GREEN ETHICAL LEADERSHIP, EMPLOYEE ENGAGEMENT, AND GREEN CREATIVITY TOWARDS GREEN BEHAVIORS IN THE FMCG SECTOR

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Abstract

The study has aimed to investigate the impact of green, ethical leadership, employee engagement with green initiatives, and green creativity on in-role and extra-role green behavior with the moderating effect of psychological safety in FMCG companies in Pakistan. The information has been gathered from the employees of the FMCG firms in Pakistan with a green policy in operation. In total, the responses obtained from all the respondents combined to reach 417. Hence, PLS-SEM was deemed appropriate for the research. Thus, the present research findings suggest that In-Role Green Behavior (IRGB) has a positive but insignificant relationship with Extra-Role Green Behavior (ERGB). In the study, Green Ethical Leadership (GEL) has a positive relationship and was significantly related to IRGB and ERGB. A positive and significant relationship persists between Employee Engagement with Green Initiatives (EEGI) and IRGB, but there is a negative and insignificant relationship between EEGI and ERGB. Green creativity (GC) has a significant and positive impact on both the constructs, namely, IRGB and ERGB. Also, IRGB, to an insignificant extent, mediates the association between GEL, EEGI, GC, and ERGB. Finally, psychological safety, PS, has a significant and positive interaction with IRGB on ERGB. The research has suggested that green, ethical leadership and green creativity should be encouraged by managers, and employees should be encouraged to participate in green activities fully to display both in-role and extra-role green behavior.

Keywords: Green Behavior, Employee Performance, Green HRM, FMCG Industry

INTRODUCTION

Overview

Green behavior, a process of exercising environmentally sound and sustainable practices and systems, has emerged as a global issue for organizations attempting to minimize their negative environmental impacts. More significant and small organizations around the globe are embracing environmental goals, recycling, and improving capacity utilization (Gyensare et al., 2024). It shows that these green behaviors are suitable for the atmosphere and businesses in the long run as they enhance their image. The awareness of the risk associated with the depletion of the earth's natural resources has made leadership and employee activities embark on environmental programs that enhance organizational stewardship (Dantas et al., 2023).

GEL is preeminent in promoting green behaviors and perceptions among employees. Employers with positive attitudes toward environmental conservation and ethical practices create similar attitudes or cultures in other organizations and their subordinates (Hameed et al., 2022). The point is that Employee Engagement with green initiatives (EE) strengthens this impact because the people who are actively involved in the organizational processes will also support sustainable initiatives (Dantas et al., 2023).Another way that idea generation proficiency supports green behaviors is that Green Creativity

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(GC) enables the generation of innovative solutions to pro-environmental problems that employees will apply in organizations. Ethical leadership, engagement, and creativity constitute a robust set of sources that can help foster changes for embracing environmentally friendly workplace practices (Gyensare et al., 2024).

Pakistan's FMCG industry is an emerging and growing industry that significantly boosts the country's economy. It has a share of about 18% of the country's GDP and provides jobs to millions of citizens. Some key players in the Pakistani Fast Moving Consumer Goods (FMCG) industry comprise Unilever, Nestle, and Engro Foods, which provide products incorporating packaged foods and beverages and personal care products (Dantas et al., 2023). It has been established that the growth rate of this sector is about 12 percent annually due to factors such as population urbanization and heightened consumption levels. Nevertheless, much is clear that the industry pollutes the environment significantly through packaging waste and energy use, pointing to the importance of adopting sustainable solutions (Gyensare et al., 2024).

Problem Statement

The FMCG sector presents several essential challenges for stimulating IRGB and ERGB among firms' employees (Ababneh, 2021). Organizational green behaviors, which occur within the required role of employees, include compliance with the management policies of waste and energy use within organizations and are usually resisted due to ignorance, poor training, and lack of appropriate resources (Dantas et al., 2023). While these practices can quickly be adopted, employees may be unable to incorporate the changes due to a lack of direction from the management. Voluntary, self-generated behaviors beyond one's formal role or job description, such as the willingness to organize sustainability projects or join any environmental campaign, are even more challenging to encourage (Ye et al., 2022). Such behaviors imply high commitment and motivation, which may be challenging without robust, inspirational leadership and an operational, organizational culture supportive of such efforts (Ababneh, 2021). Many FMCG companies struggle to enable workers to suggest and implement green practices (Dantas et al., 2023). Pressure from supervisors, fear of negative feedback, job insecurity, and lack of support from leadership diminish employees' willingness to participate in green initiatives. Individuals and teams may hesitate to go beyond their formal roles without psychological safety, limiting the organization's sustainability achievements. Addressing these challenges requires ethical leadership, employee involvement, and fostering a sustainability-focused organizational culture (Gyensare et al., 2024).

Research Gap

Research on green behaviors has described environmental policies, corporate social responsibility, and technological innovations that comprehensively influence organizational sustainability (Ababneh, 2021; Gyensare et al., 2024). Most researches tend to provide the external environment and policy consequences (Ababneh, 2021; Gyensare et al., 2024; Li et al., 2023; Ye et al., 2022), while GEL, EE, and GC of FMCG companies in Pakistan are not explored enough. Nevertheless, prior literature does not reveal investigations concerning the impact of GEL, EE, and GC on in-role and ERGB with the moderating effect of psychological safety (PS) in FMCG companies in Pakistan (Dantas et al., 2023; Hussain et al., 2020).

Research Questions

This study, therefore, centrally seeks to address this gap by exploring these factors within Pakistan's FMCG market while extending this line of investigation further by considering how PS may moderate these relationships to explain how the internal drivers of organizational structures can promote sustainable practices. Hence, the research posits a few questions:

RQ1.   How do green, ethical leadership, employee engagement with green initiatives, and green creativity impact employees' green behavior?

RQ2.   What is the impact of green, ethical leadership, employee engagement with green initiatives, and green creativity on extra-role green behavior with the mediating role of in-role green behavior?

RQ3.   Does psychological safety moderate the relationship between in-role and extra-role green behavior?

