

Individual dynamic managerial capabilities: Influence over environmental and social commitment under a gender perspective



Marian Buil-Fabregà ^a, María del Mar Alonso-Almeida ^{b, *}, Llorenç Bagur-Femenías ^c

^a Escola Superior de Ciències Socials i de l'Empresa de Tecnocampus, Universitat Pompeu Fabra, Mataró, Barcelona, Spain

^b Autonomous University of Madrid, Madrid, Spain

^c Barcelona School of Management, Pompeu Fabra University, Barcelona, Spain

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ABSTRACT

The current business market is characterized by rapid and continuous changes. Companies should adapt to new situations to guarantee sustainable development. Managers need to have capabilities to understand the new environment's requirements. Managers' individual dynamic capabilities (IDC) help them face these unpredictable changes in the market. However, few authors have analysed individual dynamic capabilities to ensure business sustainability. This study aims to shed light on the relationship between a manager's IDC and business sustainability from a gender perspective. A survey of 339 managers was conducted, and Structural Equation Modelling (SEM) was applied to study the impact of the relationship. The results show that managers' individual dynamic capabilities help them detect changes in the market earlier and promote a greater social and environmental commitment from those managers. In addition, significant differences in the environmental and social commitment between men and women were found. Therefore, this paper first provides advice for developing business sustainability to provide an advantage for organizations. Second, individual dynamic managerial capabilities appear to be important for promoting sustainability. Finally, another step in the construction of gender and sustainability is provided. Thus, this paper provides useful empirical evidence for managerial practice from a strategic management viewpoint.

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1. Introduction

In the current economic environment, consumers reward more socially and environmentally responsible companies (Schaltegger and Wagner, 2011). This forces companies to adapt to these new requirements in their environment (Smallbone et al., 2012; Chofreh et al., 2014; Edgeman and Eskildsen, 2014). Because the lead managers must adapt to the new environment, they should also adopt new capabilities (Augier and Teece, 2009; Di Stefano et al., 2010; Teece, 2012; Alonso-Almeida et al., 2015a).

The literature developed thus far on dynamic capabilities focuses on investigating how companies develop dynamic skills that allow them to obtain long-term sustainability and competitive

advantages. Thus, studies have focused on the nature of these capabilities (Teece et al., 1997; Teece, 2010; Augier and Teece, 2008; Easterby-Smith et al., 2009), the results (Helfat, 1997; Zott, 2003), the processes required to carry them out (Eisenhardt and Martin, 2000; Zahra et al., 2006; Zollo and Winter 2002), the recurrent environments (Aragon-Correa and Sharma, 2003; Helfat and Martin, 2015), and their relationship to innovation and entrepreneurship (Teece, 2007; Augier and Teece, 2009; Pitelis and Teece, 2010; Salazar and Peláez, 2011; Teece, 2012; Al-Aali and Teece, 2014; Lanza and Passarelli, 2014).

However, in the case of dynamics at the individual level, it is not clear what these capabilities provide. The literature on individual dynamic capabilities (IDC) is scarce, as Helfat and Martin (2015) note, and more so in the case of experimental research. In fact, only one article that discusses this issue from an empirical perspective was found (Wilden et al., 2013). These authors analysed the impact of dynamic capabilities proposed by Teece (2012) on the financial performance of the company using SEM. In this framework, we conduct the present research on the influence of IDC in the new contextual framework (environmental), where consumers

Abbreviations: IDC, Individual Dynamic capabilities; SEM, Structural Equation Modelling; SOC COM, Social Commitment; ENV COM, Environmental Commitment; EFA, Exploratory Factor Analysis; CFA, Confirmatory Factor Analysis; AV, average variance.

* Corresponding author.

E-mail address: mar.alonso@uam.es (M.M. Alonso-Almeida).

reward companies' social and environmental responsibility. This work analyses this situation from the framework of individual dynamic skills and from a gender perspective. These findings show that IDC help managers observe the market and be alert and detect earlier changes in the environment. Those managers with IDC are more committed to social and environmental issues.

The rest of the article is organized as follows. Section 2 is a review of the literature related to dynamic individual abilities and social and environmental commitment. Section 3 describes the methods used in the empirical study and the results obtained. Section 4 presents a discussion. This article ends with conclusions based on empirical analysis and recommendations for future research.

2. Literature review

2.1. Managerial individual dynamic capabilities and environmental and social commitment

In today's dynamic environment, which is characterized by continuous and unpredictable changes, managers of enterprises require new skills to successfully manage and ensure the company's long-term sustainability (Helfat and Martin, 2015). Several authors have highlighted some of the new skills required. Augier and Teece (2009) defined these skills as the recognition of opportunities and leadership, whereas McKelvie and Davidsson (2009) defined them as the ability to generate ideas and create disruptions in the market and the innovation to develop new products and markets.

Teece (2012) stresses the importance of the manager's role in the company's transformation in changing environments. In these cases, dynamic capabilities become competencies of an individual (manager) that are defined as sensing (identification and evaluation of opportunities), seizing (carrying out the identified opportunity to create value) and transforming (continued innovation). Wilden et al. (2013), Lanza and Passarelli (2014) and Leih et al. (2014) identify these same powers as manager capabilities to ensure business success in the long term.

Carattoli (2013) proposes research focused on the relationship between dynamic search capabilities and other constructs, especially those that are relevant to make sustainable links to certain environmental company measures and the company's relationship with the environment (Adner and Helfat, 2003; Augier and Teece, 2009; Schaltegger and Wagner, 2011; Wilden et al., 2013). Other authors (Helfat et al., 2007; Hendry et al., 2010) consider the leaders' strategic thinking in companies as a powerful individual capability to understand and adapt to changes in order to bring innovation to the market. For these reasons, as Calabrese and Costa (2015) noted, strategic thinking of managers is considered a possible driver for sustainability development.

The sustainability of a company refers to the transformation of business models oriented towards purely economic objectives where, in addition to economic sustainability, another model incorporates environmentally and socially aware criteria into the overall strategy (Larson, 2000; Kyrö, 2001; Strothotte and Wüstenhagen, 2005; Cohen and Winn, 2007; Cohen et al., 2008; Van Passel et al., 2009; Alonso-Almeida and Bremser, 2014; Buil-Fabrega et al., 2016).

Tata and Prasad (2015) state that sustainability consists of three categories, environmental, social and human, that are influenced by the perceptions and beliefs of humans. Environmental sustainability refers to the environmental management of enterprises to maintain the natural ecosystem through actions such as reducing pollution, consumption and the ecological footprint (Andersen and Skjoett-Larsen, 2009). Social sustainability focuses on social impacts and

human rights (Bansal, 2005), improving social welfare and promoting more responsible companies through the reduction of social inequalities, improving quality of life and concern for the common good. A third category of sustainability that is under investigation is human sustainability, a reference to all the members who make up the organization. Human sustainability refers to how the company processes influence the physical and mental development of the organization's members and involves practices such as the conditions and hours of work or the provision of benefits to members, such as medical coverage. Therefore, according to Tata and Prasad (2015), beliefs and perceptions about sustainability lead to the implementation of major environmental, social and human initiatives in the company to safeguard the environment and help society.

