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**Proceedings of the
4th International Conference on
Gender Research
A Virtual Conference hosted by
University of Aveiro
Portugal
21-22 June 2021**



**Edited by
Professor Elisabeth T. Pereira, Professor Carlos Costa
and Professor Zélia Breda**

A conference managed by ACI, UK

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Proceedings of the

**4th International Conference on
Gender Research
ICGR 2021**

**A Virtual Conference
hosted by**

**University of Aveiro
Portugal**

21-22 June 2021

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E-Book ISBN: 978-1-912764-94-5

E-Book ISSN: 2516-2810

Book version ISBN: 978-1-912764-95-2

Book Version ISSN: 2516-2802

Published by Academic Conferences International Limited

Reading, UK

+44 (0) 118 324 6938

www.academic-conferences.org

info@academic-conferences.org

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Preface

These proceedings represent the work of contributors to the 4th International Conference on Gender Research (ICGR 2021), hosted by University of Aveiro, Portugal on 21-22 June 2021. The Conference Co-Chairs are Professor Elisabeth T. Pereira and Professor Carlos Costa, and the Programme Chair is Professor Zélia Breda, all from University of Aveiro, Portugal.

ICGR is a well-established event on the academic research calendar and now in its 4th year the key aim remains the opportunity for participants to share ideas and meet the people who hold them. The conference was due to be held at The University of Aveiro, Portugal but due to the global Covid-19 pandemic it was moved online to be held as a virtual event. The scope of papers will ensure an interesting two days. The subjects covered illustrate the wide range of topics that fall into this important and ever-growing area of research.

The opening keynote presentation is given by Professor Vanessa Ratten, from La Trobe University, Victoria, Australia on the topic of *Gender, Ageing and Entrepreneurial Ecosystems*. The second day of the conference will open with an address by Professor Erica Wilson, Southern Cross University, NSW, Australia who will talk about *Gender in the time of COVID: Imagining a more Inclusive (Tourism) World*.

With an initial submission of 113 abstracts, after the double blind, peer review process there are 37 Academic research papers, 2 PhD research papers, 1 Masters Research paper and 8 work-in-progress papers published in these Conference Proceedings. These papers represent research from, Austria, Belgium, Canada, Denmark, Iceland, India, Iran, Ireland, Israel, Italy, Mexico, Nigeria, North Cyprus, Poland, Portugal, South Africa, Spain, Turkey, UK, UAE, USA and Vietnam

We hope you enjoy the conference.

Professor Elisabeth T. Pereira, Professor Carlos Costa and Professor Zélia Breda

University of Aveiro
Portugal
June 2021

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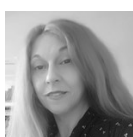
Biographies

Conference and Programme Chairs



Professor Carlos Costa is a full professor and entrepreneur based at the University of Aveiro, Portugal. Carlos started out doing an undergraduate degree in regional and urban planning (University of Aveiro). This was followed by a specialization in tourism, at the master's and doctoral level, at the University of Surrey, in the UK. Carlos is now Head of Department, at DEGEIT – the largest department of the University of Aveiro.

With publications at the highest level, Carlos also enjoys writing down-to-earth articles for the media and for the general public. As the Director of the PhD in Marketing and Strategy, as well as of the PhD in Tourism, both at the University of Aveiro, Carlos is an inspiration to colleagues and students alike – to perform beyond their dreams and achieve new entrepreneurial heights, whatever the domain may be.



Professor Elisabeth T. Pereira holds a PhD and Master in the fields of Economics and Business Management. She is Assistant Professor of Economics at the University of Aveiro (Portugal), and senior researcher in the field of Competitiveness and Innovation at the Research Unit GOVCOPP-University of Aveiro. She is author of several dozen articles, books, chapter of books and communications at international conferences.



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Keynote Speakers



Vanessa Ratten is an Associate Professor of Entrepreneurship and Innovation in the Department of Management, Sport and Tourism, La Trobe Business School at La Trobe University, Melbourne, Australia. She is the Program Director for Entrepreneurship and Innovation courses and teaches Entrepreneurial Business Planning, Managing Innovation in Organisations and Entrepreneurship. She has published numerous books including "Gender and Family Entrepreneurship" (Routledge), "Diversity and Entrepreneurship" (Routledge), "Women Entrepreneurship in Family Business" (Routledge), "Entrepreneurship, Innovation and Smart Cities" (Routledge) and "Frugal Innovation" (Routledge). Her research interests include gender studies, international business, entrepreneurship and innovation.



