businessperson", whose main goal is to establish a strong, successful business. It focuses on assuring the firm's success (Van Praag, 1999). Darwinian entrepreneurs take competitors and other entrepreneurs as their frame of reference, as the social group against which they evaluate themselves. Such entrepreneurs aim to create strong, profitable firms and seek business performance in the broadest sense (Fauchart & Gruber, 2011).

Communitarian identity develops in individuals strongly motivated by a product or service to help a group of people who share related ideas. Creating an authentic identity (Lewis, 2013) is important for belonging to this social group—sharing intimate knowledge with the community and being able to serve from this community. Communitarian identity is strongly committed to the products or activities developed by the firm and to its ability to contribute to the community through these products (Fauchart & Gruber, 2011). Its relationship to this community is highly emotional because it is driven by passion shared in the sector in which it is established. The ultimate goal of communitarian identity is thus to contribute to its closest community through new product development. Goals of sales growth, market share, and profit take second place.

Missionary identity is motivated by the desire to advance a greater cause, and its fundamental goal is to act responsibly. Missionary identities view their firms as platforms from which to pursue their social goals (Fauchart & Gruber, 2011), and these firms aim to adapt to the market, seeking creative solutions and applying their innovation capacity (Fauchart & Gruber, 2011). Since innovation capacity can be an especially important resource for remaining competitive in environments that change rapidly (McGrath, 2001) and can thus foster new product development and innovation (Sirmon & Hitt, 2003), we could view missionary identity as oriented towards improving the firm's innovative character against to competition, and thus as a variable that forms a fundamental part of business performance (Eddleston, Kellermanns, & Sarathy, 2008).

According to the foregoing, Social Identity Theory helps to understand and explain heterogeneity of business behaviour in the process of setting up a new business initiative and that initiative's orientation to its results. Based on these arguments, we find sufficient reason to propose the following hypotheses:

- H1.** Darwinian identity has a positive effect on business performance.
- H2.** Communitarian identity has a positive effect on business performance.
- H3.** Missionary identity has a positive effect on business performance.

Effectuation theory (Sarasvathy, 2001) provides a new framework for observing business phenomena, as well as for understanding how entrepreneurs think and act.

Prior research has linked the relationship between identity and behaviour to Effectuation Theory (Watson, 2013). Sarasvathy (2008) suggests that effective businesspeople initiate the process based on who they are, what they know, and whom they know—that is, relative to their identity. The means that businesspeople use to set up the business are based on their identity, knowledge, and networks (Sarasvathy & Dew, 2013). Specifically, when the goals are ambiguous, businesspeople tend to explain their actions based on their identities, not on their preferences or goals (Sarasvathy & Dew, 2005). These identities are sometimes linked to specific areas of the entrepreneurs' lives, values, and interests, as described in types, such as communitarian and missionary identity (Sarasvathy & Dew, 2005). Differences in the entrepreneur's identity can also lead to differences in the actions chosen and thus to business performance relative to the competition.

Decision-making processes in the formative stage of business creation affect business development, including financial results. In a meta-analysis of the general principles of effectuation as measured in prior studies, Read, Song, and Smit (2009) find that these principles positively affect firm performance. Other studies provide further evidence of this relationship (McKelvie, DeTienne, & Chandler, 2013; Mthanti & Urban, 2014).

Following presentation of the prior hypotheses, we propose the fourth hypothesis:

H4. Effectuation has a positive total mediating effect on the relationship between the entrepreneur's social identity and business performance.

Our theoretical model argues that Darwinian, communitarian, and missionary identities are positively oriented to business performance, even though the firm's founder has different goals. Use of effectuation can thus have a mediating effect on this relationship.

3. Methodology

The empirical part of our study uses data from the survey designed in the Global University Entrepreneurial Spirit Students' Survey (GUESSS) project for 2013/2014 (Sieger, Fueglistaller, & Zellweger, 2014). GUESSS is a research project directed since 2003 by University of St. Gallen (Switzerland). Its goal is to study university students' entrepreneurial intentions worldwide. Our study received survey responses from 271 Spanish university students who had created their own firms.¹

3.1. Measurement of the study variables

3.1.1. Business performance

Measurement of the dependent variable was adapted from the scale validated by Eddleston et al. (2008). Dess and Robinson (1984) suggest that subjective assessment of the firm's performance is closely related to objective performance and can be used when no objective data are available. This scale is composed of five questions about performance: sales growth, growth in market share, growth of profits, job creation, and innovative character. Our study constructed an indicator of performance using these five variables ($\alpha = 0.85$). According to Eddleston et al. (2008), the large number of indicators for performance is justified due to the multidimensionality of its underlying construct (Cameron, 1978) and to the need to achieve a perceived measure of reliable performance. Perceived measures of these variables have been shown to correlate closely

¹ The respondents' average age was 26. Of the total, 59.8% were men and 40.2% women. Most firms operated in the information and communication technology industries (14%), with smaller percentages in architecture and engineering (3%).

