
Is there a supreme being controlling the universe? Entrepreneurs' personal beliefs and their impact on network learning

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Abstract: Entrepreneurs' personal beliefs determine how external information, conditions and stimuli are filtered, interpreted and incorporated into a decision, which has a profound impact on firm performance. Spirituality, one of the most prominent aspects of personal beliefs, derives from the effects of both personal and social religious practices and confidence about the existence of a supreme being. Based on primary data collected from members of an association of firms that share the same principles and values, this paper analyses the effect that the entrepreneur's personal beliefs have on the possibility to learn from the network and, therefore, improve his or her firm's performance. We find that the effect of shared beliefs on network-based learning is positively mediated by the cultural compatibility, creativity and sense of identity of the entrepreneurs in the network.

Keywords: spirituality; entrepreneurship; personal beliefs; network based learning; cognitive proximity.

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1 Introduction

Upper echelons theory suggests that organisational outcomes, strategic choice and performance levels are influenced by the experience and personal characteristics of the entrepreneur (Hambrick and Mason, 1984). According to this theory, strategic choices are based on personal characteristics and are conceptualised as affecting perceptions that have a direct impact on such choices (Scott and Mitchell, 1976). Entrepreneurs' personal beliefs determine how external information, conditions and stimuli are filtered, interpreted and incorporated into decisions (Hambrick and Mason, 1984).

Belonging to a network of individuals with similar values has an impact on personal and business behaviour (Dana, 2009; Ferriss, 2002; Inglehart, 2010); the resulting social networks are characterised by a strong sense of identity among members, social support and the presence of shared frameworks for the interpretation of reality (Lim and Putnam, 2010). Shared values foster the exchange of ideas, identification of opportunities and the combination of resources and knowledge from a large and heterogeneous pool of actors (Ceci and Iubatti, 2012; Giuliani and Bell, 2007; Martins and Terblanche, 2003).

According to Wuyts et al. (2005), cognitive proximity refers to the similarity in actors' perceptions, interpretations, understanding and evaluations of the world. The extant literature suggests that cognitive proximity favours knowledge exchange among organisations (Knoben and Oerlemans, 2006) increases innovation (Dakhli and De Clercq, 2004; Hecker, 2016) and organisational performance (Jones et al., 1997; Krause et al., 2007), and reduces conflict and communication misunderstandings (Inkpen and Tsang, 2005). Cognitive proximity increases the likelihood of inter-organisational collaboration because it reduces the cognitive distance between the partnering organisations searching for mutual benefits and provides identities for organisations searching for exchange partners (Lazega, 2009). This is likely to produce positive effects on network-based learning. It is generally acknowledged that networking allows firms to build high quality ties that enable the transfer of knowledge (Carmeli and Azeroual, 2009), the building of new knowledge (Yli-Renko et al., 2001) and faster and more comprehensive learning (Schulz, 2001). Firms with strong ties to one another are more capable of exchanging information (Andersson et al., 2002; Ceci et al., 2010) and are more effective at transferring complex knowledge (Sorenson et al., 2006).

We investigate the micro-foundations of enablers of cognitive proximity and the role played by shared beliefs. More specifically, our research builds on an empirical context characterised by similar spiritual values and we explore the role played by spirituality. Spirituality is used increasingly to define the personal and subjective aspects of religious experience (Hill and Pargament, 2008). It also is more prominent in academic debate (Neubert et al., 2017; Putnam et al., 2012). Several studies focus on the impact of spirituality on different fields of human endeavour, ranging from individual well-being and behaviour (Lim and Putnam, 2010), entrepreneurial attitude (Carswell and Rolland, 2004; Christopher, 2011; Davis, 2013; Dragunova, 2006; Roessingh and Boersma, 2011)

to more macro aspects such as economic growth (Barro and McCleary, 2003; Neubert et al., 2017). It is widely acknowledged that in the realm of personal beliefs, the effect of being a practising adherent of a specific religion have a direct effect on the believing entrepreneur: for this reasons religion and spirituality are crucial variables to be studied (Dana, 2009, 2010; Drakopoulou and Seaman, 1998; Ramadani et al., 2015; Swedberg, 2000). We posit that spirituality affects the cognitive proximity of entrepreneurs operating within a firm network and, thereby, can affect network-based learning. This approach it is in line with the stream of literature that consider entrepreneurship from a social science view point (Swedberg, 2000). In this paper we address the following research question: in a network based on religious values, do entrepreneurs with higher levels of spirituality learn more from the network?

