



# Factors that influence the role of women in a management position: The case of small and medium-sized Colombian enterprises

*Factores que influyen en la gerencia de las mujeres: el caso de las pequeñas y medianas empresas colombianas*

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Received September 4, 2018; accepted January 22, 2019

Available online January 24, 2019

## Abstract

Gender in organizations is a topic that has disquiet several academics over time. The gap between men and women when occupying managerial positions each time is smaller. However, there are still obstacles for women to occupy this type of positions. Thus, the objective of this research was to identify the factors that influence the probability that a woman occupies managerial positions in the Small and Medium Colombian Companies. To achieve this objective, a quantitative approach was used, where 354 surveys were applied to managers of SMEs. As a result, the years of operation, the board of directors, the board of directors, women, women's participation, primary sector and Open System Performance indicate that, as their values increase, the probability of a woman being a manager increases as well. On the contrary, variables such as exports, performance in human relations and rational decrease the probability that a woman get to occupy managerial positions. These results open the doors to the possibility of improving the conditions of companies to enable women to occupy management positions.

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Peer Review under the responsibility of Universidad Nacional Autónoma de México.

<http://dx.doi.org/10.22201/fca.24488410e.2019.2187>

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*JEL Code:* J16, L20, M10

*Keywords:* manager's gender; SMEs; performance; board of directors

## Resumen

El género en las organizaciones es una temática que ha inquietado a varios académicos a través del tiempo. La brecha entre hombres y mujeres al ocupar cargos directivos cada vez es menor; sin embargo, aún existen obstáculos para que las mujeres ocupen este tipo de cargos. El objetivo de esta investigación fue identificar los factores que influyen en la probabilidad que una mujer ocupe cargos gerenciales en las Pequeñas y Medianas Empresas Colombianas. Para lograr este objetivo se utilizó un enfoque cuantitativo donde se aplicaron 354 encuestas a gerentes de las Pymes. Como resultado se obtiene que los años de funcionamiento, junta directiva, junta directiva mujer, participación mujeres, sector primario y rendimiento en Sistema Abierto indican que, en la medida en que sus valores incrementan, así mismo se eleva la probabilidad de que una mujer sea gerente. Por el contrario, variables como las exportaciones, el rendimiento en relaciones humanas y racional disminuyen la probabilidad de que una mujer llegue a ocupar cargos gerenciales. Estos resultados abren las puertas a la posibilidad de mejorar las condiciones de las empresas para posibilitar que las mujeres ocupen cargos gerenciales.

*Código JEL:* J16, L20, M10

*Palabras clave:* género del gerente; Pymes; rendimiento; junta directiva

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## Introduction

Research on the barriers women face in moving up the organizational ladder and into strategic positions has been a particular focus of interest in gender issues and the “glass ceiling” perspective. In recent years, the U.S. and some European and Asian countries have highlighted studies on promoting women to management positions (Brady, Isaacs, Reeves, Burroway, & Reynolds, 2011; Smith, Smith, & Verner, 2013). Although many women have had access to education, like their male counterparts, and have been active in the workforce, the possibilities of access have not been the same (Haslam & Ryan, 2008). Some authors (Hurley & Choudhary, 2016; Smith et al., 2013) have attributed the scarcity of women in management positions to factors such as the number of children, marital status, and maternity leave. Other authors have gone for characteristics more associated with perceived incompatibilities between women's skills and the leadership requirements of a management position (Cárdenas et al., 2014; Eagly & Carli, 2007; Eagly & Karau, 2002). Hurley and Choudhary (2016) point out that holding a top management position, whether held by a man or a woman, requires a combination of individual and middle-level factors.

Since the 2000s, authors such as Fawcett and Pringle have pointed out that women's incompatibility in management positions and women's scarcity as Chief Executive Officers (CEOs) makes women use both feminine and masculine characteristics to reach these top management positions. For Glass and Cook (2016), women in leadership positions have enormous potential to contribute positively to organizations. Moreover, the representation of women reduces gender segregation in organizations. It is understood from every angle that factors shaping the experience and success of women go beyond the barriers created by the "glass ceiling." The determinants for a woman to occupy a management position are varied. However, although these investigations have been diverse, it has not yet been possible to reduce the gap between men and women in occupying this type of position.