According to both Schaltegger and Wagner (2011) and Tata and Prasad (2015), the introduction of social goals and environmentally responsible managers facilitates sustainable development over the long term for companies, with positive effects on customers and society in a coordinated manner. IDC facilitate this process by allowing the combination of resources to create value and contribute to sustainable development (Augier and Teece, 2008; Teece, 2012; Alonso-Almeida et al., 2017). Some authors (Schaltegger and Wagner, 2011; Garriga and Mele, 2013) have identified the social and ethical values of managers who manage corporate sustainability through social and environmental innovations. Examples of social engagement management are the process of ethical decision making (Petrick and Quinn, 2001; Adner and Helfat, 2003) and the development of appropriate key stakeholder relations: employees, customers, suppliers and society (Harrison and St. John, 1996; Hillman and Keim, 2001). Therefore, it is expected that the manager's IDC contribute to social and environmental business momentum in order to make them socially and environmentally responsible. In light of the above contributions, the following hypotheses are made:

- H1.** Individual dynamic capabilities of the manager have a direct and positive impact on their social commitment.
- H2.** Individual dynamic capabilities of the manager have a direct and positive effect on their commitment to the environment.

2.2. Managerial individual dynamic capabilities and gender

IDC are a new field of research. To date, there is no evidence from studies about the impacts on a company where the effect of the dynamic capabilities of a manager committed to social and environmental commitment is analysed from a gender perspective. The literature to date has studied leadership or management of an enterprise, considering women as an "engine change" (Cohen and Huffman, 2007), or the perception of women and their impact on the social and environmental aspects of the company. A consensus in the previous literature attributes to men a dominant leadership style in the company characterized by authoritarianism, with an eagerness for power and status and an orientation towards economic performance (Godoy and Mladinic, 2009). By contrast, women are associated with transformational leadership based on social values, interpersonal relations, welfare and empathy for others (Rudman and Glick, 2001; Bird and Brush, 2002; Eagly et al., 2003; Eagly and Carli, 2007; Aygün et al., 2008; Alimo-Metcalfe, 2010).

In addition, Askehave and Zethsen (2014) establish a third type of leadership that both men and women adopt depending on the environment and the social context in which they operate (Billing, 2011). This type of leadership is a mixed dominant leadership and is transformational. In this case, men and women are similar in terms of management models and leadership carried out in enterprises

(Godoy and Mladinic, 2009) and converge on similar values without showing particular characteristics of management styles and leadership that characterize them because of their gender. Joint leadership can thus be called evolutionary leadership (Murray and Schmitz, 2011), as it is able to adapt to changing market demands.

Fernandez et al. (2003) suggest that an organization’s manager must have the capability to adapt to environmental changes. To this end, part of the job is to review the literature on the relationship between the company’s leadership style and the managers’ environmental commitment. According to Portugal and Yukl (1994), the leaders with environmental commitment resemble transformational leadership, whereas other authors (Egri and Herman, 2000) argue that leaders with social commitment respond to the characteristics of transformational leadership, including the values of collaboration, granting responsibility to employees, two-way communication, orientation towards change, charisma, confidence building and individualized consideration—as opposed to transactional leadership, which includes mediation, contingent compensation and unidirectional communication.

The first line of research suggests that women have greater social commitment than men because of their concern for the welfare of both employees and society in general (Tata and Prasad, 2015; Larrieta-Rubin de Celis et al., 2015), their commitment to ethical values themselves (Galbreath, 2006), their own social characteristics of caring for others, and the ability to establish interpersonal relationships and to empathize (Boulouta, 2013). By contrast, men have a greater environmental commitment derived from their focus on economic performance in the short term (Hindle et al., 2009; Kronsell et al., 2014; Alonso-Almeida and Bremser, 2014; Santos et al., 2016). In the same vein, Bernardi and Threadgill (2010) suggest a relationship between the number of women who make up top management teams and the companies with the greatest social commitment, because women incorporate greater commitments to donations, society and outside recognition of the employees’ work. Some studies also show that women are more likely than men to identify situations in which judgements of ethical values are necessary (Smith et al., 2001).

The recent second line of research suggests that women also have greater environmental commitment than men because women have a greater concern for the environment and identify with the environment, as suggested by eco-feminist theories (e.g., inequalities of the impact of climate change) (Alonso-Almeida, 2013; Eccles et al., 2014), leading to greater reasons for concern about environmental management in the company. Thus, women take a positive role in promoting practices designed to protect the environment and therefore help to increase the local community’s wealth (Alonso-Almeida, 2012). Similarly, Kassinis et al. (2016) conclude in their study that companies with more women making strategic decisions develop more environmentally responsible policies and measures. However, the proportion of women at all levels of economic management and decision-making worldwide is lower than that of men (European Commission, 2010). Fernandez-Feejo et al. (2014) suggest that companies who have at least three women on their management team (which is a criterion of critical mass) are more socially and environmentally responsible than those who do not have at least three women on the management team. This is due to both the greater social and environmental commitment of women compared to men and the increased presence of women in top management teams, which has a positive impact on the deployment of corporate social responsibility (CSR) measures seeking gender equality, which contributes to environmental innovation in firms (Larrieta-Rubin de Celis et al., 2015). Proposed model is shown in Fig. 1.

Because the previous literature suggests that both management and leadership styles, as well as the social and environmental

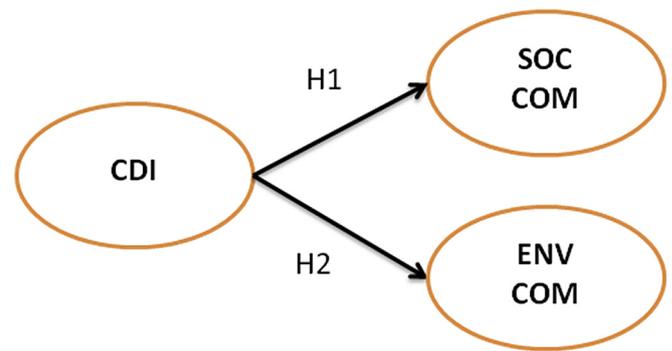


Fig. 1. Proposed model.

commitment of men and women, are different (see Calabrese et al., 2016), we assume that the IDC of men and women affecting their social and environmental commitment also differ. Therefore, the following assumptions are made:

- H3.** There are significant differences in the impact of individual dynamic capabilities on the social commitment of managers based on gender.
- H4.** There are significant differences in the impact of individual dynamic capabilities on the environmental commitment of managers based on gender.

3. Methods

3.1. Sample and data collection

To contrast the above hypotheses, we analysed a sample of 339 managers who completed Masters in Business Administration (MBA) in Catalan universities in Spain during the 2013–2014 and 2014–2015 academic years. The data was collected by MBA professors at those universities. These managers were surveyed at the end of their MBA studies, and the survey was distributed to all MBA students with a response ratio of 100%. The main characteristics of the managers in the sample in terms of educational background, work experience and position in which they work are shown in Table 1 below. As shown in Table 1, due to the personal characteristics of the students they are considered as managers. These factors include their age, their experience in job positions as management in companies, and their current placements in managerial

Table 1
Responder profiles.