Table 1
Correlation among the variables analysed.

	Mean	s.d.	1	2	3	4	5
Darwinian identity (1)	4.85	1.45	1	.612***	.442***	.569***	.358***
Communitarian identity (2)	4.76	1.65		1	.741***	.534***	.285***
Missionary identity (3)	4.51	1.74			1	.426***	.290***
Effectuation (4)	5.1	1.36				1	.386***
Business performance (5)	4.1	1.47					1

Note:
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

with objective data on performance (Dess & Robinson, 1984; Love, Priem, & Lumpkin, 2002).

3.1.2. Social identity

Based on the prior literature and a scale validated by Sieger et al. (2016), we analysed what this literature calls the entrepreneur's frame of reference, considering the three types of identity described above (Darwinian ($\alpha = 0.87$), communitarian ($\alpha = 0.91$), and missionary ($\alpha = 0.91$)). Since the founder's social identity is an attribute that cannot be measured directly (it is latent and psychologically abstract), we must use a scale (Sieger et al., 2016). Based on Brewer and Gardner (1996), we adapt the concepts to the entrepreneurship context, considering: (1) basic social motivation, (2) self-evaluation, and (3) founder's frame of reference. These three dimensions are formative, since together they determine a founder's social identity. Eliminating one dimension would alter the domain of the construction (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

3.1.3. Effectuation

The scale to measure the variable effectuation was based on Chandler et al. (2011), who validated the measurements with the help of exploratory and confirmatory factor analysis, showing content validity, predictive validity, and construct validity. Following their analysis, we consider effectuation as a formative construct composed of three reflective second-order dimensions (experimentation [$\alpha = 0.78$], affordable loss [$\alpha = 0.95$], and flexibility [$\alpha = 0.93$]). It is not advisable for our study to include "pre-agreements", since Chandler et al. (2011) obtain evidence indicating that this subdimension is shared with causation.

All variables analysed were measured through a multi-item scale. The evaluations were captured through a Likert-type scale ranging from 1 to 7 points (where 1 = Strongly disagree and 7 = Strongly agree).

4. Analysis and results

Table 1 shows the mean, standard deviation, and correlation of the study variables. These parameters suggest that Darwinian identity is more sharply defined than the other social identities.

4.1. Correlation among the variables analysed (Table 1)

For the quantitative analysis, we chose the structural equations method, using the partial least squares technique (PLS-SEM) (Fornell & Cha, 1994) in Smart PLS version 3.0 (Ringle, Wende, & Becker, 2015). Various characteristics of PLS-SEM have led to increasing use of this technique in research on management, market research, and strategy (Bontis, Booker, & Serenko, 2007; Drengner, Gaus, & Jahn, 2008; Gruber, Heinemann, Brettel, & Hungeling, 2010; Hennig-Thurau, Henning, Sattler, Eggers, & Houston, 2007; Robins, Tallman, & Fladmoe-Lindquist, 2002; Sattler, Völckner, Riediger, & Ringle, 2010). The PLS-SEM technique is appropriate in this study because it facilitates use of formative and reflective scales. Structural equations models (SEM) based on covariance

Table 2
Analysis of measurement model variables.

Variable		First-order factor loading	Weighting second-order construct	CA	CR	AVE
Effectuation	Experimentation	EXP1	0.85***	0.41***	0.88	0.62
		EXP2	0.94***	0.68***	0.78	0.81
Affordable loss		PA1	0.97***	0.51***	0.95	0.95
		PA2	0.97***	0.51***		
Flexibility		FLEX1	0.94***	0.35***	0.93	0.88
		FLEX2	0.94***	0.36***		
		FLEX3	0.93***	0.34***		
Business performance		REND1	0.80***		0.85	0.64
		REND2	0.86***		0.89	
		REND3	0.84***			
		REND4	0.70***			
		REND5	0.76***			

Note:
*** $p < 0.001$.
CA = alpha Cronbach α ; CR = composite reliability; AVE = average variance extracted.

