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Article

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MANAGEMENT | RESEARCH ARTICLE

The influence of women's leadership on corporate sustainability in Indonesia

Nina Kurnia Dewi¹, Arif Imam Suroso^{1*}, Idqan Fahmi¹ and Rizal Syarief¹

Abstract: This article examined the influence of women's leadership on corporate sustainability by mediating business competence and organizational competence. The research method was quantitative based on positivism and hypothesis testing, combining WarpPLS and the PLS-SEM technique for multivariate analysis. The research was conducted in Indonesian State-Owned Enterprises (SOEs) using a survey, namely an online census of all female leaders at the board of directors and directors' level minus one (BoD-1) with a response



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PUBLIC INTEREST STATEMENT

Women's leadership is not just a gender issue, but it is a business issue. The increasing number of women leaders in business organisations, encouraged research on women's leadership in the corporation, moreover, when it connected with the sustainability of the company. This study that involved women leaders of State-Owned Enterprises in Indonesia found that there was an influence between visionary and organic women's leadership on corporate sustainability. However, there were interesting things from this research, namely that the influence of women's leadership was only significant if it was driven by business competence in women leaders. These findings could serve as a reference for companies to improve women's leadership development through increasing business and organizational competencies, so that companies would continue to be sustainable.

rate of 73%. The characteristics of women's leadership in Indonesian SOEs tended to be visionary-type leadership compared to organic-type leadership. They were very prominent as crucial players in the organization, built a strong relationship between the leaders and staff, and could make decisions by centralizing decision-making on the leaders. The investigation's findings using the Structural Equation Model (SEM) revealed that organic leadership was significant for corporate sustainability, while visionary leadership was not significant. Business competence had a full mediation role in the influence of visionary leadership on corporate sustainability. In contrast, organizational competence only partially mediated the influence of organic leadership on corporate sustainability.

Subjects: Asian Studies; Economics; Business, Management and Accounting;

Keywords: women's leadership; business competence; organizational competence; corporate sustainability

1. Introduction

In the aftermath of the COVID-19 pandemic, which left major changes in society and the need for economic revival, companies needed to pay serious attention to the triple bottom line/TBL theory (Elkington, 2004). The theory stated that corporate sustainability was determined by three TBL components, namely people, profit, and planet, which were interrelated and could not be separated in their management, either directly or indirectly. Profit is inextricably linked to the presence of the people who work, both employees and leaders at all levels of the organization, for businesses, including those owned by the state, or State-Owned Enterprises.

More significant roles and influence in managing the company were determined by the leaders, especially the top leaders such as company directors (Franco & Piceti, 2020; Wahyudi et al., 2021) towards corporate sustainability and performance (Piwowar-Sulej & Iqbal, 2022; Shahzad et al., 2022). Further, there was still little empirical data on how women contribute to the sustainability of the company, despite the importance of leadership in the organization and business and the growing number of studies on women as leaders of sustainable development (Pierli et al., 2022; Shinbrot et al., 2019).

This study aimed to examine the influence of women's leadership on corporate sustainability. To determine women's leadership and its impacts, this study also used business and organizational competency elements and their influence on a company's sustainability. The fundamental concept of this research was based on a literature review on women's leadership. It filled the gap in the study on the influence of women's leadership on corporate sustainability by researching women leaders in Indonesian SOEs.

Women demonstrated their capacity to handle the issues surrounding themselves successfully due to environmental changes and the dynamics of society (Shahzad et al., 2022). To underline the participation of women in many sectors of the community, especially from a social and economic perspective, studies should be conducted to provide empirical evidence for this purpose (Pierli et al., 2022). Further, to prioritize the development of women's leadership and empowerment in society, governments and some relevant parties may play related roles. Similar to the purpose, the Indonesian Government, especially through the Ministry of SOEs, made some intervention by targeting the number of women leaders in SOEs to be 25% in 2024 (MSOEs Annual Report 2021). This policy was not only aimed at increasing the number of women directors in SOEs but also improving the performance and sustainability of the company.

To the extent possible, the study was conducted using a quantitative methodology of research, using a survey or census of all women leaders in Indonesian SOEs. The result of this study provided a contribution to women's leadership development programs to increase the leadership capabilities of women leaders. This article was structured by providing a literature review, conducting hypothesis research, delivering results, and discussing the current literature and studies to conclude and offer some recommendations for practical implication.

2. Literature review

2.1. Women's leadership

Several studies have shown that companies with gender diversity in the top leadership tended to perform better financially and had greater long-term sustainability than those dominated by men (Catalyst, 2020). In terms of women's leadership, according to McKinsey's (2018) research, if women were involved in corporate leadership, Indonesia could add \$135 billion per year to GDP (or a 9% increase in total business turnover) by 2025.

Likewise, there had been numerous studies looking at the components of corporate sustainability, namely financial performance and non-financial performance (Franco & Piceti, 2020; Jing, 2009; Jing & Avery, 2016), as well as leadership as an element that determined corporate sustainability (Avery & Bergsteiner, 2010, 2011; Pierli et al., 2022; Shinbrot et al., 2019). Apart from financial performance, corporate sustainability was demonstrated by social, environmental, and governance performance (Al Amosh et al., 2023; Graham, 2019; Hadad & Maftuchah, 2015). A meta-analysis carried out by Hoobler et al. (2018) described how the representation of women in top management was related to a company's performance, especially sales and innovation performance.

2.2. Leadership and corporate sustainability

Corporate sustainability was also seen as a continuous process for managing company performance both financially and non-financially (Kantabutra, 2006; Piwowar-Sulej & Iqbal, 2022; Shahzad et al., 2022; Wu et al., 2013). This perspective was the main view in corporate sustainability, in line with the triple bottom-line (TBL) theory, namely people, profit, and planet (Elkington, 2004). This was used as a framework and became the main theory in the construction of the research models on how top corporate leaders manage financial, social, and environmental synergies to sustain the life and sustainability of the company.

Based on the thoughts above, Upper Echelons Theory (UET) (Hambrick, 2007; Jahanshahi et al., 2018) was used as middle-range theory to develop research models, namely how upper leadership interpreted strategic conditions and situations and determined strategic choices and action plans in managing synergy, as well as corporate and social resource management to achieve corporate sustainability. Top leaders analyze internal and external conditions and situations, interpret them, and then choose actions based on their characteristics to achieve corporate performance and sustainability.

In many studies, women's leadership has been linked to company performance such as organizational effectiveness, social and environmental responsibility, and corporate sustainability (Harris, 2019; Pierli et al., 2022; Rao & Tilt, 2016; Shaukat et al., 2016). There have been several studies conducted to look at the link between women's leadership and corporate effectiveness. Moreno-Gómez et al. (2018) and Piwowar-Sulej and Iqbal (2022) reported that gender diversity was positively related to business performance through the Return on Assets (ROA) parameter and that women's leadership influenced the Return on Equity (ROE). Women's leadership had a positive impact on company performance, credit rating, and company risk (Zhou, 2020; Zulvina et al., 2021) and had a positive effect through investment and effective social engagement and reporting (Arraissi et al., 2016; El Khatib & Joy, 2020).

