

THE IMPACT OF TRANSFORMATIONAL LEADERSHIP STYLE ON THE SOCIAL RESPONSIBILITY OF EMPLOYEES IN THE MINING INDUSTRY: THE MODERATING ROLE OF INTRINSIC MOTIVATION

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ARTICLE INFO		ABSTRACT
Received:	27/10/2024	This study evaluates the impact of transformational leadership style on the social responsibility of employees in the Vietnamese mining industry based on the transformational leadership theory. The study also examines the moderating role of intrinsic motivation in the relationship between transformational leadership style and employee social responsibility. The study employed a quantitative method using the partial least squares structural equation modeling (PLS-SEM), the analysis results from a survey sample of 142 employees at Vietnamese mining industry enterprises reveals the positive influence of transformational leadership style on both extra-role and in-role social responsibility participation of employees in the Vietnamese mining industry. Intrinsic motivation significantly moderates the relationship between transformational leadership style and extra-role social responsibility participation of employees. However, it does not moderate the relationship with in-role social responsibility participation of employees. The authors propose some discussions and practical suggestions, aimed at improving practices, for managers in the Vietnamese mining industry.
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TÁC ĐỘNG CỦA PHONG CÁCH LÃNH ĐẠO CHUYỂN ĐỔI TỚI TRÁCH NHIỆM XÃ HỘI CỦA NGƯỜI LAO ĐỘNG TRONG NGÀNH CÔNG NGHIỆP MỎ: VAI TRÒ ĐIỀU TIẾT CỦA ĐỘNG LỰC NỘI TẠI

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THÔNG TIN BÀI BÁO		TÓM TẮT
Ngày nhận bài:	27/10/2024	Nghiên cứu này đánh giá tác động của phong cách lãnh đạo chuyển đổi tới trách nhiệm xã hội của nhân viên trong ngành công nghiệp mỏ ở Việt Nam dựa trên lý thuyết lãnh đạo chuyển đổi. Đồng thời, nghiên cứu xem xét vai trò điều tiết của động lực nội tại. Nghiên cứu sử dụng phương pháp định lượng qua mô hình phương trình cấu trúc tuyến tính. Kết quả phân tích từ mẫu 142 nhân viên trong các doanh nghiệp mỏ ở Việt Nam cho thấy ảnh hưởng tích cực của phong cách lãnh đạo chuyển đổi tới trách nhiệm xã hội bên trong và bên ngoài của nhân viên trong ngành công nghiệp mỏ. Động lực nội tại đóng vai trò điều tiết giữa phong cách lãnh đạo chuyển đổi với trách nhiệm xã hội bên ngoài của nhân viên, nhưng lại không điều tiết với mối quan hệ với trách nhiệm xã hội bên trong của nhân viên. Các tác giả đề xuất một số gợi ý và khuyến nghị cần thiết cho các nhà quản trị doanh nghiệp mỏ.
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1. Introduction

Burns [1] introduced the transformational leadership theory, then Avolio [2] further developed the theory. According to them, transformational leadership has four components including charismatic role modeling, individualized consideration, inspirational motivation, and intellectual stimulation. And then, transformational leadership theory has emerged as a prominent theoretical framework in organizational behavior research, emphasizing the capacity of leaders to inspire and motivate followers to exceed expectations. Transformational leaders are characterized by their ability to articulate a compelling vision, foster a sense of collective identity, and stimulate intellectual stimulation among their team members [3]. Transformational leaders guide and encourage employee mindfulness by enunciating a vision that escalates the consciousness of employees and consideration for the significance of organizational values, goals, and performances [4]. Thus, a fundamental aspect of the theory on transformational leadership is a strong accentuation on the part of a shared vision. That is an idealized arrangement of objectives that the organization seeks to accomplish one day [5], [6].

Recent studies have delved into the mechanisms by which the transformational leadership style influences follower outcomes, such as job satisfaction, organizational commitment, and performance [7]. In addition, researchers have explored the moderating and mediating roles of various contextual factors, like organizational culture, national culture, and team composition, in the relationship between transformational leadership and follower behaviors. Most of studies focused on the impact of transformational leadership style on employee outcomes such as job satisfaction and organizational commitment [7].