Variable	Full sample (35.40%) N = 339	Women (36.29%) N = 130	Men (64.60%) N = 209
Age: average	39	37	40
Degree:			
- University/undergraduate degree	78.17%	80.77%	76.56%
- Master’s or PhD	19.17%	19.23%	19.14%
- Other	2.66%	0.00%	4.30%
Work experience:			
- < 1 year	10.03%	9.23%	10.53%
- Between 1 and 5 years	17.11%	13.85%	19.14%
- Between 5 and 10 years	55.16%	52.30%	56.94%
- > 10 years	17.70%	24.62%	13.40%
Current job:			
- Management team	66.37%	76.92%	59.81%
- Entrepreneurs/Other	33.63%	23.08%	40.19%

positions.

Managers in the sample have an average age of 40 years; thus, more than 50% of the respondents have work experience of 5–10 years. In addition, in view of their current employment, approximately 67% of women and 75% of men held a management position at their last job. A very high percentage of respondents (95%) for both men and women have a university education, which corresponds to the training that managers usually acquire in business. The gender bias of approximately 36% women and 64% men in the sample is consistent with an unequal distribution of access to management positions among men and women, which is an aspect of great importance and suggests various ethical and sociological considerations that have already been highlighted previously in the literature (e.g., [Alonso-Almeida et al., 2015a](#); [Spanish Statistical Office, 2016](#)).

4. Results

4.1. Structural equation model (SEM)

[Table 2](#) shows the mean values for the different questions that allow definition of the three constructs under study as well as social and environmental commitment and the respective values that women and men provide for each question posed.

The mean values for the questions from the questionnaire show values above 4 for a Likert scale of 1–7 in all cases. With regard to both the social and environmental commitment of respondents, the mean values are higher in all cases up to 4, although there is some difference in somewhat higher social commitment values than environmental values.

The statistical study was divided into two distinct parts. The first goal, analysed via factor analysis, was to determine the different dimensions comprising the model to be tested based on the variables that make up the questionnaire. A second aim, once the dimensions were defined, was to test the goodness of the proposed model with a Structural Equation Model (SEM).

Finally, using the same statistical analysis and structural equation model, we wanted to detect whether there were significant differences between men and women. Then, the work conducted in each part was described in detail.

As [Wynne \(1998\)](#) noted, part of the reason for choosing the method of SEM may be the increase in software packages to perform such covariance-based (e.g., LISREL, EQS, AMOS, SEPATH, AMONA, MX, and CALIS) and component-based (e.g., PLS-PC, PLS-Graph) analysis. SEM-based procedures have substantial advantages over first-generation techniques, such as principal components analysis, factor analysis, discriminant analysis, or multiple regression, because of the greater flexibility that a researcher has

for the interplay between theory and data. Specifically, SEM provides the researcher with the flexibility to do the following: (a) model relationships among multiple predictor and criterion variables, (b) construct unobservable latent variables, (c) model errors in measurements for observed variables, and (d) statistically test a priori substantive/theoretical and measurement assumptions against empirical data (i.e., confirmatory analysis).

4.2. Factor analysis

From an exploratory factor analysis (EFA), those variables that best explained each of the dimensions comprised the model chosen. In addition, and as indicated by the literature ([Loiacono et al., 2002](#)), those variables that had less than 0.5 loads were removed from the model. The original set of variables considering IDC are shown in the Appendix of the article. As a result of this first analysis, it can be seen that the variables are grouped into six different dimensions.

Having defined the composition of dimensions, each dimension was subjected to a confirmatory factor analysis (CFA) to debug each construct. The result of this analysis eliminated various factors that did not exceed the threshold load of 0.7 required by the literature; thus, the results were reduced to 12 factors and a 3-dimensional model. These dimensions were subjected to analysis of Cronbach's alpha, exceeding the required value of 0.7 in all cases ([Carmines and Zeller, 1979](#)).

In the penultimate stage of this first part of the analysis, consistency, reliability and validity of convergent size were performed and had a composite reliability greater than 0.6 in all cases ([Bagozzi and Yi, 1988](#)). The extracted average variance (AVE) was greater than 0.5, and convergent validity was confirmed in accordance with Fornell and Larcker's study (1981). The main statistical results of the first part can be seen in [Table 3](#).

Finally, once defined and tested, the dimensions were used in a final analysis of discriminant validity, demonstrating that each construct was more related to its own dimensions than to the dimensions of other constructs in all cases, as seen in [Table 4](#).

4.3. Contrast of the proposed model

By using EQS 6.1 software and a robust structural equation model, the boom of the proposed model was tested, and the suitability of the proposed model was confirmed via the main statistical observation. According to the literature, [Schermelleh-Engel et al. \(2003\)](#) established that it is sufficient to have 3 statisticians test the boom and the explanatory power of the defined values of the model according to this methodology. In the model, the minimum requirements are exceeded, confirming the robustness and explanatory power of the model. [Table 5](#) shows the values for the

Table 2
The means of the variables that are part of the model.

Dimension	Code	Definition	Mean	Women	Men
Individual dynamic capabilities	IDC1	Frequent interactions with third parties to acquire new information	4.51	4.60	4.45
	IDC2	I am attentive to new business opportunities	4.66	4.50	4.76
	IDC3	Seeking new information actively	5.00	4.98	5.01
	IDC4	I see links between seemingly unrelated parts	4.62	4.82	4.50
	IDC5	I can distinguish between profitable and less profitable opportunities	4.63	4.48	4.72
Social commitment	SOC COM1	I believe strongly in maintaining employment and the positive effect of a good working environment	5.81	6.13	5.61
	SOC COM2	I think any company should pay the same people who perform the same task	5.41	5.63	5.27
	SOC COM3	Any company should be committed to the community in which it operates	4.86	5.01	4.77
Environmental commitment	ENV COM1	I do not understand a business if you do not have a sustainable environmental approach	5.14	5.25	5.07
	ENV COM2	Must train and encourage employees to promote positive environmental initiatives	4.66	4.78	4.59
	ENV COM3	I believe in environmental marketing	4.54	4.64	4.48
	ENV COM4	Any company should quantify savings and environmental costs	5.37	5.63	5.21

Table 3
Factorial Analysis dimensions.

Dimension	Code	CFA	Internal consistency and reliability statistics
Individual dynamic capabilities	IDC 1	0.811	Cronbach's alpha: 0.801 Composite reliability: 0.907 AVE: 0.661
	IDC 2	0.814	
	IDC 3	0.822	
	IDC 4	0.791	
	IDC 5	0.825	
Social commitment	SOC	0.763	Cronbach's alpha: 0.821 Composite reliability: 0.837 AVE: 0.631
	COM 1	0.812	
	SOC	0.808	
	COM 2	0.812	
	COM 3	0.812	
Environmental commitment	ENV	0.796	Cronbach's alpha: 0.808 Composite reliability: 0.867 AVE: 0.620
	COM 1	0.777	
	ENV	0.777	
	COM 2	0.785	
	COM 3	0.791	

main statistical observation as well as its ideal value according to the literature.