In the context of business organizations, leadership theory from Avery (2004, 2005) and Boukamcha (2019) provided the concept of leadership as a paradigm consisting of classical, transactional, visionary, and organic leadership. This leadership paradigm had been put forward in several scientific journals, including research reports from Avery (2004, 2005, 2011), Avery and Bergsteiner (2010, 2011), Jing and Avery (2016) and Jing et al. (2020). In a meta-analysis study, Gardner et al. (2010) and Karwan et al. (2021) testified that the concepts of visionary and organic leadership were seen as more strategic leadership concepts and continued to emerge in practice (emerging leadership) as business developed. Both types of visionary and organic leadership were more conceptual in relation to corporate performance and sustainability.

2.3. Business competency and leadership

Knowledge, skills, and attitudes are included in competencies (Hanafi & Ibrahim, 2018). Business knowledge, skills, and work attitudes that drive the company's business were business competencies that must be possessed by the company's human resources, especially the corporate leaders (Martini et al., 2020). Katsaros (2022) provided perspectives on the importance of business competency factors in leadership and company performance. Similarly, the research results of Kurdi et al. (2020), which conveyed ethical leadership and competitive intensity as modes of moderation of customer orientation on company performance, provided empirical evidence that humane leadership and moderating leadership helped companies make better use of customer orientation to improve performance, especially in less competitive environments.

The importance of mediators of business competency in leadership and improving company performance was reinforced by Mu et al. (2018), who reported that companies that were more outside-in marketing devoted resources to developing leadership skills and nurturing proactive employees for company performance.

2.4. Research framework and hypothesis

The scheme in the Upper Echelons Theory (Hambrick, 2007; Jahanshahi et al., 2018) perspective demonstrated that top management characteristics determined strategic choices to achieve company performance, namely profitability and growth. The characteristics in question were based on values (psychologically cognitive based values) and observable factors such as age, functional and career experience, education and socio-economic history, financial position, and group characteristics. The characteristics of the top leaders then determined the sustainability of the company.

In the corporate context, agency theory underlined the relationship between company leaders or directors and all stakeholders. By paying attention to the leader as an important factor that influenced the running of the company, the research framework was based on theory and empirical studies on existing research, namely the leadership paradigm. The prominent paradigms were used, namely visionary leadership and organic leadership. The hypothesis of the study was then presented in the figure 1.

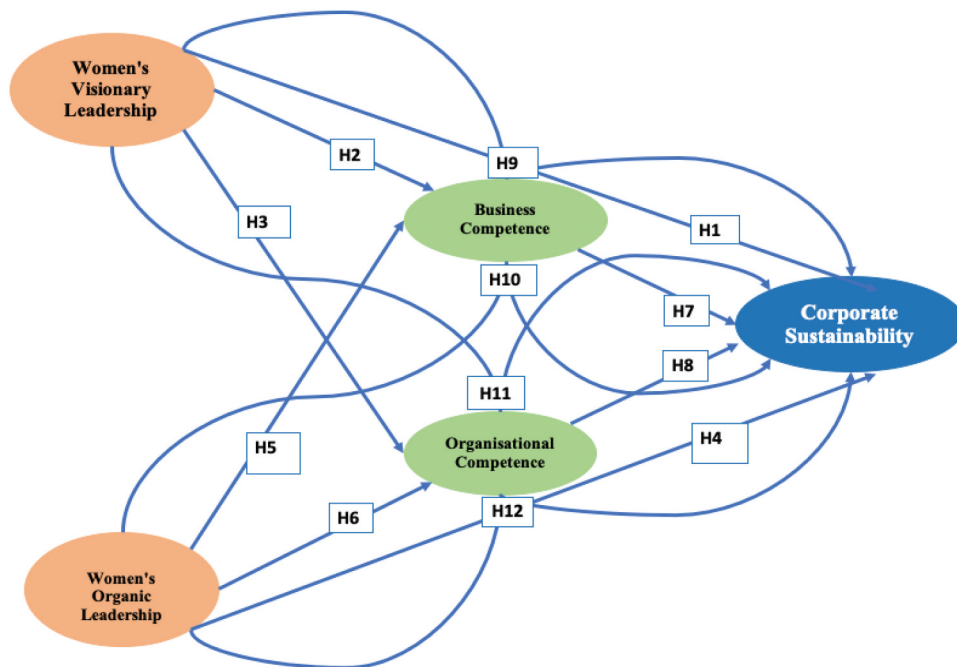
3. Material and methods

In this work, a sequential explanatory design approach was used in conjunction with a mixed technique, which was preceded by quantitative methods and hypothesis testing. The research was conducted in April 2022 to March 2023, with the online survey to the SOEs women leaders was conducted in October 2022. It then continued using qualitative methods to observe and deepen the findings of a thorough comprehension of the idea of women's leadership methods through quantitative research in corporate sustainability in SOEs. The quantitative research was conducted in a deductive manner and was based on the theories that were used in the development of the framework and research concept models (Bauer et al., 2021).

3.1. Population and sample

The study's participants included all women leaders in SOEs, namely directors and the women leaders one below directors (BoD-1) or at the level of General Manager or Division head in SOEs.

Figure 1. Research framework and Hypotheses.



The population of these women leaders was 293 people, and all women leaders were invited to participate in this study. The sample, or respondent, of the research was 214 people, or 73% of the whole population. The survey was carried out using an online system and the census method. The study was carried out by filling out a questionnaire with respondents giving approval answers on each statement and respondents choosing approval answers using a structured 5-point Likert scale as the main data collection tool to obtain specific information.

3.2. Validity and reliability test

The goals of validity testing were to evaluate the questionnaire's effectiveness and provide information on (1) construct validity, which was a clear measurement of the research framework to be carried out, in this case about women's leadership and corporate sustainability performance, and (2) content validity (Sekaran & Bougie, 2013). It evaluated how well the questionnaire captured all elements that were regarded as the conceptual framework. The research instrument test was carried out in July–September 2022 on 32 women respondents who were not the research respondents. All statement items were declared valid if they had a corrected item correlation of $r \geq 0.361$ using the Pearson Correlation Coefficient test. The reliability test's internal consistency approach was utilized to obtain the Cronbach's Alpha coefficient (Bonett & Wright, 2015).

3.3. Research variables

The research variables consisted of exogenous and endogenous variables. The exogenous variables or independent variables, namely women's visionary leadership, and women's organic leadership. Both types of leadership were characterized by five indicators (Avery, 2004, 2005), namely the ability for decision making, the strength of the distance between leaders and followers, key players of the organization, sources of organizational commitment and responsibility, and leadership skills in management and organizational situations. The endogenous variables, or dependent variables, consisted of business competency, organizational competency, and corporate sustainability. While business competency and organizational competency were also intervening or mediator variables.

The business competency was characterized by digital leadership, global business savvy, customer focus, building strategic partnerships, strategic orientation, and driving execution.

Organizational competency was measured by driving innovation, developing organizations capabilities, leading change, and managing diversity. While corporate sustainability was measured by financial performance, employee satisfaction, customer satisfaction, and corporate governance.