In the context of the mining industry in Vietnam underwent significant changes since COP26, Vietnamese government has committed to achieving net-zero emissions by 2050 [8]. The mining sectors have been identified as areas requiring the most robust emission reduction measures. Simultaneously, with the emergence of increasingly demanding practical requirements for corporate social responsibility (CSR), the role of CSR in the mining industry has become even more crucial [9]. Recently more and more attention has been devoted to considering the micro-level outcomes of CSR, especially the CSR-associated outcomes of employee [10]. This includes extra-role and in-role CSR participation [11]. In-role CSR participation refers to “CSR-related behaviors, which are formally prescribed, expected, and directed by rewards and sanctions”, whereas extra-role CSR participation refers to “behaviors, which originate within the individual not directly or explicitly recognized by the formal reward system but support the effective functioning of CSR programs”. However, research on this topic seems to be very limited.

This study seeks to integrate these two theoretical frameworks to investigate the relationship between transformational leadership style, intrinsic motivation, and employee participation in CSR initiatives. By doing so, this research aims to contribute to a relatively underexplored area of research, particularly within the context of the mining industry in Vietnam.

CSR perceptions involve the personal evaluations and interpretations of an employee regarding the CSR initiatives of an organization, which are different from the actual CSR practices of the organization [12]. When employees observe the behaviors of their leaders, all of them feel motivated and try to the ideas and competencies of one another to create innovative solutions to problems. Therefore, in this article, we expect that all dimensions of transformational leadership encourage employees to invest higher willingness and energy in their work and tasks which exhibit their higher responsibility [5].

Therefore, this study explores the relationship between transformational leadership style and CSR participation (in-role and extra-role participation of employees). As a result of the analysis, the following hypotheses are raised for testing:

Hypothesis H1: Transformational leadership style is positively related to Extra-role participation of employees in the mining industry

Hypothesis H2: Transformational leadership style is positively related to In-role participation of employees in the mining industry

When employees whose work competencies are encouraged by the leader are more likely to have higher intrinsic motivation and resultantly perform better at work. They become more focused and try to accomplish organizational goals by taking their own interests [5].

When having high intrinsic motivation, employees feel more confident in their abilities, and believe that they can perform their work better. They also tend to seek opportunities to learn and develop their skills, contributing to the growth of company. Furthermore, when employees have high intrinsic motivation, they actively exchange ideas and share information to create and contribute innovative solutions and ideas [13]. Thus, high intrinsic motivation helps enhance social responsibility of employees because it encourages them to focus on their work, seek creative solutions to solve problems, promote a positive work spirit, and exchange ideas. In other words, the more intrinsically motivated an employee is, the greater the impact of transformational leadership on their social responsibility. As a result of the analysis, the following hypotheses are raised for testing:

Hypothesis H3: Intrinsic motivation moderates the relationship between transformational leadership style and Extra-role CSR participation.

Hypothesis H4: Intrinsic motivation moderates the relationship between transformational leadership style and In-role CSR participation.

In summary, this study examines the relationship between the transformational leadership style and the social responsibility of employees in the mining industry. Beyond providing empirical evidence, this study delves deeper into the underlying mechanisms, specifically exploring the moderating role of intrinsic motivation on the social responsibility of employees in the mining industry.

The rest of this study is divided into sections, as follows. First, the research methodology is developed and put into use. Second, in order to test the hypotheses, data analysis and results are presented. Finally, the findings of this study are concluded and managerial implications and limitations are discussed.

2. Methodology

2.1. The mining industry of Vietnam

The mining industry of Vietnam, with a rich history spanning over 180 years, has played a vital role in national socioeconomic growth. The country boasts a vast network of mines and mineral deposits, numbering around 5,000 which contain more than 48 different minerals. Currently, about 900 of these mines are actively producing. The workforce in mining industry field is approximately 170,000 people [9].

A standout characteristic of the Vietnamese mining sector is its wealth and variety of mineral resources. Substantial reserves of bauxite, rare earth elements, coal, apatite, and white marble highlight this abundance. Moreover, Vietnam also possesses moderate reserves of numerous other minerals including iron, copper, lead-zinc, manganese, chromite, tin, tungsten, kaolin, feldspar, diatomite, and bentonite [9].