To end the results section, and in summary, the statistical model of causal relationships derived is shown in Fig. 2.

4.4. Gender differences

To detect possible differences between men and women, using the same EQS software, a multi-group analysis is conducted. This analysis compares the multiple-group model with a nested model in which the relationships between all the dimensions are constrained to be equal across groups. We can determine whether there are different behaviours according to the subsample using the chi-squared distribution p-value and that calculated from the difference between the chi-square of the two models and the degrees of freedom.

These results indicate that there are differences between men and women. In summary, the multiple-group analysis shows that different results are obtained from the separate samples and that the two types of people display different behaviours in terms of social and environmental commitment. The results show that there are differences in the relationship between CDI and SOCCOM and in the relationship between CDI and ENVCOM for men and women. Table 6 shows these results.

Next, the same multi-group study is conducted to determine in detail where the differences are most pronounced by analysing each relationship across dimensions. The standard values and the statistics for the relationships of the complete model are presented in Table 7 to understand the detected differences.

5. Discussions

Barreto (2010) and Carattoli (2013) proposed research to find the relationship between dynamic capabilities and other

Table 4
Discriminant validity.

	IDC	SOC COM	ENV COM
IDC	0.813 ^a		
SOC COM	0.533	0.795 ^a	
ENV COM	0.284	0.304	0.787 ^a

^a Square root of AVE in the diagonal.

Table 5
Main statistical observation (EQS).

Statistics	Result	Ideal Value
x2/degrees of freedom	2.008	<3
BB-NFI (Bentler – Bonnet normed fit index)	0.814	>0.8
BB-NNFI (Bentler – Bonnet non-normed fit index)	0.921	>0.9
CFI (comparative fit index)	0.907	>0.9
RMSEA (root mean square error of approximation)	0.071	<0.06

*Satorra-Bentler scaled chi-square.

constructs, especially those that are relevant to the company's sustainability (Adner and Helfat, 2003; Augier and Teece, 2009; Schaltegger and Wagner, 2011; Wilden et al., 2013; Lanza and Passarelli, 2014).

This work is aligned with these suggestions because from a methodological point of view, the model seeks to empirically verify the existence of a dynamic relationship between individual skills and greater social and environmental commitment. The model, which is proposed from a wide sample, shows statistically significant results, and all the hypotheses are accepted, not only reinforcing the previous results but also adding some new aspects and opening some development of interest to academic research and policy implementation business training.

The first hypothesis (H1) proposes the existence of a relationship between IDC and dynamic social engagement managers. The results of the structural equation model show a direct and positive relationship between the managers's IDC and his social commitment. This means that, as suggested (Leih et al., 2014), the dynamic capabilities of sensing, seizing and transforming as defined by Teece (2012) are capabilities that help ensure the success and sustainability of the company in general and the social component of sustainability in particular. Therefore, and as a novelty, this paper suggests that the IDC of sensing, seizing and transforming (Teece, 2012) and the commitment to bring value to society (the social dimension of sustainability) help the company improve the welfare of its employees, customers and citizens through an adequate response to their needs.

The second hypothesis (H2) suggests the existence of a direct and positive relationship between the IDC of the manager in his or her commitment to the environment. This second hypothesis is also accepted by strengthening the work of those who conclude that managers should include in their business strategy mechanisms to ensure environmental sustainability (Alonso-Almeida and Bremser, 2014). This paper suggests that individually, managerial capabilities are related to the environmental commitment of the manager so that managers are more sensitive to environmental issues, such as climate change or green products and services, thus helping to boost the deployment of environmental measures in the company

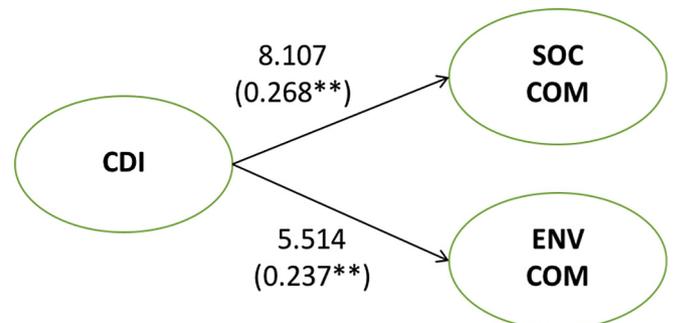


Fig. 2. Standardized solution of the causal model. **Statistically significant at the 0.05 level.

Table 6
Standardized values by sub-sample.

		CDI → SOC COM	CDI → ENV COM
Men	β	0.263	0.211
	Statistic ^a	7.854**	6.365**
Women	β	0.289	0.242
	Statistic ^a	8.119**	6.012**

**Statistically significant at the 0.05 level.

^a Robust method.

with a positive impact on society (Kassinis et al., 2016).

These first two results show that the direct and positive relationship dynamic capabilities of the manager are more significant with regard to social commitment, with an associated value of 8.107, although both are statistically significant in their environmental commitment (5.514). The previous academic literature has analysed the importance of including environmental and social objectives in the manager's objective (Schaltegger and Wagner, 2011; Garriga and Melé, 2013) function. This paper proves that IDC seem to help drive the company's social commitment more than its environmental commitment, although both are relevant. Thus, the IDC are configured as an engine of corporate sustainability. The very definition of IDC as visionary capacities with adaptation and innovation make the perception of sustainability in its social aspect the backbone of any initiative that the company will develop, taking into account environmental concerns (Alonso-Almeida et al., 2015b). Social commitment refers to the social promotion of businesses and their mechanisms to improve the welfare of society, reduce social inequalities, improve quality of life, and promote the common good and human rights (Bansal, 2005; Tata and Prasad, 2015). One possible explanation of why the social impulse is greater than the environmental impulse can be explained by the fact that social measures taken by companies are those that ensure long-term sustainability, whereas environmental measures respond to short-term actions to preserve the environment.

Finally, the third (H3) and fourth (H4) hypotheses analyse whether significant differences are produced by the manager's gender on the impact of IDC of their social and environmental commitment. The results of structural equation modelling show that there are significant differences in both social commitment (a variable value of 8.119 for women and 7.854 for men) and the environment (a variable value of 6.365 for men compared to 6.012 for women). The previous literature reveals two channels of research. The first affirms that social commitment is greater for women, whereas environmental commitment is greater among men than women (Hindle et al., 2009; Kronsell et al., 2014; Santos et al., 2016). The second, following the eco-feminist theories that establish a relationship with women and the environment as a result of their connection with nature, suggests that environmental commitment is higher in women than in men (Alonso-Almeida, 2012, 2013; Fernandez-Feijoo et al., 2014). This research reinforces the results of both streams of previous literature claiming that social commitment is higher in women than in men. One possible explanation for women's greater social commitment is

Table 7
Invariance test for all relationships.