In recent years, the global labor market participation of women has remained stable at 52%. In contrast, global labor force participation rates for men have steadily declined from 81% to 77% (Foro Económico Mundial, 2017). In this regard, and as mentioned in the Centre for Social Development, Humanitarian Affairs, UNICEF, & United Nations Development Fund for Women (2015), the gender gap is narrowing every day. Over time, women have begun to occupy positions traditionally held by men.

According to the World Economic Forum (2017), the difference in participation of men and women globally for 2017 placed Colombia in 36<sup>th</sup> place among 144 countries analyzed against the gender gap. This difference indicates that the country is within a level in which men and women have equal participation in economic, political, educational, and health areas. However, only 11.5% of organizations are headed by women in management positions. However, in the Latin American and mainly Colombian context, the characteristics that explain a woman's probabilities of occupying a management position are scarce. It is known that there are both individual and organizational elements that can affect whether or not a woman occupies a position at this level.

Small and medium-sized enterprises have become a focus of study due to their significant participation in the Latin American context. They play a crucial role in the world economy and even more so in each country's economy (Di Ciano, 2010). Most countries generally have between 50% and 90% of their employees in this group of enterprises; therefore, it is essential to highlight that this type of enterprise is the engine of any economy. A country with more local entrepreneurs will be more prosperous and more equitable. Therefore, it is essential to study them and learn about their behavior and strategies. In accordance with the above, Valencia (2000) points out that small and medium-sized enterprises are considered the most important productive sector in many economies, both in developed and emerging countries. In Colombia's case, 86% of the enterprises (including large, small, and medium-sized) are small and medium-sized (Chamber of Commerce, 2014), which is why this research focuses on this unit of analysis.

This research aims to identify the factors that influence a woman's probability of occupying a management position in small and medium-sized enterprises (SMEs) in Colombia. The Ministry of Commerce, Industry, and Tourism (2012) and the Congress of the Republic of Colombia (2004), through Law 905, decree as SMEs all the small and medium-sized enterprises—units of economic use—formed by natural or legal persons, engaged in business, agricultural, industrial, commercial or service activities, rural or urban, that meet specific established requirements. Small Enterprise: between 11 and 50 employees; total assets greater than 501 and less than 5,001 legal monthly minimum current wages. Medium enterprise: personnel between 51 and 200 workers; total assets between 5,001 and 15,000 legal monthly minimum current wages.

Among the variables that affect SMEs' behavior, age and education level are considered individually. Meanwhile, among the organizational variables are the board of directors, women's participation on the board, women's participation in the number of employees, age of the enterprise, sector, sales, foreign market, and performance.

The first part of this research presents the theoretical review of the concepts and variables addressed. The second part presents the methodology used with the sample, the definition of the variables, and their validity. It also indicates the model used. The third part offers the descriptive and univariate results and indicates the research's main conclusions and whether the hypotheses were accepted.

## **Review of the literature**

### *Gender*

Gender is a concept approached from different points of view and defined in different ways according to the context (social, cultural, political, economic) in which those who construct said concept interact. The origin of the characterization between men and women is a primary fact of symbolic life and communication in society's central axis. The first utility of the concept of gender is to determine that men and women have more differences than similarities, which is how human society, in general, recognized the existence of these two genders (Jayme & Sau, 2004).

The conception of the male and female gender, based on biological, social, and cultural foundations, implies some relevant differences in the corporate world, especially concerning internal communication and leadership. From the biological conception, gender is configured and is born from the chromosomal determination of sex. When studying gender within organizations from this perspective, Powell and Eddleston (2011) clarify that men and women develop and manage their businesses differently. They suggest that the sector of the organization, its size and age, organizational culture,

leadership, level of innovation, and performance are configured as characterization tools that lead to establishing management differences from management positions. Awareness and use of these differences help to establish better policies in the organization, make better decisions, and, based on a structure of gender diversity in senior management, achieve better results in the areas mentioned above. Additionally, better support can be obtained for specific organizations while senior management can exercise better control of the manager (Adams & Ferreira, 2008).

