

The Impact of Transformational Leadership on Organizational Citizenship Behavior for the Environment in Manufacturing Industry

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ABSTRACT: Employees attitude towards the work environment plays a significant role in every organization. Not only the organization, all employees are responsible towards his sustainable practices at work environment, but they failed to pay attention as these practices are not included in their job description. OCBE is the primary focus of this investigation, which explores the ways in which transformational leadership may encourage a culture of sustainable development within organisations. The results of our research suggest that transformational leaders are influential in the improvement of OCBE, which in turn inspires sustainable practices and favourable environmental outcomes. These initiatives can be promoted through Transformational Leadership (TL) to enhance OCBE (Organizational Citizenship Behavior for the Environment). The primary goal of this study is to examine how TL might support OCBE in Chennai's manufacturing sector. With 208 respondents including both superior and subordinate were gathered using purposive sampling, and structural equation model (SEM) was used to test the hypotheses employing AMOS 21 software. This study suggests that organization need to implement OCBE practices in work environment motivated by the superior, to encourage the employees to incorporate such practices in organization as well.

Keywords: transformational leadership, organizational citizenship behavior for the environment, individual consideration, idealized behavior, idealized attribute, inspirational motivation, intellectual stimulation.

I. INTRODUCTION

Organizational Citizenship Behavior for the Environment (OCBE) is described as “individual and discretionary social behaviors that are not explicitly recognized by the formal reward system and that contribute to a more effective environmental management by organizations” [1]. OCBE is of huge importance in the organization sustainability for environment for various reasons like the employee green practices at work is voluntary in nature and not included into their formal job description. The individual’s voluntary practices on OCBE results in the significant impact on environmental performance on the organization [2] states that OCBE exhibits the individual employees to contribute towards environment related issues beyond their job role. Awareness in promoting OCBE to employees is essential to reach organization’s environmental sustainability goals. The negative attitude of the organization towards the environment leads to environmental hazards and hence the employees may feel guilty and to make the employees responsible towards environment, OCBE practices can be incorporated at the work environment, which can be encouraged by Transformational leadership (TL) [3]. Hence the organizational practitioners should be aware of such practices and they should understand why it is important to motivate employees to occupy in OCBE practices [4].

In accordance with [5] was the first author to differentiate between transformational and transactional leadership. A leadership perspective that induces change in social systems and employees is referred to as TL. Unlike transactional leaders, who reward and acknowledge their followers, TL promotes an optimistic relationship between the leader and their followers [6]. Consequently, the followers are motivated and encouraged by the Leader. It involves a mutual relationship between superior and employees so that the employees receive earn rewards or good name from their superior/supervisor [7]. They encourage, motivate and inspire employees to

perform in a significant way which results in organization growth and development that shapes an organization's success [8]. As per the authors [9] concluded that there is an optimistic relationship between TL and subordinates' creativity, that are closely related with one another. As per [10] there is an immense pressure on industries to exchange information with respect to environmental issues as it a blooming concern for the public to protect ecological sustainability. [11] they found that, there is an optimistic impact of TL on the follower performance and development. TL are much more likely to understand and realize the situation of employees at their work place [12] stated that OCBE were influenced by responsible leadership. Since the responsible leaders can motivate the employees to follow sustainable practices and priorities.

Beyond the manufacturing sector, a broader review of OCBE demonstrates that leadership styles have considerable effects on sustainable behaviours in a variety of industries. OCBE is effectively promoted by responsible and transformational leadership, as it aligns individual motivations with organisational environmental objectives, as evident in numerous studies. Study [59] focused on the public sector in the Special Capital Region of Jakarta, Indonesia. For the purpose of investigating OCBE, this context is especially important, as it includes to the specific challenges or responsibilities that public sector employees encounter when advocating for sustainable practices. Leadership is particularly important in the real estate sector, which is known for its resource-consuming operations and significant environmental impact. This study emphasizes the importance of OCBE and leadership in this sector [60].

In this study we have focused on subdimensions of TL including (i) Inspirational motivation, (ii) Idealized behavior, (iii) Idealized attribute (iv) Individual consideration and (v) Intellectual stimulation which was identified by [13, 14] identified that TL's each dimensions have a distinctive impact on the other variables with different degree. The 'individual and discretionary social behaviors' includes various type of tasks, like knowledge exchange to prevent workplace's pollution, reducing workplace waste, implementing sustainable practices, incorporating environmentally friendly activities etc. [15]. Employees' workplace environment is a determining factor of their work quality and attitude towards organization which results in productivity [16]. Unethical workplace surroundings result in environment hazards which hinder the productivity rate of the employee.

The following is the paper's structure: 'review of literature and hypotheses development' in 'section II', 'material and method' in 'section III', 'data analysis' in 'section IV', 'findings and discussion' in 'section V' and 'conclusion' in 'section VI'.

II. REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

A detailed literature analysis and theoretical framework development were employed to identify construct variables for the investigation of the impact of TL on OCBE. The review supporting this study highlights the importance of these TL's dimensions on OCBE by examining the relationship between "inspirational motivation, idealized behavior, idealized attribute, individual consideration, and intellectual stimulation and OCBE".

1. THEORETICAL FRAMEWORK

Bass and Riggio's Transformational Leadership Theory [21] highlights the function of leaders in inspiring and motivating their followers to achieve remarkable outcomes and to cultivate a dedication to organisational objectives, which include environmental sustainability. This theory is particularly appropriate in the context of OCBE because it emphasises the influence of transformational leaders on the attitudes and behaviours of employees towards environmental initiatives through intellectual stimulation, idealised influence, inspirational motivation, and individualised consideration. Research [59] implies this association by illustrating that transformational leadership has a beneficial effect on job satisfaction and organisational commitment, which in turn improves OCBE among employees. TL is recognised by its capacity to encourage and motivate employees beyond their self-interests, thereby encouraging a strong emotive bond with the organization's objectives. This connection is essential for the promotion of OCBE, as it motivates employees to demonstrate environmentally friendly behaviours even when they are not explicitly compensated. Studies conducted by [61, 62] have shown that transformational leadership has a beneficial effect on OCBE by building an organizational culture that prioritizes sustainability and prioritizes proactive environmental behaviours.