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Mini Track Chairs

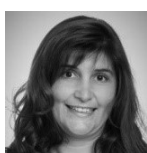


Tindara Addabbo is a full Professor in Economic Policy at the University of Modena and Reggio Emilia. Current main research areas: wage discrimination by gender, well-being, gender budgeting, gender gap in education, gender equity firms certification. Coordinator of Leading Towards Sustainable Gender Equality Plans in research institutions – (H2020-SwafS-2019 –873072). Web site:

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Paola Paoloni is a Full Professor in Accounting at the Sapienza University of Rome, Italy. She teaches Business Economics and Contemporary Strategy Analysis. Her main research interests include general management, financial reporting, female entrepreneurship and intellectual based management. She is an author and co-author of several articles and books on above mentioned research areas. She is foundress and scientific director of “Ipazia,” the scientific observatory on gender research.

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Giulia Ciancimino Graduated in Economics for Development, now collaborating to scientific and research activities as well as communication for NRC's Social Transformation, Evaluation and Methods (MUSA) team. Currently a member of the Observatory for Ongoing Social Changes-COVID-19 (OSC COVID-19).

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Edna Costa is a Post-Doctoral Fellow in the project "*Into the Secret Garden of Portuguese politics*" at GOVCOPP, Aveiro University and a researcher in the project "*The political participation of Portuguese youth*" (CGF). Holding a European PhD (2018) in Political Science from NOVA-FCSH, her work focuses democracy and political representation from a gender perspective.

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Does Gender Diversity Affect Sustainable growth? A European Quantitative Analysis

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DOI: 10.34190/IGR.21.033

Abstract: Continuous growth is the main goal of every company. Today, however, it is more correct to refer to sustainable growth. The United Nations points to sustainability as the only viable way to continue doing business in the coming decades. Every firm must therefore adopt sustainable business strategies in order to remain competitive. What are the drivers that most influence sustainability and growth? Several studies exclusively focus on two sustainable dimensions: economic and environmental. The social dimension is often overlooked. The aim of this study is to fill this gap by analyzing the effect of the presence of women in firms on sustainable growth. The driver for measuring this feature is the composition of the Board of Directors. From a theoretical point of view, there are different theories that can illustrate the relationship between board gender diversity and firm growth. In particular, this study supports the Upper Echelon theory. Following the literature suggesting the positive role of female participation in the decision-making process of firms, in terms of growth and sustainable innovation, we identified three research questions. First, the presence of female directors has a positive impact on the level of firm's growth. Second, sustainable innovation has a positive impact on the level of firm's growth. Third, the presence of female directors contributes positively to the beneficial influence of sustainable innovation on growth. To test the hypotheses, we developed different econometric models. Our sample is made up of data about 274 European companies. Our results suggest that, when sustainable innovation is moderated by the proportion of female directors, the level of a firm's growth increased significantly. The results have several managerial and policy implications. Managers can observe how gender diversity in the board positively impacts firm's growth. Furthermore, our findings suggest that policymakers should consider board gender diversity when designing laws affecting sustainability and should implement specific actions to stimulate such a virtuous relationship

Keywords: Gender Diversity; Sustainable growth; Sustainability; Quantitative analysis; Upper Echelon theory

1. Introduction

The scientific debate regarding sustainability and the economic, environmental and social goals has grown over the last two decades (Babiak and Trendafilova, 2011). Consequently, the managerial practice is expected to be increasingly focused on the concept of sustainability and considers structural issues that are not merely economic (Pastré and Vigier, 2003).

If on the one hand sustainability is a worldwide issue, on the other one continuous growth is the main goal of every company. Even if these two concepts seem unrelated, today we must talk about sustainable growth as sustainability is the only viable way to continue doing business in the coming decades.

For this reason, the aim of this study is to analyse the impact of two drivers of sustainability and their interaction on growth: the presence of women in firms, measured by the composition of the Board of Directors (BoD), and sustainable innovation of firms, measured as the number of sustainable patents held by a firm. This study supports the Upper Echelon theory, that states that organizations' strategic choices and performance levels are partially predicted by managerial background characteristics. To test our hypothesis, we developed different econometric models. The sample is made up of 274 European companies.