3.4. Data analysis

Primary data was taken from the answers of respondents who provided answer choices on a Likert scale of 5 points. Utilizing the Structural Equation modelling (SEM) approach, data analysis was carried out. Prior to structural model analysis, the research model was tested through Confirmatory Factor Analysis (CFA) to see whether indicators (observed variables) truly reflected latent variables (Hair et al., 2019). For the CFA test, the Goodness of Fit Index (GOFI) test, t-value, and factor loading were observed. To find out whether the indicators reflected the latent variables, the validity test and the reliability test were both run.

In this research, the significance test was carried out at a 1% chance of error and a 5% chance of error through the F test, and the results were compared with Table F. As for the path model analysis, the researchers used the WarpPLS software (Solimun & Nurjannah, 2017), which was considered very appropriate for a multivariate analysis model that used many latent variables simultaneously. WarpPLS also had a structured causal relationship hierarchy that used many indicators from each variable and could be analysed through the PLS-SEM approach.

4. Results and discussion

4.1. Result and analysis

4.1.1. Respondent descriptive

Respondents in this survey were women leaders (women directors and women one level below directors) in all SOEs and their subsidiaries. Based on the census method, all women leaders in the population were all invited to join the study. The participation rate or response rate of the survey was 73%, with a total of 214 respondents, 2 missing data, and total data processed was 212.

According to the survey, most women leaders in SOEs, or 88%, showed visionary leadership characteristics, while 80% showed characteristics of organic leadership. The average age of the respondents was 48.5 years, with the youngest age being 36 years and the oldest age being 63 years. The working time at the current position was 4.4 years, and the total working time in the company was on average 21–25 years. The education of the women leaders of these SOEs is on average post-graduate, as much as 66% of the respondents. These respondents work in SOEs with a maximum of 143 people and in the subsidiaries of SOEs with 71 people.

The evaluation of the structural measurement model of variables was based on the rule of thumb, namely the Average Variance Extracted (AVE), the parameter that the score should be less than 0.5. The examiner then kept dropping the inappropriate signs. Women leaders in SOEs did not possess the necessary leadership qualities or decision-making abilities, according to the evaluation of their capacity for visionary leadership. While the observations on the character of women's organic leadership described that the respondents did not look strong on the indicators of their ability for decision making and organizational commitment and responsibility. Based on the data, there were three skills that should be developed in women leaders in SOEs: ability for decision making, sources of organizational commitment and responsibility, and leadership skills.

4.1.2. Result of SEM-PLS and hypotheses testing

Table 1 shows the hypotheses in this study based on the expected relationships. Evaluation of the outer model was done by examining the reliability indicator's value, the variance of the indicator's magnitude, and the Average Variance Extracted (AVE). The outer model for the reflective-type construct was then assessed. Whereas for formative-type constructs, the outer model evaluation was carried out by looking at the weight significance of the resampling procedure. SEM-PLS results

showed that all items forming reflective constructs were valid with outer loading values of > 0.6 . With an AVE > 0.5 , all constructs met the convergent validity criteria. Meanwhile, for formative constructs, all constructs were significant with a value of > 0.7 . Thus, testing the outer model showed the feasibility of a good model by passing the tests for construct validity and reliability.

The inner model was evaluated further by looking at the average path coefficient (APC), average R-squared (ARS), and average adjusted R-squared (AARS) values. Those coefficients were all less than 0.001 in the overall output findings. The results suggested that the model was well-fitted. The APC value was 0.261, the ARS value was 0.379, and the AARS value was 0.372. The resulting outcomes, AVIF = 0.220 (3.3) and AFVIF = 2.797 (3.3), were excellent, just like the Average Block VIF (AVIF) and Average Full Collinearity VIF (AFVIF) values, indicating that there were no issues with multicollinearity between the indicators and exogenous variables.

The R-squared Contribution Ratio (RSCR), Statistical Suppression Ratio (SSR), and Nonlinear Bivariate Causality Direction Ratio (NLBCDR) all yielded values of one for the Simpson's Paradox (SPR) index. This suggested that all indices were ideal or that the model had no causality difficulties. This study sought to find a model that suited the original data as well as test the assumptions, which was crucial for assessing the model's accuracy. When compared to the overall result output, the P-value cut-off values for APC, ARS, and AARS are P 0.001 or have a significance level of 5% (0.05), suggesting that the model was very effective.

In Evaluation of Goodness of Fit, because of the R-squared value's bias towards the model's predictor and sample counts in PLS, it was advised to use the adjusted R-squared value to report the analysis's findings. The model's predictor had a greater level of accuracy the more variance it could explain. A summary of the findings from this study's structural model evaluation was presented in Table 2. Because of the R-squared value's bias towards the model's predictor and sample counts in PLS, it was advised to use the adjusted R-squared value to report the analysis's findings. The model's predictor had a greater level of accuracy the more variance it could explain. A coefficient of latent variables and summary of the findings from this study's structural model evaluation was presented in Table 2 and 3.

Table 4 shows the coefficient of endogenous determination in our model. The adjusted R-squared coefficient for corporate sustainability was 0.481, which meant that variations in corporate sustainability could be explained by women's visionary leadership, women's organic leadership, business competency, and organizational competency by 48.1%. Meanwhile, the other 51.9% was described by other outside factors. The modified R-squared value for business competency was 0.320, which meant that the variation in business competency could be explained by women's visionary leadership and women's organic leadership by 32%, and the remaining 68% could be explained by other factors. The adjusted R-squared coefficient for organizational competency was 0.314, indicating that visionary leadership and organic leadership accounted for 31.4% of the variation in organizational competency and that the remaining 68.6% was explained by factors not included in the model.

The resulting Q-squared (Q2) value for each dependent variable (endogenous) > 0 , namely Q2 Corporate Sustainability = 0.497, Q2 Business Competency = 0.328, and Q2 Organizational Competency = 0.322, meant that the model had predictive relevance. The above-mentioned structural model's overall evaluation showed that it was excellent and suitable for further investigation because it generally complied with all the recommendations made by experts. Calculations were also performed using the Stone-Geisser Q-square test on endogenous variables with the following formula to see how much the diversity of data may explain the structural model in this study (Solimun & Nurjannah, 2017), namely $Q2 = 1 - (1 - R12)(1 - R22) \dots (1 - Rn2)$.

Based on the formula above, the value of Q2 was:

Table 1. The hypotheses used in the study

No	Hypotheses
H1	Women's visionary leadership influenced corporate sustainability.
H2	Female vision leadership has a significant effect on Business Competency.
H3	The leadership of women visionaries has a significant effect on organizational competence.
H4	Women's organic leadership influenced corporate sustainability.
H5	Women's organic leadership had significant effect on business competency.
H6	Women's organic leadership had significant effect on organizational competency.
H7	Business competency had significant effect on corporate sustainability.
H8	Organizational competency had significant effect on corporate sustainability.
H9	Business competency mediated the impact of women's visionary leadership on corporate sustainability.
H10	Business competency mediated the impact of organic women's leadership on corporate sustainability.
H11	Organizational competency mediated the influence of female visionary leadership on corporate sustainability.
H12	Organizational competency mediated the impact of women's organic leadership on corporate sustainability.