Structure of the Study

The second section delve into the hypotheses and theoretical foundations derived from the literature review. The third section, focusing on research methodology, will detail the data analysis techniques and research methods employed in the study. Subsequently, the fourth section will deal with the data analysis and presentation of research findings. Finally, the fifth section will offer recommendations, conclusions, and a synthesis of the study's findings.

LITERATURE REVIEW

Theoretical Underpinnings

Ability-Motivation-Opportunity (AMO) Framework

Bailey introduced the AMO framework in 1993 and Appelbaum in 2000 (Bailey, 1993). The AMO framework is a comprehensive model that elucidates how three critical components influence employee performance and behavior. Hughes (2007) in Ye et al. (2022) defines these components as the AMO framework, i.e., three essential factors enable an employee to perform a specific desired behavior: ability, motivation, and opportunity.

In this research, ability is defined as the necessary skills and competence that employers require to execute their organizational tasks and duties; they do not necessarily have to be inherited but can be acquired from a training program (Bailey, 1993). Motivation mainly consists of intrinsic and extrinsic types and other influencing factors like personal satisfaction and reward to ensure employees employ their talents to achieve organizational objectives (Ye et al., 2022). Opportunity refers to facilitating resources at the employees' disposal, allowing critical capacities and efforts to be implemented to execute a specific task or behavior. In this research, the AMO framework indicates the effects of GEL (opportunity), EE (motivation), and GC (ability) on green behavior; PS improves these components (Bailey, 1993).

Social Exchange Theory (SET)

SET was initially introduced by sociologist Homans in 1958, with other sociologists such as Peter Blau and Richard Emerson adding on and elaborating on the proposition later (Homans, 1962). This theory presupposes that social conduct depends on an exchange process where a person evaluates the strengths and weaknesses of the social encounter. Thus, the self-interest perspective argues that people aim to gain as much as possible with the least risk or expense in relationships (Ye et al., 2022). These can be material incentives such as monetary compensation, items, or services that the organization and its affiliates

(Thomas et al., 2023). Expense factors include all values perceived as harmful or costly, including time, effort, and emotional stress. This implies that people engage in social exchanges by focusing on expected exchanges of positive acts with others (Homans, 1962).

In this research, SET explains how GEL, EE, and GC influence green behaviors in FMCG companies. Leaders committed to sustainability reward employees with recognition and support, encouraging reciprocation through in-role and ERGB (Ye et al., 2022). Active involvement in green initiatives offers intrinsic and extrinsic rewards, motivating further engagement (Homans, 1962). Managers can leverage this theory to design strategies that promote sustainable practices by maximizing rewards and minimizing costs (Thomas et al., 2023).

Development of the Hypotheses
In-Role Green Behavior and Extra-Role Green Behavior

According to the definition of IRGB, an employee's work description must include behaving sustainably. ERGB comprises extra-role, discretionary behaviors, which are not in the official description of an employee's tasks but perform environmental actions (Ye et al., 2022). IRGB affects ERGB by laying down a context of sustainability in an employee's daily practice, making it a positive influence. When green behaviors are well incorporated into the employees' work responsibilities, they are likely to go the extra mile when implementing environmentally friendly practices, which stems from a strong commitment (Ababneh, 2021).

Based on the AMO framework, if employees can behave and perform green responsibilities at the workplace, this brings more engagement and motivation. Hence, this guarantees that it contributes to ERGB, strengthening the ecological development of the business (Ye et al., 2022). Hence, it has been proposed that:

H1: There is a relationship between in-role green behavior and extra-role green behavior.

Green Ethical Leadership and In-Role Green Behavior

GELs are organizational executives who advocate for and exhibit environmentally responsible and ethical behavior. IRGB means that the employee acts pro-environmentally while at work and executing his/her duties (Fatoki, 2023). Green ethical leaders ensure that the employees understand what is expected from them and support their ethos by demonstrating how sustainable practices can be incorporated into the working environment (Ababneh, 2021). These leaders show concern for the environment while providing support to underpin those specific IRGBs in their organization. This approach helps guarantee sustainability as an organizational culture supported by employees' day-to-day activities (Ye et al., 2022). According to SET, employees are likely to reciprocate the positive actions of leaders committed to sustainability. When leaders promote green, ethical practices, employees respond by adopting and exhibiting IRGB, driven by the mutual benefits and trust established within the organization (Homans, 1962). Hence, it has been proposed that:

H2: There is a relationship between green, ethical leadership, and in-role green behavior.

Green Ethical Leadership and Extra-Role Green Behavior

GEL creates a culture of sustainable behavior in the institute, with the employees assuming extra responsibilities by engaging in green-oriented practices over and above their official responsibilities (Ye et al., 2022). Managers who set ethical and environmentally responsible examples influence the ERGB of employees, including urging for environmentally friendly practices and undertaking green activity beyond

formal expectations (Fatoki, 2023). This relationship is fostered by the trust that the leader develops between the organization and its employees to have the employees embrace and contribute towards more green initiatives that will improve the organization's environmental performance (Ababneh, 2021).

GEL influences ERGB by fostering a culture of trust and mutual benefit, as explained by SET (Homans, 1962). When leaders visibly commit to and advocate for sustainability, employees are more inclined to reciprocate by engaging in behaviors beyond their formal duties. This reciprocal relationship enhances the likelihood of employees adopting ERGB, driven by the positive example set by their leaders (Ye et al., 2022). Hence, it has been proposed that:

H3: There is a relationship between green, ethical leadership, and extra-role green behavior.

Employee Engagement with Green Initiatives and In-Role Green Behavior

The level of IRGB increases with the employee's level of green initiative engagement as they incorporate more green approaches in their work (Li et al., 2023). Employees feel more committed to embracing environmental objectives when included in green initiatives. This, in turn, results in increased identification of their tasks with the organizational sustainability goals (Ababneh, 2021). Thus, green behaviors become embedded within the regular tasks performed by the employees, including resource conservation and waste reduction, which benefits the organization's environmental outcomes. Thus, the correlation between engagement and role-specific green activities leads to a more sustainable environment at the place of work (Ye et al., 2022). The AMO framework states that when staff members participate in green activities, they are inspired and given chances to put their skills to use (Bailey, 1993). This engagement enhances their commitment and effort toward performing green behaviors within their formal job roles, effectively leveraging their skills and motivation to contribute to organizational sustainability goals (Li et al., 2023). Hence, it has been proposed that:

H4: There is a relationship between employee engagement with green initiatives and in-role green behavior.