Table 3
Weightings of second-order constructs.

Construct/item	No. items	Weightings	t-Value
Experimentation	2	0.532***	6.542
Affordable loss	2	-0.103	0.816
Flexibility	3	0.780***	6.304

*** $p < 0.001$.

structures have limitations when formative constructs are introduced (Chin, 1998; Henseler, Ringle, & Sinkovics, 2009). Our model uses social identities divided into three formative dimensions as independent variables, since they jointly determine the founder's social identity (Sieger et al., 2016); and effectuation, a reflective construct composed of three second-order formative dimensions (experimentation, affordable loss, and flexibility) (Chandler et al., 2011).

Next, we evaluate validity and reliability of the measurement model. As shown in Table 2, α and CR take values above the required threshold of 0.7 for all constructs (Fornell & Larcker, 1981; Hair, Ringle, & Sarstedt, 2011; Nunnally, 1978). Fornell and Larcker (1981) recommend that the average variance extracted be greater than 0.50, indicating that over 50% of construct variance is due to its indicators. For all constructs, the AVE is above 0.50.

4.2. Analysis of measurement model variables (Table 2)

Next, Table 3 presents the weightings of the second-order construct² that corresponds to the variable effectuation. Table 4 shows the weightings of the formative variables that correspond to the different identities.

4.3. Weightings of second-order constructs (Table 3)

4.3.1. Weightings of formative variables (Table 4)

We then evaluated the structural model. Fig. 1 summarises the results of the PLS-SEM analysis. We performed two analyses to determine the differences between them (Tippins & Sohi, 2003). The first model (Fig. 1) included the direct relationship among the

² The method followed in PLS-SEM with the second-order constructs is the hierarchical components model, proposed by Wold (cit. Chin et al., 2003). In our analysis, it was applied to the items composing effectuation.

Table 4
Weights of formative variables.

Construct	Item	Weightings	t-Value	VIF
Darwinian identity	IMETAS1	0.353**	2.183	1.285
	IMETAS2	0.408**	2.265	1.69
	IFUND1	0.264	1.093	2.907
	IFUND2	-0.054	0.195	3.454
	IGEST1	-0.098	0.458	3.461
	IGEST2	0.406	1.737	3.505
Communitarian identity	IMETAS3	0.523*	1.901	3.077
	IFUND3	-0.17	0.627	2.675
	IFUND4	0.711***	3.132	1.835
	IGEST3	0.046	0.146	3.779
	IGEST4	0.054	0.144	3.554
Missionary identity	IMETAS5	0.069	0.295	2.6
	IMETAS6	0.767***	4.135	2.365
	IFUND5	0.333	1.073	3.05
	IFUND6	0.051	0.161	3.121
	IGEST5	0.069	0.207	2.543
	IGEST6	0.069	0.207	2.543

Note:
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$; VIF < 5 (Hair et al., 2011).

social identities (the variables described above) and the business result.

4.3.2. Direct model (Fig. 1)

Evaluation of the variance of the dependent latent variables explained by the constructs that predict them (R^2) shows that the constructs explain a variance higher than 0.1 (Falk & Miller, 1992).³

The results of the first model show that the identities classified as Darwinian and missionary have a positive and significant effect on business performance ($\beta = 0.29$ and $\beta = 0.21$; $p < 0.001$, respectively), facilitating achievement of performance-related goals. Communitarian identity has a positive but non-significant relationship to business performance ($\beta = 0.03$; $\dagger p > 0.10$), suggesting an identity committed to the products the firm provides but not to the firm's overall results. This information leads us to accept initial Hypotheses H1 and H3 completely and Hypothesis H2 partially.

³ At the same time, we analysed the size of R^2 as a criterion of predictive relevance by applying the sample reuse technique (Q^2 through Blindfolding) proposed by Stone (1974) and Geisser (1975). For the dependent latent variable, Q^2 is greater than zero, indicating the model's predictive validity. Finally, we evaluated the significance of the structural relationships using the bootstrapping procedure (with 500 samples from the original sample).