The paper is organised as follows. Section 2 reviews the most relevant contributions on the interrelations among spirituality, religion and economic practice. We formulate testable hypotheses to investigate the enabler of cognitive proximity and test them using an original dataset. Section 3 presents and discusses the results.

2 Literature review and hypothesis development

Personal beliefs are concepts that affect many disciplines including psychology, sociology, anthropology and political science. In this paper, we rely on the perspective of ‘shared beliefs’, central to which is that an understanding of reality is made possible by social representations, which are shared among the members of a group (Moscovici, 2001). Shared beliefs reflect how people construct their social worlds in the search for meaning and understanding of the social reality. This shared construction allows interaction and communication, providing a common social identity and enabling a consensual course of action (Leung and Bond, 2004).

Leung and Bond (2004) propose the conceptual tool of social axioms to explore such beliefs. Social axioms are “generalised beliefs about oneself, the social and physical environment, or the spiritual world, and are in the form of an assertion about the relationship between two entities or concepts” [Leung et al. (2002), p.289]. Spirituality is a social axiom and refers to a belief in the reality of a supreme being and the positive function of religious practice. It represents the personal and subjective aspects of religious experience (Hill and Pargament, 2008) and is indicative of how the effects of religious practices at both the personal and social levels are assessed and a confidence in the existence of a supreme being.

Spirituality and religious beliefs play a role in determining economic outcomes (Carswell and Rolland, 2004; Guiso et al., 2003; Lim and Putnam, 2010): the protestant reformation is a clear example of this. It changed thinking about the pursuit of wealth, which was not only to achieve personal advantage but also was a duty of the individual (Rietveld and Van Burg, 2014; Swedberg, 2000; Weber, 1904). This change had a deep impact on individual behaviours, making it legitimate for the bourgeoisie to disrupt the existing order and introduce a new one based on individual opportunities to achieve prosperity. Guiso et al. (2003) considers the effect of religion on trust and finds that individuals who are regular attendees at religious services show much higher levels of trust towards other individuals. Hilary and Hui (2009) finds that firms operating in US counties with high levels of religiosity tend to exhibit lower exposure to risk measured in

terms of financial assets. Spear (2010) reports several cases (example, Quakers in 19th century England or the network of Protestants in Latin America) where membership of a cohesive group with strong religious connotations facilitated the development of new business ideas, suggesting the existence of a link between religious values and economic practices. Roessingh and Boersma (2011) described how specific religious background of social groups influence and drive a process of organisational change, impacting the development path followed by a community (Christopher, 2011; Roessingh and Boersma, 2011; Roessingh and Nuijten, 2012). Saxenian (1994) showed that entrepreneurs working in Silicon Valley tend to use their social networks to connect with investors, and for religious individuals the most important social network is the religious group to which they belong (English-Lueck and Saveri, 2001). Dana (2009) showed that being immersed in a network enabled by religious and personal beliefs affect entrepreneurship in multiple ways. More specifically, Dana identified the following four networks: credit, employment, information and supply networks. Juteau and Paré (1996) studied the credit networks of Jewish entrepreneurs in Canada and Dana (2006) noted that Jewish relied heavily on other Jews for financing; member of the same religious network provided finance when needed.

Being part of a network of co-religionists has an effect also from an employment viewpoint: entrepreneurs gives preference to members of their immediate circle rather than giving equal opportunities to outsiders and this applies to many religious groups: Quakers (Raistrick, 1950) and Amish (Kraybill et al., 2010) among the others. Likewise, successful Hispanic entrepreneurs, often active in the local Catholic Church, are found to look for new employees among other recent immigrants (Galbraith et al., 1997). Similar behavioural pattern has been found among Muslim Arab, Muslim Malays and Turkish entrepreneurs (Abdullah, 1992; Altinay, 2008; Galbraith et al., 2007). Analysing the competitive dimensions, it has been found that being immersed in a religious network gives advantages also from a cost perspective viewpoint. Juteau and Paré (1996) and Lee (1999) found that co-religionists suppliers were prevalent among Jewish entrepreneurs in Canada and the USA respectively. This provided access to lower wholesale costs, which could translate to lower retail costs and enhanced competitiveness.

Besides the advantages in terms of financing and employments, literature considered also the benefits in terms of being part of an information network. In such situation, information networks are mainly comprised by informal sources such as colloquies, friends, peers and coreligionists. More specifically, being part of a religious group influences the amount of information and support that can be obtained also from a business viewpoint (Altinay, 2008; Boissevain et al., 1987; Dana, 2006).