Employee Engagement with Green Initiatives and Extra-Role Green Behavior

Concerning ERGB, it emerges in the literature that employee green initiative engagement has a positive impact. When staff participate in sustainability initiatives, they are passionate about carrying out their assigned duties and being environmentally responsible (Li et al., 2023). In this case, committed employees are willing to go the extra mile to participate in green-related activities such as supporting, contributing, or championing environmental initiatives and causes in their organization (Ye et al., 2022). Such a change in awareness fosters an advocacy approach toward the environment. Thus, employees feel compelled to go the extra step in implementing environment-friendly initiatives in the organization's facilities (Li & Rabeeu, 2024). Therefore, a positive attitude toward green activities leads to interaction in high ERGB, sustaining the organization's green environment (Li & Rabeeu, 2024).

A relationship exists between EE and ERGB. According to the AMO framework, when employees are motivated and actively involved in green initiatives, they are more likely to go beyond their formal job responsibilities (Bailey, 1993). This engagement, driven by intrinsic and extrinsic rewards, fosters a nurturing setting, encouraging employees to participate in ERGB (Li & Rabeeu, 2024). Hence, it has been hypothesized that:

H5: There is a relationship between employee engagement with green initiatives and extra-role green behavior.

Green Creativity and In-Role Green Behavior

GC is the conceptual skill of developing new solutions to bolster environmental stewardship. Also known as individual green behavior (IRGB), IRGB refers to job-related actions that support sustainability within an individual's job responsibilities (Li et al., 2023). A green mindset encourages employees to search for innovative approaches to performing their tasks with less negative impact on the environment, defined as IRGB (Ye et al., 2022).Critical thinkers allow environmental issues to examine techniques for more efficient use of resources and waste disposal. This strengthens IRGB, meaning employees perform their tasks while adhering to the firm's sustainability strategies (Gyensare et al., 2024). The AMO framework supports this by emphasizing that employees who can innovate (creativity) are better equipped to perform green behaviors within their roles. When organizations nurture GC, they enhance employees' skills and competencies, leading to more effective and consistent IRGB (Bailey, 1993). Hence, it has been proposed that:

H6: There is a relationship between green creativity and in-role green behavior.

Green Creativity and Extra-Role Green Behavior

GC leads to ERGB since it encourages employees to perform green activities that are not mandatory but go beyond their duties (Gyensare et al., 2024). The GC seems to encourage employees to contribute to the organization's sustainability management, including the involvement in or initiation of environmental activities and support of environmental initiatives within a specific group (Ye et al., 2022). This creative frame of mind makes the employees willingly embark on other green processes because they are interested in environmental conservation. Therefore, GC leads to an increased ERGB commitment, thus ensuring the institute's green culture and aims are achieved (Hameed et al., 2022).

According to the AMO framework, employees who are encouraged to use their GC are likelier to engage in ERGB (Bailey, 1993). When organizations provide opportunities and resources for creative green solutions, employees are motivated to go beyond their formal job duties, contributing additional efforts towards sustainability initiatives. This environment fosters a proactive approach to environmental stewardship beyond the standard job requirements (Li et al., 2023). Hence, it has been proposed that:

H7: There is a relationship between green creativity and extra-role green behavior.

In-Role Green Behavior, Green Ethical Leadership, and Extra-Role Green Behavior

IRGB fully mediates the connection between GEL and ERGB by being the pathway through which leadership affects extra environmental performance. It fosters green ethical IRGB, referring to the situations when leaders show green ethical practices, and employees follow this example by including sustainable activities in their work responsibilities (Fatoki, 2023). It ultimately translates this formal commitment to green practices into encouraging the employees to practice ERGB, which includes the development or participation in voluntary environmental activities (Ye et al., 2022). Therefore, IRGB can be viewed as a mediator of GEL that explains how extra-role sustainability practices are established (Li et al., 2023). IRGB mediates the relationship between GEL and ERGB. According to the AMO framework, effective GEL enhances employees' abilities and motivation, improving in-role green behavior (Ye et al., 2022). This, in turn, facilitates the likelihood of employees engaging in ERGB. By performing well in their designated roles, employees are more inclined to contribute additional efforts towards sustainability, driven by the supportive environment established by leadership (Fatoki, 2023). Hence, it has been hypothesized that:

H8: In-role green behavior mediates the relationship between green, ethical leadership, and extra-role

green behavior.

In-Role Green Behavior, Employee Engagement with Green Initiatives, and Extra-Role Green Behavior

IRGB might mediate through which EE gives rise to ERGB since engagement affects only additional green actions (Ye et al., 2022). IRGB is defined as the extent to which employees build sustainability into the tasks and responsibilities of their work (Pham et al., 2023). This creates an established precedent of performing in a green manner to the organization's subsequent roles and following it by engaging in ERGB, including championing or supporting other green initiatives beyond their official responsibilities (Ye et al., 2022). The AMO framework supports this by suggesting that when employees are engaged in green initiatives, their improved IRGB is a foundation for extra-role behaviors (Bailey, 1993). High engagement enhances their motivation and ability, leading to effective performance in their roles and encouraging them to extend their efforts to additional green activities beyond their formal job duties. Therefore, IRGB positively directs the effect of engagement on ERGB and fortifies the organization's sustainability strategy (Li et al., 2023). Hence, it has been hypothesized that:

H9: In-role green behavior mediates the relationship between employee engagement with green initiatives and extra-role green behavior.