	CDI → SOC COM	CDI → ENV COM
Δx^2	4.148	3.055
$\Delta d.f.$	1	1
p-value	0.029**	0.024**

**Statistically significant at the 0.05 level.

that they possess the common features of being warm, nurturing, interpersonally sensitive, and concerned for others' welfare (Eagly et al., 2003). In addition, networking relationships established with partners, cultural values and the beliefs of women increase their social commitment compared to men (Santos et al., 2016). As a new study, the results support emerging research stating that environmental commitment is also higher in women than in men because women are more environmentally conscious due to their perception of environmental health risks (Park and Zheng, 2012), their sensitivity to the effects of climate change (Ciocirlan and Pettersson, 2012) or their concern regarding attitudes related to the environment (Diamantopoulos et al., 2003). Furthermore, the greater female engagement with social and environmental values could be manifested by a greater concern for creating value for society and improving environmental conditions (Karam and Jamali, 2013).

6. Conclusions and recommendations

The contribution to knowledge in this paper shows that managers' IDC help them to be alert to changes in the market and adapt earlier to those changes. This allows managers who have a greater social and environmental commitment to promote sustainability in the company. From a gender perspective, this research has established that the relationship between IDC with the social commitment of the manager is greater when the company's leader is a woman. Previous research has asserted that women have higher social commitment than men, but this was not clear in the case of the environment, where results were mixed. In addition, no paper was found with the relation between IDC of managers and sustainable engagement depending on gender.

Thus, the findings show the relationship between IDC to the manager's environmental commitment is also higher among women, contrary to previous research (Hindle et al., 2009; Kronsell et al., 2014; Santos et al., 2016). This finding is relevant because it suggests that companies with the proper managerial capabilities could accelerate sustainability development and slow down some worldwide problems such as climate change, pollution and social inequalities.

The results provide a number of conclusions relevant to the business environment, the education sector and academia.

The first conclusion suggests that companies require managers with dynamic capabilities to adapt to new environments of rapid and unpredictable changes. This capability and the ability to quickly adapt to different environments allows businesses to survive and avoid exiting the market. This idea is in line with the theory of evolutionary economics (Alchian, 1950; Nelson and Winter 1982), which states that managers must continually change and adapt to new situations that the market demands. Moreover, these IDC count as part of the managers' strategic thinking and drive in business innovation (Calabrese and Costa, 2015). To adapt to social and environmental changes that the market demands, companies should be able to offer products and services that cause less pollution while contributing to a better quality of life.

The second conclusion proposes the inclusion of more women in top management teams to ensure the company's sustainability (Khan and Vieito, 2013; Kogut et al., 2014). Women's greater social and environmental commitment helps companies provide the more socially and environmentally responsible products and services demanded by new customers, create value for society and improve environmental conditions, as explained in the results section. For this reason, companies must adopt specific programmes or examples of good practices to empower and advance women in companies. Therefore, the present study suggests that

women can contribute by enhancing companies' sustainability, and their placement in top management positions is recommended.

For education, this study highlights several recommendations. First, it emphasizes the need to incorporate programmes for the development of IDC into educational programmes and the learning processes of future business managers. Second, it recommends strengthening the role of women in management teams in companies to ensure the inclusion of social and environmental measures to promote companies' sustainability. Finally, the study recommends updating business plans and training workers to include the development and incorporation of these dynamic skills into the company's daily management at all levels for all employees regardless of gender. The positive effects of these skills are not only greater economic growth but also greater development of adaptability to change and productivity. In addition, this involves determining business objectives and social and environmental considerations, which are increasingly demanded in today's society.

Finally, for academia, several paths of research are proposed. First, the individual capabilities that managers need to adapt to new environmentally related situations need to be further defined, especially those that are relevant to the company's sustainability.

Second, the relationship of IDC and the managers' social and environmental commitment must be strengthened from a gender perspective. More research is required along the lines of gendered IDC and their impact on business sustainability and sustainable development. Specific research to advance in the field of IDC could be the analysis of each IDC impact on business sustainability and the concrete measures adopted by the company's managers regarding those relationships. Furthermore, as IDC are not static and change in order to adapt to new market requirements, it could be interesting to detect managers' new dynamic capabilities that determine the leaders' strategic thinking, as noted by Calabrese and Costa (2015), and analyse their impact on the managers' social and environmental commitment.

Third, the new field of study on Gendered Social Responsibility (GSR) (Larrieta-Rubin de Celis et al., 2015) analyses whether the dynamic capabilities of managers from a gender perspective contribute to establishing measures of social corporate responsibility that promote gender equality. It also analyses the measures of Corporate Social Responsibility that are adopted by enterprises, specifically with regard to women in top management teams, and this field requires more contributions.

Finally, the study has some limitations. First, the sample of MBA students used as managers may not be fully representative of all managers, despite that parallel drawn in this study, as managers of companies must meet the social and environmental criteria required. A second limitation is the geographical area from which the sample was taken. New empirical research is necessary to reaffirm our conclusions.

