

Gender Diversity and Venture Capital Sustainability

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Abstract. With the advancement of thought, gender equality has gradually become a hot topic of continued global concern. All walks of life have begun to pursue gender equality and realize full utilization of talents. However, in the male-dominated venture capital industry, judging from the existing literature, there is still a lack of impact on the relationship between gender diversity and venture capital sustainability. This article conducts an in-depth study of the topic of this article through evaluative methods and data analysis. After research, this article finds that the relationship between gender diversity and venture capital sustainability is different in different companies. An increase in the proportion of female executives at Jiangling Motors can increase corporate net profits; an increase in the proportion of female executives at Foton Motor and FAW Motors will reduce corporate net profits; the relationship between the proportion of female executives at Dongfeng Motors and JAC Motors and corporate net profits is not very obvious. This article suggests that companies can increase the proportion of female executives, optimize female leadership, remove invisible barriers in the workplace, and formulate long-term strategic goals.

1 Introduction

A new five-year action plan to accelerate the realization of gender equality was proposed at the Times Equality Forum on July 2, 2021, to offset the sudden new crown epidemic's weakening of women's rights and status, and to help women be themselves and return to work to fully utilize talents from all walks of life. Gender diversity can not only increase innovation power and achieve increased performance, but also enhance cultural inclusiveness and reflect social equity. Due to the characteristics of gender diversity in improving financial performance, more and more industries have begun to pay attention to it, such as the venture capital industry, the new energy industry, the hotel management industry, and so on.

Among them, the venture capital industry plays an important role in promoting the development of the country's financial market, driving innovation and development, and achieving employment and economic growth. The commercial automobile industry, especially the new energy automobile industry, is one of the hot topics at the moment, and the development of such enterprises has also attracted much attention. Although there are many studies on venture capital, gender diversity, and the new energy vehicle industry, there

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are few studies that combine them to study the impact of gender diversity on company performance in the commercial vehicle industry.

Therefore, this article will study the relationship between gender diversity and sustainability in the venture capital industry in the commercial automobile industry, in the hope of promoting the sustainable development of the commercial automobile industry.

2 Literature review

2.1 Upper management theory

Senior managers are a group of people who have full control and absolute say in the development direction of the enterprise, so the decisions made by senior managers are crucial to the development of the enterprise, and the decisions made by senior managers are reflected in their own personality characteristics, educational background, personal growth experience, etc. People with military service experience are more likely to become CEOs. This is because the military will cultivate soldiers' absolute obedience to superiors, a stronger sense of morality, and the ability to remain calm in critical moments, so that they will not excessively use leverage, will not participate in fraudulent activities, and will perform better when the industry is in trouble [1]. Therefore, people with military experience are more likely to become executives. In addition, the educational background of senior executives will also affect decision-making. For example, some people found that executives with overseas backgrounds in private enterprises are more likely to make decisions on foreign investment [2]. Executives with overseas work experience can significantly increase the possibility of companies making foreign direct investments, while executives with overseas study experience have a low correlation with companies' decisions on foreign direct investment [2]. At the same time, there is a negative correlation among state-owned enterprises.

2.2 Gender diversity theory

In the past, the solidification of gender roles led to the formation of stereotypes in people's shallow consciousness. Nowadays, research has found that some physiological differences between men and women result in differences in thinking, emotion, and decision-making styles that will make men and women have their own areas of expertise. As gender stereotypes research, people found that men have similar risk preference indexes in implicit and non-stereotyping situations, while in the case of explicit stereotypes, men are forced by greater pressure from society to conform to stereotypes and choose to cater to them, resulting in a higher risk preference index [3]. As society gradually opens up, women's test results are exactly the opposite. In the real world, female directors often choose to change their personal behaviour in order to integrate into the male team, so that they show male and female characteristics consistent with the director's role [4].