The remainder of the paper is organized as follows. Section 2 conceptualizes the relationship between gender in firms, a social sustainable driver, sustainable innovation and firm's growth. Section 3 introduces data, empirical models and results. Finally, Section 4 provides conclusions and limitations of our study.

2. Literature review

2.1 Gender in firms and growth

There are six main theories that can illustrate the relationship between BoD gender diversity and firm performance: Resource Dependency theory, Agency theory, Social Psychological theory, Critical Mass theory,

Human Capital theory and Upper Echelon theory. Resource Dependence theory states that growth in BoD diversity can create strong linkage between firms and its external environment (He and Jiang, 2018; Klettner et al., 2016). Agency theory deals with conflicts of interest between shareholders and corporate managers and how the corporate BoD plays an important role in order to monitor and overcome these conflicts (Fama and Jensen, 1983). In line with the Agency theory perspective, the integration of women on BoD can improve the quality of control activity due to gender differences and in terms of female risk aversion (Post and Byron, 2015). Moreover, according to Social Psychological theory, female directors who hold titles which mean success and reputation are more prone to have significant influence on BoD decisions and firm performance (Brahma, Nwafor and Boateng, 2020). Based on the Critical Mass theory, the mere presence of women on BoD may not be sufficient enough to improve corporate governance (Charles, Redor and Zopounidis, 2015). This may happen because the proportion of socially and culturally diverse people in a group is considered as critical in shaping group dynamics and processes (Kanter, 1977). The Critical Mass theory suggests that when the size of the minority group reaches a certain threshold, it is possible to notice a growing influence exerted by the minority group itself (Konrad, Kramer and Erkut, 2008; Torchia and Calabrò, 2011). Konard et al. (2008), identify a Critical Mass in three or more women on BoD in order to have a positive contribution for good governance, while Joecks et al. (2013) claim for the presence of 30% or more females in the BoD.

The Human Capital theory refers to an individual's education, skills and experience in contributing to productive capabilities that bring benefits to his/her organization (Becker, 1964; Kesner, 1988). The underlying idea of this theory was subsequently reviewed and developed in such a way as to give life to the Upper Echelon theory. This, according to Hambrick and Mason (1984), states that organizations' strategic choices and performance levels are partially predicted by managerial background characteristics (He and Jiang, 2018; Hambrick, 2007). The assumption which characterized this theory is that heterogeneity of decision making, and problem-solving styles generates better decisions (Milliken and Martins, 1996). In line Upper Echelon theory, Glass, Cook and Ingersoll (2016) provide empirical evidence that, as far as it concerned environmental practices, demographic heterogeneity rather than homogeneity could bring to a better business performance. In order to better understand the relationship between BoD and business growth, many researchers have tried to identify which specific female characteristics stimulate this growth. First of all, it's important to highlight that authors such as Kanadli and Pingying (2017) argue that diversity, due to the dissimilar background, leads to more ideas and more perspectives. And new ideas and perspectives can foster creativity and innovation with a consequent positive impact on firm performance (Palmu and Joronen; 2009). Eagly et al., (2003) argue that female style is less hierarchical, more communicative and collaborative when compared to men. Women also stimulate subordinates, who are encouraged to enthusiastically participate in the growth of the company (Palmu and Joronen; 2009; Oakley, 2000). Female leadership can help the company to grow, not only through the creation of a better workplace atmosphere, but also by increasing its potential (Bannò and Nicolardi, 2020).

For all these reasons, we argue that the presence of a female leader promotes business growth (Eagly and Carli, 2003) and supporting the Upper Echelon theory, we expect that:

Hp1. The presence of female directors has a positive impact on the level of firm's growth.

2.2 Sustainable innovation and growth

Firms have reached important levels of economic, legal and ethical social responsibilities (Bellringer et al., 2011) and this may explain why Corporate Social Responsibility has turned into an increasingly debated topic, becoming a key factor in most firms' business plans and agendas (Camilleri, 2015; Kend, 2015). Furthermore, the presence of global environmental problems, such as climate change, has increased the focus on green and sustainable value creation among businesses and led to focus on the question of whether sustainable innovations can simultaneously increase both sustainability, competitiveness and growth of firms (Chu et al., 2018).