Gender discussions have introduced the concept of the glass ceiling concept (Burin, 2008), which incorporates women into the labor market. The first approach was made in 1987 in the book *Breaking the Glass Ceiling: Can Women Reach the Top of America's Largest Corporations?* In this text, the authors revealed how women's executive environment is different from that of men, as they must face obstacles on the way to reaching top management positions. The glass ceiling is a transparent barrier that prevents them from accessing or ascending through not always visible discrimination mechanisms. Therefore, the glass ceiling is a brake on the professional careers of women, even those with high levels of performance and professional training. (Barnet-Verzat & Wolff, 2008; Freeman, 1990; Meza Martínez, 2018).

### *Gender and academic studies*

Oakley (2000) notes that few women in senior management have experience with various lines of succession. To this end, this author surveyed 461 senior female executives and 325 CEOs of the largest enterprises in the United States. The survey results indicated that these women's academic backgrounds were mainly focused on human resources and public relations. Thus, to become managers and be promoted, they should have a higher education level in these areas. On the other hand, Hurley and Choudhary (2016) and Hodigere and Bilimoria (2015) indicate that each additional year of education reduces the likelihood of having a female CEO. Therefore, having more education will not increase the likelihood of women leading an organization compared to men. For their part, Burgess and Tharenou (2002) state that the analysis of education levels is complex due to the differences in education in the countries. For this reason, the proposal is that:

H1: Women with higher education levels are more likely to be managers in an SME.

### *Gender and age*

Withisuphakorn and Jiraporn (2017) study the gender and age of managers. As a result of this research, the authors find that women take longer to lead an enterprise because they have more obstacles to

advancing their careers. Thus, female managers should be older than their male counterparts; however, the authors conclude that women are younger, although with an average difference of two years at an average age of 50 years (age). Elsaid (2015) and Hodigere and Bilimoria (2015) reach the same conclusion, pointing out that being younger will increase women's probability of occupying a management position. Therefore, the proposal is that:

H2: Being younger will increase the probability of women being a manager in an SME.

### *Gender and age of the enterprise*

Ali and Shabir (2017) point out that female-led-enterprises are generally mature enterprises, i.e., they are more than twenty years old. The authors indicate that, as a woman occupies a management position in the organizations, the enterprise's age also increases. Araújo-Pinzón, Álvarez-Dardet, Ramón-Jerónimo, and Flórez-López (2017) argue that women have a significantly shorter promotion time than their counterparts. This leads to women working in younger enterprises and, at the same time, to the enterprise having less export potential.

For their part, Díaz and Jiménez (2010) find that female-led enterprises face certain structural disadvantages, which also cause them to lead younger enterprises. The disadvantages that these authors point out are focused on the limited availability of human, social, and financial capital. On the other hand, Gupta and Raman (2014) indicate that the enterprise's age is not affected by having a woman leading the enterprise. Therefore, the proposal is that:

H3: SMEs managed by women are younger.

### *Gender, board of directors, and participation of women in the board*

Adams and Ferreira (2009) indicate that enterprises with women in management have larger boards than enterprises led by men. Cook and Glass (2014) point out that women's participation on the board of directors will not increase the likelihood of a woman being appointed as a manager. For their part, Ng and Sears (2017) conducted a study of 278 enterprises analyzing the macro-level organizational determinants of women in corporate management. This research indicates that the presence of female managers is positively associated with the percentage of women on the board of directors. This aspect is also found to be in the research by Smith et al. (2013). Gupta and Raman (2014) and Matsa, Miller, and Bertrand (2011) indicate that after accounting for the influence of the female-friendly environment in which the enterprise operates, there is a positive and significant association between the proportion of women on the board of directors and the probability that the manager is female. Due to the above, the proposal is as follows:

H4: The board of directors is larger when the manager is a woman.

H5: In SMEs managed by women, there is a higher participation of women in the board of directors.

### *Gender and participation of women*

Smith et al. (2013) point out that when the enterprise has a female manager, there are more significant opportunities for women's participation to increase in the organization, especially in middle management positions. Among the authors' arguments are eliminating prejudices against women or better accepting the characteristics of the people who wish to work in the organization and arrive as candidates. They also attribute the changes in the perceptions of men to their having wives and children. Similarly, Matsa et al. (2011) indicate that a female manager can increase the desire to hire women in the organization, thus increasing their participation. From the above, the proposal is that:

H6: The participation of women in SMEs increases when a woman manages the enterprise.

