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The effect of organisational green culture and organisational environmental ethics on green employee behaviour: the role of green innovative performance and green communication and feedback among employees of garment industry in Bangladesh

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The effect of organisational green culture and organisational environmental ethics on green employee behaviour: the role of green innovative performance and green communication and feedback among employees of garment industry in Bangladesh

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Abstract: Globally, organisations are joining the battle to reduce global warming. Using 245 pieces of data collected from ready-made garment employees in Bangladesh. The findings indicate that a significant relationship exists between organisational green culture and green employee behaviour; a direct positive relationship exists between organisational environmental ethics and green innovative performance; and a direct positive relationship exists between green innovative performance and green employee behaviour. The results indicated that green innovative performance mediates the relationship between organisational environmental ethics and green employee behaviour. Finally, green communication and feedback were found to be moderators of the relationship between organisational environmental ethics and green employee behaviour in such a way that the effect will be stronger at a higher level of green communication and feedback.

Keywords: organisational green culture; green communication and feedback; green innovative performance; organisational environmental ethics; garment industry; Bangladesh.

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1 Introduction

Both researchers and practitioners have agreed that environmental deterioration is one of the most pressing issues facing humanity soon (Bueno-Garcia et al., 2021; Damert and Baumgartner, 2018; Oliva et al., 2022). Globally, there has been a significant increase in environmental awareness (Oliva et al., 2022). Organisations' economic operations are always accompanied by an environmental imbalance. Organisations have recently been under increasing pressure to limit the ecological consequences of their economic activities (Han et al., 2019). As a result, organisations should not only promote environmental principles to achieve long-term economic success (Han et al., 2019), but they should also consider environmental management as a metric of their social performance (El-Kassar and Singh, 2019; Yawar and Seuring, 2017). This necessitates organisational management's commitment to environmental ethics through policy design and execution in day-to-day operations to minimise the environmental effects of business activities (Han et al., 2019). The complete ethical belief, value, and standard of environmental issues within a company is known as organisational environmental ethics (Albort-Morant et al., 2018; Weaver et al., 1999a). Prior research on organisational environmental ethics has discovered that organisations with quality environmental ethics achieve employee green behaviour at work and vital competencies for environmental sustainability (Singh et al., 2019; Yu et al., 2017).

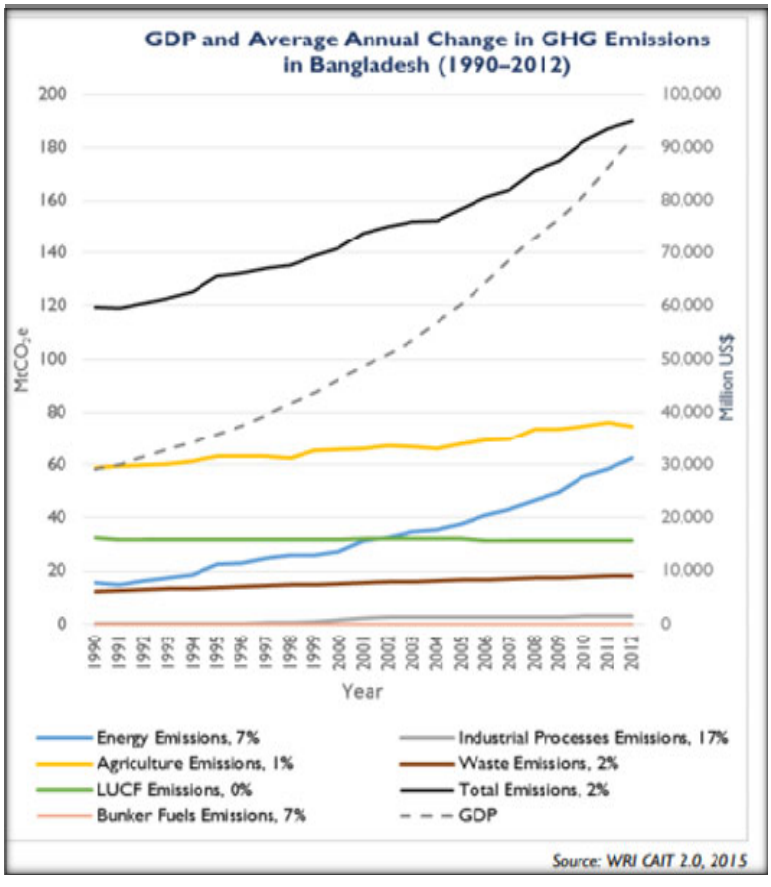
Bangladesh has achieved marvellous economic growth by providing low-cost, high-quality ready-made garments and clothes. The textile business is notorious for polluting streams and oceans, thereby contributing to greenhouse gas emissions and global warming. Pollutant products are typically associated with unethical business practices that contribute to environmental deterioration and have poor environmental impacts. Bangladesh's emissions climbed by 59% between 1990 and 2012, according to the World Resource Institute (WRI CAIT), with industrial activities accounting for the biggest share (17%), followed by energy (7%). Figure 1 shows Bangladesh's GDP and the average change in greenhouse gas emissions from 1990 to 2012.

Organisations must ensure that their environmental policies and efforts are communicated to their employees to be recognised as good corporate citizens (Prothero et al., 1997). As a result, numerous academics see environmental communication and feedback to employees as a valuable complement to gaining a competitive edge (Maas et al., 2014; Prothero et al., 1997). This paper incorporates and explores the role of organisational green communication and feedback as a complementary asset to organisational environmental management efforts, assisting organisations in their efforts to gain a differentiating advantage by enhancing green employee behaviour (GEB).

Nonetheless, the moderating role of green communication and feedback in the link between organisational green culture and organisational environmental ethics on GEB has been overlooked. To the best of the knowledge of the researchers, no empirical

research on this topic has been undertaken. The supply of information and data about an organisation's green achievement level to make a proper green plan is characterised by green communication and feedback. As a result, green communication and feedback can be viewed as an important construct for understanding GEB as well as a leading green indicator that has not been explored in sustainability and environmental research before.