The mining sector is known for its potential environmental and social impacts, making CSR a crucial aspect of its sustainable operations. Furthermore, the commitment of Vietnamese government to achieving net-zero emissions by 2050 has placed significant pressure on the mining industry to adopt robust emission reduction measures and enhance its social responsibility performance. Examining employee extra-role and in-role CSR participation in this context is particularly relevant as it sheds light on the voluntary efforts of employees to contribute to the sustainability goals of the industry beyond their formal job requirements.

2.2. Sample characteristics and data analysis techniques

Sample characteristics

To collect data using random sampling, we developed a survey questionnaire containing a cover letter elaborating on the purpose of the study and the assurance of anonymity. Through the random sampling approach, we selected 142 respondents from June to August 2024.

Gender

A frequency table was generated to describe the distribution of gender in the sample. As shown in Table 1, majority participants were male ($n = 124$, 87.32%), while 18 participants (12.68%) were female. The results for gender wise distribution of the respondents are presented in Table 1.

Table 1. Respondents' demography

	N	%
Age		
Under 30	35	24.65
30-40	82	57.75
40-50	14	9.86
50 and above	11	7.75
Gender		
Male	124	87.32
Female	18	12.68
Marital status		
Single	38	26.76
Married	104	73.24
Education		
University	16	11.27
College	37	26.06
Intermediate	86	60.56
High school	3	2.11
Job position		
Production worker	67	47.18
Mechanical worker	28	19.72
Furnace worker	23	16.20
Office staff	24	16.90

Note. N: Sample Size

Age

Descriptive statistics were calculated to summarize the distribution of age group in the sample. As shown in Table 1, the largest age group was 30-40 years ($n=82$, 57.75%), followed by Under 30 years ($n=35$, 24.64%). The results for age wise distribution of the respondents are presented in Table 1.

Job Position

Descriptive statistics were calculated to summarize the distribution of job positions in the sample. As shown in Table 1 the largest group was Production workers ($n=67$, 47.18%), followed by Mechanical workers ($n=28$, 19.72%). The results for job position distribution of the respondents are presented in Table 1.

Data Analysis Technique

Researchers have typically used structural equation modeling (SEM) to estimate causeeffect models with latent variables Sarstedt [14] and it has gained significant popularity in business research and scientific fields [15].

Following Podsakoff [16] recommendation, we conducted the Harman's single-factor test. This involved subjecting all study variables to an unrotated principal component analysis to

determine whether a single factor emerged or if one general factor explained more than 50% of the total variance. The results showed that the cumulative variance explained by a single factor was 33.47%. This result indicated that common method bias was not a significant concern in this study.

2.3. Measures

This study used three constructs such as transformational leadership style, intrinsic motivation and CSR participation. Transformational leadership style measured six items were adopted from the Shayegan [6]. Intrinsic motivation was measured by five items adapted from the study of [13] and [17]. Sample items were “I enjoy coming up with new ideas for products” and “I enjoy improving existing processes or products.” The measurement of CSR participation in our study, adapted from the study of Vlachos [11], consisted of two factors including extra-role CSR participation with three items and in-role CSR participation with four items.

The measurement scales in this study were used in the form of a 5-point Likert scale, in which 1: totally disagree and 5: totally agree.

3. Results and discussion

3.1. Validity and Reliability of the Measures

In this study, the authors used Outer loadings, Cronbach's alpha (CA) and Composite reliability (CR) to assess the reliability of the measurement scale. At the same time, assessing the convergence through the Average variance extracted ratio (AVE), using the heterotrait-monotrait ratio (HTMT ratio) to assess the discriminant validity.