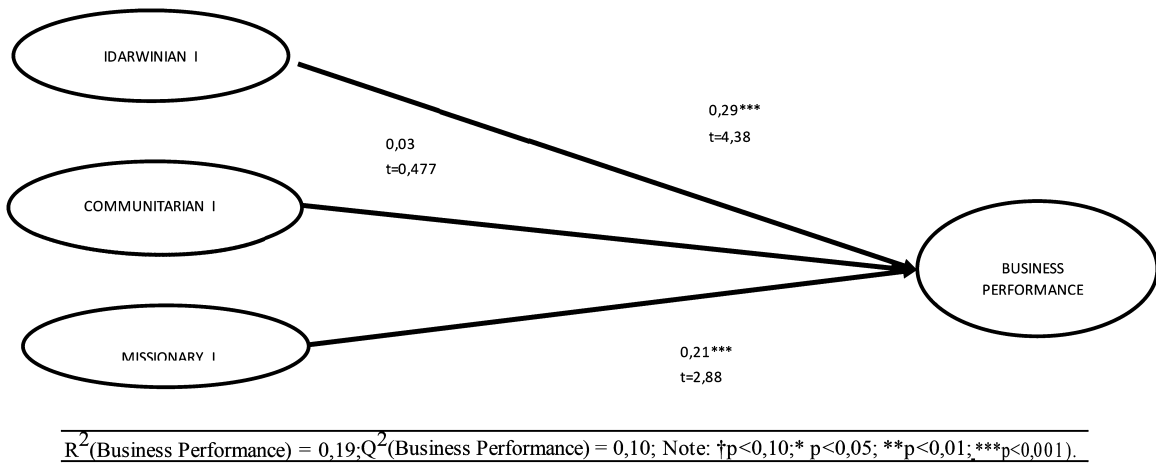


Fig. 1. Direct model.

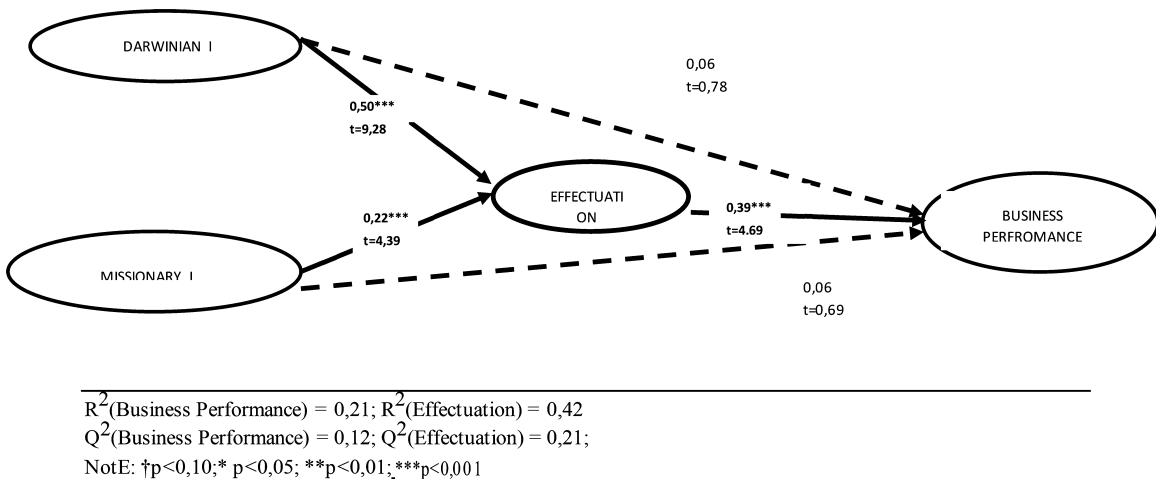


Fig. 2. Total mediation model.

To evaluate Hypothesis H4, we follow the analysis proposed by Baron and Kenny (1986), which permits us to analyse only the independent variables that have a significant relationship to business performance. Fig. 2 confirms fulfilment of the conditions required to apply this analysis.

4.3.3. Total mediation model (Fig. 2)

The relationship between the each identity – Darwinian and missionary – and effectuation is significant ($\beta=0.50$ and $\beta=0.22$; $p<0.001$, respectively), and the relationship between effectuation and business performance is positive and significant ($\beta=0.39$; $p<0.001$). Another condition of this analysis is that the effect of the dependent variable on the independent variable should cease to be significant when the latter is controlled by the mediating variable, a circumstance fulfilled by our model ($\beta=0.06$ and $\beta=0.06$; $p>0.10$, respectively).