2. TRANSFORMATIONAL LEADERSHIP

Study [17] was the first author, who coined TL. He stated that it involves an exchange of relationship between leaders and followers. aiming to earn rewards or for implementing their leader's desire.

2.1 Idealized Influence

TL should conduct activities that allow them to serve as positive examples for their groups, as idealized influence, in terms of behaviour [18]. Additionally, these leaders must exhibit skill and commitment, as well as sincerity and respect. These leaders exhibit behaviours that establish them as role models for their supporters in this aspect of TL. The adherents subsequently aspire to emulate the leader, who is subsequently treated with reverence, respect, and trust [19]. The followers also acknowledge the remarkable capabilities and determination of their leader, who is visible in his willingness to take risks in order to attain personal or organizational objectives [20]. For their employees [21], TL serves as an effective role model. The followers appreciate, respect, and believe in these leaders. Thus, there are two main aspects to Idealized Influence: Idealized attribute and Idealized behavior. These two leader's attribute and behavior are formed by the leaders influence on followers. As the leader are highly capable of taking risk, solving problem and supporting the followers. Study [22] Idealized influence attributed is the level in which the administration of the leader makes his followers to trust and follow him that results the followers to identify his exceptional leader. A leader's idealized influence behavior, employees personally sacrifice to their leader's vision, which makes them emotional bond with their leader [23]. Based on this explanation, the following hypotheses are proposed,

H1: Idealized attribute of TL significantly affects OCBE.

H2: Idealized behavior of TL significantly affects OCBE.

2.2 Inspirational motivation

Motivation is stimulated by dynamic and efficient communication methods [19]. This action shows the importance of leaders providing high standards to employees and motivating them through challenges and purpose in order to develop a shared vision within the organization [24]. TL, according to [25], establish a unique vision for their employees and inspire them to achieve it, thereby encouraging positive connections between them. [26] Both individuals assert that TL overcome simply recognising and reward by integrating with the organization's objectives and vision with the employees' interests. Study [23] suggests that employees are likely to adopt the behaviour of leaders when they express their viewpoints on the workplace. The inspiring motivation of leaders is essential for the engagement of employees in the promotion of a secure work environment [27], which in turn encourages them to participate in the organization's sustainable initiatives or practices. Study [28] examined the impact of TL on group cohesiveness, empowerment, and group effectiveness and he concluded that the role of leadership on team work plays a vital role in the organization. Inspirational motivation reveals the leader's coherent of effective goal and vision to inspire and motivate the employees to work towards the organization commitment goal, which results in more of inspirational employees [13]. Therefore, as a result the hypothesis developed,

H3: Inspirational motivation of TL significantly affects OCBE.

2.3 Intellectual stimulation

Leaders who participate in intellectual stimulation develop a secure environment that encourages risk-taking and experimentation, thereby fostering innovation [29]. This is especially important in industries that are currently undergoing rapid technological advancements. According to a recent meta-analysis conducted by [30], there is a positive correlation between increasing levels of employee engagement, commitment, and job performance and intellectual stimulation. Furthermore, intellectual stimulation improves the problem-solving abilities and critical thinking skills of employees. According to [31], employees who are driven by intellectually stimulating individuals are more likely to engage in challenging critical thinking and problem-solving tasks. Team creativity and innovative behaviours are significantly improved by intellectual stimulation, particularly in complicated and difficult environments, according to a study conducted by [16]. Employees who are intellectually stimulated by their leaders are more likely to exceed their typical duties and exhibit strategic behaviours that contribute to organizational success, as per the research conducted by [32]. Leaders who are intellectually stimulating are more effective in cultivating a culture of continuous growth and adaptability and navigating organizational changes, as per the study conducted by [33].

According to [34], employees' responses to intellectually stimulating leadership are substantially influenced by their intrinsic motivation and flexibility to experience.

TL provide the opportunity to generate new ideas and innovation from the employees and hence their opinions and ideas are being valued, rewarded and recognized [21]. Leaders encourages the employees to suggest new perspective in addressing and finding solution to the work-related problems. Transformational leaders encourage and challenges their employees to re think about their work and how it can be improved further [35]. This makes the employees to go beyond their job description and think better. In accordance with this explanation, the fourth hypothesis that has been put forth,

H4: Intellectual stimulation of TL significantly affects OCBE.

2.4 Individual consideration

According to recent research [36], employees' knowledge regarding the environment can be significantly affected by individualized consideration. It is possible for leaders who prioritize individualized consideration to create a culture in manufacturing sectors that experience significant environmental outcomes [37]. Study [38] conducted a study that indicated that employees are more likely to adopt pro-environmental behaviours, such as recycling, reducing waste, and optimizing resource use, when leaders provide personalised encouragement and assistance. Mentorship, personalised feedback, and attention to employees' particular needs are all components of individualized consideration, a leadership behavior that prioritizes their personal development [39]. In recent years, the role of individualized consideration in promoting OCBE voluntary, extra-role behaviours that are designed to improve the environmental sustainability of organizations has attracted great interest in manufacturing industries where environmental impact is critical [40].

