Revista Galega de ECONOMÍA | Galician Journal of ECONOMICS

Revista Galega de Economía, 34(2) (2025). ISSN-e: 2255-5951
https://doi.org/10.15304/rge.34.2.10602

Special

Peculiarities of Implementing Pro-Environmental Behaviour in Ukrainian Companies During the War

Peculiaridades da aplicación dun comportamento pro-ambiental nas empresas ucraínas durante a guerra

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Received: 31/03/2025; Accepted: 14/07/2025

Abstract

This study examines the pro-environmental behaviour of employees in Ukrainian companies, with a particular focus on transforming environmental practices under wartime conditions. Drawing on a bibliometric analysis of international academic literature and qualitative case studies of leading Ukrainian enterprises, this study identifies key thematic trends and organisational responses. Findings highlight the integration of ecological awareness into crisis management and energy-saving strategies, the transition from general education to practice-oriented environmental training, and the reinforcement of corporate cultures centred on responsible consumption. The results demonstrate that the war has functioned as both a disruptor and catalyst for the development of more adaptive and sustainable business models. Despite the progress observed, key limitations persist, including the lack of longitudinal assessments of behavioural change and the need for more empirical research on sectoral differences. Future studies should explore the roles of digital technologies and green leadership in shaping pro-environmental behaviour in post-crisis and remote work settings. The findings have practical relevance for business leaders aiming to embed sustainability principles into organisational strategies amid disruption and systemic uncertainty.

Keywords: Pro-environmental behaviour; Corporate sustainability; Crisis adaptation; Ukrainian companies; Wartime environmental practices.

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Resumo

Este estudo examina o comportamento pro-ambiental dos empregados nas empresas ucraínas, con especial atención á transformación das prácticas medioambientais en condicións de guerra. Baseándose nunha análise bibliométrica da literatura académica internacional e en estudos cualitativos de casos de empresas ucraínas punteiras, este estudo identifica as tendencias temáticas chave e as respostas organizativas. Os resultados destacan a integración da conciencia ecolóxica na xestión de crise e as estratexias de aforro enerxético, a transición dunha educación xeral a unha formación medioambiental orientada á práctica, e o reforzo de culturas corporativas centradas no consumo responsable. Os resultados demostran que a guerra funcionou como perturbador e catalizador do desenvolvemento de modelos empresariais máis adaptables e sostibles. A pesar dos avances observados, persisten limitacións importantes, como a falta de avaliacións lonxitudinais do cambio de comportamento e a necesidade de máis investigación empírica sobre as diferenzas sectoriais. Futuros estudos deberían explorar o papel das tecnoloxías dixitais e o liderado verde na formación de comportamentos pro-ambientais en contornas de traballo post-crise e remotos. As conclusións teñen relevancia práctica para os líderes empresariais que pretendan integrar os principios de sustentabilidade nas estratexias organizativas nun contexto de perturbación e incerteza sistémica.

Palabras chave: Comportamento pro-ambiental; Sustentabilidade empresarial; Adaptación á crise; Empresas ucraínas; Prácticas medioambientais en tempos de guerra.

JEL classification: M14; Q56; O13.

Revista Galega de Economía, 34(2) (2025). ISSN-e: 2255-5951
https://doi.org/10.15304/rge.34.2.10602

1. INTRODUCTION

Given the escalating global ecological challenges and increasing stakeholder pressure for sustainable development, the concept of pro-environmental behaviour in the workplace has garnered growing academic and practical interest (Graves et al., 2013; Kim et al., 2017; Ones & Dilchert, 2012; Pham et al., 2019). Organisations worldwide are recognising the strategic value of integrating environmental principles into their corporate culture, operations, and employee practices (Raineri & Paillé, 2016; Saeed et al., 2019).

Pro-environmental employee behaviour is defined as individual actions within the workplace that contribute to environmental sustainability (Rubel et al., 2021; Unsworth et al., 2021). These behaviours range from energy conservation and waste reduction to supporting green initiatives and participating in ecological decision-making (Amir & Sabri, 2023; Bentler et al., 2023; Chen & Wu, 2022; Saeed et al., 2019). Although a considerable body of research has examined environmental management, green human resource management (GHRM), and corporate social responsibility (CSR), the behavioural dimension, particularly in the context of uncertainty and crises, remains insufficiently investigated.

Military aggression represents one of the most extreme and under-researched contexts affecting organisational functioning. Ukraine, facing a full-scale war since 2022, offers a unique environment to study the interaction between ecological responsibility and corporate crisis adaptation. The wartime situation imposes severe constraints on businesses, including disruptions to infrastructure, supply chains, and workforce dynamics, while simultaneously creating incentives to enhance energy efficiency, reduce resource dependency, and reinforce corporate resilience through sustainable practices (DTEK Group, n.d.).

Although many Ukrainian companies had already begun implementing CSR and environmental strategies prior to the war, the escalation of conflict intensified the need for innovative, resource-efficient, and context-specific approaches to environmental responsibility (Astarta Holding N.V., n.d.; Nova Poshta, n.d.). In this light, employee behaviour plays a pivotal role, acting as both a reflection of organisational values and a driving force for sustainability transformations (Robertson & Barling, 2013).

Despite the global relevance of pro-environmental employee behaviour, existing empirical research has focused predominantly on stable peacetime environments in developed economies (Zientara & Zamojska, 2018). As such, there is a substantial knowledge gap concerning how such behaviour evolves under extreme conditions, what mechanisms support it, and how organisations can sustain environmental values during systemic disruption.

To address this gap, our study combines bibliometric analysis with case study methods to explore the key features, determinants, and practical manifestations of pro-environmental behaviour among employees in Ukrainian companies during the war. This study focuses on two interconnected objectives: (1) to analyse global scientific trends and conceptual approaches related to pro-environmental employee behaviour, and (2) to examine practical strategies implemented by Ukrainian enterprises under the pressure of war.

This study was guided by the following research questions:

- How has academic discourse on pro-environmental employee behaviour evolved in recent years, particularly regarding motivation, leadership, and sustainability frameworks?
- What are the main characteristics of the environmental practices adopted by Ukrainian companies during the war, and how do employees contribute to these initiatives?

– What lessons can be drawn from Ukrainian corporate experiences to inform the global sustainability agenda, particularly in crisis conditions?

The contributions of this study are twofold. First, it expands the theoretical understanding of pro-environmental behaviour by analysing its development using quantitative scientometric indicators and qualitative synthesis. Second, it provides empirical insights into the corporate practices of Ukrainian enterprises, highlighting the role of employees in sustaining environmental initiatives in the context of war-related constraints.

The findings of this study are intended to support researchers, policymakers, and business leaders in identifying resilient environmental strategies, refining employee engagement models, and promoting sustainability in the most adverse environments.

2. LITERATURE REVIEW

In recent decades, pro-environmental behaviour (PEB) has become central to the broader discourse on sustainable organisational development. Academic interest in this area has grown in parallel with increasing global concerns about climate change, environmental degradation, and the role of businesses in advancing ecological goals. This section provides a structured review of the existing literature, focusing on the theoretical foundations of PEB (Section 2.1) and the organisational determinants that shape such behaviour in the workplace (Section 2.2). It also highlights the underexplored areas in current research, setting the stage for the empirical and contextual analysis of Ukrainian enterprises during wartime (Section 2.3).