To provide more rigorous analysis to ensure that the decision of the mediating effect depends on the significance of more than just one parameter, we analyse this effect using the “Variance Accounted For” criterion (VAF), calculating which part of the total effect of the independent variable on the dependent is due to mediation (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). In our case, the mediation effect between Darwinian identity and performance is 72%, and between missionary identity and business performance 63%. In both cases, $20\% \leq VAF \leq 80\%$, ultimately confirming partial, not total, mediation. The mediation model

(Fig. 2) confirms that using effectuation partially mediates the relationship between the social identities defined as Darwinian and missionary, and business performance, partially supporting H4. Finally, the R^2 levels obtained suggest that the causal model partially explains the endogenous variables studied. The proposed model also shows good fit according to most of the indicators considered.

5. Discussion and conclusions

This study analyses both the founder’s social identity as a factor that influences use of effectuation and the mediating effect of effectuation in business performance.

In spite of the increasing importance of social identity in the literature (Stets & Bruke, 2000), this theory has only been applied relatively recently to entrepreneurship research (Alsos et al., 2016; Fauchart & Gruber, 2011; Powell & Baker, 2014; Sieger et al., 2016). Although various studies stress identity as an important predictor of entrepreneurs’ decisions and actions (Cardon et al., 2009; Conger et al., 2012; Hoang & Gimeno, 2010; Murnieks & Mosakowski, 2007; Navis & Glynn, 2011; Shepherd & Haynie, 2009), only a few tackle social identity in the context of entrepreneurship.

Our analysis focuses specifically on the business initiative, employing complementary theories that support this field, such as Effectuation Theory (Sarasvathy, 2001) and Social Identity Theory (Tajfel, 1972; Tajfel & Turner, 1979).

This study makes several fundamental contributions to the prior literature. First, it enables us to examine the influence of the entrepreneur's social identity as founder on the firm's business objectives and goals, confirming that each individual's identity is an important variable in the firm's development. Not all entrepreneurs possess the same view of the firm, and each one's distinctive vision affects their business decisions. Second, our study suggests that effectuation is the vehicle by which the entrepreneur's identity translates into business performance.

Regarding the relationships proposed in the first model, the data show a positive, significant relationship for Darwinian and missionary identities but a non-significant relationship for communitarian identity. Although these identities' objectives are very different, both consider the firm as a vehicle for achieving these objectives, making this relationship significant. Communitarian identity seems, however, to focus more on providing an "authentic" product to individuals who form part of their social group, effectively considering the firm and the sector in which they establish themselves in terms of "lifestyle", not results (Fauchart & Gruber, 2011). As Alsos et al. (2016) argue, both cases focus on a single goal, but the means to achieving this goal can vary.

The second model confirms the partial mediating effect of effectuation. This finding enables us to conclude that, in pursuing their objectives, Darwinian and missionary identities start by using effectuation in decisions related to specific areas of the firm. Since a firm's decision-making process can produce different logics depending on the area involved, we could say that effectuation is partially entwined with the objectives and goals of Darwinian and missionary founders for the results of the firm. This finding enables us to identify the mechanisms for action through which a specific social identity achieves its effects. Managing a new firm demands a large number of decisions, and each decision involves a different level of contextual uncertainty. Specific studies, such as Smolka et al. (2016), propose that planned reasoning is better for decisions involving predictable results, and effectual reasoning better applied to situations of uncertainty. Founders who use different logics in decision making seem, however, to obtain better performance. The identity for which an entrepreneur wishes to be recognised in society thus affects the logic used in the initial processes of entrepreneurial activity. We thus agree with Alsos et al. (2016) that one should not initially assume that new firms are motivated only by obtaining profits. Founders have different motivations for setting up firms, and these motivations influence the founders' behaviour, creating complex structures in the logic used for decision making.

This study makes a significant contribution to several areas. First, it enables us to propose future lines of training in entrepreneurship that foster use of Social Identity Theory in decision making. Since effectuation can be considered as a means for achieving business growth, our study can improve determination of how each type of entrepreneur thinks and acts, fostering the best behaviours for achieving the goals. Second, this contribution can help entrepreneurs to develop the best income strategies based on their way of adapting to the market. It is also useful for analysing individual identity from a broader perspective, since social identity may be a factor in identifying opportunities that is distinct from other factors discussed in the literature, such as prior knowledge, access to information, and different cognitive capabilities (Shane & Venkataraman, 2000; Shane, 2003).