Table 2. Measurement model results

Constructs	Items	Outer loadings	CA	CR	AVE
Transformational leadership style (TLS)	TLS1	0.941	0.939	0.953	0.771
	TLS2	0.862			
	TLS3	0.869			
	TLS4	0.849			
	TLS5	0.873			
	TLS6	0.861			
Intrinsic motivation (IM)	IM1	0.943	0.926	0.944	0.773
	IM2	0.858			
	IM3	0.882			
	IM4	0.877			
	IM5	0.820			
Extra-role participation (ERP)	ERP1	0.947	0.899	0.937	0.832
	ERP2	0.895			
	ERP3	0.893			
In-role participation (IRP)	IRP1	0.947	0.926	0.947	0.818
	IRP2	0.904			
	IRP3	0.881			
	IRP4	0.885			

Note: Means and standard deviations are based on composite scores; CA = Cronbach's alpha; CR = composite reliability. AVE values are in parentheses. Alpha, CR 0.7 và AVE 0.5

As shown in Table 2, Outer loading exceeded the recommended value of 0.708 [18] is retained. Besides, the results of CA, CR show that all measurement scales are reliability (≥ 0.7). Specifically, the Alphas of the 3 constructs indicate high reliability (≥ 0.85) [19], the rhoC and rhoA coefficients ensure the lower and upper limits within the allowed value (≥ 0.7). The results of the average variance extracted analysis AVE show that the measurement scales achieve convergent values, the average extracted variances are all above 50%.

Similarly, the HTMT criterion was used to further assess discriminant validity, all research concepts differ significantly at the HTMT threshold of 0.90 as presented in Table 3 (<0.9).

Table 3. *Heterotrait-monotrait (HTMT ratio)*

Constructs	Mean	S.D.	1	2	3	4
1. Transformational leadership style	3.98	0.81				
2. Intrinsic motivation	3.70	0.89	0.40			
3. Extra-role participation	3.93	0.86	0.48	0.45		
4. Intra-role participation	3.99	0.88	0.36	0.42	0.56	

Note: Discriminant values are set at HTMT0.90 level.

Thus, through the results of scaling the measurements of the concepts, reliability and validity will be ensured for the next analysis step.

Table 4. *Vif_antecedents*

Constructs	Transformational leadership style (TLS)	Intrinsic motivation (IM)
1. Extra-role participation (ERP)	1.14	1.18
2. Intra-role participation (IRP)	1.24	1.16

Additionally, multicollinearity was not a concern in this study as the constructs demonstrated discriminant validity [20]. This finding is supported by Grewal [18] who suggested that multicollinearity arises when correlations between constructs exceed 0.80. Furthermore, all Variance Inflation Factor (VIF) values were below the critical threshold of 3, indicating the absence of multicollinearity issues. The results are presented in Table 4.

3.2. Model and hypotheses testing

The partial least squares structural equation modeling (PLS-SEM) method was employed with the assistance of R language to test the research model and hypotheses.

As shown in Table 5, the hypotheses were tested using the path coefficient (β) indicating the strength of the cause-effect relationship between the research constructs using the p_value. The bootstrapping procedure was used to assess the significance of path coefficient values (β). The statistical significance was tested at 5% ($p < 0.05$). The results show that both direct and mediating effects are statistically significant in Table 5.

Table 5. *Total effects, t values, confidence intervals*

Hypothesis	Path description	β	T-Value	P Values ($p < 0.05$)
H1	TLS $\rightarrow$ ERP	0.531	11.615***	Supported
H2	TLS $\rightarrow$ IRP	0.360	7.560***	Supported
H3	IM * TLS $\rightarrow$ ERP	0.109	2.497**	Supported
H4	IM * TLS $\rightarrow$ IRP	0.010	0.207	Unsupported

$R^2 = 0.838$, $\text{Adj}R^2 = 0.835$ ($p < 0.001$)

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Transformational leadership style has a positive influence on extra-role and in-role participation of employees in the mining industry. Transformational leadership style has a stronger impact on extra-role participation of employees in the mining industry, with corresponding estimation coefficients for extra-role ($\beta = 0.531$; $t = 11.615$; $p < 0.01$) and In-role participation ($\beta = 0.360$; $t = 7.560$; $p < 0.01$). Thus, hypotheses H1 and H2 are accepted.

Moreover, the study also revealed the moderating role of intrinsic motivation in the relationship between transformational leadership style and extra-role social responsibility behaviors of employees ($\beta = 0.109$; $t = 2.497$; $p < 0.01$), while notably finding has no moderating effect on in-role behaviors. This is also an important contribution of this research. Thus,

hypotheses H3 are accepted, while H4 are not accepted. The results of the structural model are shown in Table 5 and Figure 1.