2.1 Network-based learning

Networking allows firms to build high quality ties, which enable more effective knowledge exchange and faster learning (Andersson et al., 2002; Carmeli and Azeroual, 2009; Schulz, 2001; Sorenson et al., 2006; Yli-Renko et al., 2001). We define network-based learning as the rate at which the firm learns through the acquisition of knowledge facilitated by membership of a network (Lane and Lubatkin, 1998; Lavie, 2006). Management scholars have identified a series of factors that facilitate network-based learning. Social capital plays a central role: it creates the necessary conditions for the exchange and combination of knowledge, it unlocks access to network-based learning opportunities and activates the transfer of knowledge (Hughes

et al., 2011; Inkpen and Tsang, 2005; Laursen et al., 2012; Masciarelli, 2011). However, social capital can successfully promote entrepreneurship only among groups already sharing the requisite cultural capital (Light and Dana, 2013). Also important are the presence of trust among partners (Brinckmann and Hoegl, 2011) and the interconnectedness of the firms within a network. The greater their interconnectedness, the more learning in the entrepreneurial firm, which is necessarily exposed to larger stocks of knowledge (Lavie, 2006; Nahapiet and Ghoshal, 1998). In the specific context of entrepreneurship, learning it is also facilitated by the participation to specific programs, whose participation is enable being immersed in a network (Dana, 1987; Gorman et al., 1997; Kuratko, 2005; Rasmussen and Sørheim, 2006) Other studies posit that engaging in networks provides opportunities to access rich knowledge, information and experience that can inform the firm's own knowledge stocks to improve performance (Adler and Kwon, 2002; Dana, 1987; McEvily et al., 2003; Stuart and Sorenson, 2003). Nahapiet and Ghoshal (1998) theorised that the more an entrepreneurial firm interacts in the network by building strong relationships network ties and establishing common norms with other network firms, the more likely it will learn and acquire increasing amounts of knowledge to improve its performance *directly*.

The direct relation depicted in Figure 1 leads us to hypothesise that:

Hp1 In a network based on religious values, a high level of spirituality in the entrepreneur has a positive effect on network-based learning.

Network-based learning is the result of a high level of interconnectedness and interaction among the firms in a network (Lavie, 2006; Nahapiet and Ghoshal, 1998). High levels of interconnectedness and interaction are observed in those networks where firms have similar organisational norms, values, expectations and systems of meaning and consider themselves to be part of a social group (Adler and Kwon, 2002; Kambil et al., 2000; Lazoi et al., 2011; Madhok and Tallman, 1998; Nahapiet and Ghoshal, 1998; Tajfel and Turner, 2004). To investigate the role of these antecedents to network based learning, we develop a model with three mediators, that is, cultural compatibility, identity and shared creativity, which we discuss in turn below.

2.2 Cultural compatibility

Cultural compatibility or congruence of organisational philosophies, goals and values amongst network members, influences the extent to which members are able to realise their synergistic potential (Madhok and Tallman, 1998). This dimension addresses broad issues related to organisational norms and value systems. Cultural incompatibility can lead to an inability to develop a harmonious relationship and, thus, have a negative influence on collaborative effectiveness (Sarkar et al., 1997). We expect that, in networks based on similar religious beliefs, entrepreneurs with high levels of spirituality will be more likely to share organisational philosophies with other member of the network. Cultural compatibility facilitates the sharing of knowledge and the development of a common language among network members and promotes network-based learning (Sarkar et al., 1997). Based on this reasoning, we hypothesise that:

Hp2a In a network based on religious values, a high level of spirituality has a positive effect on the entrepreneur's cultural compatibility.

- Hp2b In a network based on religious values, a high level of cultural compatibility promotes network-based learning when controlling for spirituality.

2.3 *Identity*

Social Identity Theory argues that individuals can define themselves as belonging to more than one social group (e.g., profession, family, company) (Ashforth et al., 2001; Meyer et al., 2007; Tajfel and Turner, 2004). A central aspect of this theory is the relation and the potential conflict amongst multiple work-related identities – for example, professional, organisational, network. In large firm networks, some members may be far from their headquarters and perceive themselves as being ‘out of sight, out of mind’ [Wiesenfeld et al., (2001), p.214]. In those networks, dual affiliation (to the firm and to the network) may increase the ambiguity of network identity (Li et al., 2002; Rockmann et al., 2007). Network members from different firms will likely have different professional experience and different backgrounds (e.g., Gurung and Prater, 2006). A high level of spirituality produces a positive effect on identity by reducing the role played by working experience and background (see, e.g., Roessingh and Boersma, 2011). A strong identity has a positive effect also on network based learning by increasing trust among members and a willingness to share knowledge and information. Therefore, we expect identity to positively mediate the effects of the entrepreneur’s spirituality on network-based learning.