### *Gender and sector*

Kirsch (2017) highlights the importance of recognizing the factors that influence a woman's likelihood of being a manager, including the sector. For Brady et al. (2011), the sector is the most frequently studied enterprise characteristic in analyzing female executives and managers. Within these authors' research, female managers are less likely to be in construction sectors but more likely to be present in the commercial sector. For their part, Matsa, Miller, and Bertrand (2011) indicate that women have specific skills that are more valuable in some environments, such as marketing. García, García Pérez de Lema, and Madrid Guijarro (2012) state that the enterprises managed by women are in the service sector, and this aspect increases the probability that women will occupy a management position. Therefore, the proposal is that:

H7: Women manage enterprises belonging to the tertiary sector.

### *Gender and sales*

The research by Brady et al. (2011) identifies that enterprises with higher sales growth are less likely to have female managers. For their part, Ali and Shabir (2017) report that annual sales growth in female-led enterprises is comparatively higher than in male-led enterprises. Several studies indicate how gender (male

or female) may affect sales levels. In one such study, Hoogendoorn, Hessel, and Mirjam (2013) estimated the impact of women's participation on the performance of business teams. According to the results, teams in which there is an equal proportion of men and women perform better than teams in which one gender is predominant.

On the other hand, Duarte and García (2017) conducted a study to determine whether there are differences in the competitiveness of enterprises managed by men and women, as measured by sales level. The authors concluded that there is no difference between the sales levels of male-led and female-led firms, although many previous studies indicate that female-led firms' performance is lower than that of male-led firms. Similarly, Beldad, Hegner, and Hoppen (2016) studied whether the gender of the sales consultant had a positive influence on customer belief, trust, and purchase intention; according to the results obtained, there are no significant differences according to the gender of the salesperson. Therefore, the proposal is that:

H8: Sales growth in enterprises managed by women is lower.

### *Gender and the foreign market*

Regarding the impact of manager gender and its impact on the firm's export performance, Lee, Paik, and Uygur (2016) and Welch, Welch, and Hewerdine (2008) were able to determine that both large and SME male-owned firms achieve better export performance. The above is due to the proper use of mediating capabilities such as marketing and innovation. Furthermore, these authors provided new perspectives on the influence of gender on exporting and entrepreneurial behavior. They found that female-owned enterprises are less likely to export than those owned by men because this practice is associated with more masculine characteristics. However, those women who succeeded in exporting described it as a life-changing experience that allowed them to grow personally and achieve great results within their enterprise.

García and Moreno (2009) also demonstrated that enterprises managed by women suffer from certain structural disadvantages, such as the low availability of human capital, which creates a particular disadvantage in forays into international markets. On the other hand, Williams (2013) found that female-owned enterprises are smaller and younger, and as business age and size outcomes are important in successfully engaging in international operations, they tend to have more significant difficulties.

H9: In enterprises managed by women, participation in foreign markets is lower than in those managed by men.



## *Gender and performance*

Adams and Ferreira (2009) indicate that enterprises with women in management perform worse in ROA. Haslam and Ryan (2008) point out the “phenomenon whereby women are more likely than men to be appointed to leadership positions associated with a higher risk of failure” (p.2). These authors’ results indicate that selecting a woman over an equally qualified man increases when the organization’s performance declines rather than improves. Among the reasons that these authors highlight is women’s particular ability to handle stressful situations in their leadership position. Therefore, the authors point out that women are preferentially selected for leadership positions when an enterprise is in crisis.

For Adams, Gupta, and Leeth (2009), Elsaid (2015), Acar (2015), Glass and Cook (2016), and Elsaid and Ursel (2017), women in management positions are more willing to take risks than men, which is consistent with the fact that they occupy these positions when the enterprise is in a position of weak financial performance. Similarly, Gupta and Raman (2014) point out that female managers are more likely to be appointed in less profitable enterprises and have higher leverage. Ryan and Haslam (2005) reveal that enterprises prefer women on their boards of directors and in management positions in general during a period of general stock market decline. For the authors, these findings point to an additional hurdle for women to overcome in the workplace.