2.1. Conceptual Foundations of Employees' Pro-environmental Behaviours (PEBs)

Pro-environmental behaviour (PEB) is a multifaceted construct that refers to any observable individual action that supports or undermines the achievement of environmental sustainability objectives in workplace settings (Zhang et al., 2021). In the academic literature, this concept is discussed under various labels, including employee green behaviour, organisational citizenship behaviour for the environment, sustainable behaviour, eco-friendly conduct, and resource-conserving behaviour. Such behaviours are widely recognised as crucial in enhancing organisational environmental performance and competitive advantage (Farooq et al., 2022). Furthermore, PEB is increasingly viewed as the psychological foundation of corporate environmental responsibility (Zhang et al., 2021).

PEB may manifest as in-role behaviour (i.e. actions aligned with formal job requirements) or as extra-role behaviour involving discretionary, voluntary actions (Katz et al., 2023). These behaviours range from designing sustainable products and services to recycling, initiating environmental initiatives, or avoiding harmful environmental practices. Scholars frequently distinguish between these behavioural types to provide a more nuanced understanding of how PEB operates within organisational contexts (Amir & Sabri, 2023).

A few theoretical frameworks have been employed to explain the emergence, drivers, and mechanisms of PEB:

Theory of Planned Behaviour: This framework posits that behavioural intentions are determined by attitudes, perceived behavioural control, and subjective norms, which collectively influence the likelihood of engaging in pro-environmental actions (Rubel et al., 2021; Hossain et al., 2024). This theory remains one of the most widely used models in empirical research on workplace environmental behaviour.

Revista Galega de Economía, 34(2) (2025). ISSN-e: 2255-5951
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Self-Determination Theory: Applied to explore how environmentally oriented transformational leadership enhances employee well-being, with PEB as a mediating mechanism (Hossain et al., 2024; Sachdeva & Singh, 2024; Soni, 2023). In certain cultural contexts, such as China, Self-Determination Theory has also been applied to show that extrinsic motivators, including green compensation, may reduce intrinsic motivation (Zhang & Sun, 2021).

Focus Theory of Normative Conduct: This theory distinguishes between injunctive norms (perceived social approval) and descriptive norms (perceptions of others' actual behaviour). It has been used to understand how green management practices influence PEB both within and beyond the workplace (Jaich et al., 2023b).

Cognitive Dissonance Theory: Suggests that individuals are motivated to maintain internal consistency. Research shows that when green training and extrinsic incentives are applied simultaneously, they may cause dissonance, prompting either behavioural change or internal attitude adjustment (Bentler et al., 2023; Zhang & Sun, 2021).

Ability – Motivation – Opportunity Theory: Commonly used in HRM research, this theory explains how green HR practices enhance employees' competencies, motivation, and opportunities to engage in environmentally responsible actions (Faezah et al., 2022b; Rubel et al., 2021; Sachdeva & Singh, 2024).

Job demands-resources model: This model explores how organisational resources, such as perceived support, enhance individual capacities (for instance, green self-efficacy), thereby fostering pro-environmental behaviour (Zhou et al., 2022).

Social Identity Theory: Argues that employees' identification with environmentally responsible organisations reinforces their pro-sustainability self-concept and increases their alignment with environmental goals (Sachdeva & Singh, 2024).

Spillover Effects Theory: Empirical studies indicate that workplace interventions, including food waste reduction programs, may produce positive behavioural spillover into employees' personal lives, thereby extending the influence of organisational sustainability efforts (Wang et al., 2022; Jaich et al., 2023a, 2023b).

In summary, research on PEB makes a substantial contribution to achieving the Paris Climate Agreement targets and the broader effort to address escalating environmental challenges (Bentler et al., 2023). The expanding theoretical and empirical literature highlights the significance of PEB not only for organisational transformation but also for advancing societal progress towards sustainable development.

2.2. Organizational Drivers of PEBs

Organisations play a pivotal role in shaping and encouraging employees' pro-environmental behaviour, which in turn enhances environmental performance and strengthens competitive advantage (Katz et al., 2023; Li et al., 2023). The principal organisational determinants are outlined below.

Green Human Resource Management (GHRM). GHRM refers to a set of human resource practices designed to achieve environmental objectives and is increasingly recognised as a core dimension of corporate social responsibility (Merlin & Chen, 2022). These practices include green recruitment and selection, training, performance appraisal, rewards, and job design (Farooq et al., 2024; Merlin & Chen, 2022; Rubel et al., 2021; Zhang & Sun, 2021).

Empirical research confirms that GHRM significantly fosters employees' pro-environmental behaviour (Chen & Wu, 2022; Farooq et al., 2024; Patwary et al., 2023; Rubel et

al., 2021; Sachdeva & Singh, 2024; Yu et al., 2023). It also supports the development of green values and organisational culture (Merlin & Chen, 2022).

However, evidence from the Chinese context indicates that the intensive implementation of both green compensation and training may produce unintended effects. This combination can undermine intrinsic motivation by overemphasising extrinsic incentives and may induce cognitive dissonance, thereby diminishing employees' engagement in pro-environmental practices (Zhang & Sun, 2021).

Leadership. Responsible leadership has been shown to significantly enhances employees' pro-environmental behaviour, with perceived organisational support for the environment and green self-efficacy acting as key mediating variables (Zhou et al., 2022). Environmentally focused transformational leadership is also positively associated with employees' subjective well-being, as mediated by green behavioural outcomes (Soni, 2023). Research (Afsar et al., 2016; Graves & Sarkis, 2018) demonstrates that environmentally conscious leadership significantly influences employee behaviour through motivational strategies, personal example, and trust-building.

Green transformational leadership improves environmental performance by promoting green autonomy, particularly when supported by a robust green organisational culture (Katz et al., 2023). In addition, green inclusive leadership has been identified as a catalyst for proactive, pro-environmental behaviour (Patwary et al., 2023, 2024).

Moreover, support from leaders and peers plays an important role in fostering employees' environmental engagement (Bentler et al., 2023; Katz et al., 2023).

Organisational Culture and Climate. A green organisational culture is positively correlated with both pro-environmental behaviour and overall environmental performance (Faezah et al., 2022b; Hossain et al., 2024; Li et al., 2023; Merlin & Chen, 2022). Some studies emphasise the importance of fostering an environmental climate within organisations to achieve this (De Roeck & Farooq, 2018; Norton et al., 2015). This contributes to the formation of shared values that drive pro-environmental behaviours.

Perceptions of a green work climate have been shown to mediate the relationship between GHRM and employees' environmental actions (Alshebami, 2021; Rubel et al., 2021). Furthermore, a psychologically supportive green climate plays a critical role in encouraging sustainable behaviour (Faezah et al., 2022a; Rubel et al., 2021).

Workplace culture has also been identified as an important factor influencing the effectiveness of persuasive strategies in sustainability interventions (Kalamaras et al., 2024).

Job Characteristics. Job autonomy has been identified as the most significant predictor of counterproductive environmental behaviour, although it remains essential for the success of behaviour change initiatives (Katz et al., 2023; Bentler et al., 2023).

Social support from co-workers is particularly influential in encouraging both task-related and proactive environmentally friendly behaviour (Katz et al., 2023). Job demands also affect employee performance and may indirectly influence engagement in sustainability initiatives (Katz et al., 2023).

Other Organisational Initiatives and Factors. Corporate social responsibility (CSR) directly promotes pro-environmental behaviour, with employee well-being and green self-efficacy acting as mediators (Rubel et al., 2021; Zhang et al., 2021; Patwary et al., 2024; Liu et al., 2024). CSR initiatives are also linked to improved environmental outcomes at the organisational level (Li et al., 2023).

Environmental management practices shape employee behaviour by establishing descriptive social norms within peer groups (Jaich et al., 2023b).