In-Role Green Behavior, Green Creativity, and Extra-Role Green Behavior

IRGB fully mediates the relationship between GC and ERGB because this behavior links creative sustainability and advanced green behaviors (Sarmad et al., 2023). Indeed, when employees generate sustainable ideas to address new environmental concerns and incorporate them into the work environment to solve new problems, they act in a process called IRGB. This encouragement of creativity, sustainable thinking, and finally turning it into their daily tasks provides employees with better environmental commitment (Li et al., 2023). Therefore, this implies they are willing to go the extra mile by engaging in other sustainable practices not mentioned in their description of role requirements. Thus, IRGB serves as a mediator that converts GC into other, more extensive, voluntary actions beneficial for the environment (El Baroudi et al., 2023).According to the AMO theory, GC enhances employees' abilities, which improves their performance in their designated roles (in-role green behavior) (Bailey, 1993). This enhanced performance then serves as a basis for engaging in ERGB. By leveraging their creative skills within their roles, employees are more motivated and able to contribute beyond their formal job responsibilities (El Baroudi et al., 2023). Hence, it has been hypothesized that:

H10: In-role green behavior mediates the relationship between green creativity and extra-role green behavior.

Psychological Safety Moderates the Relationship between In-Role Green Behavior and Extra-Role Green Behavior

PS is the belief that one will not face negative consequences or humiliation for expressing ideas, concerns, or making mistakes, allowing individuals to feel secure in taking risks and contributing openly (Ye et al., 2023). In the link between IRGB and ERGB, PS is crucial, as it affects how much confidence employees have in going beyond the call of their duties in contributing to the environment (Ye & Li, 2024). If the employees feel psychologically safe, chances of ERGB are high because employees can share new ideas related to sustainability; they could suggest new sustainability ideas or volunteer to work in any voluntary environmental programs (Hong et al., 2023). By adopting a risk-free setting, they are

compelled to act proactively and contribute ideas without worrying about unfavorable consequences; this, in turn, expands the benefits of IRGB on additional sustainability initiatives, as per Ye et al. (2023). This aligns with the AMO framework that postulates that a climate of PS enables employees to be capable and willing to do their jobs (Bailey, 1993). This safety ensures they can freely express themselves and be proactive, as this boosts their IRGB and transitions them into ERGB. Thus, when the favorable conditions described earlier are met, one can expect that employee engagement in additional sustainability actions is higher when they experience security (Ye & Li, 2024). Hence, it has been hypothesized that:

H11: Psychological safety moderates the relationship between in-role green behavior and extra-role green behavior.
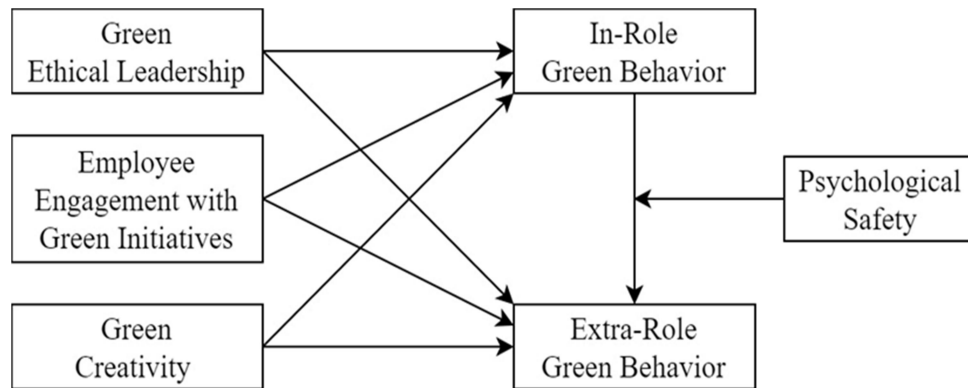
Research Framework

Figure 1: Research Framework

METHODOLOGY

Sample and Population

The target population for this research study involves the FMCG companies' employees in Pakistan who are affiliated with firms that have established green policies. FMCG companies are known for having severe environmental impacts, as the studies suggest they contribute a large proportion of resource usage and waste production (Dantas et al., 2023). The FMCG sector in Pakistan stands for about 10% of the total GDP and engages more than 2 million people. Concentrating on firms with active green policies further improves the research's internal validity since it limits the research target to organizations that are not only aware of but are actively embracing sustainability. This enables them to determine a more effective association between GEL and employee behavior, engagement, and creativity (Liu et al., 2023). This research seeks to contribute information concerning emerging markets where the FMCG sector plays a significant role in economic growth and green conservation (Ye et al., 2022). Table 1 shows the demographic profile of 417 respondents.

Table 1
Demographic Profile (n = 417)

		Frequency	Percent
Gender	Male	210	50.4
	Female	207	49.6
Age	25-34	124	29.7
	35-44	90	21.6
	45-54	123	29.5
	55 and above	80	19.2
Education Level	Bachelor's Degree	114	27.3
	Master's Degree	170	40.8
	Doctorate	133	31.9
Job Role/Position	Entry-level	124	29.7
	Mid-level	90	21.6
	Senior-level	126	30.2
	Executive	77	18.5
Working Experience	1-3 years	106	25.4
	4-6 years	146	35.0
	7-10 years	114	27.3
	More than 10 years	51	12.2
Company Size	Small (1-200 employees)	124	29.7
	Medium (201-500 employees)	90	21.6
	Large (> 500 employees)	203	48.7

Measures

Table 2
Measures

Variables	N Items	Likert Type	Source(s)
Green Ethical Leadership	8	7-Points	(Islam et al., 2021)
Employee Engagement with Green Initiatives	5	7-points	(Jnaneswar, 2024)
Green Creativity	6	7-points	(Mittal & Dhar, 2016)
In-Role Green Behaviour	3	7-points	(Islam et al., 2021)
Extra-Role Green Behaviour	3	7-points	(Islam et al., 2021)
Psychological Safety	4	7-points	(Liang et al., 2012)

Table 2 provides the variables' measurements, including the number of indicators, the type of Likert scale, and the adoption sources.

Data Collection
In conducting this study, the survey method is preferred as it allows for collecting immediate responses

from a large population of the employees of FMCG companies. It enables measuring the overall response concerning perceptions of GEL, green initiatives, and connected green behaviors (Li et al., 2023). Compared to other ways of acquiring information on the subject, surveys are specific in presenting the overall effects of the outlined factors on the level of in-role and ERGB. This method is suitable for large-scale coverage and identifying relationships between variables, as the study's objectives concerned the aspects of sustainable practices in a wide range of organizational contexts (Ye et al., 2022).