Individual consideration has an effective result towards employees' thoughts [27], knowledge and their perspective towards safer work environment. When the leaders solely consider the employees individually, the employees open up and share their ideas and suggestions towards their work environment. Leaders focus on employee's strength and weakness individually and train them to improve their quality of work. Transformational leaders act a mentor or coach to the employees and develop their individual potential towards the organization growth and development [21]. Consequently, the hypothesis was framed,

H5: Individual consideration of TL significantly affects OCBE.

2.5 TL and OCBE

In study [41] researchers have clearly demonstrated that both the TL and OCBE contribute to the enhancement of environmental-related practices in the workplace and the enhancement of organizational performance. The behavior and attitude of employees are believed to be influenced by TL, according to researchers. Helping employees participate in environmental sustainability practices is considered a form of OCBE [42]. As a result, the organization's environmental performance is significantly influenced by the leader's advocacy for environmentally favorable initiatives in the workplace [43]. In accordance with [44], the leader's environmental support is the extent to which the leader encourages employees to adopt sustainability practices in the workplace. In many ways, they support employees in paying attention to sustainable environmental practices. This includes allowing them the freedom to act in an environmentally friendly manner, motivating employees' environmental initiatives and practices at work, sharing their knowledge about OCBE with group members, ensuring proper communication regarding environmental-related issues within the organization, assisting subordinates in engaging in sustainable practices at work, recognizing employees who exhibit such behavior/practices, and promoting awareness among subordinates [45]. As a result, these investigations have verified that TL improves OCBE for environmental protection [46].

3. OBJECTIVES

1. To study the demographic profile and characteristics of the employees in manufacturing industries.
2. To examine the role of TL's dimensions that supports OCBE.
3. To investigate the relationship between Individual consideration, Idealized behavior, Idealized attribute, Inspirational motivation, Intellectual stimulation and OCBE.

4. To recommend some OCBE practices at work environment to adhere by the employees in manufacturing industries.

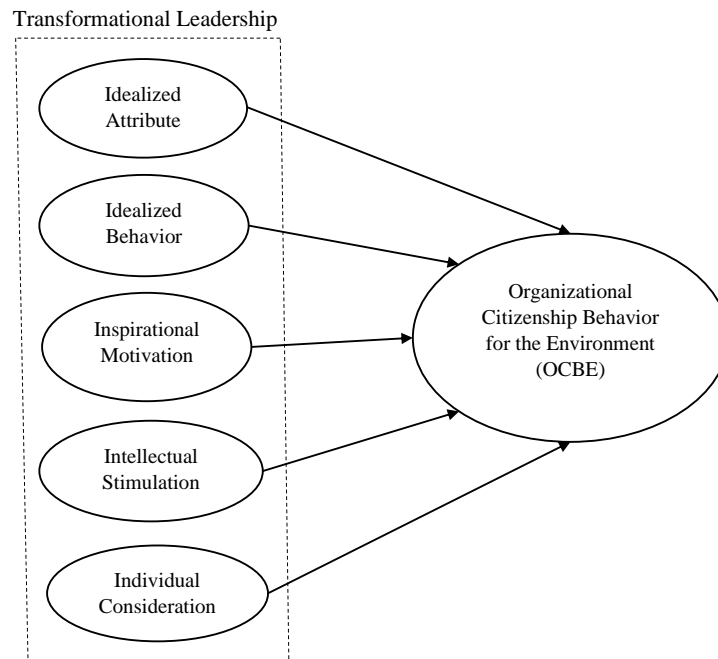


FIGURE 1. Conceptual framework.

Source: Prepared by Authors (2024)

III. MATERIAL AND METHOD

1. METHODS

Primary as well as Secondary data were used for this research. Online Questionnaires were constructed and gathered from the superiors and the employees as the Primary data. Questionnaires has been circulated through Google forms and the data was were distributed among 250 respondents of which finally 208 were taken after deleting or modifying data. Purposive sampling method was used to collect the sample, focusing on a particular demographic of participants to guarantee that the sample was a fair representation of the targeted population and the determined sample size was 208, was sufficient to determine meaningful relationships between the variables under investigation and is suitable for statistical analysis including both superior and subordinate. This non-probability sampling approach was selected to assure that only individuals with specific knowledge and experience who were relevant to the study's focus namely, TL and organizational citizenship behaviour (OCB) for the environment—were engaged. Based on predetermined criteria, including their active participation in programs designed to reduce the organization's sustainability initiatives, leadership positions, or involvement in environmental sustainability initiatives, respondents were chosen from manufacturing sectors in Chennai. Likert's five-point scale were applied with scales covering as "Strongly agree, Agree, Neutral, Disagree, and Strongly Disagree". SPSS -25 and AMOS-21 were used for the research. For data analysis, SEM was done using AMOS for validity check, T test, Chi square test, regression, correlation and SEM analysis were used for model fit.

2. MEASURES

2.1 Idealized Attribute

In order to evaluate a leader's charismatic influence and the extent to which their followers admire and respect them, the TL framework frequently employs the Idealised Attributes (IA) scale. The "Multifactor Leadership Questionnaire (MLQ)", which was devised by [47], is frequently utilised to evaluate it. "I believe that the value of trust between each other is highly commendable", "I always boost my self-confidence and power", "I always feel

trust as an important factor between superiors and with other employees". This scale specifically assesses the ethical standards, conviction, and sense of mission that a leader exhibits. A five-point Likert scale is typically employed to evaluate these items.

2.2 Idealized Behavior

Another element of the TL model is the Idealised Behaviour (IB) scale, which is distinct from the Idealised Attributes (IA) scale. The IB scale emphasises the actual behaviours that leaders exhibit, which are consistent with the values and principles of the leader, while IA concentrates on the leader's values, principles, and the respect they achieve from their followers. Similar to IA, the "Multifactor Leadership Questionnaire (MLQ)" devised by [47] is the standard method for measuring the Idealised Behaviour scale. "My organization helps in going beyond my formal job description and engaging in sustainable practices at my organization", "My organization helps in developing the vision for future at work environment" and "My organization helps in understanding the need for change at work in the organization related to environment issues". The integrity of leaders' actions, their ability to serve as role models, and their alignment with the organization's collective interests are all assessed by the IB scale.