Figure 1 GDP and average change in green house gas in Bangladesh between 1990 to 2012 (see online version for colours)



This paper is unique in the environmental sustainability literature because of the ecological approach and the theories that underpin it. Additionally, the mediating effect of green innovation performance is also studied in this research, which fills a vacuum in the environmental sustainability literature that has yet to be addressed. The following are the objectives of this study:

1 To test the relationships between organisational green culture and organisational environmental ethics and GEB.

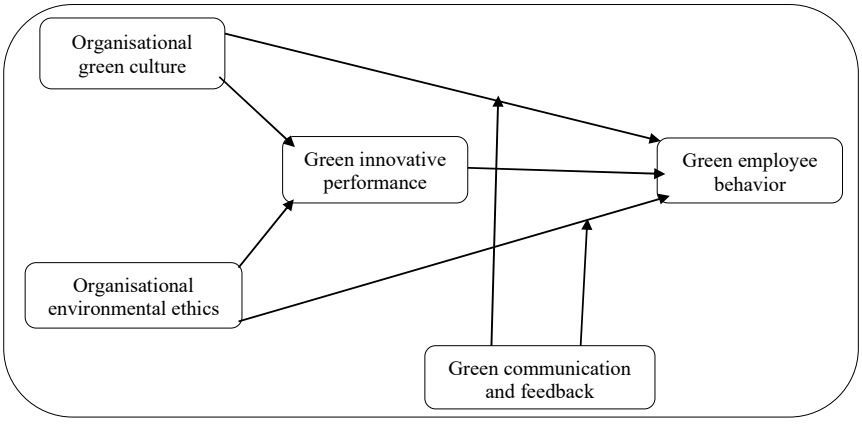
2 To examine the effect of organisational green culture and organisational environmental ethics on green innovative performance.

3 To determine the relationship between green innovative performance and GEB.

4 To test the mediating effect of green innovative performance on the relationships between organisational green culture and organisational environmental ethics on GEB.

5 To examine the moderating effect of green communication and feedback on the relationships between organisational green culture and organisational environmental ethics on GEB. The model of this study is shown in Figure 2.

Figure 2 Conceptual model



2 Theoretical background and research hypotheses

2.1 Green employee behaviour

GEB, also known as environmentally responsible behaviour in the workplace, has received attention in recently as organisations and individuals increasingly recognise the importance of environmental sustainability. This literature review aims to provide an in-depth analysis of the existing research on GEB, shedding light on the key concepts, determinants, outcomes, and challenges associated with this phenomenon. Understanding GEB is crucial for organisations seeking to foster sustainability, reduce their environmental footprint, and promote corporate social responsibility.

Various environmental issues, such as environmental noise, urban air pollution, water shortages, global warming, and biodiversity loss, represent a danger to environmental sustainability. Numerous of these problems are brought on by human conduct, which can be resolved by changing relevant behaviours to minimise their negative effects on the environment (Adriana et al., 2020). Since consumption growth is outpacing advancements in energy-saving technology, home insulation, and water conservation, it is believed that behavioural changes in humans are necessary. Ones and Dilchert (2012) describe GEB as 'scalable acts and behaviours that are involved by related individuals, contribute to, or degrade environmental sustainability' as a particular sort of behaviour in the workplace. As a result, the GEB involves activities such as switching off lights when

walking out the door, (i.e., conserving energy), reporting bathroom leaks, (i.e., saving water), among others (Adriana et al., 2020).

Green behaviour among employees is one of several strategies used by organisations to improve their environmental performance and meet sustainability goals (Chaudhary, 2020; Pham et al., 2020). It can be defined as an employee's actions that have a positive impact on the environment (Unsworth et al., 2013). Scholars in the literature have identified GEB as a workplace-specific form of pro-environmental behaviour (Kim et al., 2017; Ones and Dilchert, 2012). GEB, according to Stern (2000), is the purposeful conduct of employees that serves to lessen the negative impact of human actions. It may involve tasks such as water conservation, resource efficiency, waste reduction, energy conservation, and recycling, among others (Adriana et al., 2020).

Understanding the factors that influence GEB is essential for organisations looking to design effective sustainability initiatives. Research has identified several determinants of GEB, including:

- Individual values and attitudes: individuals' environmental values and attitudes play a significant role in shaping their green behaviour. Employees who have a strong environmental ethic are more likely to engage in green activities Tahir et al., 2020).
- Organisational culture: an organisation's culture and values can either support or hinder GEB. A culture that prioritises sustainability and environmental responsibility is more likely to encourage employees to adopt eco-friendly practices (Mirhadian et al., 2023).
- Environmental knowledge and awareness: employees with a better understanding of environmental issues and their impact are more likely to engage in green behaviour. Environmental education and awareness-raising initiatives can have a positive effect (Shahriari et al., 2023).
- Leadership and management support: strong leadership support for sustainability initiatives is crucial. When leaders demonstrate commitment to environmental goals and provide resources, employees are more likely to follow suit (Judeh and Khader, 2023).

GEB can be divided into two categories: voluntary green behaviour and task green behaviour (Norton et al., 2015). Green behaviours that are conducted within organisational restrictions and within the scope of required work activities are referred to as task green behaviours (Norton et al., 2015). Green behaviour in the workplace can also be characterised as behaviours that are formally stated and designated as part of a job description (Borman and Motowidlo, 1997; Zhang et al., 2021b). Green behaviours that require personal initiative and transcend organisational objectives have been classified as voluntary employee green behaviours (Norton et al., 2015). Discretionary behaviours establish the context in which green task performance happens by fostering the organisational, social, and psychological environment (Adriana et al., 2020; Borman and Motowidlo, 1997).

2.1.1 Organisational green culture and GEB

The topic of organisational culture has been examined numerous times in the green business literature (Adomako et al., 2021; Newton and Harte, 1997). A 'green

organisational culture' is defined as 'the amount to which the organisation's assumptions, beliefs, symbols, and artefacts reflect a desire or need to operate in an environmentally sustainable manner' from the perspective of the environment [Harris and Crane, (2002), p.218]. According to Adriana et al. (2020), an organisational climate that is supportive of the environment is defined as employees' collective perceptions of their companies' green policies, procedures, and practices. Organisational culture is thought to have an impact on whether green practices are successfully implemented in the organisation (Yeşiltaş et al., 2022). Green organisational ideas and models have only scratched the surface of the concept of green culture. The most widely held belief is that to solve environmental challenges, organisations must undergo a significant cultural shift (Azhar and Yang, 2021). According to proponents of this viewpoint, top management's participation in developing a green culture is critical (Azhar and Yang, 2021; Vargas-Hernández and Calderón-Campos, 2022), with managers in charge of directing employees' conduct in accordance with environmental principles. On the other hand, a top-down management strategy has been identified as impeding the greening of an organisation's culture (Harris and Crane, 2002; Wijethilake et al., 2021). The bottom-up approach to corporate culture is something that management values because it enables it to adopt environmental policies that are promoted or pushed by its employees (Azhar and Yang, 2021).