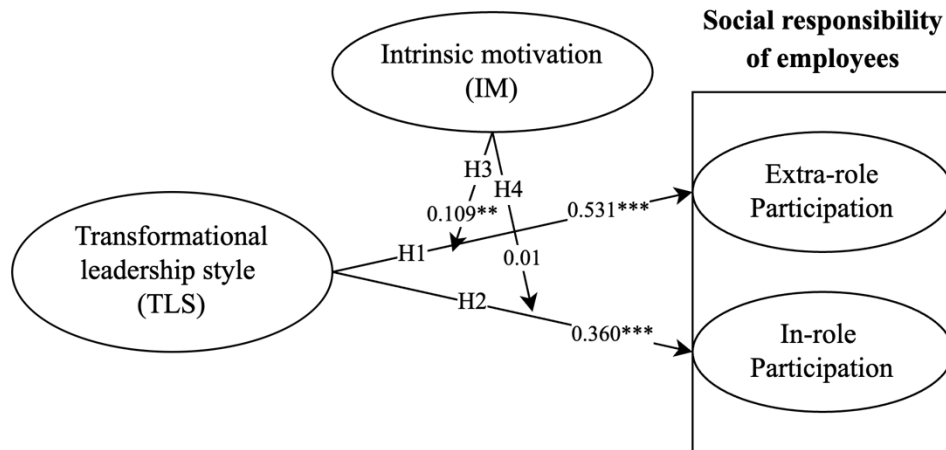


Figure 1. Results of the structural model

4. Discussion and conclusion

This research has some important theoretical contributions. Firstly, this study extends the existing literature by examining and validating the conceptual framework by combining the various determinants of the social responsibility of employees in the Vietnamese mining industry. The social responsibility of employees is playing a significant role in the context of a sustainable economy which is familiar to the ethical business operations. Thus, to our best knowledge, the present study extends the literature on the underlying mechanism through transformational leadership style are associated with positive the social responsibility of employees in the Vietnamese mining industry. These findings give credence to earlier studies by Mayer [21]. The findings substantiate transformational leadership theory regarding the capacity of leaders to inspire and motivate employees to exceed expectations, while providing empirical evidence that complements previous studies on the relationship between transformational leadership and positive employee outcomes. Furthermore, the study offers empirical validation for examining CSR outcomes at the micro-level, specifically addressing employee CSR engagement, which includes both in-role and extra-role CSR participation.

Secondly, the present research examines the moderating role of intrinsic motivation on the relationship between transformational leadership style and the social responsibility of employees in the Vietnamese mining industry and hypothesizes that intrinsic motivation are equally important for extra-role social responsibility behaviors of employees. The present study extends the research findings given by [13] when employees have high intrinsic motivation. They have passion and focus on their work, feeling excited about experimenting with new ideas and exploring creative solutions to solve problems.

In addition to its theoretical contributions, this study has important implications for managers. Firstly, if managers want to increase social responsibility of employees through their leadership style. The results of our study build on this literature by suggesting that managers should have transformational leadership style to increase the social responsibility of employees. Moreover, managers should encourage and develop individual intrinsic motivation to increase extra-role social responsibility of employee.

To enhance management capacity and foster intrinsic employee motivation, mining enterprise should implement comprehensive solutions focusing on two key areas. Firstly, management capacity improvement should prioritize merit-based recruitment for critical leadership positions,

ensuring selected candidates possess both the requisite capabilities and characteristics aligned with organizational objectives. This should be complemented by implementing transformational leadership training programs for managers. Secondly, employee motivation initiatives should encompass several strategic elements. A fundamental component is establishing clear career advancement pathways, providing employees with tangible professional development opportunities. This should be supported by a robust incentive system that includes performance-based rewards and recognition for technical innovations. Additionally, mining enterprise should implement supportive policies addressing the financial well-being of employees, such as interest-free loan programs and educational assistance for staff members' children. These comprehensive support mechanisms demonstrate organizational commitment to employee welfare while fostering increased Intrinsic motivation.

The future studies should extend the presented model by including and testing conventional dependent variables, such as culture, and other potentially. In addition, the sample size was limited in this study, future studies should increase the sample size to increase representativeness and generalization.

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