2.3 Inspirational Motivation

Another crucial element is inspirational motivation, which comprehends specific measurements that evaluate the TL's dimension. [47] developed the "Multifactor Leadership Questionnaire (MLQ)", which includes the Inspirational Motivation scale. Consist of three scale item which include "I feel proud when I do exceptional work in my organization", "I feel positive about the work environment and my organization" and "I always motivate others in implementing environmentally sustainable practices". This scale is employed to evaluate the extent to which leaders motivate and inspire their supporters.

2.4 Intellectual Stimulation

"The Multifactor Leadership Questionnaire (MLQ)", which was developed by [47] determines the Intellectual Stimulation scale, which is an additional critical element of the TL model. "I feel challenge in thinking out of box related to environmental issues", "I rethink some of my traditional practices at work" and "I always analyse problems in multiple dimensions and allows others to think". This scale evaluates a leader's capacity to encourage followers to innovate, query assumptions, and think creatively.

2.5 Individual Consideration

The TL model is assessed using the Individual Consideration scale in the "Multifactor Leadership Questionnaire (MLQ)", which was proposed by [47]. "I encourage environmental practices at work in achieving the goals", "My behaviour helps in increasing cohesiveness between other employees", "My behaviour helps to increase employee morale at my organization" and "My attitude helps me to boost myself while practising environmentally friendly activities". This scale evaluates a leader's capacity to offer personalised assistance, guidance, and mentoring to followers, with an emphasis on their own development, growth, and requirements.

2.6 Organizational Citizenship Behavior for the Environment

Organizational Citizenship Behaviour (OCB) are discretionary behaviours that employees exhibit that exceed their formal employment responsibilities and positively influence the organization's operations. Organizational behaviour research has extensively investigated the concept of OCB, which was initially introduced by [48]. The organizational behaviour (OCB) scale assesses behaviours that are not expressly recognised by the traditional system of rewards but that are essential to the organization's operational efficiency. "My behaviour at work, i.e., environmental management practices lead to the Organizational sustainability", "I am excitable, when I do things beyond my job role" and "I feel happy to be a part of this organization while taking part in environmental issues". Typically, the OCB scale employs a Likert-type response format, on a scale of 1 to 5 (in which 1 denotes 'strong disagreement' and 5 denotes 'strong agreement').

IV. DATA ANALYSIS

1. DEMOGRAPHIC PROFILE AND CHARACTERISTICS

Table 1. Demographic profile and characteristics.

S. No	Demography variable	Category	Frequency	Percentage (%)
1	Gender	Male	134	64%
		Female	74	36%
2	Age	25-30	91	44%
		30-35	72	35%
		35-40	21	10%
		40-45	10	5%
		45-50	8	4%
3	Marital status	50 and above	6	3%
		Married	106	42%
		Unmarried	102	58%
4	Education	Diploma	11	7%
		Graduation-UG	125	71%
		Graduation-PG	57	18%
		External Certification	15	4%
5	Services	Fresher	91	60%
		1-5 Years	59	18%
		5-10 Years	35	17%
		10-15 Years	14	2%
		More Than 15 Years	9	3%
6	Job classification	Entry	97	52%
		Intermediate	66	39%
		Experienced	25	6%
		Specialist	11	2%
		Expert	9	1%

Source: Prepared by Authors (2024)

The table 1 demonstrates that the male respondent's presence was 64% and 36% were female respondent. In the age group perspective of respondent's 44% were the age range between 25 to 30 and 35% were the age range between 30 to 35 and 10% were the age range between 35 to 40 and remaining 12% were between 40-45,45-50 and 50 years above. When comparing the marital status, unmarried respondents were more than married respondents with 58% and married respondents with 42%. Educational qualification perspective of the respondent's UG graduate participation was more with 71% and external certification respondent's shows lesser participation with 4%. According to the services of the respondents, freshers' participation was more with 60% of the respondents with experience between 10 to 15 years, showed lesser interest with 2 %. According to the Job classification of the respondent's, entry level shows higher participation with 52 %, intermediate with 39%, experienced with 6%, specialist with 2% and expert with 1 %.

2. CONSTRUCT VALIDITY AND RELIABILITY

Table 2. Construct validity and reliability.

Model	Items	Loading	CR	AVE	MSV	Maxr(H)	Tolerance	VIF
Inspirational_Motivation	INMO1	0.734	0.718	0.467	0.327	0.756	0.732	1.366
	INMO2	0.497						

	INMO3	0.785						
Idealized_ Behaviour	IDBE1	0.660						
	IDBE2	0.731	0.768	0.526	0.408	0.776	0.665	1.503
	IDBE3	0.779						
Idealized_ Attribute	IDAT1	0.697						
	IDAT2	0.778	0.751	0.503	0.408	0.762	0.688	1.455
	IDAT3	0.647						
Individual_ Consideration	INCO1	0.620						
	INCO2	0.560						
	INCO3	0.608	0.699	0.368	0.484	0.702	0.764	1.308
	INCO4	0.637						
Intellectual_ Simulation	INST1	0.432						
	INST2	1.115	0.695	0.505	0.033	1.264	0.968	1.033
	INST3	0.293						
Organizational_ Citizenship_ Behaviour_ Environment	ORCBE1	0.758						
	ORCBE2	0.702	0.778	0.538	0.484	0.779	0.695	1.438
	ORCBE3	0.740						