Table 2. Coefficient of latent variables

Variable	R ²	Adj. R ²	Composite Reliability	Average Variance Extracted	Full Collinearity VIF
Visionary Leadership			0,772	0,537	1,179
Organic Leadership			0,786	0,551	1,920
Business Competency	0,326	0,320	0,957	0,788	4,102
Organizational Competency	0,321	0,314	0,962	0,864	4,278
Corporate Sustainability	0,491	0,481	0,834	0,588	1,964

$$Q2 = 1 - (1-0.328) (1-0.322) (1-0.497) = 0.771 = 77.1\%$$

The calculation yielded a predictive relevance (Q2) value of 0.771. Based on the Stone-Geisser Q-square, it advised that the explanatory factors' predictive value was relevant, as it provided a value greater than zero for the endogenous latent variables. The model was able to explain 77.1% of the diversity of the data, or, in other words, 77.1% of the information that was included in the data. While other factors (not included in the model) accounted for the remaining 22.9% of the explanations, showing that the model's structure was excellent.

The P-value's significance value was used as the choice criteria (conclusion) to assess the variables' effects on the hypotheses that were developed. A two-tailed P-value of 0.05 (significance threshold = 5%) was selected as the significance value. Figure 2 depicted an analysis of the PLS

Table 3. Summary of structural model Evaluation

Criteria	Rule of Thumb	Result	Rating
<i>R-squared</i>	$\leq 0,70$, $\leq 0,45$, dan $\leq 0,25$ (strong, moderate, weak)	0,326 (Business Competency)	Moderate
		0,321 (Organizational Competency)	Moderate
		0,491 (Corporate Sustainability)	Strong
<i>R-squared Corrected</i>	$\leq 0,70$, $\leq 0,45$, dan $\leq 0,25$ (strong, medium, weak)	0,320 (Business Competency)	Moderate
		0,314 (Organizational Competency),	Medium
		0,481 (Corporate Sustainability)	Strong
<i>Q-squared</i>	$\geq 0,02$, $\geq 0,15$, dan $\geq 0,35$ (weak, moderate, and strong)	0,328 (Business Competency)	Medium
		0,322 (Organizational Competency),	Medium
		0,497 (Corporate Sustainability)	Strong
APC	<i>P-value</i> $\leq 0,05$	$P < 0,001$	Excellent
ARS	<i>P-value</i> $\leq 0,05$	$P < 0,001$	Excellent
AARS	<i>P-value</i> $\leq 0,05$	$P < 0,001$	Excellent
AVIF	$\leq 3,3$ (ideal), ≤ 5 (accepted)	2,220	Ideal
AFVIF	$\leq 3,3$ (ideal), ≤ 5 (accepted)	2,797	Ideal
Goodness Tenenhaus (GoF)	$\geq 0,10$, $\geq 0,25$, dan $\geq 0,36$ (small, medium and large)	0,503	Large (Large Fit)
SPR	<i>Ideal</i> = 1, <i>accepted if</i> $\geq 0,7$	1,000	Ideal
RSCR	<i>Ideal</i> = 1, <i>accepted if</i> $\geq 0,9$	1,000	Ideal
SSR	<i>accepted if</i> $\geq 0,7$	1,000	Ideal
NLBCCR	<i>accepted if</i> $\geq 0,7$	1,000	Ideal

Note: Average Path Coefficient (APC), Average R-Squared (ARS), Average Adjusted R-Squared (AARS), Average Block VIF (AVIF), Average Full Collinearity VIF (AFVIF), Sympton's Paradox Ratio (SPR), R-Squared Contribution Ratio (RSCR), Statistical Suppression Ratio (SSR), Nonlinear Bivariate Causality Direction Ratio (NLBCCR).

Table 4. Coefficient of endogenous variable Determination

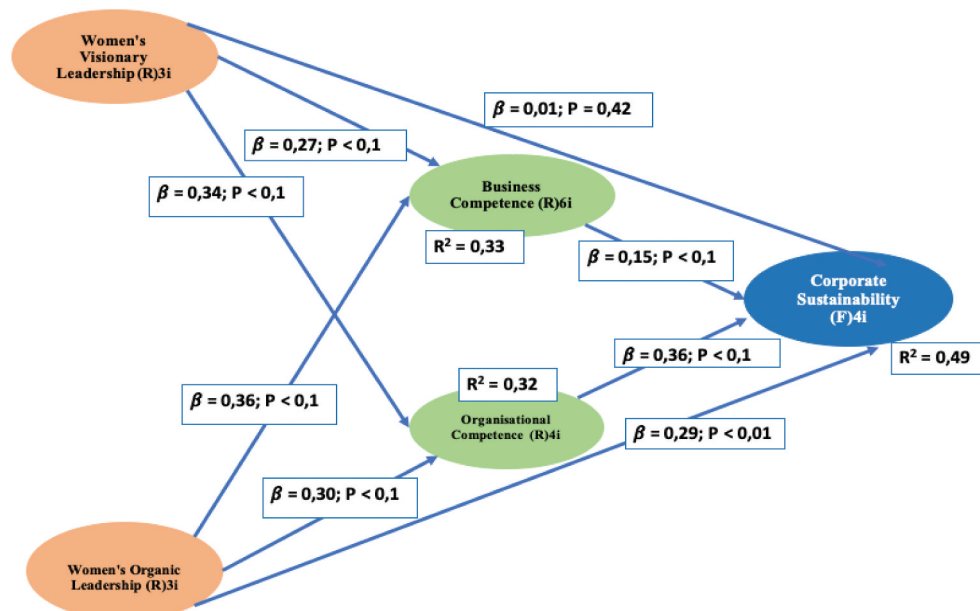
Endogenous Variables	R-Squared
Y1 (Business Competency)	0.328
Y2 (Organizational Competency)	0.322
Y3 (Corporate Sustainability)	0.497

structural model with path coefficients and their importance. The outcomes of the model analysis and hypothesis choices were displayed in Table 5.

4.1.3. Women's visionary and organic leadership influenced corporate sustainability (H1, H4)

The hypothesis testing result presented in Table 5 showed that there was no significant effect of women's visionary leadership on corporate sustainability. A structural coefficient of 0.012 was

Figure 2. Structural model analysis results, source: processed data, 2022.



obtained, and a P-value of 0.418 (P-value >0.05) was discovered. It meant that the higher the ability of women's visionary leadership, the less significant the impact on corporate sustainability. The study's findings did not support earlier studies on the impact of visionary leadership on company sustainability, namely research by Suriyankietkaew (2013), Nguyen et al. (2015), Jing et al. (2020), Silva et al. (2021), and Suriyankietkaew et al. (2022), where visionary leadership characteristics could help companies achieve good performance and encourage corporate sustainability.