- Hp3a In a network based on religious values, a high level of spirituality has a positive effect on the entrepreneur’s identity.
- Hp3b In a network based on religious values, a strong identity promotes network-based learning when controlling for spirituality.

2.4 *Shared creativity norms*

Shared creativity norms refers to expectations, interpretations and systems of meaning capturing firms’ shared language and codes (Nahapiet and Ghoshal, 1998). These norms are the product of firm behaviour (individual and collective), which create cultural compatibility among partnering firms and inform and govern knowledge sharing (Adler and Kwon, 2002). Shared creativity norms reflect shared beliefs, practices and the common ground that characterise the nature of cooperation among firms in a network (Nahapiet and Ghoshal, 1998). Shared creativity norms help to promote cultural compatibility among firms, inform and shape cooperation among them, and provide a basis for repeated interactions (Ceci and D’Andrea, 2014; Hughes et al., 2011, 2014). Over time, these norms operate more at the network level and represent an institutionalised set of rules that govern behaviour without the need for formal contracts (Gulati et al., 2000). These rules act as a governance mechanism which facilitates knowledge transfer.

Kambil et al. (2000) proposed that the development of common creativity norms with network members catalyses the firm’s entrepreneurial abilities to generate more learning. Reduced search times serve to increase this effect. In a network-based on religious values, entrepreneurs with high levels of spirituality are likely to have similar standards

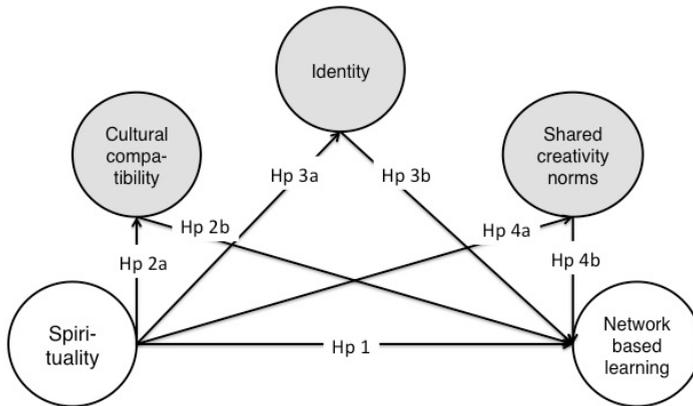
to other members of the network. Also, the existence of implicit norms and rules operating at the network level, established and driven by the network, further facilitates the exchange of knowledge since opportunism would be severely sanctioned (Inkpen and Tsang, 2005). Therefore, we expect shared creativity norms to positively mediate the effect of the entrepreneur’s spirituality on network based learning.

Hp4a In a network based on religious values, a high level of spirituality in the entrepreneur has a positive effect on shared creativity norms.

Hp4b In a network based on religious values, a high level of shared creativity norms predicts network-based learning when controlling for spirituality.

Figure 1 is a graphical representation of the above hypotheses and highlights the mediating roles of cultural compatibility, identity and shared creativity norms.

Figure 1 Analytical model



3 Method

3.1 The empirical context

To explore the role of spirituality in business networks, we selected an empirical context – CDO, an association of entrepreneurs – where spirituality plays a prominent role. CDO’s activities started in 1986; it has 38 branches in Italy and 17 abroad, which include some 36,000 members, mainly business organisations. The entrepreneurs associated to CDO are expected to share the norms, principles and values of the Roman Catholic Church (Nanini, 2011). CDO’s main goal is to promote and develop relationships among its members, and between these members and non-member organisations. It offers various services to its members, such as financial services, training activities, support for the conduct of international business, support on innovation activities.

3.2 *Data collection*

The collection of data to investigate our hypotheses involved a two-step strategy that combined qualitative and quantitative research methodologies (Creswell, 2003). In November 2012, we conducted a preliminary study of the innovation dynamics within a local CDO branch. We conducted 23 interviews – 14 with general managers or CEOs and 9 with responsibility for other functions (e.g., sales, finance, production, marketing) (Ceci et al., 2014). In September and October 2014, we conducted nine additional exploratory interviews with key informants associated to CDO association, identified by the president of CDO. Appendix A provides a list of our interviewees.