2.3 The connotation of sustainability in venture capital

Venture capital sustainability refers to the positive impact of investment's long-term value creation on the environment, society, and economy. Because venture capital funds usually have a long investment lock-in period and protect the interests of investors through continuous monitoring and contract mechanisms, they are considered to be consistent with sustainable investment [5]. Venture capital is applied to green technologies and improves efficiency to meet environmental standards through Jiang Investment Fund, playing a

positive role in promoting innovation [6]. At the same time, venture capital is one of the important factors in promoting the sustainable development goals, promoting low-carbon and more inclusive economic transformation by investing in projects with positive environmental or social returns [7].

2.4 The impact of gender diversity on venture capital

2.4.1 Positive impact

According to other studies, men will receive more financing because they have more self-confidence than women. However, after analyzing the data, it was found that the success rate of women's entrepreneurial proposals is actually higher than men. Meanwhile, the capabilities of gender-diverse teams are higher than those of gender-based teams in terms of innovation and performance capabilities [8]. People found that female directors can significantly enhance the legitimacy and credibility of the board of directors by demonstrating their abilities, benevolence and high ethics, thereby enhancing shareholders' trust in the company [9].

2.4.2 Negative impact

Some people mentioned that venture capital is mainly dominated by men [10]. In order to weaken the threat brought by the increase in the number of women, they are more inclined to invest in men's companies. Women are in a submissive position. In order to obtain resources and recognition, they are more inclined to adopt the suggestions of male investors, resulting in gender diversity actually not playing a big role [10]. People used semi-structured interviews and searched relevant literature [11]. It was found that venture investors are more inclined to seek investment opportunities from around them, resulting in investment preferences in investment decisions, and are more likely to prefer male entrepreneurs, leading to a greater gender imbalance in the male-dominated venture capital industry, and leading to obstacles in exploring the impact of gender diversity on venture capital decision-making [11]. Even if women successfully join the board of directors, it is not that the addition of women will increase performance, but the subconscious pursuit of diversity by the company or the pressure from external gender equality. As the research results show, when female directors leave, the possibility of adding female directors will increase significantly [12].

3 Data analysis

This article will use multiple regression analysis to study the impact of the gender ratio of senior management on company performance. It is hoped that this method can be used to study the relationship between the proportion of women in each management level and company performance, and provide targeted suggestions for companies to promote the development of the commercial vehicle industry.

3.1 Selection of target company

Nowadays, there are many commercial vehicle companies in China. In order to select representative companies, this article consulted the China Youth Automotive Channel and found the top ten commercial vehicle companies in sales (as shown in Table 1), and finally

selected Foton Motor, Dongfeng Motor, FAW Jiefang, JAC Motors, and Jiangling Motors as the research objects.

Table 1. Top ten companies in commercial vehicle sales in 2024

rank	company	volume(unit:10,000vehicles)	market share
1	Foton Motor	61.16	15.79%
2	Dongfeng Motor	38.54	9.95%
3	Chongqing Chang'an	34.30	8.86%
4	SINOTRUK	34.27	8.85%
5	FAW Jiefang	25.58	6.61%
6	Jianghuai Automobile	23.05	5.95%
7	Jiangling Motors	22.17	5.72%
8	Shanghai GM Wuling	21.71	5.49%
9	Great Wall Motors	17.71	4.57%
10	Shaanxi Automobile Group	16.71	4.32%

3.2 Variable selection

In order to further verify the relationship between senior gender diversity and company net profit. This article uses the company's annual net profit as the dependent variable of the study; the independent variables are the proportion of female directors, female supervisors, and female senior managers in the same position in the company, the total number of employees in the company, the company's annual operating income, the company's R&D investment this year, and China's GDP value that year (as shown in Table 2):

Table 2. Selection and introduction of each variable

Variable name	Symbol	Variable description
Net profit	Y	Measure corporate financial performance
Proportion of women among directors	X1	Measuring the gender diversity of the board of directors team
Proportion of women among supervisors	X2	Measuring the gender diversity of the supervisory team
Proportion of women among senior managers	X3	Measuring the gender diversity of top management teams
Total number of active employees	X4	Measuring business size
Operating income	X5	Measure the core business capabilities of the enterprise
R&D investment	X6	Reflects the importance the company attaches to innovation
GDP that year	X7	Reflects the macroeconomic scale of the year

4 Regression result analysis

For the above-selected companies, this article obtained the annual data of each variable by querying their financial reports from 2001 to 2023, and used SPSS software to perform

regression analysis on the variables of each car company, and finally obtained the following results.