Data Analysis

PLS-SEM was selected for this study because this technique is ideal for analyzing theoretical-based models developed in multiple paths and variables and when the sample size is small or medium. This technique is beneficial when examining complex interactions between GEL, EE, GC, in-role, and ERGB (Hair et al., 2011). The essential advantage of using PLS-SEM is the possibility of considering direct and indirect relationships between the factors included in the model and revealing mediating and moderating effects (Hair et al., 2013). The current study applies Smart-PLS, making it easier to estimate and validate the model with sustainable results for exploring sustainability practices within the given organizational context. It fits the study's objectives since it comprehensively depicts the interactions between the factors involved in green behaviors (Hair et al., 2011).

RESULTS AND DISCUSSIONS

Measurement Model

The measurement model or the outer model in PLS-SEM explains the association between the theoretical constructs – the latent variables that cannot be directly measured – and the manifest variables, the observable items. It helps determine the extent to which the observed variables depict the distinctive latent constructs and the reliability and validity of the measurement models (Hair et al., 2013). Table 3 provides the result of the measurement model, including indicator reliability, construct reliability, and validity using the PLS algorithm.

Table 3
Measurement Model

	Loadings	Prob.	VIF	Alpha	CR	AVE
EEGI2 <- EEGI	0.894	0.000	1.613	0.763	0.894	0.808
EEGI4 <- EEGI	0.904	0.000	1.613			
ERGB1 <- ERGB	0.939	0.000	2.217	0.851	0.931	0.870
ERGB2 <- ERGB	0.927	0.000	2.217			
GC3 <- GC	0.921	0.000	1.971	0.825	0.919	0.851
GC5 <- GC	0.923	0.000	1.971			
GEL2 <- GEL	0.796	0.000	2.158			
GEL3 <- GEL	0.890	0.000	3.014			
GEL4 <- GEL	0.737	0.000	1.648	0.865	0.903	0.651
GEL5 <- GEL	0.800	0.000	1.805			
GEL6 <- GEL	0.803	0.000	1.933			
IRGB1 <- IRGB	0.910	0.000	1.715	0.785	0.903	0.823
IRGB3 <- IRGB	0.904	0.000	1.715			

PS1 <- PS	0.904	0.000	1.783	0.797	0.908	0.831
PS2 <- PS	0.919	0.000	1.783			

Hair et al. (2011) recommended that all the values of outer loadings must be higher than 0.70 for acceptance, as Hair et al. (2011) advised that outer loadings need to be greater than 0.70. indicators with loadings more than 0.70, a probability level below 5%, and a VIF below 5 are shown in the above table (Hair et al., 2011a). Additionally, Cronbach's alpha (α) was calculated to assess the internal consistency of the constructs. Following the guideline proposed by George and Mallery (2003), values above 0.9, 0.8, and 0.7 were classified as excellent, sound, and acceptable, respectively. Hair et al. (2011) also advised that average variance extracted (AVE) and composite reliability (CR) be higher than 0.50 and 0.70, respectively. Upon examining the table, it is evident that all variables demonstrated high reliability. So, the table above shows that each item has the proper outer loading and that all structures have hit a good level of stability and validity.

Discriminant Validity

Discriminant validity refers to the extent to which a latent construct is distinct from other constructs within a model. It indicates that the constructs measure different concepts and that the items used to measure one construct do not excessively correlate with those used to measure another (Hair et al., 2013).

Table 4
FLC Method

	EEGI	ERGB	GC	GEL	IRGB	PS
Employee Engagement	**0.899**					
Extra-Role Green Behavior	0.584	**0.933**				
Green Creativity	0.710	0.740	**0.922**			
Green Ethical Leadership	0.707	0.654	0.717	**0.807**		
In-Role Green Behavior	0.637	0.625	0.717	0.636	**0.907**	
Psychological Safety	-0.443	-0.511	-0.379	-0.502	-0.500	**0.912**

Table 4 provides the result of Fornell and Larcker (1981) criteria (FLC) for discriminant validity assessment. As seen in the above table 4, the squared-root AVE of the constructs (bold diagonal values) is higher than their corresponding values for the horizontal (Hair et al., 2011a) and vertical correlation (non-bold). Consequently, the FLC approach has successfully achieved discriminant validity (Fornell & Larcker, 1981).

Table 5
HTMT Ratio

	EEGI	ERGB	GC	GEL	IRGB	PS
Employee Engagement						
Extra-Role Green Behavior	0.718					
Green Creativity	0.894	0.881				
Green Ethical Leadership	0.866	0.755	0.844			
In-Role Green Behavior	0.824	0.763	0.891	0.771		

Psychological Safety	0.567	0.621	0.466	0.602	0.631

Table 5 displays the HTMT ratio result of the discriminant validity assessment.Henseler et al. (2016); Henseler et al. (2015) have shown that discriminant validity may be demonstrated if the HTMT ratio between two latent constructs is less than 0.90. All latent constructs effectively demonstrated discriminant validity, as shown by the results, which were lower than 0.9 (Henseler et al., 2016; Henseler et al., 2015). As a consequence of this, the discriminant validity of the HTMT ratio has been achieved.

Predictive Power and Relevance

Table 6
Predictive Relevance

	R Square	Q Square
Extra-Role Green Behavior	0.628	0.617
In-Role Green Behavior	0.559	0.552

Table 6 shows the results of the predictive relevance reporting of the endogenous components in the structural model as R-Square for predictive power and Q-Square for predictive relevance. Falk and Miller (1992) stated that an R2 value of 0.10 or above is required for a variance explanation to be considered appropriate for an endogenous construct. According to his study, the R2 values that Chin (1998) proposed for weak, considerable, and moderate endogenous latent variables were 0.19, 0.67, and 0.33. In the structural model, ERGB and in-role green behavior have moderate predictions of 62.8% and 55.9%, respectively. Hair et al. (2013) recommended that $Q^2 > 0.02$ indicates weak relevance, $Q^2 > 0.15$ indicates moderate relevance, and $Q^2 > 0.35$ indicates strong relevance. The above table demonstrates that ERGB and in-role green behavior have strong relevance of 61.7% and 55.2%, respectively.