For their part, Eduardo and Poole (2016) indicate that performance is not a determining factor for a woman to hold a management position. Ali and Shabir (2017) agree with these authors, noting that there is no difference in performance when a man or a woman leads an enterprise. However, they remark that these aspects vary considerably according to the business performance parameters of annual sales growth and capacity utilization.

In the Colombian context, Moreno-Gómez and Calleja-Blanco (2018) analyzed the relationship between the presence of women in corporate positions and the financial performance of the enterprise. They concluded that women occupy management positions in an enterprise to enhance reputation, inspire and improve employee relations, maintain good relations with consumers, and exploit leadership advantages. Therefore, these factors increase the likelihood of the presence of a female manager. From this, the following arises:

H10: As the performance of the organization increases, the likelihood of a female manager decreases.

## Methodology

The methodology of this research is quantitative and explanatory. To study the factors that influence the probability of a woman occupying management positions in companies, a survey was conducted through random probability sampling of small and medium-sized enterprises of all economic sectors in the city of Cali (Colombia) during 2016. The sample includes 354 enterprises randomly selected from a total of 7,068 registered companies. A margin of error of 5% and a confidence level of 95% is used to calculate the sample. Of the total sample, 260 (73.4%) are led by men, and 94 (26.6%) are led by women.

### *Dependent variable*

- Gender of the manager: The term gender means being male or female. For this research, the variable is dichotomous and takes the value of 1 if the manager's position is held by a woman and 0 otherwise.

### *Independent variable*

- Age of the manager: In this research, the manager's age is a continuous variable indicating the manager's number of years.
- Level of education of the manager: a categorical variable that takes the value of 0 for managers with a level of education equal to high school and 1 for managers with a level of education higher than high school
- Age of the enterprise: number of years that the enterprise has been in operation since its founding.
- Proportion of women on the board of directors: percentage of women on the board of directors with respect to the total number of board members
- Participation of women: the proportion of female workers in the enterprise with respect to the total number of employees
- Sales log: represents the natural logarithm of the total sales of the enterprise for the year 2014
- Number of partners: total number of partners in the enterprise
- Foreign market: a categorical variable that is equal to 1 if the enterprise conducts sales abroad and 0 in any other case

- Economic Sector: a categorical variable that takes the value of 0 if the enterprise does not belong to the sector and 1 if it belongs to the sector
- Performance: Performance is measured through four models: Internal Process Model, Open System Model, Rational Model, and Human Relations Model (Quinn & Rohrbaugh, 1983). Indices are constructed from the averages of the values assigned to the survey's twelve questions in the performance section, which take values between 1 and 7. Furthermore, the overall performance index is calculated by averaging the values of the four previous models.

Reliability analysis with Cronbach's alpha was carried out to evaluate the performance concept's reliability through the sub-variables, resulting in 0.90, a favorable result for the instrument. For the four performance models, the following results were obtained in the factor loadings: Internal Processes Model (0.917), Open System Model (0.868), Rational Model (0.866), and Human Relations Model (0.860).

### *Research procedure*

The first stage of the research consisted of a theoretical review of all the concepts to be studied. Within this review, the models of each concept were chosen to be incorporated into the instrument. In the second stage, the survey was designed as a collection technique validated theoretically and by experts in the field. The survey was applied in person by visiting each of the 354 managers in the database. In the third stage, the data were tabulated, and the information was processed using the SPSS program. The model used to process the information was the Logit model, through which the dependent and independent variables are introduced into the software. With the results obtained, the data are analyzed, and the results are cross-checked.

### **Results and discussion**

This section presents the results of the model and the descriptive statistics. First, Table 1 shows the descriptive statistics of the enterprises according to the gender of the manager. The T-test for the difference of means shows that, compared to men, women manage enterprises with more seniority years. When women are managers, there is a higher proportion of women on the board. They have a higher number of female workers, and sales are lower, with lower performance in relations, rational, and processes.