In addition to the correlation between these two factors, prior research indicated that one of the most crucial factors enabling the beneficial effect of female directors on business performance and sustainability was their leadership position in top management (Piwowar-Sulej & Iqbal, 2022; Shinbrot et al., 2019). It was also reported that companies with visionary leaders, tended to have higher performance and were better able to deal with environmental changes (Avery, 2011; Shinbrot et al., 2019).

Inspiring (visionary) leadership can increase corporate sustainability and performance in organizations (Avery, 2004; Avery & Bergsteiner, 2011; Pierli et al., 2022; Shinbrot et al., 2019). This survey indicated that women's visionary leadership had no significant effect on corporate sustainability because the two dimensions of the construct variables of visionary leadership, namely source of organization commitment and responsibility and leadership and management situation (leadership skills), were not reflected in women leaders in SOEs. These dimensions represented the skills that were to be developed in women leaders so that they could be the source of inspiration and reference for employees in building their commitment.

The results of the study then indicated that women's organic leadership had an influence on corporate sustainability. According to the hypothesis test results, the structural analysis had a coefficient of 0.294 and a P-value of <0.001. It indicated that women's organic leadership had a positive and significant influence on corporate sustainability. This meant that the more women were in the style of organic leadership, the more sustainable the company was. This study's findings were consistent with previous research. Among them were Suriyankietkaew (2013), Silva et al. (2021), and Suriyankietkaew et al. (2022), which reported that organizational leadership had a positive relationship with higher corporate or

Table 5. Results of testing hypothesis

Hypothesis	Path	Path Coeff	P-Value	Result
H1	Visionary Leadership → Corporate Sustainability	.012	.418	Rejected
H2	Visionary Leadership → Business Competency	.273	<.001	Accepted
H3	Visionary Leadership → Organizational Competency	.336	<.001	Accepted
H4	Organic Leadership → Visionary Leadership	.294	<.001	Accepted
H5	Organic Leadership → Business Competency	.364	<.001	Accepted
H6	Organic Leadership → Organizational Competency	.298	<.001	Accepted
H7	Business Competency → Visionary Leadership	.149	<.001	Accepted
H8	Organizational Competency → Visionary Leadership	.359	<.001	Accepted
H9	Visionary Leadership → Business Competency → Visionary Leadership	.074	.034	Accepted
H10	Organic Leadership → Business Competency → Visionary Leadership	.078	.027	Accepted
H11	Visionary Leadership → Organizational Competency → Visionary Leadership	.185	<.001	Accepted
H12	Organic Leadership → Organizational Competency → Visionary Leadership	.177	<.001	Accepted

organizational financial performance in conditions of uncertainty. Organic leadership was empirically linked to organizational performance, according to several studies. Jing (2009), Manz et al. (2009), and Lough (2021). All found that organic leadership was strongly related to team and organizational effectiveness, aside from being linked to employee performance and satisfaction and organizational performance (Schaubroeck et al., 2007), as well as corporate sustainability (Suriyankietkaew's, 2013). Furthermore, Jing and Avery (2016), and

Lough (2021) identified organic leadership as having a positive and significant relationship with organizational performance and predicted an increase in the company's sustainability.

Based on this study, the significant influence could be analysed by three dimensions of organic leadership's construct variables, namely management situation and organizational leadership, strength of distance between leaders and staff, and organizational key players. All three dimensions had high loading factors and also had strong indicators that reflected women's organic leadership paradigm in SOEs. The organic leadership character was very influential in the relationships between leaders and staff, in building work attitudes in the organization, and in increasing the employee's performance. The psychological closeness of leaders and staff would make leaders more effective in running the organization and the business. The closeness of women leaders to the staff in the corporation would build employees' commitment and involvement in the organization.

4.1.4. Female visionary and organic leadership had a significant effect on business competency (H2, H5)

The study's findings indicated that women's leadership had a substantial impact on business competence. The hypothesis test informed a value of 0.273 for the structural coefficient and a P-value of < 0.001, indicating that the better the women's visionary leadership, the higher the business competency. This result from the testing of H2 supported the leadership paradigm theory and previous research. According to Jing et al. (2020), visionary leadership promoted organizational transformation from self-interest to collective or shared interest. Understanding each employee's preferences, aspirations, and vision—all of which were strongly tied to business competency—helped to create it inside the organization. Bass and Riggio (2006) and Karwan et al. (2021) found that visionary leadership was related to motivation, organizational commitment, and performance, such as teamwork and team performance (Schaubroeck et al., 2007; Shinbrot et al., 2019). Corporate sustainability and sustainable performance in firms could be improved by visionary leadership (Avery, 2004; Avery & Bergsteiner, 2010, 2011; Kantabutra, 2006; Pierli et al., 2022; Shinbrot et al., 2019).

The results of the study showed that women's organic leadership had an influence on business competency. The results of the hypothesis test reported a coefficient of 0.364 with less than 0.001 for the P-value, describing that there was a positive and significant influence of women's organic leadership on business competency. This meant that the higher the women's organic leadership, the higher the business competency. This research was in line with previous studies where organic leadership had a significant influence on business competency. According to some literature, companies with leaders who had organic leadership tended to have higher performance and were better able to deal with environmental changes (Akram et al., 2019; Avery, 2004, 2011). Further, Jing and Avery (2016) and Lough (2021) highlighted that organic organizations did not have formal leaders, but interactions between them could act as a form of leadership united by a shared vision, values, and culture. An organic organization with organic leadership allowed members of the organization to have the freedom to organize themselves and participate in joint decision-making.

4.1.5. The leadership of women visionary and organic had a significant effect on organizational competency (H3, H6)

The results of the study showed a significant relationship between female visionary leadership and organizational competency. The results of the hypothesis test informed a structural coefficient of 0.336 with a P-value of < 0.001, indicating that the higher or better the women's visionary leadership, the higher the organizational competency. This research supported the leadership paradigm theory and Jing et al. (2020) research, which reported that visionary leadership encouraged transformation in organizations. This was aligned with the leader's ability to manage the organization. Visionary leadership was related to motivation, organizational commitment, and

organizational performance (Bass & Riggio, 2006; Karwan et al., 2021), as well as teamwork and team performance (Schaubroeck et al., 2007; Shinbrot et al., 2019).

The study's findings demonstrated that there was an influence of women's organic leadership on organizational competency with hypothesis testing (values of 0.298 and < 0.001 for structural coefficient and P-value). It informed us that the higher the women's organic leadership, the higher the organizational competency. This research was aligned with previous research that revealed that companies with organic leadership tended to have higher performance and were better able to deal with environmental changes (Akram et al., 2019; Avery, 2004, 2011). Organic organizations would rely more on the ability of their members to solve problems and make decisions for the benefit of the organization. Leadership was team or network in nature, and therefore the organization moved towards a sustainable path while responding to changes in the organization's external environment (Lough, 2021; Manz et al., 2009) and forcing corporate sustainability (Suriyankietkaew, 2013). In this case, the shared vision between leaders and staff was the key to high performance, in addition to the self-accountability, responsibility, and high adaptability of leaders and members of the organization (Avery & Bergsteiner, 2010, 2011; Shinbrot et al., 2019).