Structural Model
The structural model, the inner model in PLS-SEM, represents the hypothesized relationships between latent constructs. It examines the direct and indirect effects among constructs, testing the study's theoretical framework and assessing the strength and direction of these relationships (Hair et al., 2011).
Table 7 provides the result of path modeling analysis for hypothesis testing using the PLS bootstrapping technique at 5000 subsamples and two-tailed estimation.

Table 7
Hypothesis Testing using PLS-SEM

Hypothesized Paths		Estimate	S. D.	t-Stats	Prob.	Decision
H1	IRGB -> ERGB	0.053	0.056	0.931	0.352	Not Supported
H2	GEL -> IRGB	0.174	0.054	3.219	0.001	Supported
H3	GEL -> ERGB	0.132	0.040	3.277	0.001	Supported
H4	EEGI -> IRGB	0.187	0.056	3.353	0.001	Supported
H5	EEGI -> ERGB	-0.017	0.056	0.301	0.763	Not Supported
H6	GC -> IRGB	0.459	0.050	9.123	0.000	Supported
H7	GC -> ERGB	0.543	0.055	9.822	0.000	Supported

H8	GEL -> IRGB -> ERGB	0.009	0.012	0.788	0.431	Not Supported
H9	EEGI -> IRGB -> ERGB	0.010	0.011	0.927	0.354	Not Supported
H10	GC -> IRGB -> ERGB	0.024	0.026	0.930	0.352	Not Supported
H11	PS x IRGB -> ERGB	0.088	0.029	2.973	0.003	Supported

The above table has shown that in-role green behavior (ß = 0.053, p > 0.05) has a positive and insignificant effect on extra-role green behavior. Green ethical leadership (ß = 0.174, p <0.05) positively and significantly affects in-role green behavior. Ethical leadership (ß = 0.132, p < 0.05) positively affects extra-role green behavior. Employee engagement with green initiatives (ß = 0.187, p < 0.05) positively affects in-role green behavior. Employee engagement with green initiatives (ß = -0.017, p > 0.05) has a negative and insignificant effect on extra-role green behavior. Green creativity (ß = 0.459, p <0.05) positively and significantly affects in-role green behavior. Green creativity (ß = 0.543, p < 0.05) positively affects extra-role green behavior.

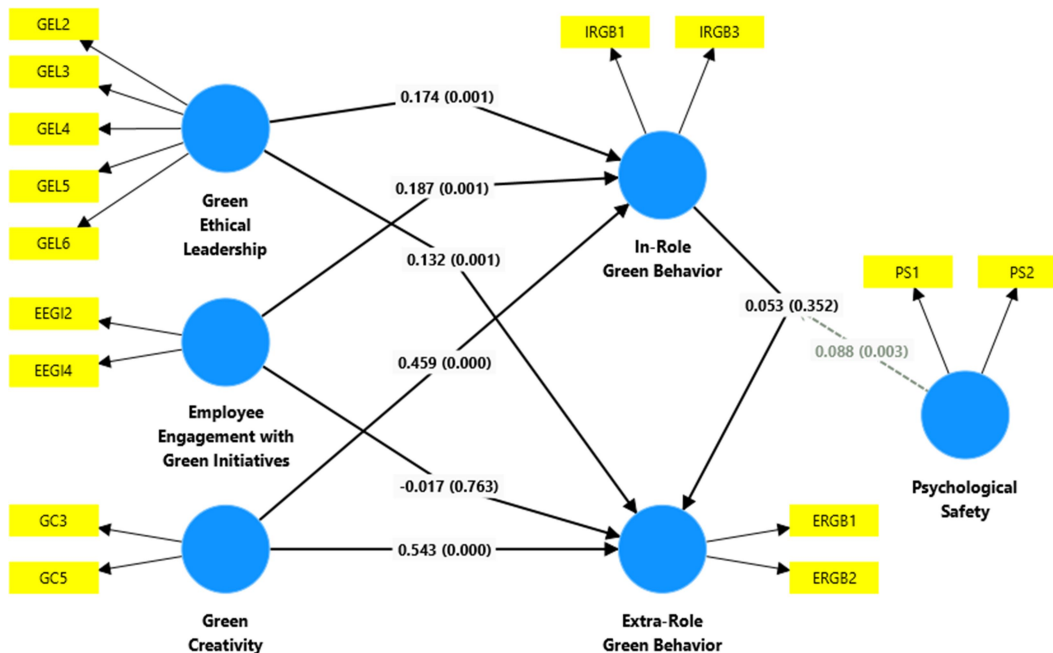*Figure 2*: PLS Bootstrapping using SmartPLS v4

The above table has also shown that in-role green behavior (ß = 0.009, p > 0.05) insignificantly and positively mediates the effect of green ethical leadership on extra-role green behavior. In-role green behavior (ß = 0.010, p > 0.05) insignificantly and positively mediates the effect of employee engagement with green initiatives on extra-role green behavior. In-role green behavior (ß = 0.024, p > 0.05) insignificantly and positively mediates the effect of green creativity on extra-role green behavior.
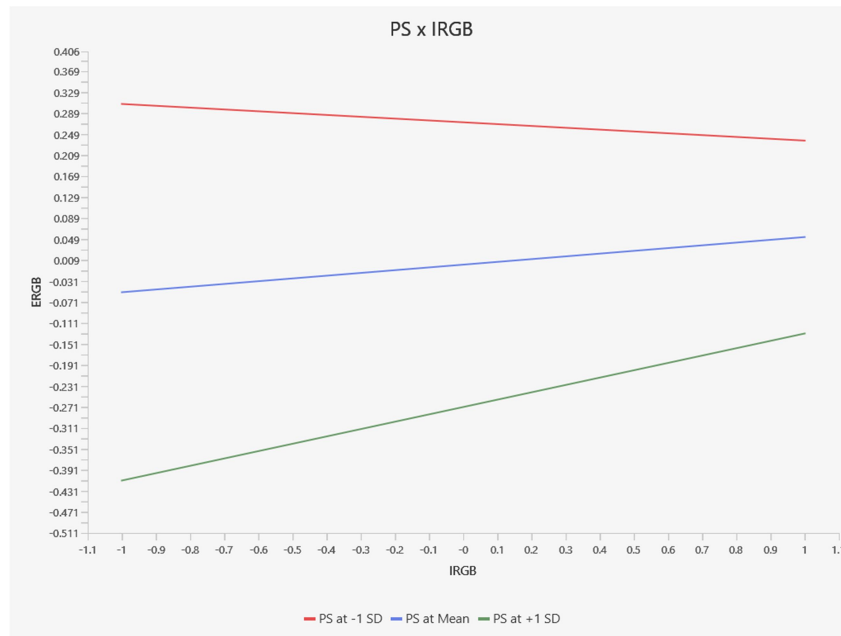
Figure 3: Moderation Interactional Effect Graph