Table 1  
 Descriptive statistics of SMEs according to the gender of the manager

Variables	Mean		Standard Deviation		T statistic	P-value
	Female manager	Male manager	Female manager	Male manager		
Manager age	60.23	61.86	11.61	12.58	-1.095	0.274
Age of the enterprise	41.34	39.02	11.82	8.88	1.983**	0.048
Female board	52.93	30.81	35.16	25.24	6.517*	0.000
Participation of women 2014	33.38	28.88	14.33	14.23	2.606**	0.010
Sales log	20.52	20.93	1.60	1.60	-2.043**	0.042
Number of partners	3.80	3.52	4.00	2.81	0.731	0.465
Relationship performance	6.13	6433.00	1.03	0.75	-2.982*	0.003
Rational performance	6.25	6.46	0.86	0.74	-2.253**	0.025
System performance	6.30	6.38	0.83	0.81	-0.868	0.386
Process performance	6.19	6.41	0.91	0.72	-2.378**	0.018

Note: (\*):  $p < 0.01$ ; (\*\*):  $p < 0.05$ ; (\*\*\*):  $p < 0.1$   
 Source: created by the author

On the other hand, Table 2 presents the characteristics of the manager and the enterprise according to the gender of the manager. This table shows attributes such as education level, the presence of a board of directors, participation in the foreign market, and the sector to which the enterprise belongs. According to the results, there is a higher proportion of women with more than high school education, but this proportion is much lower than that of men. Concerning the board of directors, most of the enterprises managed by women do not have a board of directors and do not participate in the foreign market. Concerning the economic sector, most women are in the tertiary sector, as are the men.

Table 2  
 Manager and enterprise characteristics according to the gender of the manager

Variable	Frequency according to the gender of the manager		Total
	Women	Men	
Education level of the manager			
High School	20	58	78
Beyond high school	74	202	276
Board of Directors			
Yes	5	5	10
No	89	255	344
Foreign Market			
Yes	1	16	17
No	93	244	337
Economic Sector			
Primary	9	14	23
Secondary	15	54	69
Tertiary	70	192	262

Source: created by the author

### *Multivariate analysis*

This research uses a binary Logit regression model to determine the factors that influence the probability that a woman will occupy management positions. The dependent variable used in this model is the categorical binomial variable Gender of the Manager, which takes the value of 1 when the management position is held by a woman and 0 when a man holds it. As control variables, both the manager's and the enterprise's characteristics are included, making it possible to statistically establish the factors that increase or decrease the probability of a woman occupying the management position in the SMEs of the city of Cali.

The estimated Logit model is:

$$\begin{aligned} P(Y = 1|X) &= X\beta + \varepsilon \\ &= \beta_0 + \beta_1\text{Age} + \beta_2\text{Level of education of the Manager} + \beta_3\text{Age of the enterprise} \\ &+ \beta_4\text{Female board} + \beta_5\text{Board of directors} + \beta_6\text{participation of women} \\ &+ \beta_7\text{Sales} + \beta_8\text{Foreign market} + \beta_9\text{Economic sector} + \beta_{10}\text{HRP} + \beta_{11}\text{RP} \\ &+ \beta_{12}\text{OSP} + \beta_{13}\text{IPP} + \varepsilon \end{aligned} \tag{1}$$

Where

Y = 1, if the manager is female, 0 if the manager is male.

HRP = Human Relations Performance.

RP = Rational Performance.

OSP = Open System Performance.

IPP = Internal Process Performance.

To facilitate its interpretation, the estimated coefficients of the Logit model and the Odds ratios are reported. The latter measure the probability of having a female manager (Y=1) relative to the probability of having a male manager in the enterprise (Y=0). Thus, a significant Odds ratio greater (less) than one reflects that this factor is positively (negatively) related to the probability of having a female manager. Table 3 presents the results of the estimation.

Table 3  
 Logit model results

Explanatory variables	Logit Model Coefficient	Odds Ratio
Age of the manager	-0.0246*** (0.0134)	0.9756 *** (0.0126)
Level of education of the manager	0.4613 (0.386)	1.5861 (0.6371)
Age of the enterprise	0.0283 ** (0.0143)	1.0287 *** (0.0150)
Female board	0.0275 * (0.00613)	1.0279* (0.0057)
Board of directors	3.0363 * (0.8208)	20.8288* (17.1436)
Participation of women	0.02817* (0.0103)	1.0285 * (0.0110)
Sales Log	-0.1574 (0.0977)	0.8543*** (0.08100)
Foreign Market	-1.7898** (0.8039)	0.1669 (0.1935)
<b>Sectors</b>		
Primary sector	1.1153 ** (0.5234)	3.0506 ** (1.6719)
Secondary sector	-0.04823 *** (0.3833)	0.9529*** (0.3716)
Human Relations Performance	-0.5289 ** (0.2943)	0.5544 *** (0.1766)
Rational Performance	-0.8581 * (0.2811)	0.4239 * (0.1237)
Open System Performance	0.8236 ** (0.3242)	2.2788** (0.7239)
Internal Process Performance	0.1654 *** (0.3792)	1.1799 *** (0.4499)
Constant	3.0393 (2.5167)	20.89076 (53.7202)
Pseudo R2		0.1998
Wald Chi2		64.08
Prob>chi2		0.0000