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References

- Adner, R., Helfat, C.E., 2003. Corporate effects and dynamic managerial capabilities. *Strateg. Manag. J.* 24 (10), 1011–1025. <http://dx.doi.org/10.1002/smj.331>.
- Al-Aali, A., Teece, D.J., 2014. International entrepreneurship and the theory of the (Long-Lived) international firm: a capabilities perspective. *Entrep. Theor. Pract.* 38 (1), 95–116. [10.1111/etap.12077](http://dx.doi.org/10.1111/etap.12077).
- Alchian, A.A., 1950. Uncertainty, evolution, and economic theory. *J. Polit. Econ.* 211–221. <http://dx.doi.org/10.1086/256940>.
- Alimo-Metcalfe, B., 2010. Developments in gender and leadership: introducing a new "inclusive" model. *Gen. Manag. Int. J.* 25 (8), 630–639. <http://dx.doi.org/10.1108/17542411011092291>.
- Alonso-Almeida, M.M., Buil-Fabregà, M., Bagur-Femenias, L., Aznar-Alarcón, J.P., 2017. Shedding light over sustainable development and stakeholders engagement: the role of individual dynamic capabilities. *Sustain. Dev.* <http://dx.doi.org/10.1002/sd.1682>.
- Alonso-Almeida, M.M., Fernández de Navarrete, F.C., Rodríguez-Pomeda, J., 2015a. Corporate social responsibility perception in business students as future managers: a multifactorial analysis. *Bus. Eth. A Eur. Rev.* 24 (1), 1–17. <http://dx.doi.org/10.1111/beer.12060>.
- Alonso-Almeida, M.M., Bagur-Femenias, L., Llach, J., Perramon, J., 2015b. Sustainability in small tourist businesses: the link between initiatives and performance. *Curr. Issues Tour.* 1–20. <http://dx.doi.org/10.1080/13683500.2015.1066764>.
- Alonso-Almeida, M.M., Bremser, K., 2014. Strategic management decisions in power positions to achieve business excellence in small service businesses: does gender matter? *Eur. Acc. Manag. Rev.* 1 (1), 1–24.
- Alonso-Almeida, M.M., 2013. Environmental management in tourism: students' perceptions and managerial practice in restaurants from a gender perspective. *J. Clean. Prod.* 60, 201–207. <http://dx.doi.org/10.1016/j.jclepro.2012.11.034>.
- Alonso-Almeida, M.M., 2012. Water and waste management in the Moroccan tourism industry: the case of three women entrepreneurs. *Women Stud. Int. Forum* 35 (5), 343–353. <http://dx.doi.org/10.1016/j.wsif.2012.06.002>.
- Pergamon.
- Andersen, M., Skjoett-Larsen, T., 2009. Corporate social responsibility in global supply chains. *Suppl. Chain Manag. Int. J.* 14 (2), 75–86. <http://dx.doi.org/10.1108/13598540910941948>.
- Aragon-Correa, J.A., Sharma, S., 2003. A contingent resource-based view of proactive corporate environmental strategy. *Acad. Manag. Rev.* 28 (1), 71–88. <http://dx.doi.org/10.5465/AMR.2003.8925233>.
- Askehave, I., Zethsen, K.K., 2014. Gendered constructions of leadership in Danish job advertisements. *Gen. Work Organ* 21 (6), 531–545. <http://dx.doi.org/10.1111/gwao.12053>.
- Augier, M., Teece, D., 2008. Strategy as evolution with design: the foundations of dynamic capabilities and the role of managers in the economic system. *Organ. Stud.* 29, 1187–1208. <http://dx.doi.org/10.1177/0170840608094776>.
- Augier, M., Teece, D., 2009. Dynamic capabilities and the role of managers in business strategy and economic performance. *Organ. Sci.* 20 (2), 410–421. <http://dx.doi.org/10.1287/orsc.1090.0424>.
- Aygün, Z.K., Arslan, M., Güney, S., 2008. Work values of Turkish and American university students. *J. Bus. Eth.* 80 (2), 205–223. <http://dx.doi.org/10.1007/s10551-007-9413-5>.
- Bagozzi, R.P., Yi, Y., 1988. On the evaluation of structural equations models. *J. Acad. Mark. Sci.* 16, 76–94. <http://dx.doi.org/10.1007/BF02723327>.
- Bansal, P., 2005. Evolving sustainability: a longitudinal study of corporate sustainable development. *Strateg. Manag. J.* 26 (3), 197–218. <http://dx.doi.org/10.1002/smj.441>.
- Barreto, I., 2010. Dynamic capabilities: a review of past research and an agenda for the future. *J. Manag.* 36 (1), 256–280. <http://dx.doi.org/10.1177/0149206309350776>.
- Bernardi, R.A., Threadgill, V.H., 2010. Women directors and corporate social responsibility. *Electron. J. Bus. Eth. Organ. Stud.* 15 (2), 15–21.
- Billing, Y.D., 2011. Are women in management victims of the phantom of the male norm? *Gen. Work Organ* 18 (3), 298–317. <http://dx.doi.org/10.1111/j.1468-0432.2010.00546.x>.
- Bird, B., Brush, C., 2002. A gendered perspective on organizational creation. *Entrep. Theo. Pract.* 26 (3), 41–66.
- Boulouta, I., 2013. Hidden connections: the link between board gender diversity and corporate social performance. *J. Bus. Eth.* 113 (2), 185–197. <http://dx.doi.org/10.1007/s10551-012-1293-7>.
- Buil-Fabrega, M., Aznar, J.P., Galiana, J., Rocafort-Marco, A., 2010. An Explanatory Study of MBA Students with Regards to Sustainability and Ethics Commitment. *Sustainability* 8 (3), 80. <http://dx.doi.org/10.3390/su8030280>.
- Calabrese, A., Costa, R., Rosati, F., 2016. Gender differences in customer expectations and perceptions of corporate social responsibility. *J. Clean. Prod.* 116, 135–149. <http://dx.doi.org/10.1016/j.jclepro.2015.12.100>.
- Calabrese, A., Costa, R., 2015. Strategic thinking and business innovation: abduction as cognitive element of leaders' strategizing. *J. Eng. Technol. Manag.* 38, 24–36. <http://dx.doi.org/10.1016/j.jengtecman.2015.06.001>.
- Carattoli, M., 2013. Capacidades dinámicas: líneas promisorias y desafíos de investigación (Dynamic capabilities: promising lines and research challenges). *Cuad. Adm.* 26 (47), 165–204.
- Carmines, E.G., Zeller, R.A., 1979. *Reliability and Validity Assessment*. Sage, Beverly Hills, CA.
- Chofreh, A.G., Goni, F.A., Shaharoun, A.M., Ismail, S., Klemeš, J.J., 2014. Sustainable enterprise resource planning: imperatives and research directions. *J. Clean. Prod.* 71, 139–147. <http://dx.doi.org/10.1016/j.jclepro.2014.01.010>.
- Ciocirlan, C., Petterson, C., 2012. Does workforce diversity matter in the fight against climate change? An analysis of Fortune 500 companies. *Corp. Soc. Respo. Environ. Manag.* 19 (1), 47–62. <http://dx.doi.org/10.1002/csr.279>.
- Cohen, B., Smith, B., Mitchell, R., 2008. Toward a sustainable conceptualization of dependent variables in entrepreneurship research. *Bus. Strat. Environ.* 17 (2), 107–119. <http://dx.doi.org/10.1002/bse.505>.