Psychological safety (ß = 0.088, p < 0.05) significantly and positively moderates the effect of in-role green behavior on extra-role green behavior. Figure 3 illustrates the relationship between in-role green behavior (IRGB) and extra-role green behavior (ERGB) moderated by psychological safety (PS). The graph features three lines representing different levels of psychological safety: red for PS at -1 standard deviation (SD), blue for PS at the mean, and green for PS at +1 SD. The x-axis represents IRGB ranging from -1.1 to 1.1, while the y-axis shows ERGB ranging from -0.511 to 0.406. The red line indicates the relationship between IRGB and ERGB when PS is low (at -1 SD). Here, the slope is slightly negative, suggesting that lower levels of IRGB correspond to marginally higher ERGB when psychological safety is low. The blue line depicts this relationship when PS is set at the mean level, in which the slope of the line is virtually horizontal, suggesting that the effect of IRGB on ERGB is almost nonexistent when psychological safety is moderate. The green line with high PS at +1 SD also goes up, showing that when IRGB is higher, ERGB is higher when psychological safety is high. In general, this figure reveals that the association of IRGB with ERGB depends on individuals' levels of PS, where the negative association at a low level of PS, no association at the average level of PS, and positive association at a high level of PS are apparent.

DISCUSSION

The results have shown that IRGB has a positive and insignificant effect on ERGB. This result is consistent with Ye et al. (2022). This implies that although workers might participate in carrying out the green actions as required in their performances, it does not mean that they are entirely compelled to practice other green behaviors apart from what has been set as their delivered responsibilities. This may be caused by the absence of self-interest in performing beyond the required levels or inadequately provided resources and incentives for added commitment. The employees will likely think the expected green responsibility is enough and may not see any added value or organizational appreciation for going the extra mile for green practices. It is possible that improving motivation and offering rewards would improve this link (Li et al., 2023).

The study outcomes have revealed that GEL positively and significantly affects IRGB. This result is supported by Ali and Hassan (2023). The reason behind this is due to the idea that people follow what leaders do. Thus, employees slowly integrate into their tasks when leaders critically develop and demonstratively practice sustainable environmental behavior at the workplace. Managers and leaders with ethical and green cultures set direction and can influence employees' actions by offering green guidelines and resources, enabling employees to implement green practices (Li et al., 2023).

Also, GEL has a positive and significant effect on ERGB. This result is consistent with Ye et al. (2022). This is because leaders who give and support sustainability motivate people to do more than their call of duty, which requires them to pursue sustainability. These leaders ensure that employees embrace environmental values, thus encouraging them to take part in green activities that are not required by their job role. The ethical obligation from the leadership creates a culture of supporting organizational objectives and encouraging people to participate in sustainability outside organizational expectations (Ababneh, 2021).

The study outcomes have revealed that EEGI has a positively significant effect on IRGB. This result is supported by Li et al. (2023). As a result, this shows that employees are most likely to adopt green practices when engaged in green programs. By fostering a great sense of organizational identification, employees get committed to the cause of sustainable development in the organization and work hard to achieve the objectives set (Ye et al., 2022).

The results have also shown that EEGI has a negative and insignificant effect on ERGB. This result is consistent with Ababneh (2021). From the findings, the study established that engagement of the employees increases mandatory green actions; however, it does not necessarily increase voluntary actions. In other words, employees might regard compliance with in-role green tasks as sufficient. They may not have the extrinsic motivation or incentives to go the extra mile and engage in pro-environmental behaviors outside of their prescribed responsibilities. This suggests that organizations should increase the intrinsic aspect of behavior and encourage employees to engage in other sustainable behaviors beyond organizational expectations (Ye et al., 2022).

Furthermore, GC has a positive and significant effect on IRGB. This result is supported by Li et al. (2023). The rationale is that creating an innovative culture promotes commitment, where people implement practical, sustainable practices as part of their work responsibilities. Moreover, when employees are allowed to develop innovative ideas for addressing environmental and mental issues, it becomes easier for them to develop innovative methods of putting sustainable environmental practices into practice in their job responsibilities. In light of this relationship, creativity and innovation directions have been established as crucial elements that can boost in-role green behavior and advance the organizational sustainability agenda (Ye et al., 2022).

The study outcomes have revealed that GC has a positively significant effect on ERGB. This result is consistent with Li et al. (2023). This implies that when the workers are empowered to develop new solutions to environmental issues, they are more likely to exercise voluntary green behaviors while at work than employees restrained to specific office duties. This creates an innovative culture that enhances sustainability within organizations, encouraging employees to practice further what they preach concerning environmental issues (Ababneh, 2021).

In addition, it was observed that IRGB insignificantly and positively mediates the effect of GEL on ERGB. This result is supported by Fatoki (2023). This means that, whereas GEL directly impacts ERGB, the intermediate of IRGB is relatively weak. Voluntary green behaviors may be practiced at the workplace with direct influence from GEL and without intervention from the formal job descriptions.

This implies that leadership's transformational and moral character can directly lead to extra-role green behavior in the employees without going through in-role behaviors (Ababneh, 2021).