The common opinion concerning environmental protection was dominated by the idea that sustainable strategies necessarily increased internal costs but not profits for firms (Dey et al., 2019). For a long-time sustainable innovations have been seen as a kind of innovation that required high initial investments, had long payback time, and produced only limited environmental benefits (Hojnik and Ruzzier, 2016). Several other studies defined sustainable innovation as "the development of new products, processes, services and technologies that contribute to the development and well-being of human needs and institutions while respecting natural resources and regeneration capacities" (Tello and Yoon, 2008; Garcia and Calantone, 2002) Walley and Whitehead (1994) claim that the most common idea of environmental improvements creating win-

win situations for firms is unrealistic due to the high costs, risk, insufficient government support, and regulations (García-Sánchez et al., 2019). However, two decades ago (Porter et al., 1995) and more recently (Boons et al. 2013) scholars have increasingly emphasized the win-win idea, according to which it is possible to improve the environment without a reduction in firm profits. This perspective has been reinforced by recent research which suggests a positive relationship between sustainability innovations and firm's competitiveness (Bacinello et al., 2019). Among others, Dey et al. (2019) argued that this is happening because sustainability is associated with higher profitability, efficiency, and competitiveness (Eurostat, 2020). In line with these studies, there are several reasons why sustainability innovations can increase firm competitiveness: more efficient processes (Chiou et al., 2011), improved product quality and efficiency (Dey et al., 2019), improved managerial processes through the use of assessment methods such as environmental management systems (Hojnik and Ruzzier, 2017), the launch of sustainability products and product differentiation (García-Sánchez et al., 2019). All these aspects can stimulate firms' competitiveness and growth.

Based on these motivations, we present the second hypothesis:

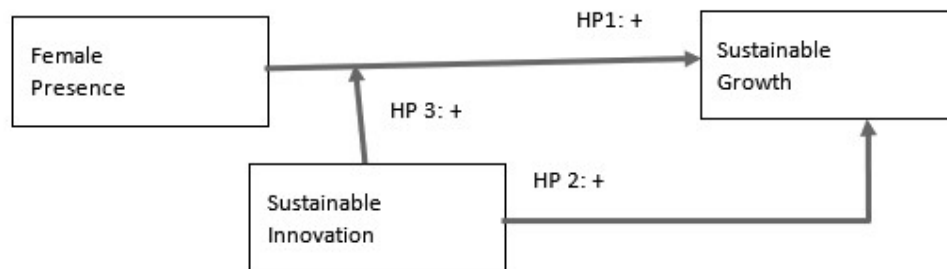
Hp2. Sustainable innovation has a positive impact on the level of firm's growth.

2.3 Sustainable innovation, gender in firms and growth

While women play an increasingly important role in corporate governance (Vinnicombe, 2009), on the other hand sustainability plays an increasingly important role in business. Both elements are positive factors for the firm's growth. Over the years, several theories have studied the relationship between women's participation in decision-making processes and environmental innovation, but no one (to the best of our knowledge) investigates the mutual relationship. Women, considering that environmental innovation constitutes an important way for firms to meet the needs of stakeholders and reduce environmental pollution, would be more prone to carry out environmental innovation. Liao et al (2019), in line with Isidro and Sobral's (2015), show that the presence of women in the BoD was positively correlated with firms' social compliance and sustainability. They found that female directors had a significant role in promoting corporate environmental innovations.

Summarising, given the positive role of female participation in the BoD in terms of growth and sustainable innovation, we suggest that:

Hp3. The presence of female directors contributes positively to the beneficial influence of sustainable innovation on growth.



3. Empirical evidence

3.1 Data, variables and models

Data, updated to the year 2017, came from different sources. First, data about companies (such as name, year of foundation, members of the BoD, number of employees), economic and financial data (such as the value of production) were extracted from the Orbis database of Bureau Van Dijk. This is a database that provides information regarding more than 380 million companies and entities worldwide. Second, the Uncertainty Avoidance Index (UAI) of Hofstede shows how much members of a given national culture feel threatened by uncertainties and ambiguous situations. Firms in nations with a high index level could be more reluctant to innovate. Third, the European Quality of Government Index (EQI) has been extrapolated from the European Commission website, updated to the year 2017. Fourth, we used the PATSTAT Espacenet database of the European Patent Office to measure sustainable innovation. We constructed a patent count variable for each firm (Johnstone et al., 2012).