Note: standard errors between parentheses  
 (\*): p<0.01;(\*\*):p<0.05;(\*\*\*):p<0.1

The results found show that among the factors that have a positive relationship with the probability that a woman will be the manager of an SME are: an increase in the years of the enterprise; the presence of a board of directors; a higher proportion of women on the board of directors; higher participation of women; belonging to the primary sector of the economy; and presenting yields in an open system and internal processes. It is essential to highlight that the factor that has the most weight in determining the probability of a female manager is the presence of a board of directors. These results align with those found in the literature of different countries (Gupta & Raman, 2014; Matsa et al., 2011; Ng &

Sears, 2017). These results also go hand in hand with the management career paths of women, in that by holding board positions, they promote the inclusion of more women in management positions.

On the other hand, the age of the manager, participation in the foreign market, belonging to the secondary sector, human relations performance, and rational performance harm the probability of a woman being a manager in an organization. In addition to this, it is essential to highlight that, contrary to expectations, education level is not statistically significant despite works such as Hurley and Choudhary (2016) and Hodigere & Bilimoria (2015) highlighting its importance (although these studies are not conducted for the case of SMEs). Therefore, it is recommended that subsequent studies consider the level of education and analyze the areas of knowledge of managers to explain these results in more detail.

The negative effect of the internationalization variable is in line with the results found by Ng and Sears (2017), which argue that enterprises that are foreign or have an international presence prefer to hire male managers, as they consider they obtain better results in negotiations or are bound by selection criteria imposed by other countries.

Similarly, the negative effect found in the secondary sector shows the importance of macroeconomic factors in women's ability to advance in the labor market, since in addition to encountering business barriers, they may encounter sectoral barriers within the country and abroad. The above results suggest addressing the professional development of women not only through a micro approach within the enterprise but also by taking into account the macro aspects of business dynamics (Kirsch, 2017).

Assuming the results presented above and the hypotheses presented at the beginning of the text, it is possible to determine their validity. Hypothesis 1 states that women with higher levels of education are more likely to be managers. However, as mentioned above, the variable is not statistically significant, so in this research, the level of education does not influence the probability of a woman being a manager. On the other hand, according to Hypothesis 2, women's age has a positive relationship with the probability that they become managers. In this case, the manager's age is a significant variable and has a negative impact; hence the hypothesis is rejected, and it is established that the older the woman is, the lower the probability that she becomes a manager.

Regarding the age of the enterprise, Hypothesis 3 proposes that enterprises managed by women are younger. However, the results reveal that the relationship is positive; hence the hypothesis is rejected. In contrast, Hypotheses 4 and 5 evaluate the influence of the presence of a board of directors and its composition on the probability of a woman becoming a manager. According to the coefficients, both variables are statistically significant, so the hypothesis is accepted that in enterprises where there is a board of directors, the probability of the manager being a woman increases. Likewise, in these SMEs, the presence of women on the board of directors is more significant. Accordingly, Hypothesis 6 states that

women have greater participation in enterprises managed by women. The variable is statistically significant and has a positive sign, so it is possible to say that female managers prefer that the labor force in their enterprises be female.