Although the study performed advances quantitative analysis of effectuation, many questions remain. Specifically, this study focuses on firms created by university students, necessitating study of other groups in different educational contexts. Given the possible relationships that may arise, research could broaden its scope to analyse other activity sectors and the entrepreneur's gender, as

well as the impact of family environment on the entrepreneur's identity as founder of a firm and his/her personal motivations for business performance.

Finally, future lines of research could extend study to the relation between causation and effectuation, and social identity, analysing the latter relative to the entrepreneur's goals in firm creation, identity as founder, and management identity. Developing one's social identity is usually a long-term process that begins with social observations made at the start (Turner, 1968). A second line of research could focus on the specific characteristics of missionary identity, since this identity can serve to analyse the individual's connection to a purely social organisation or to a hybrid organisation, as justified in the study by York, O'Neil, and Sarasvathy (2016). There is thus a need for more research in this field, as well as on its possible connection to business performance and the entrepreneur's social identity.

References

- Alsos, G. A., & Clausen, T. H. (2014). The start-up processes of tourism firms: The use of causation and effectuation strategies. In G. A. Alsos, D. Eide, & E. L. Madsen (Eds.), *Handbook of research on innovation in tourism* (pp. 181–202). Cheltenham: Edward Elgar.
- Alsos, G. A., Clausen, T. H., Hytti, U., & Solvoll, S. (2016). Entrepreneurs' social identity and the preference of causal and effectual behaviours in start-up processes. *Entrepreneurship & Regional Development*, 28(3–4), 234–258.
- Bamford, C. E., Dean, T. J., & Douglas, T. J. (2004). The temporal nature of growth determinants in new bank foundations: Implications for new venture research design. *Journal of Business Venturing*, 19(6), 899–919.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Baron-Cohen, S., Ring, H. A., Wheelwright, S., Bullmore, E. T., Brammer, M. J., Simmons, A., et al. (1999). Social intelligence in the normal and autistic brain: An fMRI study. *European Journal of Neuroscience*, 11(6), 1891–1898.
- Barringer, B. R., Jones, F. F., & Neubaum, D. O. (2005). A quantitative content analysis of the characteristics of rapid-growth firms and their founders. *Journal of Business Venturing*, 20(5), 663–687.
- Baum, J. R., & Locke, E. A. (2004). The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth. *Journal of Applied Psychology*, 89(4), 587–598.
- Baumol, W. J. (1968). Entrepreneurship in economic theory. *American Economic Review*, 58(2), 64–71.
- Boeker, W. (1989). Strategic change: The effects of founding and history. *Academy of Management Journal*, 32(3), 489–515.
- Bontis, N., Booker, L. D., & Srenko, A. (2007). The mediating effect of organizational reputation on customer loyalty and service recommendation in the banking industry. *Management Decision*, 45, 1426–1445.
- Brewer, M. B., & Gardner, W. (1996). Who is this "We"? Levels of collective identity and self representations. *Journal of Personality and Social Psychology*, 71(1), 83.
- Cameron, K. (1978). Measuring organizational effectiveness in institutions of higher education. *Administrative Science Quarterly*, 23, 604–632.
- Cardinal, L. B., Sitkin, S. B., & Long, C. P. (2004). Balancing and rebalancing in the creation and evolution of organizational control. *Organization Science*, 15(4), 411–431.
- Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. (2009). The nature and experience of entrepreneurial passion. *Academy of Management Review*, 34(3), 511–532.
- Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of Business Venturing*, 26(3), 375–390.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Mahwah, NJ: Lawrence Erlbaum Associates.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information Systems Research*, 14(2), 189–217.
- Cliff, J. E. (1998). Does one size fit all? Exploring the relationship between attitudes towards growth, gender, and business size. *Journal of Business Venturing*, 13(6), 523–542.
- Conger, M., York, J. G., & Wry, T. (2012). *We do what we are: Entrepreneurship as the expression of values and identity: Working paper*. University of Colorado.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, 18(3), 301–331.
- Dess, G. G., & Robinson, R. B. (1984). Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit. *Strategic Management Journal*, 5(3), 265–273.
- Drengner, J., Gaus, H., & Jahn, S. (2008). Does flow influence the brand image in event marketing? *Journal of Advertising Research*, 48(1), 138–147.