Based on the information obtained from our exploratory interviews, we developed a survey questionnaire, which was administered during a three-day event organised by CDO, held on 26–28 November 2014 in Milan. We contacted all the firms participating in the event that matched the following criteria: under 250 employees; entrepreneur present during the fair; belonging to the following industrial sectors: construction and furniture, food, industrial products, logistics, marketing and communication, networking, software and ICTs, power and ecology. This resulted in a sample population of 369 firms. One researcher contacted the entrepreneurs included in the sampling frame to set up interviews and explain the aims of the research and describe the questionnaire. To increase the response rate, we guaranteed confidentiality and confirmed that that data would be used only for academic purposes. We also promised to benchmark each firm against a representative sample and to share this with the respondents. We collected 109 questionnaires, a response rate of 30%. For the purposes of this research, we considered only the firms that had been associated to CDO for more than 12 months. This produced a final sample of 48 entrepreneurs.

3.3 *Questionnaire structure and definition of the variables*

The data collection instrument was a questionnaire that was distributed to entrepreneurs. It asked for the following information: Section A as about the entrepreneur's previous experience and ownership share; Section B enquired about the entrepreneur's experience of the association, participation in CDO's political and social life, and constructs used as the dependent variable and the moderator. Table 2 details the items. We measured the presence of shared creativity norms among association members using four items adapted from Hughes et al. (2014) and Sarkar et al. (2001); we measured cultural compatibility using four items from Sarkar et al. (2001) and Dhanaraj et al. (2004); we measured identity using the Organisational Identification Scale in Mael and Ashforth (1992); and we measured the dependent variable, network-based learning, using the five items in Hughes et al. (2014), Kim and Miner (2007) and Sarkar et al. (2001). The items initially were written in English and subsequently translated into Italian. To check accuracy and eliminate inconsistencies, different translators translated the Italian versions back into English (Bensaou and Venkatraman, 1995). The assessments were based on a five-point scale, ranging from (1) 'strongly disagree' to (5) 'strongly agree'.

Section C referred to the items related to the social axioms questionnaire. Social axioms are generalised beliefs about oneself, the social and physical environment, and the spiritual world and take the form of assertions about the relationship between two entities or concepts. Social axioms present a high level of abstraction; they facilitate the attainment of important goals and help people's understanding of the world. Based on

empirical results from more than 40 countries, Leung and Bond (2004) extended the results of an earlier study (Leung et al., (2002) to identify five dimensions – cynicism, reward for application, religiosity, fate control, and social complexity – as pan-cultural dimensions of belief that characterise individuals and are related to differences in individual behaviours. Leung and Bond (2004) suggest that across cultures people form similar social belief dimensions because they deal with similar problems. However, individuals from different cultures may subscribe at different levels to these beliefs, based on the social logic, developed through history, by the particular cultural group. In the present work, we used the items measuring the construct of spirituality. Table 2 provides a detailed list of the items. The language of the questionnaire was Italian: backtranslation was applied to check the accuracy of the translation and changes were made if inaccuracies were revealed (Bensaou and Venkatraman, 1995; Ceci and Masini, 2011; Leung et al., 2002). Assessments were based on a five-point scale, ranging from (1) ‘strongly disagree’ to (5) ‘strongly agree’.

3.4 Comparison group

To allow comparison among the results of our sample of firms, we created a control sample. We searched for an association of entrepreneurs that promoted exchanges and organised events and seminars, which allowed entrepreneurs the opportunity to meet and to share ideas and opinions and offer advice. Our search identified the Chamber of Commerce. The Chamber of Commerce is an entity that gathers firms and entrepreneurs in a particular territory to protect their collective interests, create business opportunities and provide them with services such as: promotion of the territory and the local economy; support for internationalisation; promotion of innovation and technology transfer; cooperations with schools and university institutions, among others.

We distributed the same questionnaire administered to the main sample, to 77 entrepreneurs participating in a two-day event – ‘Crescere in digitale’ – held in Chieti. We contacted all the entrepreneurs participating in this event. During the two days of the event, researchers contacted these entrepreneurs and offered their help in responding to the questionnaire. To increase the response rate, we guaranteed confidentiality and that the data would be used only for academic purposes. We also promised to benchmark each firm against a representative sample and to share this information with the respondents. We collected 27 questionnaires, a similar response rate (35%) to that obtained for the main sample.