Table 3 below shows the multiple linear regression analysis results of Jianghuai Automobile Company. The proportion of female directors ($P>0.05$), the proportion of female supervisors ($P>0.05$), and the proportion of female senior managers ($P>0.05$) all have significant effects at the 10% level.

Table 3. Regression analysis results of JAC Motors

Model	B	S.D.	t	P	Significance
(Constant)	5.180	12.684	.404	.692	*
X1	-50.751	24.923	-2.036	.060	**
X2	-23.890	11.848	-2.016	.062	**
X3	10.833	17.709	.612	.550	*
X4	.001	.001	.757	.461	*
X5	-.003	-.510	-.064	.950	*
X6	-.554	.441	-1.256	.228	*
X7	.008	.005	1.531	.147	*

Note: *: $P>0.05$; **: $0.01<P<0.05$; ***: $P<0.01$

Table 4 below shows the multiple linear regression analysis results of Jiangling Motors. The coefficient of the proportion of female directors is 36.695 ($P<0.05$), which means that the result is significant at the 5% level. For every 1% increase in the proportion of female directors, the net profit increases by 40 million yuan; the coefficient of the proportion of female supervisors is 34,808 ($P<0.01$), which means that the result is significant at the 1% level. For every 1% increase in the proportion of female supervisors, the net profit increases by 30 million yuan. The proportion of female senior managers is -11.842 ($P>0.05$), indicating that the result is significant at the 10% level.

Table 4. Regression analysis results of Jiangling Motors

Model	B	S.D.	t	P	Significance
(Constant)	3.041	4.395	.692	.500	*
X1	36.695	17.108	2.145	.049	**
X2	34.808	9.244	3.766	.002	***
X3	-11.842	12.610	-.939	.363	*
X4	.001	.000	1.439	.171	*
X5	-.018	.027	-.659	.520	*
X6	-.758	.560	-1.355	.159	*
X7	.007	.003	2.058	.057	*

Note: *: $P>0.05$; **: $0.01<P<0.05$; ***: $P<0.01$

Table 5 below shows the results of the multiple linear regression analysis of Foton Motor Company. The coefficient of the proportion of female directors is -41.193 ($P>0.05$), indicating that the result is at the 10% level; the coefficient of the proportion of female supervisors is 72.249 ($P>0.05$), indicating that the result is significant at the 10% level; the coefficient of the proportion of female senior managers is -355.651 ($P<0.05$), indicating that the result is significant at the 5% level. Female senior managers for every 1% increase in personnel, net profit decreases by 400 million yuan.

Table 5. Regression analysis results of Foton Motor

Model	B	S.D.	t	P	Significance
(Constant)	-11.123	18.027	-.617	.547	*
X1	-41.193	93.737	-.439	.667	*
X2	72.249	68.150	1.060	.307	*
X3	-355.651	145.965	-2.437	.029	**
X4	.000	.001	-.260	.798	*
X5	.045	.051	.883	.392	*
X6	1.656	1.648	1.005	.332	*
X7	-.001	.015	-.034	.973	*

Note: *: $P>0.05$; **: $0.01<P<0.05$; ***: $P<0.01$

Table 6. Regression analysis results of FAW Automobile

Model	B	S.D.	t	P	Significance
(Constant)	-23.177	6.370	-3.638	.002	***
X1	-56.263	13.600	-4.137	<.001	***
X2	29.971	16.897	1.774	.096	*
X3	.271	.617	.438	.667	*
X4	.002	.001	1.891	.078	*
X5	.076	.011	6.699	<.001	***
X6	-1.744	.603	-2.891	.011	**
X7	.000	.005	.078	.939	*

Note: *: $P>0.05$; **: $0.01<P<0.05$; ***: $P<0.01$

Table 6 shows the multiple linear regression analysis results of FAW Automobile Company. The coefficient of the proportion of female directors is -56.263 ($P<0.05$), which means that the result is significant at the 5% level. For every 1% increase in the proportion of female directors, the net profit decreases by 60 million yuan; the coefficient of the proportion of female supervisors is 29.971 ($P>0.05$), indicating that the result is significant at the 10% level; the proportion of female senior managers is 0.271 ($P>0.05$), indicating that the results are significant at the 10% level.