External monitoring, including public, media, governmental, and regulatory oversight, along with corporate environmental responsibility (CER), significantly contributes to the

Revista Galega de Economía, 34(2) (2025). ISSN-e: 2255-5951
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adoption of pro-environmental behaviour. This is particularly evident in waste management and repair processes (Yu et al., 2023).

Green innovation can enhance the positive relationship between CSR and environmental performance by acting as both a mediator of green behaviour and a moderator of the GHRM – PEB link (Li et al., 2023).

Organisational attractiveness and reputation are outcomes associated with effective GHRM and green culture, as employees are more motivated to work for environmentally responsible employers (Merlin & Chen, 2022).

Among GHRM components, green training is considered the most consistent and effective mechanism for fostering PEB (Farooq et al., 2024; Unsworth et al., 2021).

Finally, recommendation systems and digital technologies have been shown to support energy-efficient decision-making by enhancing the effectiveness of persuasive communication strategies (Kalamaras et al., 2024). Employees' energy-related awareness and behaviour also hold significant potential for improving energy efficiency, particularly in commercial and service sector buildings (Kalamaras et al., 2024).

2.3. Research Gaps and Opportunities for Future Research

Despite the increasing interest in PEBs, several gaps remain. Notably, there is a distinct lack of research examining how employees' pro-environmental behaviours are initiated, supported and sustained under wartime conditions. However, limited scholarly attention has been paid to this issue. One notable example is Strilchuk's (2023) study, which examined the role of community identification in fostering pro-environmental behaviour among Ukrainians during the war. However, this study focuses on the societal level, rather than workplace or organizational dynamics. Consequently, the implementation, support, and development of employees' pro-environmental behaviours in wartime organizational contexts remain underexplored. This represents an emerging and uncharted academic field with considerable potential for theoretical and empirical advancement.

Despite the growing interest in pro-environmental employee behaviour and significant progress in this field, several research gaps remain, offering promising avenues for future research.

1) Cross-cultural perspectives have been underexplored in conflict-affected regions.
2) The impact of crises (e.g. war and pandemics) on PEBs requires more attention.
3) The role of individual traits in shaping PEBs has not been sufficiently studied.
4) The long-term effects of environmental initiatives have rarely been evaluated.
5) The influence of digital technology on PEBs remains largely unknown.
6) The interaction between leadership and organizational culture has been under-researched.
7) Informal green practices are poorly understood.
8) The balance between economic and non-material incentives requires clarification.
9) Tools for evaluating the impact of green initiatives must be developed.
10) However, PEBs in remote work settings remain largely unexplored.

Understanding how Ukrainian companies respond to crisis conditions through employee-driven environmental behaviour is timely and necessary, especially because it intersects with resilience, innovation, and sustainability.

3. RESEARCH DESIGN AND DATA

This study employs a comprehensive methodology that combines bibliometric, matrix mapping, retrospective, and content analyses to evaluate the implementation and development of employees' pro-environmental behaviours (PEBs) in Ukrainian companies. The integration of quantitative and qualitative methods enables a holistic examination of the dynamics of academic research, key thematic trends, and practical approaches to workplace environmental behaviour.

The primary sources of data comprise peer-reviewed scientific publications indexed in leading international databases, namely, Web of Science and Scopus. These databases were selected for their academic credibility, interdisciplinary coverage, and extensive representation of studies on management, organisational behaviour, sustainability, and environmental research. The literature was identified through a structured query incorporating the following keywords:

("pro-environmental behaviour" OR "green behaviour" OR "ecological behaviour") AND ("employees" OR "workforce" OR "personnel") – for Web of Science;

TITLE-ABS-KEY("pro-environmental behaviour" OR "green behaviour" OR "ecological behaviour") AND TITLE-ABS-KEY("employees" OR "workforce" OR "personnel") – Scopus.

Publications affiliated with Russian institutions were excluded from the analysis. No chronological restrictions were applied, allowing for a comprehensive overview of the evolution of the research domain from its inception to the present.

The bibliographic corpus comprised 531 documents from Web of Science (2011–2024) and 882 documents from Scopus (1982–2024), retrieved using the queries mentioned above. The summary statistics for the bibliographic datasets are presented in Table 1.

Table 1. Descriptive statistics for the bibliographic dataset on pro-environmental employee behaviour (PEB)

	Scopus	Web of Science
MAIN INFORMATION ABOUT DATA		
Timespan	1982:2024	2011:2024
Sources (Journals, Books, etc)	387	187
Documents	882	531
Annual Growth Rate %	13.99	45.92
Document Average Age	3.61	3.37
Average citations per doc	33.7	32.26
DOCUMENT CONTENTS		
Keywords Plus (ID)	1552	914
Author's Keywords (DE)	2006	1601
AUTHORS		
Authors	2169	1558
Authors of single-authored docs	60	34
AUTHORS COLLABORATION		
Single-authored docs	81	37
Co-Authors per Doc	3.63	3.86

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	Scopus	Web of Science
International co-authorships %	40.36	43.69

Source: Authors' elaboration using Bibliometrix (Aria & Cuccurullo, 2017).

A bibliometric analysis was conducted using the R-based Bibliometrix package (Aria & Cuccurullo, 2017), one of the most widely recognised tools for the quantitative evaluation of scientific output. The analysis included the annual evolution of publications, geographical distribution, identification of leading authors and research schools, keyword mapping and clustering of dominant research themes. Data processing was conducted using the Biblioshiny web interface integrated within the Bibliometrix ecosystem. Bibliographic data were imported from WoS and Scopus in BibTeX, CSV, or Plain Text formats.

In addition to quantitative techniques, a qualitative case-based analysis was employed to examine the environmental practices adopted by leading Ukrainian companies during wartime. The analysis focused on organisations such as DTEK Group, Astarta Holding N.V., Nova Poshta, Kernel, and Naftogaz Group, among others, recognised for their sustainable initiatives amid crisis conditions. The sources included publicly available corporate reports, press releases, interviews, analytical reviews, and media publications. Although no primary empirical data were collected at this stage, the examination of these cases enabled the identification of recurring patterns and organisational responses to environmental challenges in the wartime context.

Content analysis was applied to the selected academic sources to qualitatively assess emerging themes in the PEBs literature. Particular attention was paid to the transformation of corporate environmental programs during the war, factors motivating environmentally responsible employee behaviour, and mechanisms of organisational governance in the sphere of environmental responsibility.

This exploratory research design ensured consistency between the literature base, analytical tools, and interpretive frameworks. The bibliometric analysis informed the conceptual grounding of the study, whereas the case-based review contributed empirical depth and contextual relevance. This phase constitutes the preliminary stage of a broader research trajectory. A follow-up empirical investigation is planned to include field-level data collection from employees in the analysed companies to triangulate and expand the findings.

Overall, the chosen methodology offers a robust platform for theory building and the formulation of testable hypotheses, particularly in the underexplored context of corporate environmental responsibility in wartime conditions.