4 Results

We used Partial Least Squares (SmartPLS v.3.2.1) (Ringle et al., 2015) to estimate our model. PLS estimates latent variables as exact linear combinations of observed measures and, therefore, assumes that all measured variance is useful variance and can be explained. PLS is minimally demanding in relation to sample size (Sarkar et al., 2001; Smith and Barclay, 1997), which makes it especially appropriate to test structural models of relatively small sample sizes.

We first assessed individual item reliability by examining the loadings of the measures on their respective constructs. A rule of thumb is to check for loadings of .70 or

more (which implies shared variance of 50% or greater between the item and the construct). Examination of the initial measurement model revealed that 21 of the 29 items had loadings greater than .7, four items had loadings greater than .5, and four items had loadings of less than .5. These four items with poor loadings were excluded from subsequent analysis. Table 1 provides the final list of the individual items used in the analysis, and their loadings. Overall, these statistics are above the cut-off suggested, and indicate that all of our items demonstrate good individual item reliability.

Table 1 Measurement model

<i>Construct</i>	<i>Item^a</i>	<i>Loading</i>
Spirituality	Religious people are more likely to maintain moral standards	0.670
	Belief in a religion helps one understand the meaning of life	0.774
	Belief in a religion makes people good citizens	0.685
	Religious faith contributes to good mental health	0.809
	There is a supreme being controlling the universe	0.747
Cultural compatibility	The organisational values and social norms prevalent in the associated firms were congruent	0.753
	Executives from associated firms involved in this projects ha compatible philosophies/approaches to business dealings	0.678
	The goals and objectives of associated firms were compatible with each other	0.789
	The chemistry was right between the associated firms	0.797
	Both my firm and the other firms associated to CDO have a similar philosophy and approach to business	0.815
	There is a lot in common in the way we do business	0.559
Identity	When someone criticises the CDO I take it personally	0.819
	I care much what others think of CDO	0.736
	When I speak of the CDO, usually I use 'we' instead of 'their'	0.730
	When someone praises the CDO, I feel it like a personal compliment	0.899
	The successes of the CDO are my successes	0.830
Shared creativity norms	Businesses in the association share a common feeling of creativity	0.712
	A creative and vibrant atmosphere exists within the association	0.922
	There is an innovative 'feel' throughout the association	0.894
Network-based learning	The association generates a creative environment to explore and experiment	0.776
	Operating in this association has provided a fast way of learning	0.783
	Our rate of learning is far ahead of where we would be had we 'gone it alone	0.761
	The quality of knowledge and experiences gained are superior than had we 'gone it alone	0.754
	Exchange of information and experiences takes place frequently and informally among the members of the association	0.752
	We have learned a great deal from the members of the association	0.835

Note: ^aScale ranging from 1 (strongly disagree) to 5 (strongly agree).

PLS models are analysed and interpreted in two stages:

- a assessment and reliability of the measurement model
- b testing the structural model (Hulland, 1999).

We assessed the adequacy of the measurement model by examining individual item reliabilities, and convergent and discriminant validity. Table 2 reports the internal consistency values for the constructs and the correlation matrix between constructs, with the diagonal indicating the square root of the average variance extracted.

Table 2 Construct-level measurement statistics and correlation of constructs

<i>Construct</i>	<i>Internal consistency</i>	<i>Spirituality</i>	<i>Cultural compatibility</i>	<i>Identity</i>	<i>Shared creativity norms</i>	<i>Network based learning</i>
Spirituality	0.857	0.546^a				
Cultural compatibility	0.876	0.253	0.544			
Identity	0.902	0.390	0.501	0.648		
Shared creativity norms	0.898	0.323	0.727	0.618	0.689	
Network based learning	0.857	0.245	0.721	0.617	0.709	0.605

Note: ^aDiagonal elements in bold are square roots of average variance extracted.

Source: Hulland (1999)

Since PLS does not try to minimise residual item covariance, there is no summary statistic to measure the overall model fit as in the case of structural equation modelling (SEM) techniques. The sign and significance of the path coefficients are used to assess nomological validity. A bootstrapping ‘sampling with replacement’ method was used to assess the statistical significance of the parameter estimates. Standard errors were computed on the basis of 500 bootstrapping runs. Table 3 presents the results of the structural model.

Table 3 Effect of spirituality on network based learning: standardised PLS coefficients

<i>Dependent variable</i>	<i>Independent variable</i>	<i>H</i>	<i>Hypothesised sign</i>	<i>Standardised coefficient^a</i>
Network based learning	Spirituality	Hp1	+	-.048
	Cultural compatibility	Hp 2b	+	0.407***
	Identity	Hp 3b	+	0.270**
	Shared creativity norms	Hp 4b	+	0.262*
Cultural compatibility	Spirituality	Hp 2a	+	0.253**
Identity	Spirituality	Hp 3a	+	0.390***
Shared creativity norms	Spirituality	Hp 4a	+	0.323***

Notes: ^a*Significant at the 0.10 level. **Significant at the 0.05 level.
 ***Significant at the 0.01 level.