Cultural artefacts vary from vision and mission to workplace décor and can reveal an organisation's underlying cultural values (Muisyo et al., 2021; Schein, 1993). Environmentally responsible attitudes, beliefs, and practices must be shared by all members of an organisation's green culture (Harris and Crane, 2002). Employees can engage in both formal and discretionary green behaviour, such as purchasing environmentally friendly products or not littering at random. However, research suggests that employees are not doing as many easy green behaviours in their daily routines as they could (Azhar and Yang, 2021; Osbaldiston and Schott, 2012). Promoting a green culture can help organisations bridge this gap and encourage employees to choose easy green activities (Azhar and Yang, 2021).

In a green cultural environment, employees receive signals that eco-friendly behaviour is desired, recognised, and rewarded by their organisations. Employees consider organisations that support, promote, and endorse environmental principles as a certain type of organisation that supports, promotes, and endorses environmental values, which raises their green behaviours (Osbaldiston and Schott, 2012; Schein, 1993). Employees are often motivated to demonstrate actions that are consistent with their beliefs about the policies, procedures, and practices of their organisations (Azhar and Yang, 2021). Prior empirical studies reported the direct relationship between Organisational Green Culture and GEB in various contexts (Azhar and Yang, 2021; Osbaldiston and Schott, 2012). Therefore, the following hypothesis is formulated:

Hypothesis 1 Organisational green culture is significant to the GEB.

2.1.2 Organisational environmental ethics and GEB

The core and fundamental ethical mindsets, attitudes, and beliefs of an organisation's environmental concerns are referred to as organisation environmental ethics (Chang, 2011). It influences the core attitudes and expectations of businesses in terms of environmental stewardship (Chang, 2011). Ethics codes, ethics officers, ethics

committees, ethics communication systems, ethics training programs, and disciplinary actions are all examples of differences in corporate environmental ethics among distinct organisations (Weaver et al., 1999b). Organisations that establish green culture and competence, which cannot be precisely imitated by rivals, can build advantages on three interconnected levels since the natural habitat imposes the biggest limits and challenges: prevention of pollution, extended producer responsibility, and sustainable development, according to the natural resource-based perspective (Hart, 1995; Han et al., 2019). The way a company or sector handles environmental issues is perhaps the most crucial metric of its overall competitiveness (Han et al., 2019). Organisational environmental ethics, according to this argument, can boost firm performance (Han et al., 2019).

First, corporate environmental ethics may result in cost reductions. Environmentally ethical businesses are willing to follow authoritarian regulation guidelines and prevent pollution, so they have a low chance of paying a fine for violating public environmental standards as employees are expected to comply with organisational green ethics (Han et al., 2019; Yahya et al., 2021). Organisational environmental ethics also put businesses on the right track for product stewardship and long-term development. Companies are more likely to include environmental considerations in product and process design. As a result, they could produce more efficiently, from raw materials to energy and labour, and offset the costs of being ecologically conscious (Han et al., 2019; Miles and Covin, 2000). Increased resource productivity as a result of organisational environmental ethics makes businesses more profitable, not less profitable (Porter and Van der Linde, 1995). Thus, a high level of organisational environmental ethics allows an organisation to have more employees with green attitudes and behaviours. Prior studies have shown a relationship exists between organisational environmental ethics and GEB. Therefore, the following hypothesis is formulated:

Hypothesis 2 Organisational environmental ethics is significant to the GEB.

2.1.3 Organisational green culture and green innovative performance

Green innovation performance gauges how well businesses produce inventions that minimise their negative effects on the environment while optimising their use of natural resources (Albort-Morant et al., 2018; Chen et al., 2006). Green innovation, as a strategy, provides excellent chances to address organisational and customer needs while also preserving the environment (Albort-Morant et al., 2018; Du et al., 2018). Customers all over the world are increasingly looking for ecological, ecologically conscious, eco-friendly, or green products and services. 'Green' practices provide a significant incentive for organisations to innovate continuously, create new market opportunities, and respond to new customer requirements, thereby increasing and expanding customer capital (Albort-Morant et al., 2018). Organisations develop innovative processes, products, technology, and/or management strategies to carry out environmental operations more effectively. "Innovation in hardware or software that is pertinent to green processes or products, such as the development of technologies for energy conservation, trash recycling, green product development, corporate environmental management, and pollution prevention", according to Chen (2008, p.332).

According to Chang (2011), green innovation is a type of innovation that allows a company to improve its employees' green behaviour by maintaining a green culture within the organisation, which is likely to improve the organisation's image, develop new

markets, and extend its competitive advantage while meeting stakeholders' environmental protection demands. Likewise, Takalo and Tooranloo (2021) affirm that green innovation entails product or production techniques that deal with industrial innovation for pollution prevention, reusing, waste reprocessing, energy saving, and eco-efficient design. By adopting significant modifications in corporate strategy, product design methodologies, productive processes, resource utilisation, and waste treatment procedures, Oduro et al. (2021) claim that this type of innovation minimises firms' ecological footprint. All of these can be achieved in an organisation with a positive green culture (Albort-Morant et al., 2018; Du et al., 2018). Therefore, the following hypothesis is formulated:

Hypothesis 3 Organisational green culture is significant to the green innovative performance.

2.1.4 Organisational environmental ethics and green innovative performance

Environmental ethics is a valuable internal asset that allows an organisation to use a value-creating approach to improve environmental performance (Clemens and Douglas, 2006). Environmental performance refers to an organisation's conduct concerning the natural environment in terms of how it uses available resources while maintaining a strong commitment to keeping pollution emissions, if any, to a minimum (Wagner et al., 2002). This paper suggests that, based on the resource-based view (RBV), firms have a natural desire to plan value-creating strategies to generate synergy among their existing resources, including environmental ethics, to improve their sustainability impact and achieve green innovative performance (Liang et al., 2022).

A significant portion of research suggests a positive correlation between a strong commitment to environmental ethics and higher levels of green innovative performance. Organisations with a clear ethical stance on environmental issues are more likely to invest in sustainable innovation, such as clean technologies and environmentally friendly production processes. Additionally, research revealed that corporate environmental ethics influence innovative performance and that organisational environmental ethics encourage pollution control efforts (Huang and Chen, 2021; Juo and Wang, 2022). Therefore, the following hypothesis is formulated:

Hypothesis 4 Organisational environmental ethics is significant to the green innovative performance.