4.1.6. Business and organizational competency had significant effect on corporate sustainability (H7, H8)

The results of the study showed that the influence of business competency on corporate sustainability acquired a value of 0.149 (for the structural coefficient) with a P-value of 0.001. This indicated that there was a positive and significant influence of business competency on corporate sustainability, meaning that the higher the business competency, the higher the company's sustainability. This research aligned with the results of previous research, including Tseng et al. (2021) research, which reported that leaders with business skills and global business acumen would seek international opportunities for more efficient access to their company's markets. They also searched for their supply chains to produce goods and services for their companies. It was also reported by Kurdi et al. (2020) that company leaders who focused on customers would prioritize customers and direct their efforts to increase customer satisfaction, customer loyalty, and repeat business. Similarly, Crandell and Orr (2021) reported that leaders with good business competency had a strategic business orientation and the ability to build partnerships to improve the company's performance and corporate sustainability. It was also reported by Tozer (2012) that leaders with business competency will encourage better execution in the organization.

The study resulted in a coefficient of 0.359 and a P-value of < 0.001 on the relationship between organizational competency and corporate sustainability. It indicated that there was a significant influence of organizational competency on corporate sustainability. In other words, the higher the organizational competency, the higher the corporate sustainability. The research results were in line with previous studies, including Crandell and Orr (2021), that reported that top leaders who had organizational competency played a very important role in corporate sustainability. The research of Swedjemark (2018) also reported that the organizational competency of leaders includes organizational ability in a managerial context. Leaders who had organizational skills were also able to create long-term competitive advantages by integrating all resources within the organization, such as people, processes, systems, and tools, as well as organizational structures, knowledge, and metric systems. They would proactively manage business through changes that foster the company's competitive advantage. These resources were important for building corporate sustainability. With organizational competency, women leaders in SOEs had the ability to lead change, manage diversity, develop organizational capabilities, and drive innovation. All these skills would enhance organizational capabilities for corporate sustainability.

4.1.7. Business competency mediated the impact of women's visionary and organic leadership on corporate sustainability (H9, H10)

The results of this study described that there was a mediating role of business competency in the influence of women's visionary leadership and corporate sustainability (coefficient of 0.074 and

P-value of 0.034). Based on the rule of thumbs (Hayes, 2018), it specified that there was a positive and significant influence between women's visionary leadership and corporate sustainability through the mediation of business competency. By looking at the insignificant direct effect of visionary leadership on corporate sustainability, it meant that business competency has a full mediation role in the influence of women's visionary leadership on corporate sustainability. The visionary leadership of women leaders in SOEs would be able to effectively encourage and foster corporate sustainability if supported or mediated by the business skills or competencies of the women leaders. The results of this study were in line with previous research, including that from Mihardjo et al. (2019); Kurdi et al. (2020); Crandell and Orr (2021), which stated some skills that should be owned by leaders in business. Leaders with skills in digital and customer focus would encourage business growth as they paid close attention to customer needs and thought and acted digitally to suit the products and services they produced to those needs (Kurdi et al., 2020; Mihardjo et al., 2019).

Tseng et al. (2021) discovered that to become a global talent, leaders must have the knowledge and skills to harmonize important matters between the country of business destination and the country of the company's location, such as labor laws, marketing channels, and financial and investment practices. Skill, knowledge, and attitude in business were the important things that leaders in business corporations must have (Hanafi & Ibrahim, 2018). While Tozer (2012) and Crandell and Orr (2021) conveyed that the capability to drive execution was essential to every CEO and leader in the company. Driving execution as part of the skills in business competency then played a very important role in corporate sustainability (Avery & Bergsteiner, 2010, 2011; Tseng et al., 2021). Driving execution was a quantitative capability that included three fundamental abilities: establishing accountability to meet company targets, tracking progress toward important indicators, and juggling long-term strategic goals with immediate objectives. In this study, business competence was measured with some skills of digital leadership, global business savvy, customer focus, building strategic partnerships, strategic orientation, and driving execution. The result of the hypothesis proved that business competence was the important thing that could support the leaders, in this case the women's visionary leadership, to be related and have an impact on corporate sustainability.

The results of hypothesis testing indicated that there was a mediating role of business competency on the influence of women's organic leadership on corporate sustainability, (structural coefficient 0.078 and P-value 0.027). Because the positive coefficient and P-value were less than 0.05, it was concluded that there was a positive and significant influence of business competence on the effect of women's organic leadership on corporate sustainability. This showed that business competency could be a mediator for the relationship between women's organic leadership and corporate sustainability. The higher the business competency, the higher the indirect influence of women's organic leadership on corporate sustainability. This indirect influence could be said to play a partial mediating role because the direct influence of women's leadership on sustainability was already significant.

The result also supported previous research by Akram et al. (2019) and Katsaros (2022), which reported the importance of business competency factors in leadership to drive a company's performance. A leader in a company was required to have the knowledge, abilities, and skills that related to the type of business managed by the company. Akram et al. (2019) connected knowledge management and leadership abilities to look at conditions outside the company for marketing the company's products. This was called by outside-in marketing. Further, Mu et al. (2018) explained that the more outside-in marketing in a company, the more resources are devoted to developing leadership skills and nurturing proactive employees for the company's performance. The previous studies provided new propositions for further research on the role of mediating business and organizational competency for women's leadership, and its influence on a company's performance and sustainability. Regarding the leadership paradigm analyzed in this

study, the business competency of the leader encouraged the effect of female leadership on corporate sustainability.

4.1.8. Organizational competency mediated the influence of female visionary and organic leadership on corporate sustainability (H11, H12)

With a structural coefficient of 0.185 and a P-value of 0.001, the outcome of hypothesis testing revealed that organizational competency had a mediating effect on the relationship between women's visionary leadership and business sustainability. It was noted that there was a positive and substantial indirect influence of organizational competency on the effect of women's visionary leadership on corporate sustainability since the P-value was less than 0.05 and the coefficient was positive. This illustrated how organizational competency might favorably mediate the relationship between women's visionary leadership and firm sustainability. This mediation role was partial because the direct influence between women's visionary leadership and corporate sustainability was significant. The result supported previous research, such as Pierli et al. (2022) and Katsaros (2022), which reported the importance of business competency factors in leadership to drive a company's performance. A leader in an organization must possess the knowledge and expertise pertinent to the type of business being managed by the organization. Research by Mu et al. (2018) also reported that companies that were more outside-in in marketing devoted resources to developing leadership skills and nurturing proactive employees for the company's performance.

According to Swedjemark (2018) and Pierli et al. (2022), organizational capabilities aim to integrate people, processes, systems and tools, organizational structures, knowledge, and metric systems that proactively manage the business through changes that create a competitive advantage. Likewise, according to Pulley (2012) and Piwowar-Sulej and Iqbal (2022), business capabilities were also able to offer new ideas and perspectives for future businesses. Meanwhile, managing diversity within the organization, according to Rahman and Zahid (2021), is one of the most important factors for running a business smoothly. Diversity in the workplace has several benefits, including boosting creativity, productivity, and problem-solving; luring and keeping talent; fostering teamwork; growing market share; and attracting and retaining a diverse clientele. The role of organizational competency is very important for corporate sustainability. The ability of top leaders to drive innovation, enhance organizational capabilities, lead changes, and manage diversity could build corporate sustainability.