Therefore, we have developed the following model to test the hypotheses, on a sample of 274 European companies:

$$Growth = f(\alpha + \beta_1(Gender) + \beta_2(Innovation) + \beta_3(Gender) * (Innovation) + \beta_n(Control Variable) + \epsilon)$$

3.1.1 Dependent variables

The literature has been consistent in showing that the presence of women on BoD leads to better performance of companies. There's a positive correlation between improving financial performance and gender diversity (Kassinis et al., 2016). Moreover, environmental innovation can also be seen as an important variable in driving business growth (Chen et al., 2018). In fact, sustainability is interconnected with economic growth, which describes the value creation of products through economies of scale and purpose (Galbreath, 2011). For these reasons, we analyzed the variable *Growth* as a combination and interaction between the presence of women in the BoD and environmental innovation. That means that the more companies innovate in sustainable practices and the more heterogeneous they have the BoD, the more positive the firm's growth will be. We constructed the variable *Growth* as the difference between the production value of companies (€) in 2016 and 2017. This economic indicator has been chosen, as the literature shows that women have a particular influence on the increase in revenues (Lorenzo et al., 2017).

3.1.2 Independent variables

In order to verify what has been discussed in literature about the contribution of the presence of women in firms, we constructed two variables. First, the *Token* variable, a dummy variable taking value 1 if there is at least one woman on the BoD, 0 otherwise. Second, the variable *Gender* was developed, to capture the effect that is described by the Critical Mass theory. The variable *Gender* takes value 1 when there are at least three women in the BoD, 0 otherwise. Based on the existing literature that considers patenting as one of the most used tools by companies in order to protect their innovations, we used a patent count variable as a proxy for measuring innovation (Scherer, 1983). Sustainable innovation (*Innovation*) is measured by the number of Air Pollution patents that were filed in 2017 by the companies. We selected specific IPC classes to target environmental technologies and we decided to focus exclusively on the Air Pollution class. This variable indicates the propensity of companies to innovate in sustainability. Then, we used Hofstede's UAI index and EQI index as institutional environment variables. The *EQI* measures the institutional quality of each European country and is constructed by the European Commission. The *UAI* is an index that takes value from 0 to 100 and captures the national culture of countries taking into account the propensity of its citizens to deal with uncertainties.

We used several control variables: *Firm Size*, that is fundamental for understanding choices related to innovation. This variable in literature has often been measured in terms of production's value or of employees' number. We choose to measure this variable as the logarithm of the number of employees because we constructed the variable *Growth* as the value of production. Another important firm's feature is the age of the firm. *Firm Age* means the experience that firm has in a given sector. The variable is measured as the logarithm of the number of years from the year of foundation. Finally, we built a geolocation variable of firms. The performance of companies, in terms of growth, is also influenced by the firm's region. Therefore, to measure this effect we divided the European regions into four areas (North, South, East, West). We constructed four dummy variables which take on the value 1 if the firm belongs to a given European macro-area, 0 otherwise. Table 1. summarizes what has been described above: variables, definitions and sources.

Table 1: Dependent and independent variables

Variables	Definition	Source
<i>Dependent Variables</i>		
Growth	Difference between production value of the year 2017 and 2016 (€)	ORBIS
<i>Independent Variables</i>		
Token	Dummy variable taking value 1 if there is at least one woman on the BoD, 0 otherwise	ORBIS
Gender	Dummy variable taking value 1 if present at least three women on the BoD, 0 otherwise	ORBIS
Innovation	Number of Air pollution patents filed in the EPO in 2017	Espacenet
<i>Control Variables</i>		
EQI	European Quality of Government Index	European Commission
UAI	Index on the degree of acceptability of uncertainties	Hofstede's website
Firm Age	Logarithm of the number of years since its foundation	ORBIS

Variables	Definition	Source
Firm Size	Logarithm of the number of employees	ORBIS
Country	Dummy that locates businesses geographically (North, South, East, West)	ORBIS

3.2 Results and discussion

Table 2 provides descriptive statistics and correlation among variables. The sample consists of 274 companies. 113 companies have filed at least one sustainable patent. In 64 companies there is only one woman on the BoD, while there are only 40 companies with at least three women on the BoD. Interesting findings emerged from the intersection of these variables. If among the companies without a patent the percentage of companies in which there are at least 3 women on the BoD is 4%, in companies with at least one patent the percentage rises to 30%.