4. RESULTS AND DISCUSSION

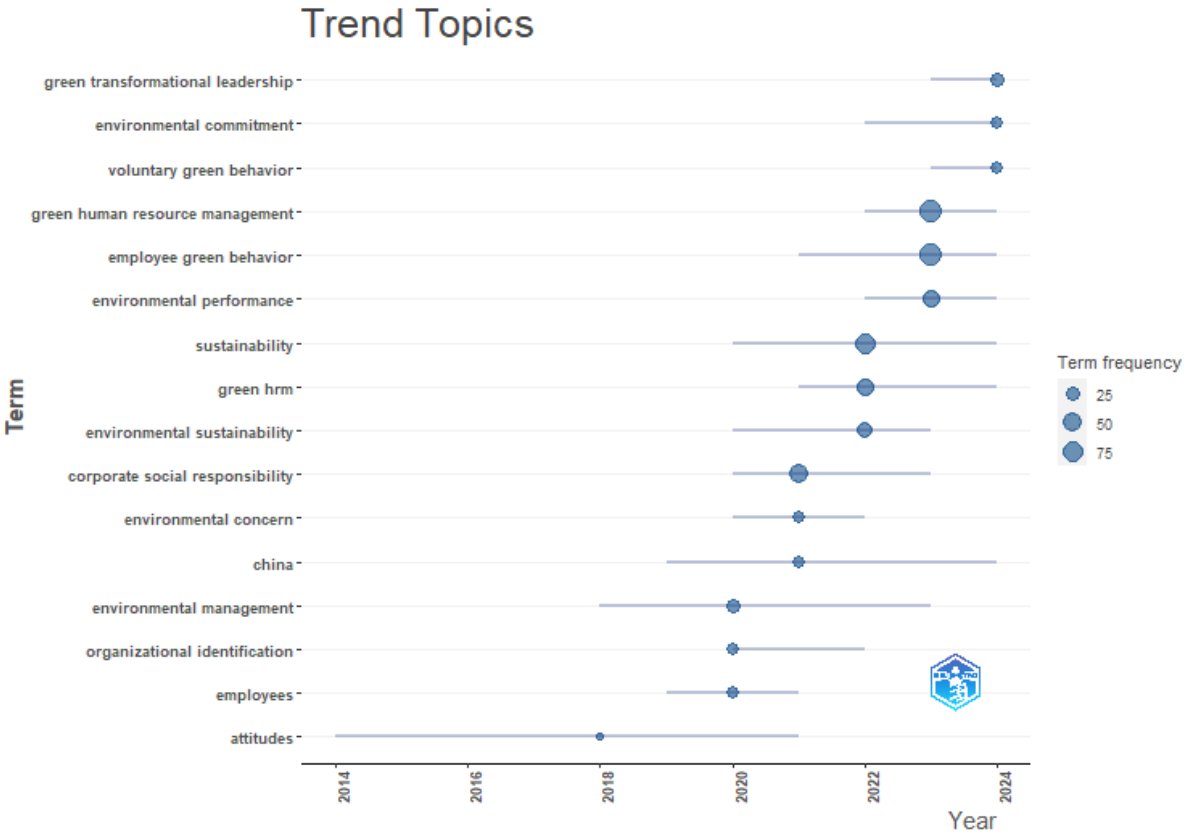
This section presents the findings of the study, which integrates bibliometric analysis and a contextual review of national and corporate practices related to pro-environmental employee behaviour (PEB). The results are structured to reflect the relationship between global academic trends (Section 4.1), national specifics in Ukraine (Section 4.2), and the practical experience of leading Ukrainian companies during the war (Section 4.3). The bibliometric findings provide a conceptual and theoretical framework used to interpret and contextualise national and corporate-level observations.

4.1. Trends and Scientific Approaches in the Study of Pro-Environmental Employee Behaviour

A bibliometric analysis was conducted using the Biblioshiny app (Aria & Cuccurullo, 2017; R Core Team, 2014; RStudio Team, 2020) to examine the trending topics in PEB research. Data were collected from the Scopus and Web of Science databases using standardised search queries. The results (Figure 1) show a steady and growing interest in employee environmental behaviour, with emerging focus areas such as "green human resource management", "environmental efficiency", and "green transformational leadership."

Figure 1. Keywords trend topics in the direction of "pro-environmental behaviour": (1a) Scopus, (1b) Web of Science

1a)



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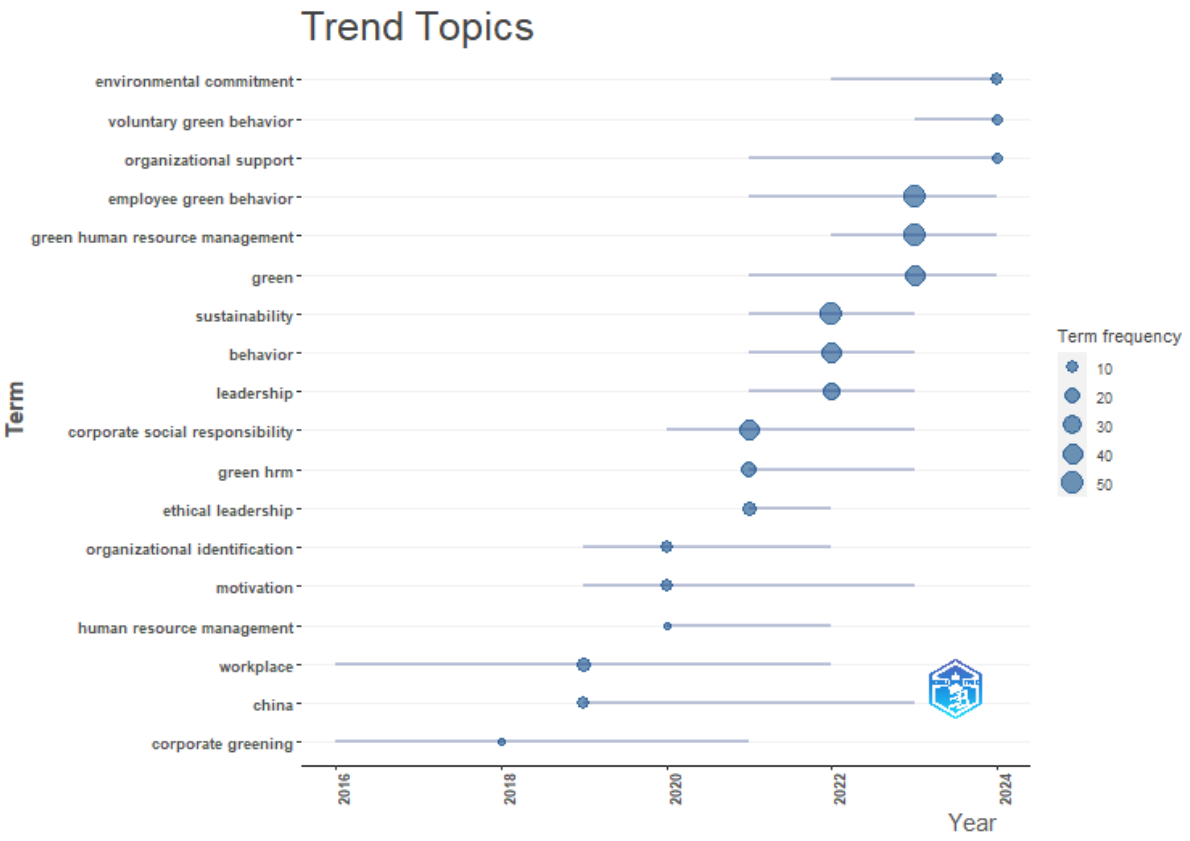


Source: Authors' elaboration based on data retrieved from the Scopus and Web of Science databases processed using the Biblioshiny application (Aria & Cuccurullo, 2017; R Core Team, 2014; RStudio Team, 2020).

Key observations revealed several significant trends in this field.

First, the scope of scientific enquiry has considerably expanded. While earlier studies primarily focused on broad concepts such as environmental sustainability, recent research increasingly addresses specific topics such as green human resource management, environmental efficiency, and green transformational leadership.

Organisational leaders have emerged as central figures in implementing environmental initiatives. Their actions shape corporate culture, which in turn fosters environmental responsibility among employees.