The results indicate that spirituality is positively related to cultural compatibility ($\beta = .253$ $p < .05$), identity ($\beta = .390$ $p < .01$), and shared creativity norms ($\beta = .323$ $p < .01$), which supports Hypotheses 2a, 3a and 4a. The results indicate also positive relations between cultural compatibility and network-based learning ($\beta = .407$ $p < .01$), identity and network-based learning ($\beta = .270$ $p < .01$), and shared creativity norms and network-based learning ($\beta = .262$ $p < .10$). Therefore, Hypotheses 2b, 3b and 4b are supported. Finally, the effect of spirituality on network-based learning is not statistically significant ($\beta = -0.048$, $p > 0.1$), which rejects Hypothesis 1.

Table 4 Measurement model for the comparison group

<i>Construct</i>	<i>Item^a</i>	<i>Loading</i>
Spirituality	Religious people are more likely to maintain moral standards	0.738
	Belief in a religion helps one understand the meaning of life	0.907
	Belief in a religion makes people good citizens	0.877
	Religious faith contributes to good mental health	0.826
	There is a supreme being controlling the universe	0.813
Cultural compatibility	There is a lot in common in the way we do business executives from associated firms involved in this projects ha compatible philosophies/approaches to business dealings	0.901
	Both my firm and the other firms associated to CCIAA have a similar philosophy and approach to business	0.810
	The goals and objectives of associated firms were compatible with each other	0.766
	The chemistry was right between the associated firms	0.725
Identity	If a media article criticised the CCIAA I would be embarrassed	0.870
	When someone criticises the CCIAA I take it personally	0.718
	I care much what others think of CCIAA	0.717
	When I speak of the CCIAA, usually I use 'we' instead of 'their'	0.593
	When someone praises the CCIAA, I feel it like a personal compliment	0.855
	The successes of the CCIAA are my successes	0.951
Shared creativity norms	A creative and vibrant atmosphere exists within the association	0.892
	Businesses in the association share a common feeling of creativity	0.901
	The association generates a creative environment to explore and experiment	0.741
Network-based learning	The association generates a creative environment to explore and experiment	0.762
	Operating in this association has provided a fast way of learning I have learned a great deal from the members of the association	0.712
	The quality of knowledge and experiences gained are superior than had we gone it alone	0.608
	Our rate of learning is far ahead of where we would be had we 'gone it alone	0.833
	Exchange of information and experiences takes place frequently and informally among the members of the association	0.740
		0.844

Note: ^aScale ranging from 1 (strongly disagree) to 5 (strongly agree).

However, the relationship between spirituality (the independent variable) and cultural compatibility, identity and shared creativity norms (the mediators) is positive and significant (Hp2a: $\beta = .253$ $p < .05$; Hp3a: $\beta = .390$ $p < .01$; Hp4a: $\beta = .323$ $p < .01$). Also, the mediating effect of cultural compatibility, identity and shared creativity norms on network-based learning (the dependent variable) is significant (Hp2b: $\beta = .407$ $p < .01$; Hp3b: $\beta = .270$ $p < .01$; Hp4b: $\beta = .262$ $p < .10$). Therefore, spirituality affects network-based learning indirectly through cultural compatibility, identity and shared creativity norms.

We then performed the same analysis for the comparison group. We assessed individual item reliability. An examination of the initial measurement model revealed that 24 of the 29 items had loadings greater than .7, two items had loadings greater than .5, and four items had loadings less than .5. These four items with poor loadings were excluded from subsequent analysis. Table 4 provides the final list of individual items used in the analysis and their loadings. Table 5 reports the internal consistency values for the constructs and the correlation matrix between constructs, with the diagonal indicating the square root of the average variance extracted. Table 6 presents the results of the structural model.