Similarly, IRGB insignificantly and positively mediates the effect of EEGI on ERGB. This result is consistent with Fatoki (2023). The reason behind this is that although it is seen that EEGI enforces mandatory green activities, this engagement does not drive voluntary green behaviors through IRGB. This may lead to the perception that EE's formal initiations are sufficient to satisfy the engagement without extra measures. This means that organizations should engage more effort in encouraging and promoting people to perform green behaviors beyond their official expectations (Ye et al., 2022).

Likewise, IRGB insignificantly and positively mediates the effect of GC on ERGB. This result is supported by Sarmad et al. (2023). The findings indicate that, although GC encourages innovative environmental solutions, these creative endeavors must be more efficiently channeled through official work activities to spur organization members' voluntary greening behaviors. The employees may initiate extra-role green behaviors without direction from their superiors; the employees may try to avoid the regular or inherent tasks of the job to engage in other ideas they have. This would mean increased creativity can facilitate voluntary environmental engagements directly without affecting more organized professional, sustainable performances at work (Li et al., 2023).

Finally, in the present study, the analysis was performed, and it was also evidenced that PS has a significant and positive moderation effect on the relationship between IRGB and ERGB. This result is in line with the previous study by Ye et al. (2023). This is because when employees are aware that they can take risks and put forward their ideas for consideration, and be assured that if any goes wrong, it will not affect them adversely, it means that they will go the extra mile and come up with such additional pro-environmental behaviors not contained in their role descriptions. PS ensures employees are willing to perform voluntary green behaviors that are not included in their official job descriptions. It encourages them to be innovative and go the extra mile in contributing to the organization's sustainable development (Ye & Li, 2024).

CONCLUSION

The analyses of the study suggest that the difference in ERGB that results from the increment in IRGB is positive but statistically insignificant, implying a relatively weak and possibly indirect association. Based on the effectiveness of leadership in promoting green behavior, it was evident that GEL has a significant impact on deciding IRGB and ERGB. Employee engagement with green initiatives EEGI positively affects IRGB but has a negative and insignificant effect on ERGB, indicating that engagement boosts in-role but not extra-role behaviors. GC significantly enhances IRGB and ERGB, highlighting the role of innovation in driving comprehensive green actions. Results show that the mediation roles of IRGB on the relationship between GEL & EEGI and GC & ERGB are positive, though achieving a limited mediation. More importantly, PS mitigates the association between IRGB and ERGB, arguing that the environment strengthens the extension of green behavior beyond role prescriptions. These ideas discuss leadership, creativity, and PS as essential to creating better, sustainable organizational environments.

Theoretical Implications
Consequently, this study contributes considerably to the existing literature by enhancing the application and development of SET and AMO frameworks in the context of green behaviors in the FMCG sector. First, the study substantiated the use of SET in analyzing and developing the present sustainability-related behaviors of GEL and EE outside the usual business-related behaviors subject to the theory. The SET

framework's theoretical concepts of reciprocity and mutual benefit help enhance in-role and ERGB. This application demonstrates that SET can effectively respond to modern organizational issues, including environmental usability, and, hence, expand the theoretical foundation of the framework (Ye et al., 2022). Second, the study contributes to a better understanding of the AMO model by linking it with green behavior, thus providing an example of how employees' skills and work motivation within the opportunities provided by the organization can be utilized to support sustainability initiatives in organizations. Thus, the empirical study done in the present work supports the AMO framework and shows that GC (ability), motivation connected with green initiatives, and supportive environments (opportunity) are significant predictors of green behaviors. These widen the framework's applicability and illustrate that it can address current organizational aims and goals associated with sustainability (Ababneh, 2021).

Recommendations

Managers and leaders are essential for ensuring that the culture of sustainability is promoted correctly. Organizations should ensure that top green enthusiasts are organizational representatives to portray all staff members as constantly involved in environmental conservation. Therefore, incorporating sustainability principles into leadership training can enable students to acquire the competencies and knowledge required to manage sustainable development initiatives in organizations. This can be complemented by regular communication from leadership about the company's sustainability vision and goals to ensure that the importance of green practices to the firm and recommendation of similar behaviors is urged even outside organizational performance contracts. In-role and extra-role green behavior require the EE to cultivate it. Employees should also be engaged in formulating and executing other sustainability initiatives because this will give them a significant stake in environmental management. Appreciation of effort and enhanced reward systems may also increase employee engagement in sustainability initiatives. Offering seminars, training sessions, and sources where employees can regularly receive information about environmental practices will raise interest. Improving the practices of GC within this structure may foster a response to sustainability concerns. Applying this idea, managers should ensure that they encourage the generation of new ideas on sustainable practices by offering employees all the tools they require to test new sustainable practices. It can involve financially supporting green innovation schemes, encouraging employees of different departments to provide as many ideas as possible, and rewarding successful green schemes. By encouraging people to be innovative in their workplace, businesses can unlock their employees' creativity and adapt and make ideas that may help create a sustainable environment. PS is crucial to allowing employees to share their concepts and ideas, be innovative, and take a chance without the risk of repercussions. Employers should come up with ways of encouraging their employees to report bright green ideas, as well as to participate in sustainable extra-curricular activities willingly. This can be done through effective communication and engagement with the employees, with feedback on what is being accomplished and appreciation of the efforts made towards following green programs. Thus, by improving the IRGB on ERGB, companies that provide psychological safety create an environment where employees will go the extra steps necessary for their knowledge and actively contribute to the organization's sustainability objectives.

Limitations and Future Research

The study only included a sample of the employees of the FMCG firms operating in Pakistan, which might decrease the generalization of the study to other sectors or countries. It will be helpful if similar

studies are conducted in different sectors and countries to determine whether the observed relationships remain valid or change when the studies are conducted in different organizations in other countries. Also, due to the cross-sectional design employed for the study, the necessary causal relationship and insights into time-varying patterns cannot be established. In order to ascertain how these associations evolve, a longitudinal method of data collection is called for. Subsequent research should use several data sets, and the divergence between self-reported and actual behavior may be reduced because the sole reliance on self-data may cause bias. Last but not least, future studies should explore other psychological antecedents that affect green behaviors to have a broader perspective.

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