- Eddleston, K. A., Kellermanns, F. W., & Sarathy, R. (2008). Resource configuration in family firms: Linking resources, strategic planning and technological opportunities to performance. *Journal of Management Studies*, 45(1), 26–50.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. Akron, OH: University of Akron Press.
- Fauchart, E., & Gruber, M. (2011). Darwinians, communitarians, and missionaries: The role of founder identity in entrepreneurship. *Academy of Management Journal*, 54(5), 935–957.
- Fern, M. J., Cardinal, L. B., & O'Neill, H. M. (2012). The genesis of strategy in new ventures: Escaping the constraints of founder and team knowledge. *Strategic Management Journal*, 33(4), 427–447.
- Fisher, G. (2012). Effectuation, causation, and bricolage: A behavioral comparison of emerging theories in entrepreneurship research. *Entrepreneurship Theory and Practice*, 36(5), 1019–1051.
- Fornell, C., & Cha, J. (1994). Partial least squares. *Advanced Methods of Marketing Research*, 407(3), 52–78.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 382–388.
- Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American Statistical Association*, 70(350), 320–328.
- Gruber, M., Heinemann, F., Brettel, M., & Hungeling, S. (2010). Configurations of resources and capabilities and their performance implications: An exploratory study on technology ventures. *Strategic Management Journal*, 31, 1337–1356.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hair, J., Jr., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, 26(2), 106–121.
- Hennig-Thurau, T., Henning, V., Sattler, H., Eggers, F., & Houston, M. B. (2007). The last picture show? Timing and order of movie distribution channels. *Journal of Marketing*, 71, 63–83.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. Rudolf, Sinkovics, N. Pervez, & Ghauri (Eds.), *New challenges to international marketing (advances in international marketing, vol. 20)* (pp. 277–319). Emerald Group Publishing Limited.
- Hoang, H., & Gimeno, J. (2010). Becoming a founder: How founder role identity affects entrepreneurial transitions and persistence in founding. *Journal of Business Venturing*, 25(1), 41–53.
- Hogg, M. A., & Terry, D. I. (2000). Social identity and self-categorization processes in organizational contexts. *Academy of Management Review*, 25(1), 121–140.
- Knight, F. H. (1921). *Risk, uncertainty and profit*. New York: Hart, Schaffner and Marx.
- Lewis, P. (2013). The search for an authentic entrepreneurial identity: Difference and professionalism among women business owners. *Gender, Work & Organization*, 20(3), 252–266.
- Love, L. G., Priem, R. L., & Lumpkin, G. T. (2002). Explicitly articulated strategy and firm performance under alternative levels of centralization. *Journal of Management*, 28, 611–627.
- McGrath, R. G. (2001). Exploratory learning, innovative capacity, and managerial oversight. *Academy of Management Journal*, 44(1), 118–131.
- McKelvie, A., DeTienne, D. R., & Chandler, G. N. (2013). What is the appropriate dependent variable in effectuation research? *Frontiers of Entrepreneurship Research*, 33(4), 4.
- Mthanti, T. S., & Urban, B. (2014). Effectuation and entrepreneurial orientation in high-technology firms. *Technology Analysis & Strategic Management*, 26(2), 121–133.
- Murniaks, C., & Mosakowski, E. (2007). *Who am I? Looking inside the 'entrepreneurial identity'*.
- Navis, C., & Glynn, M. A. (2011). Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility. *Academy of Management Review*, 36(3), 479–499.
- Nunnally, J. C. (1978). *Psychometric theory*. New York, NY: McGraw-Hill.
- Park, S., & Bae, Z. T. (2004). New venture strategies in a developing country: Identifying a typology and examining growth patterns through case studies. *Journal of Business Venturing*, 19(1), 81–105.
- Perry, J. T., Chandler, G. N., & Markova, G. (2012). Entrepreneurial effectuation: A review and suggestions for future research. *Entrepreneurship Theory and Practice*, 36(4), 837–861.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879.
- Powell, E. E., & Baker, T. (2014). It's what you make of it: Founder identity and enacting strategic responses to adversity. *Academy of Management Journal*, 57(5), 1406–1433.
- Read, S., Song, M., & Smit, W. (2009). A meta-analytic review of effectuation and venture performance. *Journal of Business Venturing*, 24(6), 573–587.