2.2 Green innovative performance and GEB

Organisations must continue to engage in environmental management in response to regulatory pressures and customer environmental awareness as a result of the trend toward environmentalism (Huang and Wu, 2010; Huang and Li, 2017). The phrase 'green innovation' or 'eco-innovation' has been used in investigations of organisations' contributions to environmental sustainability while also boosting competitiveness. Green innovation, often known as eco-innovation, can be broadly described as any innovation that reduces environmental impact, whether or not that impact is intended (Adams et al., 2016). Green innovation has aided the evolution of sustainable production projects and played a vital role in shifting sectors toward sustainable production. Organisations can boost their environmental vitality by adhering to international environmental agreements

and incorporating new scientific and technological advancements into green innovation strategies (Huang and Li, 2017; Xie et al., 2019). By-product energy consumption and production process rearrangement have spurred industry attempts to increase recycling opportunities. Contemporary green innovation initiatives are primarily focused on technological advancements. These are usually connected with green innovation focused on GEB (Huang and Li, 2017; Xie et al., 2019). Therefore, the following hypothesis is formulated:

Hypothesis 5 Green innovative performance is significant to the GEB.

2.2.1 The mediating role of green innovative performance

Innovation has been acknowledged as a key strategy and practice for ensuring a company's competitiveness and long-term existence (Chang, 2019; Lin et al., 2021; Nanath and Pillai, 2017; Yu et al., 2019). Organisations working in various commercial settings exhibit a wide range of innovation performance, which is affected by many factors including management systems, steadfast capacities for assimilating or adopting scientific understanding, green culture and institutional mechanisms, organisational green ethics, and environmental forces (Nanath and Pillai, 2017).

Organisations' ability to leverage green innovation as a strategic resource may necessitate employee-driven knowledge transfer processes and knowledge acquisition abilities within the organisation (Arici and Uysal, 2022; Fang et al., 2022), investment in research and development (Duque-Grisales et al., 2020), top-level support for technical prowess, and organisational green ethics (Fan et al., 2021). Organisations, on the one hand, see sustainability initiatives as a way to generate strategic resources through committed groups and their stakeholders, as well as through good green business practices (Fan et al., 2021).

Environmental ethics plays a significant role in green innovative performance and business management studies (Rui and Lu, 2021). It can contribute to a company's green innovation. Second, while environmental ethics and green culture are prerequisites for green innovation, the rationale why organisations adopt green innovation strategies and provide an enabling environment and support could be linked to their GEB. Therefore, the following hypothesis is formulated:

Hypothesis 6 Green innovative performance will mediate the relationship between organisational green culture and GEB.

Hypothesis 7 Green innovative performance will mediate the relationship between organisational environmental ethics and GEB.

2.2.2 The moderating role of green communication and feedback

Organisational communication is perhaps the most important procedure for ensuring organisational effectiveness in the workplace (Chiang et al., 2008). Communication and feedback are recommended as moderators in the relationships between organisational green ethics and green culture in this study. Communication has been acknowledged for its importance in successful management-employee relationships (Chiang et al., 2008).

The importance of green communication and feedback, as well as its link to many workplace outcomes, has been acknowledged, including workplace safety (Mashi et al.,

2020). The supply of information and data about an organisation's green achievement level to make a proper green plan is characterised by green communication and feedback. As a result, green communication and feedback can be viewed as an important construct for understanding GEB as well as a leading green indicator that has not been explored in sustainability and environmental research before.

This study posits that green communication and feedback mechanisms moderate the relationship between organisational green culture and GEB. Specifically, effective green communication can amplify the impact of a strong green culture by ensuring that employees understand and embrace the organisation's sustainability goals. Feedback mechanisms, on the other hand, can reinforce green behaviours by providing employees with information and recognition, thus increasing their commitment to sustainability. This paper hypothesises that organisational green ethics and green culture on GEP are moderated by green communication and feedback. Therefore, the following hypothesis is formulated:

Hypothesis 8 Green communication and feedback will be a moderator on the relationship between organisational green culture and GEB, in such a way that the effect will be stronger at the higher level of green communication and feedback.

Hypothesis 9 Green communication and feedback will be a moderator on the relationship between organisational environmental ethics and GEB, in such a way that the effect will be stronger at the higher level of green communication and feedback.

2.3 Underpinning theories

2.3.1 Institutional theory

According to Jepperson (1991, p.149), an institution is a 'socially built, routinely reproduced, program, or rule system'. Institutions are made up of three pillars: cognitive, normative, and regulative. They are essential for the stability and meaning of social behaviours (Carpentier, 2021; Scott, 1995). Organisations utilise tactics and activities to materialise appropriateness, meaningfulness, and legitimacy, which are three pillars of the institutional environment (Díez-Martín et al., 2021).

Legitimate organisations are those that match social norms and are thus accepted, respected, and seen as correct, acceptable, and beneficial (Aldrich and Fiol, 1994; Thomas and Ritala, 2022). The institutional theory explains why organisations act on their social duties, driven by the desire to gain legitimacy (including GEB). Organisations are more likely to engage in socially responsible activities when the external environment has institutionalised a normative need for corporate social responsibility (Campbell, 2007; Dmytriyev et al., 2021). Tibiletti et al. (2021) also suggested that normative or cultural institutions provide incentives for organisations to engage in socially responsible behaviour.

Institutional theory provides a lens through which to analyse how external institutional pressures, such as government regulations and societal expectations, can influence the development of a green culture, environmental ethics, GEB, green innovative performance, and green communication and feedback within the garment industry in Bangladesh. It highlights the importance of aligning organisational practices

with external institutional expectations to enhance environmental sustainability in this industry.

2.3.2 Resource-based view

In this context, the RBV focuses on an organisation's internal competence, such as organisational green culture and organisational green ethics. According to Fouts (1997), a company's skills and knowledge to use valuable and unique assets and resources provide a competitive edge and superior performance. "The resource-based view addresses the fit between what a corporation can achieve and what it has the chance to do", said Russo and Fouts (1997, p.536). Furthermore, RBV literature divides resources into two categories: tangible and immaterial resources. Capital and material assets such as raw materials, plants, and equipment are tangible resources, whereas culture, reputation, technology, and human resources are intangible resources (Russo and Fouts, 1997). It was believed that organisations with valuable, scarce, inimitable, and non-substitutable resources could gain a competitive advantage over their competitors (Russo and Fouts, 1997). Hart (1995) offered an environmental win-win approach to competitive advantage generation based on RBV reasoning, arguing that social and environmental issues can enhance the growth of a company's intangible resources, resulting in improved green performance.