Source: Prepared by Authors (2024)

From the table 2, In Item loading, most of the items were loaded excellent, except INST3 (0.293). Out of these nineteen items INST2 (1.115) was the highest loading item and INST3 (0.293) was the lowest loading item and remaining all the items lies between 0.432 to 1.115. Composite Reliability is done to calculate the internal consistency and data's reliability, the CR values with more than 0.9 it is not reliable. According to [49] declaration, all CR values lie between 0.695 and 0.778, these values are lesser than 0.9 which indicates that reliability of all the data are highly composite with each another. To measure the construct convergent validity, the researcher used Average Variance Extracted (AVE) test. AVE results shows that the mean of the items is positively (+ve) correlated with one another. Hence, the test results indicates that four constructs were close to 0.5 and two construct was lesser than 0.5. Except that two construct all the other construct are having excellent construct convergent validity. The VIF is mainly adapted to analyse multicollinearity from the constructed model. Hence, standard value of VIF is >1 and if the value is >10 it shows model is multicollinearity. VIF indicates how independent variable are influencing another one. The findings show all the VIF values are greater than 1 the minimum value is 1.033 which is Intellectual stimulation variable and the maximum VIF value is 1.503 which is Idealized behaviour. Hence it shows that there was no multicollinearity, since all the VIF values are ranging between standard model fit value.

3. DISCRIMINANT ANALYSIS

Table 3. Discriminant analysis.

Individual_ Consideration	Idealized_ Attribute	Idealized_ Behaviour	Inspirational_ Motivation	Intellectual_ Stimulation	Organization_ Citizenship_ Behaviour_ Environment
0.701					
0.526	0.709				
0.367	0.639	0.725			
0.568	0.475	0.531	0.684		
-0.082	-0.084	0.181	0.076	0.711	
0.696	0.594	0.589	0.572	0.172	0.734

Source: Prepared by Authors (2024)

The discriminate validity analysis measures the correlation among the variables. When the AVE values are higher, correlation of with the other variables it clearly shows that this study constructs theoretically not close with the other constructs. The table 3 indicates that all the AVE values are higher, Consequently, there is no relationship between any of the variables. Hence there was no variable which is closer with other variables.

4. CORRELATION ANALYSIS

Table 4. Correlation analysis.

CONSTRUCTS	Correlations					Organizational_
	Idealized_ Attribute	Idealized_ Behaviour	Inspirational_ Motivation	Intellectual_ Stimulation	Individual_ Consideration	Citizenship_ Behaviour_ Environment
Idealized_ Attribute	1	0.492**	0.327**	0.032	0.383**	0.458**
Idealized_ Behaviour		1	0.419**	0.152*	0.271**	0.452**
Inspirational_ Motivation			1	0.016	0.402**	0.415**
Intellectual_ Stimulation				1	-0.042	0.130
Individual_ Consideration					1	0.500**
Organizational_ Citizenship_ Behaviour_ Environment						1

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

Source: Prepared by Authors (2024)

A correlation analysis reveals the link between two variables as well as the interactions between them. From the table 4, it is evident that, each and all variables are positively correlated with one another. One of the variables called “Individual Stimulation” showing negative correlation -0.042 with “Individual consideration” variable. “Individual consideration” variable having high correlation 0.500 with “Organizational Citizenship Behaviour for Environment” “Inspirational Motivation” having low correlation 0.016 with “Individual Stimulation”

5. REGRESSION ANALYSIS

5.1 R square table

Table 5. R square table.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.639a	0.508	0.394	1.75830

A. Predictors: (constant), individual consideration, intellectual stimulation, idealized_behaviour, inspirational motivation, idealized attribute

Source: Prepared by Authors (2024)

R-square table shows that how the data scattered around the fitted regression model. It measures the percentage of relation among the exogenous and endogenous variable collectively. The results give the value of R square is 0.508. The value of 0.508 suggests that the independent factors in the model may account for approximately 50.8% of the variance in the dependent factor, indicating a moderate to excellent predictive level. This level of R-square is considered as high in social science research, where human behaviour is frequently influenced by a variety of intricate factors, and it conveys valuable insights into the relationships under investigation.

5.2 Significance table of Regression Analysis

Table 6. Significance table of Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.994	0.866		2.303	0.022
Idealized_ Attribute	0.172	0.060	0.188	2.888	0.004
Idealized_ Behaviour	0.166	0.056	0.197	2.964	0.003
Inspirational_ Motivation	0.129	0.059	0.139	2.205	0.029
Intellectual_ Stimulation	0.102	0.053	0.105	1.916	0.057
Individual_ Consideration	0.246	0.047	0.323	5.222	0.000

Dependent Variable: Organizational_Citizenship_Behaviour_Environment

Source: Prepared by Authors (2024)

The analysis displays the regression equation to represent the significance of each independent variable and the dependent variable. Hence with the $p = 0.05$ significance level of independent and dependent variable will be significant if the t value is greater than 1.96. As illustrated from table 6, we can infer that, each and every t values are higher than 1.96, All of the independent factors are therefore important in relation to the dependent variable. Individual attribute's significant value is 2.888 with p value of 0.004, Idealized behaviour's significant value is 2.964 with p value of 0.003, Inspirational motivation's significant value is 2.205 and p value of 0.029, Individual stimulation showing significant value of 1.916 with p value of 0.057, Individual consideration exhibiting 5.222 as significant value and the 0.000 p-value. "Intellectual Stimulation" has a p-value of 0.057, which suggests that marginal p-values can still suggest a potentially meaningful pattern, particularly in social science research where complex variables may produce slight effects. In order to verify the relationship, it may be necessary to conduct additional research in future studies or with larger sample sizes.