Concerning Hypothesis 7, which proposes that women manage enterprises in the tertiary sector, it is possible to state that there is insufficient evidence to accept or reject this hypothesis since this variable is omitted from the model when estimating it. Hypothesis 8 states that sales growth in enterprises managed by women is lower; this variable is not statistically significant, so it is not possible to determine whether sales growth influences the probability that a woman is a manager. On the other hand, considering Hypothesis 9, it can be affirmed that participation in foreign markets influences the probability that a woman is a manager, and this relationship is negative. Additionally, taking into account the Odds Ratio, it can be determined whether this probability is lower compared to that of men; by analyzing the results, it is possible to conclude that it is correct to state that the probability of participating in foreign markets is lower for women than for men. To conclude, Hypothesis 10 proposes an inverse relationship between the probability of a woman being a manager and performance. The results show that this relationship is correct for Human Relations Performance and Rational Performance. However, this hypothesis is rejected for Open System and Internal Process Performance.

## **Conclusions**

The variables that influence the presence of a woman in a management position are diverse. This research is carried out to establish the variables that affect the probability of a woman occupying a management position in SMEs in Colombia. The results show that the probability of a woman being a manager in an SME is mainly influenced by the age of the manager, the age of the enterprise, the presence of a board of directors, the number of women on the board, the participation of women in productive activities, exports, the sector, and performance. To estimate the influence of each of these variables, a Logit model was used to evaluate the probability of an event occurring. In this case, the dependent variable was the probability of a woman being a manager.

When analyzing in detail each of the variables and the hypotheses proposed at the beginning, it is found that the hypotheses related to the level of education, the age of the manager, and the years of operation of the enterprise are rejected. Conversely, the hypotheses that consider the presence of the board of directors, the number of women on the board of directors, the participation of women, and the exports of the enterprise are accepted. Accordingly, it is possible to assert that if the enterprise has a board of directors and it is made up mostly of women and, additionally, there is greater participation of women in the enterprise, and low participation of the SME in foreign markets, the probability that a woman will



manage it increases. These results lead to the conclusion that for a woman to occupy a management position, it is necessary that she also has greater participation in the workforce and that the previous roles are forgotten.

However, it is important to mention that variables such as sector and sales were not statistically significant: the first variable is only represented in the primary and secondary sectors since, at the time of estimation, the variable that considered the tertiary sector was omitted due to lack of observations. Concerning the second, the result for this research is that the coefficient was not statistically significant, so it is impossible to determine whether sales have a relationship with the probability of a female manager. In fact, women already participate in all sectors of the economy, and they are fully capable of leading them. Likewise, the relationship of sales with women indicates that women are not necessarily linked to strategic positions when the enterprise is in crisis.

It is important to note that four performance models were considered: human relations, rational, internal processes, and open system. Each of these was considered as an independent variable. Therefore, according to the results, rational performance and performance in human relations positively impact the probability of a woman being a manager. In contrast, performance in internal processes and performance in open systems have a negative impact. In other words, when sales, market share, turnover, and absenteeism levels are good, women can more easily occupy management positions. However, when product/service quality, operational processes, customer satisfaction, and enterprise image are not doing well, the likelihood of a woman holding these positions is small. These results can be attributed to the roles women still play in society and the characteristics traditionally attributed to them, such as poor operability, organization, and efficiency, as well as human characteristics such as friendliness and employee relations. For this reason, future research should carry out a detailed analysis of the influence of performance in internal processes and open systems on the probability of being a manager in order to demonstrate gender-specific characteristics.

One of the limitations of this research is the collection of data, since it was carried out with a self-administered questionnaire that the manager answered. Future research can also apply the questionnaire to employees to contrast results. Other research can also include variables related to family and personal conditions to make a more robust model, such as those of Cárdenas et al. (2014), Eagly and Carli (2007), and Eagly and Karau (2002), which include the number of children, family structure, and personality traits of the manager.

All of the above results open the door to gender research. Nevertheless, it is crucial to be cautious when implementing these findings in practice because if they are not treated as they should be, they may further increase gender gaps. However, what this study aims to do on a practical level is to increase the presence of women executives. In the first place, women with extensive experience in the business field

and with mature enterprises have the possibility of occupying management positions. The above depends directly on the elimination of other social obstacles to achieve it. Secondly, increasing women's participation in an enterprise and on the board of directors means that female employees need a woman to represent them. Hence, female managers can play an essential role in this type of leadership. Thirdly, gender diversity is becoming a core issue since, to bring female managers to the executive and board levels, spaces for equal participation for both men and women must be created. Thus, enterprises will have to change these women's career paths and allow them to make up for lost ground with promotions and advancement in general to increase management participation.

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