3 Methodology

3.1 Sample and data collection

The data were collected using a questionnaire that was self-administered to ready-made garment employees. Large-scale garment factories in Savar, Dhaka, and Gazipur, which are regarded as the key hubs of Bangladesh's garment business, were chosen for the study. The population of the study was 11 ready-made garment factories located in Dhaka, Gazipur, and Savar, which officially agreed to participate in the study with a total population of 2800 employees. Based on Krejcie and Morgan (1970), the required sample size was 331 employees. Ten percent was added to take care of non-responses (Zikmund et al., 2013), making the sample size 364 employees. The survey was administered, and data was collected using proportional stratified sampling (Ponce et al., 2021). A total of 345 valid questionnaires were collected, resulting in a 94.8% response rate. Based on the G*power requirement, 345 responses were sufficient; a minimum sample size of 172 was required. We set the effect size to medium (0.15) and the required power to 0.95 because the model had four predictors and two interactions (Roch and O'Sullivan, 2003).

3.2 Measures

Green communication and feedback were measured on the scale developed by Vinodkumar and Bhasi (2010), which consists of four items ($\alpha = 0.70$). These items were worded to suit the context of environmental sustainability. Sample items include: 'Management operates an open door policy on environmental issues'. Green organisational culture was measured on the Marshall et al. (2015) scale, which consists of five items. Sample items include: 'environmental protection is a central corporate value

in our organisation'. Corporate environmental ethics were measured on Henriques and Sadorsky's (1999) scale, which consists of four items. Sample items include: 'My organisation has specific policies for environmental protection'.

Green innovation was measured on the scale of Guo et al. (2020), which consists of five items. Sample items include 'my organisation reduces consumption, e.g., fuel, gas, oil, and petrol' and 'My organisation reuses and recycles materials'. Employee green behaviour was measured on the scale of Zhang et al. (2021a), which consists of five items. Sample items include: 'I print double-sided whenever possible' ($\alpha = 0.909$).

4 Results

In this study, Reinartz et al. (2009) proposed employing partial least squares variance-based structural equation modelling (PLS-SEM) to test the conceptual model. The following factors led to this choice: the primary objective of this study is to forecast the dependent variable (Hair et al., 2011). In our next research, we employed latent variable scores to estimate indirect effects in the suggested mediation model (Hayes, 2013). As a result, we used SmartPLS 3.2.8 to test the proposed conceptual model (Hair et al., 2021).

Table 1 Respondent's profile

Demographic characteristics		*Frequency*	*Percentage (%)*
Gender	Male	244	70.72
	Female	101	29.28
Age	Under 29 years	255	73.91
	30–39 years	56	16.23
	40–49 years	26	7.540
	Above 49 years	08	2.320
Qualification	Secondary certificate	199	57.68
	Diploma	101	29.28
	Bachelors	39	11.30
	Masters	06	1.740
Designation	Low level	317	91.88
	Middle level	28	8.120
N = 315			

The model's predictive relevance was then assessed. As a result, we report the model's R^2-squared values first. The total variance in GEB and green innovative performance is 37.5% and 10.5%, respectively, according to the empirical findings. Although the acceptable R^2-squared number varies depending on the research environment, Falk and Miller (1992) suggest that in the social sciences, a minimum of 10% variance is acceptable. Furthermore, the model's prediction performance was then tested using a blindfolding process. The results of this test were likewise acceptable, indicating that the model's Q^2 score is more than zero ($Q^2 = 0.213$ for GEB and 0.077 for green innovative performance) (Ahmed et al., 2020).

4.1 Demographic characteristics of the respondents

Table 1 reports the results of the respondent's profiles, including their gender, designation, age group, and qualification. With regards to gender, the majority were male (70.72%), and the majority were under the age of 29 (73.91%), whereas the average experience with the company was 6.1 years.

4.2 Descriptive statistics

Table 2 Mean, standard deviation, and correlation of the study variables correlations

Variables		*1*	*2*	*3*	*4*	*5*	*Mean*	*Std. deviation*
1	Organisational green culture	1					3.5014	0.80604
2	Green employee behaviour	–0.181**	1				3.0372	0.90693
3	Green innovative performance	0.021	0.382**	1			3.0377	1.08107
4	Green communication and feedback	–0.098	0.411**	0.499**	1		3.0405	0.99649
5	Organisational environmental ethics	–0.097	0.161**	0.299**	0.413**	1	3.4713	0.74871

Note: **.Correlation is significant at the 0.01 level (two-tailed).

4.3 Common method bias (CMB)

Following the recommendations of Podsakoff et al. (2003), CMB was reduced by procedural design and post-hoc analysis. The survey was designed in conjunction with senior academics specialising in management research in ready-made garments, as well as through pre-survey interviews and pilot research with a small sample of ready-made garments employees, for its procedural design. As a result of these measures, the survey questions were clear, succinct, and specific to the ready-made garments. Harman's (1967) one-factor test was used to conduct a post-hoc analysis of CMB. The dataset was first subjected to Harman's (1967) one-factor test. The eigenvalue unrotated exploratory factor analysis solution identified seven components, with a single factor accounting for 23.7% of the variation. Because the bulk of the variance was not due to a single component, this result showed that CMB was rarely an issue in this study (Harman, 1967).

4.4 Reliability and validity of measures

When the constructs of a study are reflective, the assessment of a measuring model should be focused on determining and establishing discriminant validity indicator reliability, internal consistency reliability, and convergent validity (Hair et al., 2011). Because all of the variables in this study were reflective, factor loadings were kept at 0.7

and/or above for individual item reliability (Hair et al., 2011). The composite reliability (CR) scores were assessed to determine internal consistency. All of the latent variables in this investigation had CR values of up to 0.70 or higher (Bagozzi and Yi, 1988). Convergent validity was then looked at by looking at average variance extracted (AVE) scores; as shown in Table 3, all of the latent variables had AVE scores of up to 0.50 (Chin, 1998). As a result, this paper concludes that indicator reliability, internal consistency reliability, and convergent validity were achieved. Finally, using the heterotrait-monotrait ratio of correlations (HTMT) approach to assess discriminant validity (Henseler et al., 2009), the findings revealed that all HTMT values were less than 0.85. As a result, the current study also displays discriminant validity according to the HTMT rule (refer to Table 4).