6. T TEST

Null Hypothesis (H0): There is no significance difference between Gender and TL's dimension.

Alternative Hypotheses (H1): There is a significance difference between Gender and TL's dimension.

Table 7. t-Test results.

Constructs	Gender	Group Statistics			
		N	Mean	Std. Deviation	Std. Error Mean
Idealized_ Attribute	Male	134	11.2164	2.54984	0.22027
	Female	74	10.5946	2.29901	0.26725
Idealized_ Behaviour	Male	134	10.2985	2.73938	0.23665
	Female	74	9.6757	2.53798	0.29503
Inspirational_ Motivation	Male	134	10.5746	2.72106	0.23506
	Female	74	10.3784	1.84095	0.21401
Intellectual_ Stimulation	Male	134	8.2537	2.33214	0.20147
	Female	74	9.0135	2.24825	0.26135
Individual_ Consideration	Male	134	14.2910	3.26021	0.28164
	Female	74	14.6757	2.35894	0.27422

Source: Prepared by Authors (2024)

T-test is used to tests the hypothesis in statistics. This test has been performed between gender and TL’s dimension. This result shows that construct “Individual Stimulation” significance value is lesser than 0.05 i.e., 0.024, which is rejected (null hypothesis) and each alternative hypothesis’ value was higher than 0.05, they were all accepted. Since the variable gender has different of opinion for the construct “Intellectual Stimulation” also there is no difference of opinion on other four constructs.

7. CHI SQUARE

7.1 Chi Square- Gender * IDBE1 Crosstabulation

Null Hypothesis (H0): There is no associate between Gender and My organization helps in going beyond my formal job description and engaging in sustainable practices at my organization.

Alternative Hypotheses (H1): There is an associate between gender and My organization helps in going beyond my formal job description and engaging in sustainable practices at my organization.

Table 8. Chi Square test- Gender * IDBE2.

		Gender * IDBE2 Crosstabulation						
		IDBE2						
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	
Gender	male	Count	9	17	48	38	22	134
		% Within Gender	6.7%	12.7%	35.8%	28.4%	16.4%	100.0%
		% Within IDBE2	69.2%	42.5%	70.6%	67.9%	71.0%	64.4%
		Count	4	23	20	18	9	74
female		% Within Gender	5.4%	31.1%	27.0%	24.3%	12.2%	100.0%
		% Within IDBE2	30.8%	57.5%	29.4%	32.1%	29.0%	35.6%
	Total	Count	13	40	68	56	31	208
	% Within Gender	6.3%	19.2%	32.7%	26.9%	14.9%	100.0%	
	% Within IDBE2	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Source: Prepared by Authors (2024)

Table 9. Chi Square test

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.514a	4	0.033
Likelihood Ratio	10.127	4	0.038
Linear-by-Linear Association	3.055	1	0.080
N of Valid Cases	208		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.63.

Source: Prepared by Authors (2024)

Table 8 illustrates Chi-Square test; implemented to investigate null hypothesis regarding the relationship between gender (male and female) and “My organization helps in going beyond my formal job description and engaging in sustainable practices at my organization” and findings are obtained. The table 9 shows that the Person Chi-Square value of 0.033 value is lesser than 0.05 and it is rejected. The result suggests that there is alternate association between gender and “My organization helps in going beyond my formal job description and engaging in sustainable practices at my organization”.

Men are the most prevalent in the "Agree" and "Strongly Agree" categories, which suggests that they are more in accordance with pro-environmental behaviour. Conversely, females exhibit higher percentages in the "Disagree" and "Neutral" categories, which may suggest that their perspectives are refined and influenced by their unique workplace experiences or priorities. Research indicates that men and women frequently adopt distinct sustainability strategies. Whereas men prioritise technical or structural solutions, women prioritise collaborative and socially-oriented initiatives. This gendered variance emphasises the necessity of inclusive strategies that capitalise on diverse perspectives to improve sustainability outcomes [60].

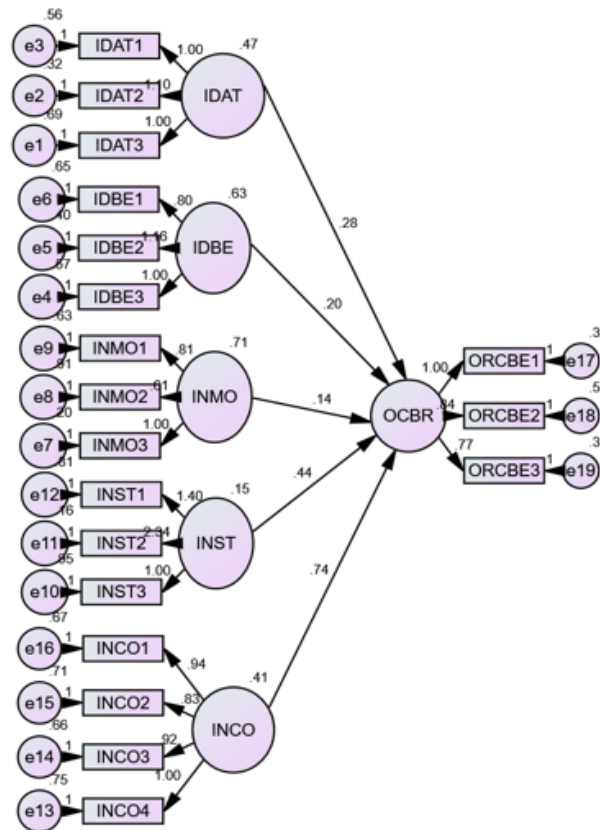


FIGURE 2. Structural equation model.

Source: Prepared by Authors (2024)

Table 10. Regression weights.