Another important observation is the global nature of this research domain. A review of studies conducted in different countries demonstrates that environmental challenges transcend national borders and require coordinated international efforts to develop effective solutions.

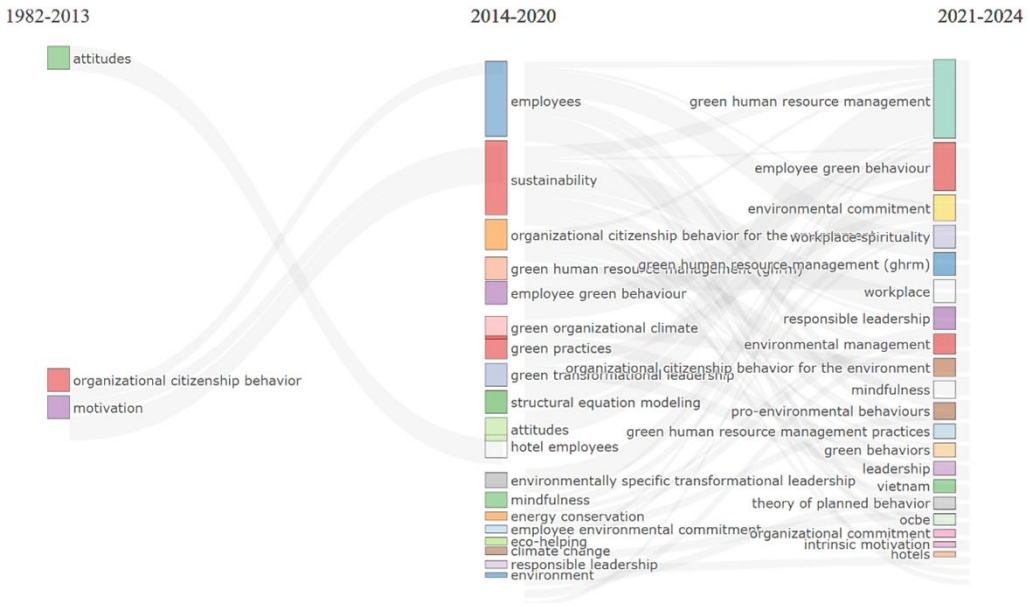
Furthermore, there has been a gradual increase in environmental awareness among employees and organisations. This trend encourages the adoption of new environmental practices and supports the integration of sustainability principles into daily business operations.

Based on this analysis, three key phases in the evolution of scientific approaches to pro-environmental employee behaviour can be distinguished. These phases reflect a transition from abstract theoretical constructs to applied managerial tools, aligned with broader shifts in international environmental and social policies.

The chronological progression of scientific discourse on PEBs can be summarised as follows:

- 1982-2013: Formation of fundamental concepts, such as attitudes and motivation.
- 2014-2020: Emergence of managerial approaches (e.g. green HRM), influenced by global frameworks such as the Paris Agreement and the UN Sustainable Development Goals.
- 2021-2024: Integration of global challenges (e.g. climate change), along with increasing emphasis on leadership responsibility and employee mindfulness (Figure 2).

Figure 2. Thematic evolution map of keywords from 1982 to 2024 concerning pro-environmental behaviour research (Scopus)



Source: Authors' development via the Biblioshiny app (Aria & Cuccurullo, 2017; R Core Team, 2014; RStudio Team, 2020).

These stages correspond to the progression of research from abstract principles to applied models in corporate settings. The shift from foundational theories to implementation practices reflects a broader trend toward operationalising sustainability strategies. Notably, this evolution directly resonates with the contemporary challenges faced by Ukrainian companies operating in wartime conditions.

Formation of Fundamental Concepts (1982-2013). This period represents the initial phase of research, during which the primary focus was on studying fundamental concepts such as "attitudes" and "motivation." Scientific work has largely been dedicated to the theoretical justification of environmental behaviour and its impact on corporate cultures. This emphasis was closely linked to the global emergence of the environmental agenda following the adoption of key documents, such as Our Common Future (1987) and the Rio Declaration (1992), which laid the foundation for sustainable development.

Institutionalisation and Development of Managerial Approaches (2014-2020). This period witnessed a dynamic expansion of the research field, driven by a growing interest in the applied aspects of environmental behaviour. New concepts emerged, including "green human resource management," "green practices," and "organizational citizenship behaviour for the environment." This trend was partially influenced by the Paris Climate Agreement (2015), which spurred companies to integrate sustainability into their operations, and by the adoption of the United Nations Sustainable Development Goals (SDGs) in 2015.

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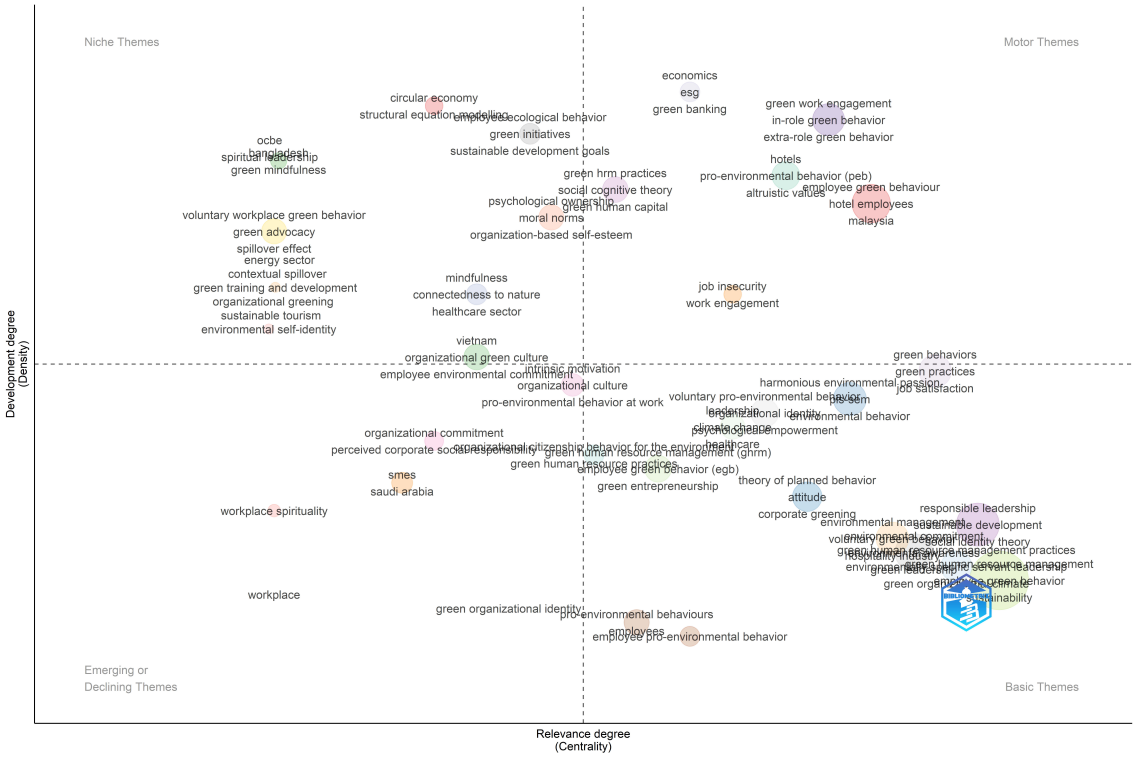
Deepening of individualised and global approaches (2021-2024). The most recent period reflects contemporary trends that emphasise leadership responsibility, employee mindfulness, and global environmental challenges such as climate change. The emergence of topics such as "responsible leadership", "mindfulness", and "climate change" illustrates the integration of new tools and strategies into corporate practices. This phase also reflects the impact of the COVID-19 pandemic, which led to a reassessment of resource management approaches and environmental resilience, as well as the launch of new climate initiatives announced at COP26 (2021).