Table 3 CFA results

Variable	*Loadings*	*CR*	*AVE*
Green employee behaviour		0.876	0.603
EGB1	0.871		
EGB3	0.833		
EGB4	0.869		
EGB5	0.777		
EGB6	0.829		
Green communication and feedback		0.927	0.810
GCP1	0.779		
GCP3	0.950		
GCP4	0.959		
Green innovative performance		0.945	0.778
GINOV1	0.960		
GINOV2	0.737		
GINOV3	0.782		
GINOV4	0.957		
GINOV5	0.947		
Organisational environmental ethics		0.912	0.725
OEE1	0.916		
OEE2	0.887		
OEE3	0.888		
OEE4	0.700		
Organisational green culture		0.965	0.846
OGC2	0.975		
OGC3	0.927		
OGC4	0.920		
OGC5	0.796		
OGC1	0.970		

Table 4 Discriminant validity heterotrait-monotrait ratio (HTMT)

Construct		*1*	*2*	*3*	*4*
1	Green communication and feedback				
2	Green employee behaviour	0.549			
3	Green innovative performance	0.527	0.518		
4	Organisational environmental ethics	0.555	0.230	0.337	
5	Organisational green culture	0.144	0.187	0.056	0.111

4.5 Structural model

In this paper, hypotheses were tested by a bootstrapping method with 5,000 re-sample estimates and confidence intervals (Hair et al., 2011). Table 5 displays the study's path coefficients. Referring to Table 5 and Figure 3, the paper infers that The association between OGC and GEB was shown to be substantial and significantly different from zero, which is compatible with Hypothesis 1 (β = 0.132, t = 3.037, p < 0.01, [0.205; 0.063]). The path from OEE to GEB was not supported (β = 0.069, t = 1.098, p > 0.05, [–0.045; 0.165]). Hence, H2 is not supported. The findings from Table 5 indicate that the path from OGC to GIP was not supported (β = 0.056, t =1.058, p > 0.05, –0.042; 0.143). Hence, H3 is not supported.

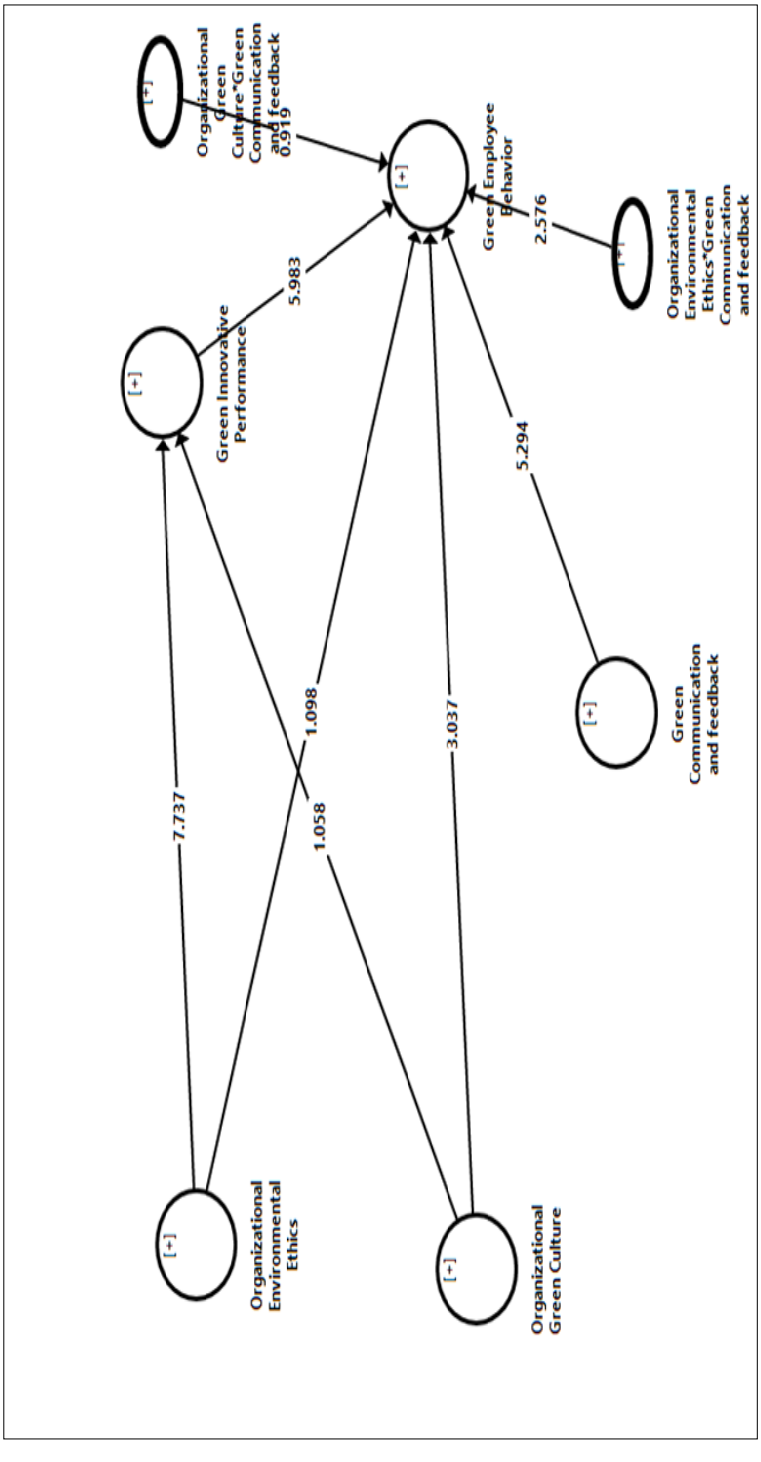
The analysis from Table 5 supports H4, where it is hypothesised that a direct positive relationship exists between OEE and GIP (β = 0.325, t = 7.737, p < 0.01, [0.260; 0.395]). Hence, H4 was supported. The analysis from Table 5 also offers empirical support for H5, where the direct positive link was predicted to exist between GIP and GEB (β = 0.363, t = 5.983, p < 0.01, [0.255; 0.448).