- Read, S., Sarasvathy, S. D., Dew, N., & Wiltbank, R. (2016). Response to Arend, Sarooghi, and Burkemper (2015): Cocreating effectual entrepreneurship research. *Academy of Management Review*, 41(3), 528–536.
- Reuber, A. R., Fischer, E., & Coviello, N. (2016). Deepening the dialogue: New directions for the evolution of effectuation theory. *Academy of Management Review*, 41(3), 536–540.
- Ringle, C. M., Wende, S., & Becker, J. M. (2015). *SmartPLS 3*. Boenningstedt: SmartPLS GmbH. <http://www.smartpls.com>
- Robins, J. A., Tallman, S., & Fladmoe-Lindquist, K. (2002). Autonomy and dependence of international cooperative ventures: An exploration of the strategic performance of US ventures in Mexico. *Strategic Management Journal*, 23, 881–901.
- Rosenberg, M. (1979). *Conceiving the self*. New York, NY: Basic Books.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26(2), 243–263.
- Sarasvathy, S. D. (2008). *Effectuation: Elements of entrepreneurial expertise, new horizons in entrepreneurship*. Cheltenham: Edward Elgar.
- Sarasvathy, S. D., & Dew, N. (2005). New market creation through transformation. *Journal of Evolutionary Economics*, 15(5), 533–565.
- Sarasvathy, S. D., & Dew, N. (2013). Without judgment: An empirically-based entrepreneurial theory of the firm. *Review of Austrian Economics*, 26(3), 277–296.
- Sattler, H., Völckner, F., Riediger, C., & Ringle, C. M. (2010). The impact of brand extension success drivers on brand extension price premiums. *International Journal of Research in Marketing*, 27, 319–328.
- Schumpeter, J. A. (1912). *Teoría del Desarrollo Económico*. (Primera versión en alemán 1935). Versión española de 1976. México: Fondo de Cultura Económica.
- Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Cheltenham: Edward Elgar.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217–226.
- Shepherd, D., & Haynie, J. M. (2009). Family business, identity conflict, and an expedited entrepreneurial process: A process of resolving identity conflict. *Entrepreneurship Theory and Practice*, 33(6), 1245–1264.
- Sieger, P., Fueglistaller, U., & Zellweger, T. (2014). Student entrepreneurship across the globe: A look at intentions and activities. In *International Report of the GUESSS Project 2013/2014*.
- Sieger, P., Gruber, M., Fauchart, E., & Zellweger, T. (2016). Measuring the social identity of entrepreneurs: Scale development and international validation. *Journal of Business Venturing*, 31(5), 542–572.
- Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, 27(4), 339–358.
- Sitoh, M. K., Pan, S. L., & Yu, C. Y. (2014). Business models and tactics in new product creation: The interplay of effectuation and causation processes. *IEEE Transactions on Engineering Management*, 61(2), 213–224.
- Smolka, K. M., Verheul, I., Burmeister-Lamp, K., & Heugens, P. P. (2016). Get it together! Synergistic effects of causal and effectual decision-making logics on venture performance. *Entrepreneurship Theory and Practice*, <http://dx.doi.org/10.1111/etap.12266>
- Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, 63(3), 224–237.
- Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, 36(2), 111–147.
- Tajfel, H. (1972). Some developments in European social psychology. *European Journal of Social Psychology*, 2(3), 307–321.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *Social Psychology of Intergroup Relations*, 33(47), 74.
- Tippins, M. J., & Sohi, R. S. (2003). IT competency and firm performance: Is organizational learning a missing link? *Strategic Management Journal*, 24(8), 745–761.
- Turner, R. H. (1968). *The self-conception in social interaction. Vol. 1: Classic and contemporary perspectives*. pp. 93–106. New York: John Wiley & Sons.
- Van Praag, C. M. (1999). Some classic views on entrepreneurship. *Economist*, 147(3), 311–335.
- Watson, J. B. (2013). *Behaviorism*. Worcestershire, UK: Read Books Ltd.
- Whetten, D. A., & Mackey, A. (2002). A social actor conception of organizational identity and its implications for the study of organizational reputation. *Business & Society*, 41(4), 393–414.
- York, J. G., O'Neil, I., & Sarasvathy, S. D. (2016). Exploring environmental entrepreneurship: Identity coupling, venture goals, and stakeholder incentives. *Journal of Management Studies*, 53(5), 695–737.