Dependent Variable	Path	Independent Variable	Estimate	S.E.	C.R.	P
Idealized attribute	<---	OCBE	.281	.053	5.301	***
Idealized behaviour	<---	OCBE	.199	.048	4.145	***
Inspirational motivation	<---	OCBE	.145	.059	2.457	.139
Intellectual stimulation	<---	OCBE	.443	.071	6.239	***
Individual consideration	<---	OCBE	.739	.075	9.853	***

Source: Prepared by Authors (2024)

The first hypothesis was found to be "supported" since it positively impacts OCBE, which in turn positively influences the idealized attribute ($\beta = 0.281, p = 0.000$). This suggests that there is a very strong correlation between the idealized attribute of TL and OCBE. The data show that there is a good correlation between OCBE and idealized behaviour ($\beta = 0.199, p = 0.000$), which supports Hypothesis 2. As a result, it was determined that OCBE positively affects idealized behavior, and Hypothesis 2 was thus "supported." Despite its little effect, promoting inspiring motivation might possibly reduce OCBE; nonetheless, since hypothesis 3's p value is 0.139, it is believed

to be "not supported." The support for hypothesis 4 results from the positive and comparatively substantial relationship between OCBE and intellectual stimulation ($\beta = 0.443, p = 0.000$), which gives workers higher levels of freedom and greatly enhances their OCBE practices. Lastly, it demonstrated that Hypothesis 5 was "supported" since it had a significant impact on OCBE when taking Individual consideration ($\beta = 0.739, p = 0.000$). Thus, OCBE is greatly enhanced by higher levels of TL.

Table 11. Model fit parameters.

Model fit parameters	Recommended values	Values obtained
x ² /d.f.	≤ 5.00	4.511
GFI (Goodness of Fit Index)	≥ 0.90	0.921
AGFI (Adjusted Goodness of Fit Index)	≥ 0.90	0.956
CFI (Comparative Fit Index)	≥ 0.90	0.934
RFI (Relative Fit Index)	≥ 0.90	0.977
NFI (Normed Fit Index)	≥ 0.90	0.935
RMR (Root Mean Square Residual)	≤ 0.05	0.041
RMSEA (Root Mean Square Error of Approximation)	≤ 0.05	0.045

Source: Prepared by Authors (2024)

Table 11 leads us to the following conclusions: the Chi-square test (X^2, df, p) value was less than or equal to 5, i.e., 4.511 which was an acceptable value; the GFI value was greater than or equal to 0.9, i.e., 0.921 which was an appropriate value; the AGFI value was higher than 0.9 or equivalent to i.e., 0.956 which was a desirable value; the CFI value was higher than 0.9 or equivalent to 0.934 which was a recommended value; the RFI value was higher than 0.9 or equivalent to 0.977 which was an acceptable value; the NFI value was higher than 0.9 or equivalent to 0.935 which was an acceptable value; the RMR value was less than or equivalent to 0.05 i.e. 0.041 which was an acceptable value; and the RMSEA value was less than or equivalent to 0.05 i.e. 0.045 which was a suitable value. According to [49], each and every parameter offers the recommended value. The model therefore fits the investigation.

V. FINDINGS AND DISCUSSION

The findings of this study reveal that employees' attitudes and behaviour towards sustainable practices implementing in organization related to environmental issues, apart from the influence of employees and organizations, the TL has a greater influence in promoting the OCBE practices. The five different dimensions of TL such as "Inspirational motivation, Idealized behavior, Idealized attribute, Individual consideration and Intellectual stimulation" positively impacts OCBE. The results indicates that all the VIF values are greater than 1, except the Intellectual Stimulation variable and the Idealized behaviour obtained maximum VIF value. It shows that the model does not contain multicollinearity.

The variables "Individual Stimulation" showed negative correlation with "Individual consideration" variable. "Individual consideration" variable showed high correlation with "Organizational Citizenship Behaviour for Environment" and "Inspirational Motivation" showed low correlation with "Individual Stimulation" variable. The variable gender has different of opinion for the construct "Intellectual Stimulation" also there is no difference of opinion on the other four constructs a) Individual consideration. b) Idealized attribute, c) Idealized behavior, d) Inspirational motivation. The result from the SEM model indicates that all the hypotheses, except H3 i.e. inspirational motivation was not supported which shows that OCBE is greatly enhanced by higher levels of TL's dimensions. Provide a framework for recognising and rewarding staff members who actively participate in OCBE. Programs for awarding achievements can motivate people to take part and emphasize the value of environmental efforts. According to [50], this may include rewards, public recognition, or other types of acknowledgements. It is the responsibility of leaders to demonstrate the environmental behaviours they want from their employees. TL influences OCBE by ensuring that organisational sustainability objectives are in accordance with the intrinsic motivations of employees. According to environmental psychology, TL promotes a sense of intrinsic commitment

to environmental values and a sense of purpose, while sustainability leadership emphasises its role in enabling employees to engage in voluntary eco-friendly behaviours and innovate [60]. TL bridge the difference between goals and behaviors by fostering innovation, providing support, and establishing a shared vision, thereby integrating sustainability into organizational culture and individual actions [63]. According to [51], leaders who actively participate in OCBE initiatives create a positive example and support practices that aim to conserve energy. All the parameters offer the recommended value which indicates the model is fit for the study.

VI. CONCLUSION

“Reduce, Reuse, recycle”, reduce means to minimize the use of wastage, reuse means to use the product for more than once and recycle means turning the old or waste products into new one. By following this mantra, we can switch to sustainable organization. This research suggest that it will be mainly useful to evaluate the different dimensions of TL such as “Idealized attribute, Idealized behavior, Inspirational motivation, Intellectual stimulation, and Individual consideration” which impacts OCBE. This analysis also indicates that managers/superiors have a prominent positive effect on employees by motivating encouraging such practices to employees. Particularly, Inspirational motivation plays an essential part to make the employees attaining in organizational sustainability for the future. The organization can implement environmentally sustainable practices into their management system by locating environmentally sustainable management objectives, observing such practices, evaluating those objectives, and then creating awareness through the employees for environmental protection by rewarding in order to encourage or motivate employees environmentally sustainable behavior [35].