Considering that the years 2021-2024 coincide with major global disruptions, including the COVID-19 pandemic and the full-scale war in Ukraine, this period warrants closer examination. The following thematic map illustrates how research has responded to these challenges by prioritising leadership, resilience, and employee responsibility (Figure 3).

Figure 3. Thematic map of topics discussed (2021-2024), Scopus



Source: Authors' development via the Biblioshiny app (Aria & Cuccurullo, 2017; R Core Team, 2014; RStudio Team, 2020).

Themes positioned in the lower-right quadrant of the map (Basic Themes) exhibit high centrality and low density, indicating their strong relevance and influence within the research domain. Primary themes include "environmental behaviour", "green human resource management practices", "sustainability", and "responsible leadership". Their significance lies in integrating environmental aspects into corporate strategies and promoting responsible management practices.

Themes in the upper-right quadrant (Motor Themes) are well developed and possess high centrality. Topics such as "green behaviours", "green work engagement", and "job satisfaction" suggest that environmental principles are increasingly embedded into workplace routines, with employee motivation and engagement playing a pivotal role in enhancing job satisfaction and overall performance.

Themes located in the upper-left quadrant (Niche Themes) are characterised by high density but lower centrality. These include "circular economy", "employee ecological behaviour", and "green initiatives". While representing highly specialised areas, these topics are still emerging in terms of broader academic or practical adoption, although they hold significant potential for future development.

The lower-left quadrant features Emerging or Declining Themes, such as "workplace spirituality" and "connectedness to nature". Their low centrality and density may indicate a lack of integration into mainstream academic discourse and insufficient conceptual development in contemporary scientific studies.

Overall, the thematic map indicates that research on pro-environmental employee behaviour is evolving dynamically, particularly in relation to green management practices and motivational factors. Topics such as responsible leadership, employee engagement, and environmental behaviour have become embedded in mainstream academic discourse and organisational practices. In contrast, niche and emerging areas, such as the circular economy and nature-related values, offer promising avenues for further investigation.

These conceptual clusters provide a broad foundation for theoretical models and empirical hypotheses that may be adapted to the wartime context of Ukrainian enterprises. They offer valuable guidance for developing sustainable strategies under crisis conditions and fostering pro-environmental organisational cultures despite resource constraints and systemic disruption.

Building on this foundation, it is important to examine how specific thematic areas identified through bibliometric analysis can inform strategic decision-making in Ukrainian companies. The following key insights from the thematic map highlight not only prevailing global research priorities but also indicate which directions are most relevant for strengthening corporate resilience and supporting employee-led sustainability initiatives in the context of the war.

Key insights from the thematic map analysis

- Basic themes as foundations for employee-centred environmental strategies. Core topics such as "environmental behaviour", "green human resource management practices", and "responsible leadership" underscore the critical role of leadership and HRM in shaping pro-environmental employee behaviour (PEB). These themes reflect widely accepted theoretical and practical approaches that, when adapted to wartime conditions in Ukraine, can support the integration of environmental values into corporate culture, even amidst resource scarcity and organisational uncertainty.
- Motivation and engagement as prerequisites for sustainable behaviour. Motor themes such as "green work engagement" and "job satisfaction" highlight the importance of fostering a motivating and psychologically supportive work environment to sustain employee engagement in green practices. In the Ukrainian wartime context, these insights imply the need for adaptive motivational strategies that balance operational continuity and environmental commitment.
- Innovation potential in niche domains. Themes such as "circular economy", "employee ecological behaviour", and "green initiatives" represent specialised yet increasingly relevant directions for research and practice. Under conditions of systemic disruption, Ukrainian companies may view these areas not only as long-term sustainability goals but also as immediate responses to resource shortages, logistical constraints, and the need for decentralised solutions.

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– Constraints of underdeveloped or emerging domains. Themes such as "workplace spirituality" and "connectedness to nature" reflect the emerging academic interest in the cultural and psychological dimensions of environmental behaviour. However, in wartime settings, their practical application may be limited by prioritising operational survival and security. Nevertheless, these areas could offer value in the long term by contributing to the development of resilient organisational identities and value-driven leadership.

These findings highlight that while a broad spectrum of pro-environmental themes has gained traction in global academic discourse, their applicability varies according to the institutional, cultural, and crisis-specific contexts in which organisations operate. For Ukrainian enterprises navigating the dual pressures of wartime disruption and sustainability commitments, focusing on well-established themes (such as green HRM, responsible leadership, and employee engagement) offers a practical entry point for implementing resilient environmental strategies. Simultaneously, exploring niche areas such as the circular economy or green innovation may yield long-term benefits by fostering adaptability and resource efficiency in the face of uncertainty.

Taken together, these themes provide a structured lens through which to analyse national policy (Section 4.2) and corporate practices (Section 4.3) concerning pro-environmental behaviour. The bibliometric results thus serve not only as a descriptive overview of scholarly evolution but also as a conceptual foundation for examining real-world implementation in crisis conditions.

4.2. National Specifics of Implementing Pro-Environmental Behaviour in Ukraine

The national approach to implementing pro-environmental behaviour in Ukraine is shaped by fundamental regulatory documents aimed at gradually integrating European standards (Table 2).

Table 2. Values of the basic criteria for implementing pro-environmental behaviour: Ukraine and the EU

Criterion	Ukraine	EU
Scope	National strategies and laws oriented toward EU standards integration	Comprehensive EU directives implemented across all member states
Priorities	Energy efficiency, waste management, raising environmental awareness	Decarbonization, circular economy, minimization of plastic waste
Regulatory Depth	Partially integrated environmental standards, room for harmonization with EU norms	Unified standards and regulations for all countries, innovation-driven policies
Implementation Tools	National regulations and strategies encouraging pro- environmental behaviour	Directives, economic incentives, international funding programs
Employee Training	Legislative provisions on environmental education and awareness-raising	European Commission programs focused on environmental education

Criterion	Ukraine	EU
Future Development Areas	Integration of EU directives and enhancement of regulatory frameworks in corporate environmental responsibility	Development of innovative approaches to sustainability, integration of new technologies into practice

Ukraine's national regulatory framework governing the implementation and promotion of pro-environmental behaviour among employees encompasses various aspects of environmental activity. A cornerstone of this framework is the *Law of Ukraine on Environmental Protection* (Verkhovna Rada of Ukraine, 1991), which defines the rights and responsibilities of businesses regarding environmental protection, including integrating environmental standards into workplaces.

The *Law of Ukraine on Waste Management* (Verkhovna Rada of Ukraine, 2022) is a key document in the waste management sector, aligning national legislation with European standards. It promotes circular economy principles, emphasises employee involvement in waste sorting, recycling, and reduction, and highlights corporate responsibility in these areas.

In the field of energy efficiency, the *Law of Ukraine on Energy Efficiency* (Verkhovna Rada of Ukraine, 2021) plays a crucial role in fostering a culture of energy conservation through the adoption of energy-efficient technologies, employee training, and developing environmental competencies.

Ukraine's environmental policy is further outlined in the *Law on the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period up to 2030* (Verkhovna Rada of Ukraine, 2019), which includes provisions for enhancing environmental awareness among the population and enterprise employees. Additionally, the *National Waste Management Strategy until 2030* (Cabinet of Ministers of Ukraine, 2017) establishes circular economy principles aimed at promoting environmentally responsible behaviour in the workplace.