Table 5 Direct effect

Relationships	*Beta*	*SE*	*t-value*	*p-values*	*CI*	
					5.0%	*95.0%*
Direct effect						
H1 OGC → GEB	0.132	0.044	3.037	0.001**	0.205	0.063
H2 OEE → GEB	0.069	0.063	1.098	0.136ns	–0.045	0.165
H3 OGC → GIP	0.056	0.053	1.058	0.145ns	–0.042	0.143
H4 OEE → GIP	0.325	0.042	7.737	0.000**	0.260	0.395
H5 GIP → GEB	0.363	0.061	5.983	0.000**	0.255	0.448
Path coefficient (indirect effect) results						
H6 OGC → GIP → GEB	0.020	0.020	1.004	0.316ns	–0.016	0.064
H7 OEE → GIP → GEB	0.118	0.027	4.400	0.000**	0.067	0.173
Moderating effect						
H8 OGC*GCF → GEB	–0.041	0.045	0.919	0.179ns	–0.114	0.033
H9 OEE*GCF → GEB	0.239	0.093	2.576	0.005**	0.331	0.115

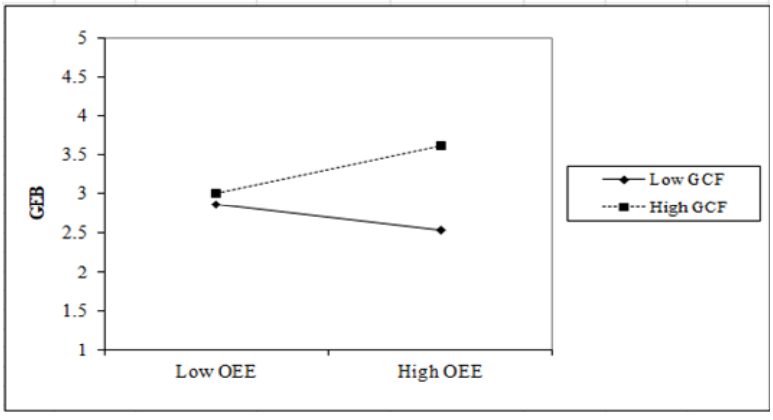
Notes: **0.01 (one-tailed), ns = Not significant, OGC = Organisational green culture, GEB = Green employee behaviour, OEE = Organisational environmental ethics, GIP = Green innovative performance, GCF= Green communication, and feedback, CI = Confidence interval.

Figure 3 Structural model



This paper used the bootstrapping approach to apply the criterion proposed by Preacher and Hayes (2004) for mediation analysis. GIP mediates the association between OEE and GEB (β = 0.118, t = 4.400, p < 0.01). Additionally, zero should not fall inside the confidence intervals of the indirect effects, according to Preacher and Hayes (2004) (0.067; 0.173). Thus, this paper concludes that H7 was supported. Surprisingly, H6 was not supported. GIP did not mediate the relationship between OGC and GEB (β = 0.020, t = 1.004, p > 0.01, [CI –0.016, 0.064]).

Figure 4 Organisational environmental ethics * green communication and feedback → green employee behaviour



Surprisingly, from Table 5, Hypothesis 8 was not supported, and green communication and feedback did not moderate the relationship between organisational green culture and GEB (β = –0.041, t = 0.919, p > 0.01, [CI –0.114, 0.033]). Hypothesis 9 stated that green communication and feedback will be a moderator on the relationship between organisational environmental ethics and GEB in such a way that the effect will be stronger at the higher level of green communication and feedback. This finding is supported (β = 0.239, t = 2.576, p < 0.01, [CI 0.331, 0.115]). Figure 4 indicates that the relationship between organisational environmental ethics and GEB is stronger, (i.e., more positive) for an organisation with high levels of green communication and feedback than for an organisation with low levels of green communication and feedback. This indicates that GEB increases in the organisation when both organisational environmental ethics and safety communication and feedback are high.

5 Discussion and conclusions

The purpose of this paper is to test the effect of organisational green culture and organisational environmental ethics on GEB using green innovative performance as a mediator and green communication and feedback as moderators among employees of the garment industry in Bangladesh. Firstly, the findings of this study established the link between the relationship between organisation's green culture and GEB. This finding is consistent with prior studies (Adomako et al., 2021; Yeşiltaş et al., 2022). The garment industry in Bangladesh may be the cause of this result. Management values the bottom-up

approach to corporate culture, which enables it to adopt environmental policies that are supported or promoted by its employees. Secondly, the results indicate that the path between organisational environmental ethics and GEB was not supported in this study. The possible reason for this finding could be that this relationship is indirect, as identified in this study. Thirdly, the findings indicate that the path from organisation-wide green culture to innovative performance is not supported.

- *Organisational green culture → green employee behaviour:* the positive relationship between an organisational green culture and GEB aligns with institutional theory's concept of normative pressures. In Bangladesh's garment industry, there may be increasing societal expectations for organisations to adopt environmentally friendly practices, which influence organisations to promote a green culture and employees to adopt green behaviours to conform to these expectations.
- *Organisational environmental ethics → green employee behaviour:* while this relationship is not statistically significant, it still suggests that organisational environmental ethics, driven by normative pressures, may have a positive influence on GEB. However, this effect might be weaker due to variations in the level of commitment to ethics across organisations in the industry.
- *Organisational environmental ethics → green innovative performance:* the strong and significant relationship between organisational environmental ethics and green innovative performance can be attributed to regulatory pressures and normative expectations. Organisations in the garment industry in Bangladesh may face increasing regulations related to environmental practices, pushing them to develop innovative solutions.
    a *H7: Organisational environmental ethics → green innovative performance → green employee behaviour (indirect effect):* this indirect effect suggests that institutional pressures, including regulations and industry norms, can lead to innovative practices, which, in turn, influence GEB. Organisations conform to external expectations, which, in turn, affect their internal practices and employee behaviours.
- *Organisational environmental ethics → green innovative performance:* this relationship highlights the role of environmental ethics as an internal resource. Organisations that proactively invest in ethical practices and sustainability may build a valuable resource that contributes to their innovative performance, setting them apart in the competitive landscape of the garment industry.
    a *H5: Green innovative performance → green employee behaviour:* green innovative performance can be viewed as an internal capability or resource that organisations develop. In the context of the garment industry in Bangladesh, organisations with a strong capability for sustainable innovation may have a competitive advantage in terms of fostering GEB.
- *Organisational green culture * Green communication, and feedback → Green employee behaviour:* the interaction between green culture and communication/feedback represents how internal organisational resources (culture) can be leveraged with communication and feedback mechanisms to influence employee behaviour positively.