Table 7. Regression analysis results of Dongfeng Motor

Model	B	S.D.	t	P	Significance
(Constant)	.292	.443	.659	.519	*
X1	-	-	-	-	-
X2	.887	1.106	.802	.434	*
X3	-.629	.700	-.898	.382	*
X4	0.000	.000	.205	.840	*
X5	.015	.026	.584	.568	*
X6	-.194	.412	-.461	.651	*
X7	0.000	.000	-.019	.985	*

Note: *: $P>0.05$; **: $0.01<P<0.05$; ***: $P<0.01$

Table 7 shows the multiple linear regression analysis results of Dongfeng Motor Company. Because the company's financial report shows that the proportion of female directors is 0, this variable cannot be analyzed. The proportion of female directors ($P>0.05$), the proportion of female supervisors ($P>0.05$), and the proportion of female senior managers ($P>0.05$) all have significant effects at the 10% level.

In summary, analyzing the available data shows that the relationship between gender diversity and net profit shows different relationships in different companies. But there is a negative trend in most companies.

5 Suggestion

5.1 Increase the proportion of women in senior positions

The company's first priority is to make a clear plan to increase gender diversity and recruit a certain number of outstanding female talents within a specific period of time; add more female recruiters during recruitment to ensure fairness and justice in recruitment, or ensure that the candidate list has a certain proportion of women to avoid discrimination.

5.2 Focus on female leadership

Another observation shows that women will have more empathy, empathy, and stronger team coordination skills in the workplace, so companies should make full use of these qualities. Let women participate more in management and decision-making, and vigorously promote women's voice.

In this study, compared with the other four automobile companies, Jiangling Motors has the largest proportion of female executives, and even more than half of the female executives in more than half of the study range. At the same time, its net profit and net profit growth rate are relatively the best. However, in the past ten years, Jiangling Motors' net profit has shown a downward trend.

5.3 Remove invisible barriers in the workplace

Although China strives to achieve gender equality, women are still rarely seen in many female-dominated industries, such as the financial industry. Companies should provide certain training courses and ongoing assistance to eliminate gender bias, share corporate resources across the entire platform, and create a fair working environment. Provide vacation arrangements or telecommuting systems for women during special periods.

For companies with a high proportion of female executives but low net profits, like Jianghuai Automobile Company. These companies may need to consider optimizing the roles of female executives, clarifying their positions and goals, knowing whether they encounter invisible obstacles, providing support and training, and improving the working environment.

5.4 Establish long-term strategic goals

Enterprises should regard gender diversity strategy as a long-term strategic goal, incorporate it into assessment indicators, conduct regular evaluations, and make timely strategic adjustments; regularly publish relevant reports and conduct comparative analysis with the entire industry.

6 Conclusion

Through the analysis of existing literature and sample data analysis, this article found that it is affected by factors such as homogeneous preference theory, gender role theory, role consistency theory, and found that in different companies, gender diversity has different impacts on the sustainability of venture capital.

Because the literature on venture capital sustainability is limited, this article cannot discuss the relationship in depth. Few existing studies have studied the situation in East Asia, and most of them have studied the European region. This study only studies the data of five automobile companies over a period of more than 20 years, which has the impact of a short

research interval, a single research industry, and a small amount of research data. At the same time, there will also be certain errors in data measurement, so this study cannot be applied to the entire real environment.

Future research can conduct in-depth analysis of gender diversity beyond binary gender, such as how matching, gender attributes, and other intrinsic factors affect venture capital performance, and thus venture capital sustainability. At the same time, research and analyze enterprise data from other countries and industries, and conduct multiple analyzes to increase universality and reduce error values.

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