With a structural coefficient of 0.177 and a P-value of 0.001, the results of hypothesis testing indicated that organizational competency played a mediating role in the relationship between women's organic leadership and corporate sustainability. The positive coefficient and P-value suggested that organizational competency had a positive and substantial mediating effect on women's organizational leadership and business sustainability. Thus, the relationship between women's organic leadership and business sustainability could be mediated by organizational competency. The direct impact of women's organic leadership and company sustainability was strong; therefore, this mediation role was only partially effective. This research result supported previous research, namely Avery (2004, 2011) and Lough (2021), that companies with organic leadership had a tendency to perform better and were better able to deal with environmental changes. According to this study, the key to the corporation's durability and resilience was organic leadership and organization with a shared vision between leaders and followers (Avery & Bergsteiner, 2010, 2011; Lough, 2021).

Based on the discussion above, it could be said that this study proved that there was an influence of female leadership on corporate sustainability in Indonesian SOEs. This result was in line with the studies of Piwowar-Sulej and Iqbal (2022) and Shinbrot et al. (2019), which all examined the relationship between leadership style and sustainable performance. This study was also similar to the study of Shahzad et al. (2022) regarding the existence of an element that mediated the influence of transactional leadership on corporate sustainability. If, according to Shahzad et al. (2022), there was knowledge sharing that mediated the influence of transactional

leadership and corporate sustainability, then this study proved that there was business competency among women leaders that influenced visionary and organic leadership in corporate sustainability.

The finding of this study suggested additional literature for women's leadership because it revealed the existence of a mediator variable that was mandatory in women's leadership for corporate sustainability, namely business competency. Proven by this research, women's leadership will affect the company's sustainability in Indonesian SOEs if there are solid indicators of ability in decision-making, strong distance between leaders and staff, key organizational players, organizational commitment and responsibility, and leadership skills in women leaders, as well as business competency in SOEs' women leaders.

4.2. Discussion

The focus of this research was to investigate the impact of visionary and organic women's leadership on corporate sustainability. Research results showed that organic leadership had a significant impact on corporate sustainability, while visionary leadership was insignificant. Further, on the indirect impact test, the study discovered that business competence played a full mediation role in the influence of visionary women leaders on company sustainability. Another conclusion was that the role of organizational competency in mediating the influence of both visionary and organic women's leaders on a company's sustainability was only partially effective.

The sustainable creation of organizations was one of the most challenging themes for business and corporations, as Kerekes and Wetzker (2007) and Bui et al. (2022) said. They stated that companies can strengthen the criteria for sustainability by clearly realizing and implementing things such as economic goals, social roles, and environmental awareness, facing the fact that the challenges ahead are more stringent, and how the role of leaders can create reinforcement and empowerment of resources that can meet economic criteria, social standards, and the environment (Loeis et al., 2023).

The results of this study provided important recommendations on how SOEs could strengthen the role of top-level leaders to improve company performance and sustainability. This was because sustainability was an excellent resource for the development of organizations, products, and technologies, which was also reflected in corporate revenue and operating results. Fülöp and Pelczné Gáll (2009) affirmed in their research report that the weakening of corporate sustainability was strongly linked to the implementation of Corporate Sustainability principles, mainly due to a lack of theoretical knowledge and related methodologies and a lack of leadership. The shortage of strong leadership in the organization could lead to unsustainability, and hence the character, capacity, and competences of the leaders became important (Najib et al., 2021).

This study reinforced empirical findings in many previous research that studied the relationship between leadership and organizational performance (Avery, 2004; Avery & Bergsteiner, 2010, 2010, 2011; Jing & Avery, 2016; Suriyankietkaew, 2013), namely the existence of a significant influence between management and corporate performance. Specifically, the results of this study were in line with previous studies that focused on women's leadership (Lough, 2021; Pierli et al., 2022; Piwowar-Sulej & Iqbal, 2022; Shinbrot et al., 2019). The leadership of a person with all the character and individual characteristics of a leader, as well as the ability and skills in leadership, including technical competence, will make a superior leader. The superior leaders will then produce a superior organization and progress.

While several previous studies took samples or respondents from private companies listed on the stock exchange, such as Asri (2017), which surveyed 347 private companies on the Indonesia Stock Exchange (IDX), Slomka-Golebiowska et al. (2023), who surveyed the 35 listed companies in Italy, and Abdullah Alshammari et al. (2023), who surveyed small and medium-sized entrepreneurs in Saudi Arabia, the study specifically looked at women's leadership in state-owned

enterprises in Indonesia. With these conditions, this study fills the shortage of research on women leaders in Indonesia as a developing country, especially in state-owned enterprises (SOEs).

In terms of leadership role, this was in line with the Upper Echelons theory (Hambrick, 2007), which explains that top leadership character can affect the performance of the company. Furthermore, the above empirical theory stated that management teams were influenced by many attributes, including age, education, gender, background, and other attributes that shaped their way of thinking in understanding and facing a variety of situations and decision-making efforts. This research emphasized the upper echelons theory because the presence of female leaders as part of gender diversity in the top management of companies was one of the leadership attributes that could affect the organizational performance and sustainability of companies, in this case in Indonesian state-owned enterprises (SOEs).

In their research report, Mihardjo et al. (2019) claimed that the effectiveness of leadership in an organization was mostly decided by such a leader's talents in influencing and guiding its employees according to the firm's direction and goal. It is further stated that leadership was influential when there was reinforcement in the characteristics, character, style, and attributes of leadership that have an impact on certain factors for the efficiency of the organization, such as company performance, employee satisfaction, customer contentment, team progress, and various other organizational outcomes.

The business skills or competences of the leaders in the top ranks of corporate management have a crucial role in building the organization's business capabilities, which will ensure the sustainability of the company (Crandell & Orr, 2021). In particular, the business competences of women leaders at SOEs consisting of building strategic partnerships, strategic orientation, customer focus, driving execution, global business savvy, and having a digital leadership mindset have indirectly influenced the relationship of visionary leadership to corporate sustainability.

Based on the frequency distribution of women leaders at Indonesian SOEs, they tend to be characterized as visionary leaders. Based on this, the right strategy to support corporate sustainability was to strengthen business skills or competences so that women's leadership can drive the company to grow and sustaining. It was a very interesting research result because, to drive corporate sustainability, leaders need to have good business skills. Strengthening business competence focused on developing the ability or competence to build strategic partnerships with the stakeholders of the company, building strategic thinking (strategic orientation), as well as skills in driving the entire company's plan into operational activities that produce activities (driving execution).

The Outside-in marketing paradigm, which emphasized the focus of leaders to consider external factors first before formulating strategies within the organization, provided a conceptual impetus to strengthen the mediation role of business competence and organizational competence on the influence of women's leadership on corporate sustainability. The Mu et al. (2018) research reinforced this sign that there was a new way of looking at corporate leaders, with the need to improve business competence and organizational competence before defining strategies and formulating corporate efforts for business sustainability.