5.1 Theoretical contributions

The study's findings contribute to RBV and institutional theory in the understanding of the relationship between an organisation's environmental ethics, green culture, and GEB. As a result, the findings of this study support RBV and institutional theory that effective integration and reconfiguration of a firm's key competencies, namely, the organisation's environmental ethics and green culture, is critical for green innovative performance and GEB, particularly in the context of Bangladesh, a developing country. The findings show that organisations environmental ethics and green culture play a critical role in improving employee green behaviour both directly and indirectly through green innovative performance, which is an important contribution of this study.

The moderating role of green communication and feedback in the link between organisational green culture and organisational environmental ethics and GEB has been overlooked. To the best of the knowledge of the researchers, no empirical research on this topic has been undertaken.

5.2 Managerial implications

The findings of the study, when applied to the context of the garment industry in Bangladesh, have several practical implications for organisations operating within this sector. The garment industry in Bangladesh is a significant contributor to the country's economy and has been undergoing various sustainability challenges. The findings emphasise the importance of organisational environmental ethics in enhancing GEB and widen practitioners' perspectives on how to improve green innovative performance. Identifying green innovation opportunities and employing qualified personnel in line with the organisation's green policies and programs can assist organisations in reducing penalty costs associated with waste and pollution while also increasing the organisation's image. As a result, managers should understand how to use the organisation's environmental ethics to boost the organisation's innovative performance and employee green behaviour.

To stimulate economic growth, the government should first emphasise the philosophy of organisational environmental ethics related to the garment industry. It is beneficial to publicise the benefits of environmentally conscious operations and to spend resources to create a social climate that supports green-conscious behaviour. To enhance business ethics, the government should create efficient institutional arrangements and stimulate organisational green communication.

Organisations have been under greater government pressure to develop sustainable green management practices to prevent negative business impacts on the built and physical environment. This finding reveals that in such a business context, both senior management and staff should be dedicated to implementing and maintaining environmentally green ethical practices to improve the organisation's green performance. Furthermore, the research suggests that by keeping employees informed about organisational green culture and ethics, employee green behaviour can be enhanced, as can monitoring their green behaviours concerning sustainable environmental management practices based on environmental ethics.

Given the positive relationship between organisational green culture and GEB, garment industry companies in Bangladesh should strive to cultivate a strong green culture. This can be achieved by promoting environmentally conscious practices, values,

and behaviours among employees. Providing education, training, and awareness campaigns about sustainable practices can enhance employees' commitment to green initiatives. The study suggests that promoting organisational environmental ethics leads to improved green innovative performance. In the context of the garment industry, companies can integrate ethical considerations into their practices, such as using eco-friendly materials and adopting cleaner production processes. This can lead to the development of innovative products and manufacturing methods that align with sustainable practices and consumer demand for environmentally friendly products.

The positive relationship between green innovative performance and GEB highlights the importance of innovation in driving sustainable practices. Garment industry companies can encourage innovation through research and development initiatives aimed at producing eco-friendly fabrics, reducing waste, and improving energy efficiency. Employees involved in such innovation projects can feel a stronger sense of purpose and engagement. The study indicates that the moderating effect of green communication and feedback significantly influences the relationship between organisational environmental ethics and GEB. In the Bangladesh garment industry, clear and open communication channels are crucial. Organisations should establish transparent channels for employees to provide feedback on environmental initiatives and practices. Encouraging two-way communication can empower employees to contribute ideas and feel more connected to sustainability efforts.

With the increasing global focus on sustainability and environmental regulations, the findings emphasise the need for garment industry organisations in Bangladesh to align their practices with environmental standards. Demonstrating a commitment to ethical and sustainable practices can enhance the reputation of these organisations, attracting socially conscious consumers and potential partners. The findings highlight the potential for industry leadership and collaboration. Companies that actively promote green culture, environmental ethics, and innovative practices can set industry benchmarks and inspire others to follow suit. Collaborative efforts among garment industry players, government bodies, and non-governmental organisations can drive collective action toward a more sustainable and responsible sector.

Considering the nuanced relationships identified in the study, training programs can be designed to equip employees and management in the garment industry with the skills and knowledge needed to implement and sustain green initiatives. This can range from educating employees about environmental practices to providing managerial training on how to foster a culture of sustainability. By adopting these implications, garment industry organisations can contribute to a more sustainable and responsible sector that meets both consumer expectations and global environmental standards.

5.3 Limitations and future research

A few limitations must be acknowledged explicitly in this study. A cross-sectional survey is used, which makes it difficult to overlook the fact that cross-sectional design is incapable of establishing a robust causal relationship between organisational environmental ethics, culture, and GEB. Future research should, however, use longitudinal and other multiple research methods to rule out alternative reasons and confirm the findings' robustness. Second, green innovative performance is identified as a mediator in this study since the construct fully transfers the influence of an organisation's

environmental ethics to GEB. Still, other important variables can be explored to further test the mediators using this framework.

5.4 Conclusions

In conclusion, the study provides valuable insights into the relationships between various factors influencing GEB and innovative performance within an organisational context. Organisational green culture appears to have a significant direct effect on GEB, while organisational environmental ethics shows mixed results. The strong direct effects of both organisational environmental ethics and green innovative performance on GEB highlight their importance. The moderating effects of green communication and feedback on the relationship between organisational environmental ethics and GEB also demonstrate the role of communication in influencing behaviours. However, the indirect effects of organisational green culture and green innovative performance on GEB through green innovative performance seem less significant. These findings underscore the need for organisations to foster a culture of sustainability and ethical practices, while recognising the influence of effective communication in promoting environmentally friendly behaviours among employees. In the context of the garment industry in Bangladesh, Institutional Theory highlights the role of external pressures, norms, and regulations in shaping organisational behaviour and practices related to sustainability. On the other hand, RBV emphasises the importance of internal resources and capabilities, such as environmental ethics and innovation, as sources of competitive advantage in fostering green behaviours and practices. Together, these theoretical perspectives provide a holistic understanding of the dynamics within the industry regarding sustainability and green initiatives.

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