These regulatory acts lay the foundation for developing environmental consciousness among employees and implementing practices that align with contemporary environmental challenges.

The European Union's regulatory framework emphasises the integration of environmental principles into various aspects of business operations, including workforce engagement. The *European Green Deal* (European Commission, 2019) serves as the strategic foundation for decarbonising the economy, implementing circular economy models and transforming labour markets. For instance, the *Industrial Emissions Directive* (Directive 2010/75/EU; European Parliament & Council of the European Union, 2010) sets environmental standards that require active employee participation in compliance measures. Likewise, the *Waste Framework Directive* (Directive 2008/98/EC; European Parliament & Council of the European Union, 2008, amended by Directive 2018/851 (European Parliament & Council of the European Union, 2018)) includes provisions that encourage environmentally responsible behaviour within organisations.

EU member states also have their own national regulatory frameworks that support green economies. In Germany, the *Circular Economy Act* (Bundesministerium der Justiz, 2012) promotes corporate environmental responsibilities. Sweden's *Environmental Code* (Svensk författningssamling, 1998) mandates environmental training for employees. In France, the *Law on Energy Transition for Green Growth* (Journal Officiel de la République Française, 2015) facilitates workplace green initiatives, whereas Italy's *Environmental Management Law* (Gazzetta Ufficiale della Repubblica Italiana, 2006) requires companies to adhere to environmental responsibility.

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Thus, the regulatory frameworks in both Ukraine and the EU outline pathways for integrating pro-environmental behaviour into business practices, ensuring alignment with contemporary sustainability challenges.

Importantly, the Ukrainian regulatory framework strongly aligns with the basic themes identified in the bibliometric analysis presented in Section 4.1. These include sustainability, environmental behaviour, and responsible leadership. The emphasis on energy efficiency, environmental education, and step-by-step implementation of circular economy principles provides a foundation for institutionalising environmental practices at the organisational level.

Simultaneously, a comparison with EU standards highlights areas for potential advancement, particularly in terms of harmonising regulatory depth, standardising implementation tools, and expanding training programmes for employees. These observations reflect the global trends identified in the latest academic literature and create a solid policy context for exploring how Ukrainian companies respond to environmental challenges under wartime constraints.

The following sections examine how these regulatory conditions and international trends are translated into corporate strategies and employee behaviour in practice, drawing on case studies of leading Ukrainian companies during the war.

4.3. Practical Aspects of Implementing Pro-Environmental Behaviour in Ukrainian Companies During Wartime

The implementation of pro-environmental behaviour (PEB) in Ukrainian enterprises must be considered within the broader context of national development challenges and ongoing institutional transformation. Although Ukraine's regulatory framework increasingly incorporates key environmental principles and aligns with European standards (as discussed in Section 4.2), translating these provisions into consistent workplace practices remains a significant challenge, particularly under wartime conditions.

According to the Ministry of Environmental Protection and Natural Resources of Ukraine, more than 400 million tons of waste are generated annually in Ukraine, of which only 5-7% is recycled or reused. In comparison, the municipal waste recycling rates in EU countries exceed 45% (European Environment Agency, 2023b). In 2021, only 6% of Ukraine's municipal waste was processed for recycling (Ministry of Environmental Protection and Natural Resources of Ukraine, 2021).

In the field of energy efficiency and renewable energy, the situation in Ukraine significantly differs from that of the EU. In 2022, the share of renewable energy sources in Ukraine was 13%, whereas the EU average exceeded 22% (Eurostat, 2022).

Despite the promotion of circular economy principles in Ukraine, only 2% of companies have officially implemented resource reuse strategies (Ministry of Environmental Protection and Natural Resources of Ukraine, 2021). In EU countries, this direction is actively developing, with companies implementing sustainable development programs that include energy-saving measures, waste minimisation, and a shift to clean energy sources. In 2022, the average ESG score of the largest European companies was 80.9, indicating leadership in environmental, social, and governance (ESG) indicators (European Environment Agency, 2023a).

Thus, despite some progress in implementing pro-environmental behaviour, Ukrainian companies still face numerous obstacles, such as a low level of environmental culture, insufficient employee motivation, and limited resources for sustainable initiatives. Simultaneously, the experience of EU countries demonstrates that a systematic approach to

environmental business transformation can significantly enhance corporate competitiveness and efficiency.

Given the coexistence of systemic barriers to transformation and emerging opportunities for innovation, the practical dimension of PEB implementation in Ukraine merits a closer examination. To better understand how Ukrainian enterprises respond to these challenges, this study explores the environmental initiatives introduced by leading companies that are signatories of the UN Global Compact. These include MHP SE, Naftogaz Group, Kernel Holding S.A., Astarta Holding N.V., Nova Poshta (operating in the EU under the name Nova Post), DTEK Group, and Kyivstar.

These companies represent key sectors of the Ukrainian economy, including agriculture, energy, logistics, telecommunications, and food production, and provide valuable insights into how pro-environmental behaviours are promoted across diverse organisational contexts. The selected cases are particularly relevant, as all companies have publicly committed to the United Nations Sustainable Development Goals (SDGs), with several continuing to implement or even expand their environmental initiatives since the onset of the full-scale war in 2022 (Table 3).

Table 3. Selected Ukrainian Companies Participating in the UN Global Compact and Their Alignment with the Sustainable Development Goals (SDGs)

Company	Industry	Date of Joining the UN Global Compact	Sustainable Development Goals (SDGs)
MHP SE	Food producer	12.07.2021	1-17
Naftogaz Group	Oil and gas production	02.12.2020	3, 4, 6, 7, 11, 17
Kernel Holding S.A.	Agricultural sector	29.05.2020	11, 13, 17
Astarta Holding N.V.	Agricultural sector	15.01.2008	1-17
Nova Poshta	Logistics services	13.04.2020	3, 4, 8-13, 16, 17
DTEK Group	Fuel and energy sector	24.05.2007	3-9, 11-13, 15, 17
Kyivstar	Mobile telecommunications	09.05.2006	4, 8, 9, 17

Source: Authors' development based on Global Compact Network Ukraine (n.d.)

This selection of companies enabled a nuanced examination of pro-environmental behaviour across diverse sectors, including agriculture, energy, logistics, telecommunications, and manufacturing. This provides a basis for assessing how wartime conditions shape the scope, intensity, and orientation of sustainability initiatives and how companies adapt their environmental strategies in response to systemic disruptions.

The subsequent analysis focuses on two interrelated dimensions. First, it explores the nature and scope of pro-environmental initiatives implemented by these organisations during the war, with particular emphasis on energy efficiency, waste management and employee engagement. Second, it examines how environmental awareness and corporate environmental culture have evolved among employees in the context of wartime challenges, constrained resources and heightened operational risks.

Together, these perspectives contribute to a deeper understanding of how Ukrainian enterprises navigate the complex interplay between environmental responsibility and resilience and how employee-driven sustainability practices can be maintained and even strengthened in times of crisis.

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https://doi.org/10.15304/rge.34.2.10602

4.3.1. Research on the Adaptation and Implementation of Pro-Environmental Initiatives in Ukrainian Companies

The implementation of pro-environmental initiatives in Ukrainian companies has become increasingly important in response to both global sustainability challenges and domestic disruptions caused by the war. Many companies have adjusted their operational strategies in line with international environmental standards, thereby contributing to the achievement of Sustainable Development Goals (Table 4).