According to Mu et al. (2018), leaders needed to devote resources to developing their leadership skills, among others, through changing their way of thinking and nurturing proactive employees for the company's performance. The outside-in approach to corporate strategy was essentially the strategic orientation of a leader. This became crucial because other skills such as digital leadership mindset, customer focus, and execution-driven leadership also need to be owned by corporate leaders to ensure business continues to be profitable and guarantee corporate sustainability.

This research was in line with Swedjemark's (2018) finding that organizations aimed at integrating people, processes, systems, and tools, organizational structures, knowledge, and metric systems will proactively manage through change that creates competitive advantages. Avery (2005) emphasized that organic leadership would encourage the involvement of members of the organization and the emergence of leadership from those members, or the presence of distributive leadership.

The results of the descriptive analysis showed that women leaders in SOEs had visionary leadership character (88%), and organic leadership (80%). Both leadership skills can be developed with the potential to develop women leaders as key organizational leaders, further developing their ability to build relationships with staff while still showing their ability to make decisions.

Based on the test results of the model, where the predictive relevance value (Q^2) is 0.771, it showed that the Q-squared Stone-Geisser yields a higher value than zero for the endogenous latent variable. It showed good predictive relevance for exogenous variables. The model can describe 77.1% of the diversity of the data, or in other words, the model can describe 77.1% of the information contained in the data, while the remaining 22.9% was described with other variables (not yet included in the model) and mistakes. The results of this study described a very good structural model of research. So the role of business competence mediation in the model became an intervening variable that gave a full mediation role to the influence of visionary women's leadership on corporate sustainability. It can be said that female visionary leadership will have a real impact on the sustainability of SOEs if the female leaders have adequate business competence.

From the results of this research, a strategy can be further formulated to develop female leadership in SOEs. The strategy formula was that women's leadership at SOEs could drive corporate sustainability through efforts to develop visionary women leaders by strengthening the ability of women leaders in business and organizational fields to improve performance, both financial performance and customer and employee satisfaction, which are essential conditions in building company sustainability.

5. Conclusion, implication and limitation

5.1. Conclusion

This study examined the influence of women leadership on corporate sustainability and the mediating role of business competence and organizational competence. The findings of this study led to three main conclusions as follows. Firstly, organic leadership had a significant impact on corporate sustainability, while visionary leadership was insignificant. Secondly, there was a full mediation role of business competence on the influence of visionary women leadership on corporate sustainability, and the partial mediation role of organizational competence on the impact of both visionary and organic women leaders on a company's sustainability. Thirdly, there were significant effects of women's visionary and organic leadership on business competency, organizational competence, and significant effect of business and organizational competency on company's sustainability.

5.2. Theoretical implication

This study involved women leaders in Indonesian SOEs who were positioned in the top management of the corporations. They had their background and characteristics; they interpreted strategic conditions and situations; they determined strategic choices; they executed jobs; and their leadership influenced corporate sustainability. This finding confirmed the theory of the upper echelons (Hambrick, 2007): that leaders in top management significantly influenced the organization's future.

This study added to the results of previous research, which suggested that there was a relationship between leadership and corporate sustainability. Further, this study specifically contributed to the results of earlier studies on women's leadership in that it influenced a company's sustainability. By involving the respondents, the directors of the Indonesian SOEs, the findings of this research became interesting. This was because the result showed that female visionary leadership had no significant influence on corporate sustainability. However, if women leaders had business competence, then it would significantly influence women's visionary leadership and corporate sustainability. This study completed the previous research on the importance of business competence factors for such influence in the presence of women leaders in the company.

The core notion of corporate sustainability was the theory of the triple bottom line (TBL) (Elkington, 2004), with three components: people, profit, and the planet. This research supported the TBL hypothesis by demonstrating a solid effect of women's leadership on corporate sustainability. It also emphasized the importance of women leaders in firms since they significantly impact the company's sustainability. Furthermore, this study had significance for corporate sustainability and leadership theory because it discovered that elements like business competency and organizational competence mediated the relationship between women's leadership and company sustainability, fully or partially

5.2. Managerial implication

Corporate management could learn from this study that female leadership had an impact on corporate sustainability, and to be able to support the sustainability, it required female leaders to have business competence. Some of the skills related to business competencies learned from this research, such as digital leadership, customer focus, strategic orientation, and driving execution, were soft skills that a woman leader in a company needs to have. From here, corporate management can prepare women's leadership development programmes that fit their organisation's needs.

Additionally, this essay provided useful information for women, trainers, management, and sponsors of women's leadership initiatives. Some collective women's experiences had demonstrated that women may find the analysis useful for identifying and resolving their leadership-related issues. The research result proved that women's leadership could support sustainability and mediated by business and organizational competencies. This considered the fact that women's leadership and women's strategic position in the organization was influencing the future of the organization. The empirical research and approach may also be helpful to trainers and educators in thinking about the needs of female learners and how they could increase their influence and contribution in the organization through increasing the business skills.

Practically, the research results had implication for corporations to support women's leadership development through leadership trainings, business and organizational competency seminars and trainings, as well as assignments to the women leaders in the corporation. These activities could increase the skill of women's leadership as well as commitment and performance of women leaders to the organization. In this connection, it would be prudent for policy makers of Ministry of SOEs to implement the findings of this study. This research could help them to formulate sound policies and support program which are necessary to boost the performance of current SOEs women leaders and the future SOEs women leaders.

Finally, the analysis of this paper provided a unique perspective on the question of whether and how investments in training of the women leaders may help women's leadership become more effective. The findings also challenged stakeholders to prepare material for women's leadership development training programs to better target, namely, enhancing the capacity of women

leaders and prospective women leaders in terms of business and organizational skills for corporate sustainability.

5.3. Limitation and further study

This research had three limitations. Firstly, our analysis results were focused and specific to women leaders in Indonesian SOEs. It cannot be used as a reference for all Indonesian women business leaders or women business leaders in general. Therefore, future research could be conducted on the expanded corporations, including private enterprises and small and medium enterprises (SMEs), for widely recognized research results.

Secondly, there was an absence of comparisons between female and male leadership in SOEs. Future studies could be managed to compare how the leadership of women and men in the company affects corporate sustainability and whose leadership has a more significant effect.

Thirdly, this research did not distinguish the main role or professional job of women leaders, whether they handled the company's main business, such as marketing, commercial, or operational, or the supporting work, such as finance and HR. As each job needed different competences, advanced research could be carried out to examine the specific competences and specific jobs that affect corporate sustainability. Further, a future study could be done to determine the extent to which the professional work of women leaders has the most influence on the sustainability of the corporation. For future studies of what areas most influence women leaders for corporate sustainability, the construction of research models can be made to deepen the relationship by linking women's leadership, business competencies, and management functions. With the construction of this model, research is expected to provide more practical implications for the formulation of women's leadership development strategies in SOEs, which can be specifically studied in corporate functions such as operational, sales, marketing, human resources, finance, accounting, assets, and others.

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Correction

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