- Cohen, P.N., Huffman, M.L., 2007. Working for the woman? Female managers and the gender wage gap. *Am. Sociol. Rev.* 72 (5), 681–704. <http://dx.doi.org/10.1177/000312240707200502>.
- Cohen, B., Winn, M., 2007. Market imperfections, opportunity and sustainable entrepreneurship. *J. Bus. Ventur.* 22, 29–49. <http://dx.doi.org/10.1177/000312240707200502>.
- Diamantopoulos, A., Schlegelmilch, B.B., Sinkovics, R.R., Bohlen, G.M., 2003. Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *J. Bus. Res.* 56, 465–480. [http://dx.doi.org/10.1016/S0148-2963\(01\)00241-7](http://dx.doi.org/10.1016/S0148-2963(01)00241-7).
- Di Stefano, G., Peteraf, M., Verona, G., 2010. Dynamic capabilities deconstructed: a bibliographic investigation into the origins, development, and future directions of the research domain. *Ind. Corp. Change.* <http://dx.doi.org/10.1093/icc/dtq027>.
- Eagly, A.H., Carli, L.L., 2007. *Through the Labyrinth: the Truth about How Women Become Leaders.* Harvard Business Press.
- Eagly, A.H., Johannesen-Schmidt, M.C., Van Engen, M., 2003. Transformational, transactional and laissez-faire leadership styles: a meta-analysis comparing women and men. *Psychol. Bull.* 129, 569–591. <http://dx.doi.org/10.1037/0033-2909.129.4.569>.
- Easterby-Smith, M., Lyles, M.A., Peteraf, M.A., 2009. Dynamic capabilities: current debates and future directions. *Br. J. Manag.* 20 (s1), S1–S8. <http://dx.doi.org/10.1111/j.1467-8551.2008.00609.x>.
- Eccles, R.G., Ioannou, I., Serafeim, G., 2014. The impact of corporate sustainability on organizational processes and performance. *Manag. Sci.* 60 (11), 2835–2857. <http://dx.doi.org/10.1287/mnsc.2014.1984>.
- Edgeman, R., Eskildsen, J., 2014. Modeling and assessing sustainable enterprise excellence. *Bus. Strateg. Environ.* 23 (3), 173–187. <http://dx.doi.org/10.1002/bse.1779>.
- Egri, C.P., Herman, S., 2000. Leadership in the North American environmental sector: values, leadership styles, and contexts of environmental leaders and their organizations. *Acad. Manag. J.* 43 (4), 571–604. <http://dx.doi.org/10.2307/1556356>.
- Eisenhardt, K.M., Martin, J.A., 2000. Dynamic capabilities: what are they? *Strateg. Manag. J.* 21 (10–11), 1105–1121.
- European Commission, 2010. Strategy for equality between women and men 2010–2015. *Publ. Off. Eur. Union* 2011. <http://dx.doi.org/10.2767/71254>.
- Fernández, E., Junquera, B., Ordiz, M., 2003. Organizational culture and human resources in the environmental issue: a review of the literature. *Intern. J. Hum. Resour. Manag.* 14 (4), 634–656. <http://dx.doi.org/10.1080/0958519032000057628>.
- Fernandez-Feijoo, B., Romero, S., Ruiz, S., 2014. Effect of stakeholders' pressure on transparency of sustainability reports within the GRI framework. *J. Bus. Eth.* 122 (1), 53–63. <http://dx.doi.org/10.1007/s10551-013-1748-5>.
- Galbreath, J., 2006. Corporate social responsibility strategy: strategic options, global considerations. *Corp. Gov. Intern. J. Bus. Soc.* 6 (2), 175–187. <http://dx.doi.org/10.1108/14720700610655178>.
- Garriga, E., Melé, D., 2013. Corporate social responsibility theories: mapping the territory. *J. Bus. Eth.* 53 (1–2), 51–71. <http://dx.doi.org/10.1023/B:BUSI.0000039399.90587.34>.
- Godoy, L., Mladinic, A., 2009. Estereotipos y roles de género en la evaluación laboral y personal de hombres y mujeres en cargos de dirección (Stereotypes and gender roles in the labor and personal evaluation of men and women in management positions). *Psyke Santiago* 18 (2), 51–64. <http://dx.doi.org/10.4067/S0718-22282009000200004>.
- Harrison, J.S., St. John, C.H., 1996. Managing and partnering with external stakeholders. *Acad. Manag. Exec.* 10 (2), 46–61. <http://dx.doi.org/10.5465/AME.1996.9606161554>.
- Helfat, C.E., Martin, J.A., 2015. Dynamic managerial capabilities: a perspective on the relationship between managers, creativity, and innovation in organizations. In: *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*, pp. 421–429.
- Helfat, C.E., Finkelstein, S., Mitchell, W., Peteraf, M.A.H., Singh, D.J., Teece, S.G., 2007. *Dynamic Capabilities: Understanding Strategic Change in Organizations* Blackwell Publishing (Malden, MA).
- Helfat, C.E., 1997. Know-how and asset complementarity and dynamic capability accumulation: the case of R&D. *Strateg. Manag. J.* 18 (5), 339–360.
- Hendry, K.P., Kiel, G.C.C., Nicholson, G.J., 2010. How boards strategize: a strategy as practice view. *Long. Range. Plann.* 43, 33–56. <http://dx.doi.org/10.1016/j.lrp.2009.09.005>.
- Hillman, A.J., Keim, G.D., 2001. Shareholder value, stakeholder management, and social issues: what's the bottom line? *Strateg. Manag. J.* 22 (2), 125–139.
- Hindle, K., Klyver, K., Jennings, D.F., 2009. An "informed" Intent Model: Incorporating Human Capital, Social Capital, and Gender Variables into the Theoretical Model of Entrepreneurial Intentions. In *Understanding the Entrepreneurial Mind* (35–50). Springer, New York. http://dx.doi.org/10.1007/978-1-4419-0443-0_3.
- Karam, C.M., Jamali, D., 2013. Gendering CSR in the Arab Middle East: an institutional perspective. *Bus. Eth. Q.* 23 (01), 31–68. <http://dx.doi.org/10.5840/beq20132312>.
- Kassinis, G., Panayiotou, A., Dimou, A., Katsifaraki, G., 2016. Gender and environmental sustainability: a longitudinal analysis. *Corp. Soc. Respon. Environ. Manag.* <http://dx.doi.org/10.1002/csr.1386>.
- Khan, W.A., Vieito, J.P., 2013. CEO gender and firm performance. *J. Econ. Bus.* 67, 55–66. <http://dx.doi.org/10.1016/j.jeconbus.2013.01.003>.
- Kogut, B., Colomer, J., Belinky, M., 2014. Structural equality at the top of the corporation: mandated quotas for women directors. *Strateg. Manag. J.* 35 (6), 891–902. <http://dx.doi.org/10.1002/smj.2123>.
- Kronzell, A., Rosqvist, L.S., Hiselius, L.W., 2014. Sustainability transitions and gender in transport sector decisions. In: 5th International Conference on Women's Issues in Transportation. In: http://wiit-paris2014.sciencesconf.org/conference/wiit-paris2014/pages/Proceedings_The_5th_International_Conference_on_Wiit_1.pdf.
- Kyrö, P., 2001. To grow or not to grow? Entrepreneurship and sustainable development. *Intern. J. Susta. Dev. World Ecol.* 8 (1), 15–28. <http://dx.doi.org/10.1080/13504500109470059>.
- Loiacono, T., Richard, T., Watson, D.L., Goodhue, 2002. WebQual: a measure of website quality. *Mark. Theor. Appl.* 13 (3), 432–438.
- Lanza, A., Passarelli, M., 2014. Technology change and dynamic entrepreneurial capabilities. *J. Small Bus. Manag.* 52 (3), 427–450. <http://dx.doi.org/10.1111/jsbm.12042>.
- Larson, A.L., 2000. Sustainable innovation through an entrepreneurship lens. *Bus. Strateg. Environ.* 9, 304–317. [http://dx.doi.org/10.1002/1099-0836\(200009\)10:9:5<304::AID-BSE255>3.0.CO;2-O](http://dx.doi.org/10.1002/1099-0836(200009)10:9:5<304::AID-BSE255>3.0.CO;2-O).
- Larrieta-Rubín de Celis, I., Velasco-Balmaseda, E., Fernández de Bobadilla, S., Alonso-Almeida, M.M., Intxaurburu-Clemente, G., 2015. Does having women managers lead to increased gender equality practices in corporate social responsibility? *Bus. Eth. A Eur. Rev.* 24 (1), 91–110. <http://dx.doi.org/10.1111/beer.1208>.
- Leih, S., Linden, G., Teece, D., 2014. In: Foss, Nicolai, Saebi, Tina (Eds.), *Business Model Innovation and Organizational Design: a Dynamic Capabilities Perspective. Near-final Version of a Chapter in Business Model Innovation: the Organizational Dimension.* Oxford University Press. Revision date: March 23, 2015.
- McKelvie, A., Davidsson, P., 2009. From resource base to dynamic capabilities: an investigation of new firms. *Br. J. Manag.* 20, S63–S80. <http://dx.doi.org/10.1111/j.1467-8551.2008.00613.x>.
- Murray, G.R., Schmitz, J.D., 2011. Caveman politics: evolutionary leadership preferences and physical stature. *Soc. Sci. Q.* 92 (5), 1215–1235. <http://dx.doi.org/10.1111/j.1540-6237.2011.00815.x>.
- Nelson, R.R., Winter, S.G., 1982. The Schumpeterian tradeoff revisited. *Am. Econ. Rev.* 72 (1), 114–132.
- Park, J.D., Zheng, W., 2012. Human exposure and health effects of inorganic and elemental mercury. *J. Prev. Med. Public Health* 45 (6), 344–352. <http://dx.doi.org/10.3961/jpmph.2012.45.6.344>.
- Petrick, J.A., Quinn, J.F., 2001. Integrity capacity as a strategic asset in achieving organizational excellence. *Meas. Bus. Excell.* 5 (1), 24–31. <http://dx.doi.org/10.1108/13683040110385304>.
- Pitelis, C., Teece, D., 2010. Cross border market co-creation, dynamic capabilities and the entrepreneurial theory of the multinational enterprise. *Ind. Corp. Change* 19 (4), 1247–1270. <http://dx.doi.org/10.1093/icc/dtq030>.
- Portugal, E., Yükl, G., 1994. Perspectives on environmental leadership. *Leadersh. Q.* 5 (3), 271–276. [http://dx.doi.org/10.1016/1048-9843\(94\)90017-5](http://dx.doi.org/10.1016/1048-9843(94)90017-5).
- Rudman, L.A., Glick, P., 2001. Prescriptive gender stereotypes and backlash toward agentic women. *J. Soc. Issues* 57 (4), 743–762. <http://dx.doi.org/10.1111/0022-4537.00239>.
- Salazar, A., Peláez, E., 2011. The organic growth of dynamic capabilities for innovation within resource constrained environments. *Intern. J. Technol. Manag. Sustain. Dev.* 10 (3), 231–250. http://dx.doi.org/10.1386/tmsd.10.3.231_1.
- Santos, F.J., Roomi, M.A., Liñán, F., 2016. About gender differences and the social environment in the development of entrepreneurial intentions. *J. Small Bus. Manag.* 54 (1), 49–66. <http://dx.doi.org/10.1111/jsbm.12129>.
- Schaltegger, S., Wagner, M., 2011. Sustainable entrepreneurship and sustainability innovation: categories and interactions. *Bus. Strateg. Environ.* 20, 222–237. <http://dx.doi.org/10.1002/bse.682>.
- Schermelleh-Engel, K., Moosbrugger, H., Müller, H., 2003. Evaluating the fit of structural equation models: tests of significance and descriptive Goodness-of-Fit measures. *Psychol. Res.* 8 (2), 23–74.
- Smallbone, D., Deakins, D., Battisti, M., Kitching, J., 2012. Small business responses to major economic downturn: empirical perspectives from New Zealand and the United Kingdom. *Intern. Small Bus. J.* 0 (0), 1–24. <http://dx.doi.org/10.1177/0266242612448077>.
- Smith, W.J., Wokutch, R.E., Harrington, K.V., Dennis, B.S., 2001. An examination of the influence of diversity and stakeholder role on corporate social orientation. *Bus. Soc.* 40, 266–294. <http://dx.doi.org/10.1177/000765030104000303>.
- Spanish Statistical Office, 2016. Encuesta de Población Activa 2016. Available at: <http://www.ine.es> (accessed 17 January 2016).
- Strothotte, T.G., Wüstenhagen, R., 2005. Structure of sustainable economic value in social entrepreneurial enterprises. In: Vinig, G.T., Van der Voort, R.C.W. (Eds.), *Res. Technol. Innov. Manag. Policy*, vol. 9. Elsevier, Oxford, pp. 129–140.
- Tata, J., Prasad, S., 2015. National cultural values, sustainability beliefs, and organizational initiatives. *Cross Cult. Manag.* 22 (2), 278–296. <http://dx.doi.org/10.1108/CCM-03-2014-0028>.
- Teece, D.J., 2012. Dynamic capabilities: routines versus entrepreneurial action. *J. Manag. Stud.* 49 (8), 1395–1401. <http://dx.doi.org/10.1111/j.1467-6486.2012.01080.x>.
- Teece, D.J., 2010. Business models, business strategy and innovation. *Long. Range Plan.* 43 (2), 172–194. <http://dx.doi.org/10.1016/j.lrp.2009.07.003>.
- Teece, D.J., 2007. Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strateg. Manag. J.* 28 (13), 1319–1350. <http://dx.doi.org/10.1002/smj.640>.