Study [52] stated that OCBE includes reducing energy consumption and waste reduction, for both the employees’ and organizations, by incorporating green practices at work. Study [43] described OCBE, as the discretionary environmental practices by the employees which is not awarded by the organizations. Study [53] states that the environmental sustainability of the organization mainly depends on the voluntary behaviours of the employees, as they are responsible to implement green practices at work [54]. Study [55] states that when environmental practices are implemented into the organizational results in positive impact of the organization sustainability and further it inspires other employees to engage in such to environmental activities at work environment.

Study [13] noted that inspirational leaders’ uses of inspirational talks and emotional appeals have impact on their quality of work. It is defined as the impression of positive comments about the organization that build confidence and motivation. Hence implementing OCBE practices at the work environment is necessary for each and every individual from superior to the employees to attain organizational sustainability. TL is responsible in promoting motivation among the employees to engage them in environmental protection practices [56]. Hence, training to be given to the superiors/managers by the organization, in order to improve their standard of TL and also to engage the employees in environmental protection practices, to promote OCBE. [57] concluded that employees are undoubtedly trusted and followed responsible leaders’, if they instruct them about sustainable practices at work.

Sustainable practices in organizations are improved by TL’s influence on OCBE through a variety of psychological and behavioural mechanisms. From the perspective of psychology, TL cultivates an environment in which employees are motivated and inspired to align their personal values with the organization’s objectives. Organisational commitment and job satisfaction are improved by TL, which fosters a favourable environment for OCBE from a behavioural perspective. It is evident from the research that TL has a beneficial effect on both job satisfaction and organisational commitment, which are essential mediators in the promotion of OCBE [59].

1. PRACTICAL IMPLICATIONS

Study [58] states that the leadership’s style and methods are mainly influenced the relationship between subordinate-superior, which are followed in the organization. The organization should strong believe in team work that leads to their organization growth and development and relationship between the leaders and followers are very essential for organization survival. Hence the followers’ development characteristics as a predictor of TL.

These are a few sustainable concepts that can be implemented in the manufacturing sector at the premises where leaders prefer, recycling and upcycling process, reuse of waste water, using solar lights, avoiding disposable product, giving new life to old electronics, solar panel installation for energy conservation, upgrading to a green computer, led light bulbs, planting trees at the campus, waste reduction, consuming less energy, conserving water, avoiding air pollution, drive less and share vehicles, walk more, eco-friendly cleaning products, cleaning up the work environment, awareness programmes, reuse of plastic bottles, using natural resources. By incorporating these practices in the manufacturing industries, the organization and its employees, as well as the environment also can be protected and safeguarded. By engaging the employees towards sustainable practices brings cohesiveness, knowledge sharing, motivation between them which results in organization sustainability.

It is essential that leaders cultivate an environment that prioritizes innovation and creativity, where employees are motivated to generate and execute unique concepts that lowers environmental consequences. Improved processes, strategies for waste reduction, or energy conservation methods may comprise this class. In the manufacturing sector, challenges may be implemented to inspire employees to provide innovative solutions to environmental issues that are unique to the manufacturing context, such as the use of sustainable materials or the reduction of emissions. To encourage employees who are interested in participating in OCBE, leaders should offer personalized mentoring and support. The provision of training programs that concentrate on specific environmental skills that are applicable to manufacturing, such as sustainable waste management or efficient energy consumption, is one example of this. Leadership should prioritize the consideration of and response to the specific concerns of each individual regarding environmental practices. In order to foster more proactive environmental behavior, executives may extend targeted support to employees by understanding the specific challenges they experience. Leaders can improve OCBE by motivating employees to participate in corporate social responsibility (CSR) initiatives that prioritize safeguarding the environment, such as community clean-up campaigns or afforestation projects. In addition to enhancing morale, this also incorporates the organization's environmental values into the broader community. By implementing these strategies, in manufacturing industries can fully capitalize on the potential of TL to encourage OCBE, thereby enhancing more sustainable and responsible industrial environment.

2. *LIMITATION AND FUTURE SCOPE*

This investigation was conducted exclusively within the manufacturing industry. In the future, it is imperative to conduct research on other manufacturing industries in other districts of Tamil Nadu. We will investigate additional aspects of TL that have the potential to enhance the OCBE in other future investigations. Organizational identification, Organizational culture, and motivation may be implemented onto the OCBE in future; however, no mediator, moderator, or control variables are implemented. Different leadership styles, such as transactional, ethical, and supportive, can be applied to OCBE, and their effects can be analysed. However, this study exclusively examines TL. To further refine the application of TL globally, cross-cultural studies would provide insights into how dimensions are perceived and its effectiveness in various cultural settings. Future research could explore the practical implications and challenges associated with implementing these strategies in a variety of organizational environments. Cross-cultural research can determine whether the influence of TL on OCBE is consistent across different cultural contexts or if it is considerably varied as a result of cultural values and norms. It can contribute to a more thorough comprehension of the global application of TL to advocate for sustainable practices within organisations. Diverse perspectives can be introduced to the study by participating in collaborative research activities with academics and practitioners from areas other than the manufacturing sector. This approach enhances the interpretation of results and guarantees practical significance.

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Authors Contribution

All the authors made equal contributions to the development and planning of the study.

Conflict Of Interest

The authors have no potential conflicts of interest.

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