Table 2: Descriptive statistics and correlation analysis

		1	2	3	4	5	6	7	8	9	10	11
1	EQI	1.000										
2	UAI	-0.697	1.000									
3	Innovation	0.293	-0.091	1.000								
4	Token	0.063	-0.209	-0.102	1.000							
5	Gender	0.268	-0.028	0.441	-0.238	1.000						
6	Growth	0.129	0.063	0.250	-0.111	0.461	1.000					
7	Firm size	0.429	-0.106	0.510	-0.099	0.562	0.478	1.000				
8	Firm age	0.229	-0.053	0.304	-0.034	0.362	0.202	0.520	1.000			
9	North	0.504	-0.705	-0.014	0.144	-0.062	-0.076	-0.093	-0.084	1.000		
10	South	-0.887	0.579	-0.307	-0.013	-0.250	-0.131	-0.470	-0.223	-0.405	1.000	
11	West	0.547	-0.061	0.342	-0.063	0.335	0.210	0.561	0.312	-0.355	-0.644	1.000
	Mean	-0.130	64.19	0.950	0.250	0.150	261247	1.930	1.390	0.180	0.420	0.360
	St. Dev.	1.000	20.65	2.260	0.430	0.350	1283710	1.330	0.350	0.390	0.490	0.480
	Max	1.428	99	20	1	1	10548000	5.797	2.238	1	1	1
	Min	-1.150	23	1	0	0	2287950	0	0.060	0	0	0

Table 3 shows the results of our econometric model. *Token* has a positive but not significant effect on growth. Similarly, *Gender* has a significant and positive impact on *Growth*. Therefore, hypothesis 1 is confirmed: the presence of three or more women in managerial positions has a positive impact on firm's growth. *Innovation* has also significant, but negative, effect. This can be explained by the presence of the interaction variable. This result can't confirm hypothesis 2. Finally, the interaction between the *Innovation* and *Gender*, has a significant and positive coefficient. This last result supports hypothesis 3. The interaction shows that if there are three or more women on BoD and if the firm is prone to sustainable innovation in the environmental field, the value of production increases.

Firm size is a significant control variable. Big firms have also high turnover and therefore, an increase or decrease in the number of employees has a predominant influence on the model. A similar consideration can also be made for *EQI*. This variable also has a positive coefficient but is not significant. Instead, *UAI* is significant and has a positive coefficient.

Table 3: Empirical findings

Variables	Coeff	Std.Err.
<i>Independent Variables</i>		
Token	26447.00	161334
Gender	807109.00***	274503
Innovation	-157784.00*	80428
Gender*Innovation	160333.00*	85936
<i>Control Variables</i>		
EQI	96805.00	192504
UAI	10728.00*	5577
Firm Age	-345503.00	221407
Firm Size	458462.00***	78464
Country		
R-squared = 0.318		

Variables	Coeff	Std.Err.
N = 274		
Sign. * 10%; ** 5%; *** 1%		

4. Conclusions

The aim of this paper is to understand the effect of women in important decision-making positions on sustainable growth. We identified in the composition of BoD, variable *Gender*, a key element of the decision-making process. Then, we constructed the variable *Innovation* to measure the sustainable innovation of firms. We developed an econometric model to analyze the impact of these two drivers and their interaction on growth. Our results suggest a positive effect of heterogeneous BoD on sustainable growth. Demographic heterogeneity brings better sustainable performance, supporting the Upper Echelon theory (Glass et al., 2016). *Gender* has positive and significant effect, confirming hypothesis 1: *The presence of female directors has a positive impact on the level of growth*. The interaction between *Gender* and *Innovation* is also significant and positive. This means that the more a company has a diversified BoD and a propensity to innovate in a sustainable environment, the more it grows in terms of production value. This result responds positively to the beneficial influence of the presence of women on sustainable growth and confirms hypothesis 3: *The presence of female directors contributes positively to the beneficial influence of sustainable innovation on growth*. This result indicates that women peculiarities in business context, in terms of leadership style, stimulate sustainable strategies. Finally, hypothesis 2 is not confirmed.

This paper is not without limitations. We need to improve our sample in two ways: first, we have to enlarge the number of firms. Second, we have to add a sector variable in the model, another key feature of firms. Furthermore, we measure a firm's propensity for sustainability as the number of sustainable patents held by a firm. We're conscious that there are several ways for a firm to become sustainable.

However, we believe that the implications of our study are interesting. First, firms must consider the importance of having an heterogeneous BoD to achieve positive growth. Second, policy makers should consider the importance of this social driver when designing law affecting sustainability.

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