- Teece, D.J., Pisano, G., Shuen, A., 1997. Dynamic capabilities and strategic management. *Strateg. Manag. J.* 18 (7), 509–533. [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z).
- Van Passel, S., Van Huylenbroeck, G., Lauwers, L., Mathijs, E., 2009. Sustainable value assessment of farms using frontier efficiency benchmarks. *J. Environ. Manag.* 90 (10), 3057–3069. <http://dx.doi.org/10.1016/j.jenvman.2009.04.009>.
- Wilden, R., Gudergan, S.P., Nielsen, B.B., Lings, I., 2013. Dynamic capabilities and performance: strategy, structure and environment. *Long. Range Plan.* 46 (1), 72–96. <http://dx.doi.org/10.1016/j.lrp.2012.12.001>.
- Wynne, C.W., 1998. Issues and opinion on structural equation modelling. *Manag. Inf. Syst. Q.* 22 (1), 1–8.
- Zahra, S., Sapienza, H., Davidsson, P., 2006. Entrepreneurship and dynamic capabilities: a review, model and research agenda. *J. Manag. Stud.* 43 (4), 917–955. <http://dx.doi.org/10.1111/j.1467-6486.2006.00616.x>.
- Zollo, M., Winter, S., 2002. Deliberate learning and the evolution of dynamic capabilities. *Organ. Sci.* 13 (3), 339–351. <http://dx.doi.org/10.1287/orsc.13.3.339.2780>.
- Zott, C., 2003. Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study. *Strateg. Manag. J.* 24 (2), 97–125. <http://dx.doi.org/10.1002/smj.288>.