Table 5 Construct-level measurement statistics and correlation of constructs for the comparison group

Construct	Internal consistency	Spirituality	Cultural compatibility	Identity	Shared creativity norms	Network-based learning
Spirituality	0.868	0.572^a				
Cultural compatibility	0.875	0.290	0.543			
Identity	0.901	0.446	0.500	0.648		
Shared creativity norms	0.898	0.367	0.727	0.618	0.690	
Network-based learning	0.884	0.277	0.721	0.615	0.709	0.604

Note: ^aDiagonal elements in bold are square roots of average variance extracted

Source: Hulland (1999)

Table 6 Effect of Spirituality on Network based learning: Standardised PLS Coefficients for the comparison group

Dependent variable	Independent variable	Standardised coefficient ^a
Network based learning	Spirituality	0,073
	Cultural compatibility	0,648***
	Identity	-0,233
	Shared creativity norms	0,378
Cultural compatibility	Spirituality	-0,045
Identity	Spirituality	0,577***
Shared creativity norms	Spirituality	-0,073

Notes: ^a**Significant at the 0.10 level. **Significant at the 0.05 level. ***Significant at the 0.01 level.

The results indicate that spirituality has a positive effect only on identity ($\beta = .577$ $p < .01$); a higher level of spirituality influences the construction of a common identity, but has no effect on the development of shared creativity norms or cultural compatibility. The results indicate also that only cultural compatibility is positively related to network-based learning ($\beta = .648$ $p < .01$). Thus, in contrast to what we observed in the main sample, spirituality has no impact – either direct or indirect – on network-based learning.

5 Discussion and conclusions

This paper explored the role of a shared vision of the world in facilitating firms' learning ability. We focused, specifically, on spirituality, a dimension of group norms and values, used to define the personal and subjective side of religious experience (Hill and Pargament, 2008). In our conceptualisation, spirituality refers to the assessment of the effects of religious practices at both the personal and social levels, and belief in the existence of a supreme being (Leung et al., 2002). The importance of spirituality in economic studies has been established (Polanyi, 1944; Weber, 1904) and interest in spirituality has increased in recent years (Carrera and Parkin, 2011; Christopher, 2011; Lim and Putnam, 2010; Putnam et al., 2012; Rietveld and Van Burg, 2014). We addressed the issue of spirituality by exploring its role as an enabler in the creation of cognitive proximity, defined as the extent to which actors similarly perceive, interpret, understand and evaluate the world (Dakhli and De Clercq, 2004; Inkpen and Tsang, 2005; Knobens and Oerlemans, 2006; Wuyts et al., 2005).

We collected empirical data from firms belonging to a network, which are characterised by similar values to address the research question of whether, in a network based on religious values, a high level of spirituality of the entrepreneur favours cultural compatibility, identity and shared creativity norms, and whether it impacts on network-based learning.

The results of our mediated model confirm our hypotheses. Spirituality is related positively to cultural compatibility, identity and shared creativity norms. The effect of spirituality on network-based learning is not statistically significant, but the mediating effect of cultural compatibility, identity and shared creativity norms on network-based learning is significant. Therefore, spirituality affects network-based learning indirectly through cultural compatibility, identity and shared creativity norms.

To our knowledge, this is the first analysis to find a significant relation between the entrepreneur's spirituality and the possibilities available to the firm to learn and acquire new knowledge. Previous contributions identify the presence of trust, social capital and the interconnectedness of firms as factors that facilitate network-based learning (Brinckmann and Hoegl, 2011; Inkpen and Tsang, 2005; Lavie, 2006; Nahapiet and Ghoshal, 1998). We contribute to this literature stream by highlighting the role of a shared view in enabling learning. More specifically, we show that a common spiritual view has a positive effect on the possibility to improve learning experiences within a network. The entrepreneur's spirituality is a factor that promotes the development of cultural compatibility and identity within the group, and shared creativity norms influence important managerial processes such as the firm's ability to learn. We believe that our results give greater importance to the role of the entrepreneur's personal beliefs

in influencing the development of his or her firm and the impact on the local economic system.

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Appendix A

	<i>Firms data</i>			<i>Interview</i>		
	<i>Industrial sector</i>	<i>Activity</i>		<i>Day</i>	<i>H</i>	<i>Length</i>
1	C.D.	Production	Typography	18-9-2014	email	
2	C.L.	Services	Consultant	19-9-2014	10:00	30'
3	Z.P.	Production	Automation	24-9-2014	10:00	34'
4	A.S.	Services + Food	Consultant	25-9-2014	11:00	23'
5	A.F.	Services	Consultant	29-9-2014	12:00	17'
6	R.G.	Production	Automation	30-9-2014	11:00	50'
7	C.M.	Food	Oil production	1-10-2014	10:30	15'
8	C.T.	Services	Controlling	3-10-2014	11:45	9'
9	L.A.	Services	ICT Solution	3-10-2014	15:30	24'