Table 4. Pro-environmental practices and employee behaviour in the analysed companies

Initiative	MHP SE	Naftogaz Group	Kernel Holding S.A.	Astarta Holding N.V.	Nova Poshta	DTEK Group	Kyivstar
Waste Sorting and Recycling				X	X	X	
Energy Efficiency	X		X	X	X	X	X
Environmental Education	X	X	X	X	X	X	
Eco-Friendly Packaging				X	X		
Resource Efficiency	X		X	X			
Renewable Energy Development				X		X	
Corporate Eco-Actions	X		X	X	X	X	
Digital Innovation	X			X			X
Crisis Adaptation Measures				X	X		

NoteX indicates that the respective initiative has been explicitly implemented or reported by the company.

Source: Authors' development based on information from the official websites of the companies: Astarta Holding N.V. (n.d.), DTEK Group (n.d.), Kernel Holding S.A. (n.d.), Kyivstar (n.d.), MHP SE (n.d.), Naftogaz Group – Ukrgasvydobuvannya JSC (n.d.), and Nova Poshta (n.d.).

These initiatives reflect a wide spectrum of environmental priorities, including waste management, energy efficiency, employee education and climate resilience. For instance, DTEK and Kernel Holding S.A. have invested in energy audits and modernisation projects to optimise resource consumption and to reduce emissions. Nova Poshta has integrated routing algorithms to minimise fuel use, whereas Kyivstar has implemented cloud-based solutions to lower energy demands.

Environmental education has become a cornerstone of organisational adaptation. Companies such as Astarta Holding and DTEK provide training focused on energy conservation,

resource efficiency, and crisis-oriented environmental awareness training. MHP SE and Naftogaz have introduced digital platforms and targeted learning programs to support employee upskilling during emergencies.

Packaging initiatives have evolved to prioritise sustainability, such as the use of recycled cardboard at Nova Poshta and the repurposing of materials for humanitarian logistics by Astarta. Meanwhile, the promotion of rational resource use has led companies to adopt precision agriculture (Astarta), invest in water purification and reuse (MHP SE), and optimise fertiliser applications (Kernel).

Efforts in renewable energy include large-scale green projects by DTEK and the integration of alternative sources into agricultural production systems by Astarta. Similarly, companies have engaged in eco-action campaigns, including reforestation and community-driven cleanup initiatives in areas affected by hostilities.

The adoption of digital solutions to reduce environmental impact has become a strategic priority. For example, Kyivstar has introduced smart technologies for process monitoring, whereas Astarta and MHP SE have digitalised agricultural workflows to enhance energy and environmental efficiency.

In summary, the environmental responses of Ukrainian companies demonstrate diverse and adaptive approaches. Although implemented under wartime constraints, these strategies align with core sustainability themes and underscore the increasing role of employee-driven environmental action in enhancing corporate resilience.

4.3.2. Formation of Environmental Awareness and Culture among Employees

Cultivating environmental awareness and developing an environmentally oriented organisational culture are essential components of corporate social responsibility in Ukrainian enterprises. Prior to the full-scale invasion of Ukraine in 2022, major companies had already launched educational programs addressing energy efficiency, responsible resource use, waste management, and environmental safety. However, the outbreak of war necessitated a reorientation of these efforts to address challenges such as infrastructure damage, energy shortages, and disrupted production processes.

Nova Poshta has implemented several training initiatives to strengthen employees' awareness of sustainable development. These programs have promoted responsible resource consumption and the application of circular economy principles. Internal training focuses on waste sorting, energy-saving practices, and the use of environmentally friendly packaging. In response to the conflict, these initiatives were adapted to crisis conditions, including modules on energy efficiency under an unstable electricity supply and voluntary eco-initiatives aimed at restoring ecosystems in war-affected regions (Nova Poshta, 2024).

DTEK has invested substantially in environmental education. Even prior to the war, the company had developed a strong environmental culture through internal programs on emission reduction, energy efficiency, and waste management (DTEK Grids, 2025a). The systematic education of personnel on the principles of sustainability and environmental responsibility is a cornerstone of its corporate strategy.

Before the full-scale invasion, DTEK embedded environmental education into corporate policies through the DTEK Academy, its internal educational platform. This platform delivers training aligned with the UN's Sustainable Development Goals and ESG principles. During the war, these programs were adapted and expanded, reflecting the company's resilience and long-term commitment to sustainability (DTEK, 2021). DTEK Grids also achieved ISO 14001

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certification, which recognised "systematic environmental education" as a key element of environmental policy implementation (DTEK Grids, 2025b). Among its notable projects is #EnergyWings, an ongoing initiative focused on biodiversity protection and environmental education. Launched prior to the war and sustained through 2025, it engages employees in protecting white storks via safe nesting platforms on power lines, and also includes exhibitions, digital learning tools, and interactive training (DTEK Grids, 2023a; 2023b; 2025c).

Kernel Holding S.A. integrates environmental awareness into its broader sustainability strategy through a structured combination of internal policies, operational procedures, staff training, and motivational programs (Kernel Holding S.A., 2023). Key mechanisms include:

- Governance and roles. Environmental priorities are institutionalised through designated roles, such as energy managers and environmental specialists, supported by engineering teams that monitor indicators, ensure compliance, and optimise energy and resource efficiency. As of FY2024, ESG-related KPIs were introduced at the management level.
- Training and knowledge sharing. Initiatives such as the Open Agro University and Open Agribusiness prepare future and current employees for sustainable agricultural practices. Staff are also engaged in establishing Water User Organisations (WUOs) and collecting carbon footprint data from suppliers to improve Scope 3 emissions assessments.
- Incentives and corporate culture. Through the internal program Synergy of Changes, employees are encouraged to propose improvements in resource use. Contributions are recognised and rewarded for their economic and environmental impact, thereby reinforcing a culture of ecological responsibility and ethical business conduct (Kernel Holding S.A., 2023).

Astarta Holding N.V. initiated staff training on environmental practices even before the war, focusing on digital technologies in agriculture to reduce greenhouse gas emissions (Astarta Holding N.V., 2023). In early 2025, the company participated in an Energy Management System (EnMS) training project aligned with ISO 50001, in partnership with the UKR IEE project (2025). Following the onset of hostilities, Astarta adapted its training agenda to include the use of alternative energy sources, resource efficiency, and waste minimisation (Astarta Holding N.V., 2024).

Within the Naftogaz Group, environmental protection is integrated into employee upskilling through regular training on environmental and energy security. These efforts foster pro-environmental behaviours both at work and in everyday life (Naftogaz Group, 2024). Ukrgasvydobuvannya JSC implements an environmental policy that mandates the development of environmental awareness and culture among its workforce (Naftogaz Group – Ukrgasvydobuvannya JSC, 2024).

The company has adopted a systematic approach to environmental management, as confirmed by its certification under EN ISO 14001:2015 (Naftogaz Group, 2023). This not only supports effective environmental governance but also strengthens employees' conscious engagement with their ecological responsibility. The Energy Management System Action Plan of NJSC Naftogaz of Ukraine (Naftogaz Group, 2025) identifies employee awareness and motivation as central to rationally using energy resources. The company develops information materials, organises training seminars, and promotes participation in educational programs on energy efficiency. In parallel, it introduces technical solutions, such as motion sensors for automated lighting and water-saving aerators in production facilities (Naftogaz Group, 2025).

Taken together, these cases indicate that leading Ukrainian companies have demonstrated a high level of adaptability in maintaining and advancing environmental education during wartime. The key shifts in employee-oriented environmental initiatives during the war included the following:

- Integration of environmental training into broader energy-saving and crisis response strategies
- a focus on practical adaptation skills relevant to wartime disruptions and resource scarcity
- reinforcement of responsible consumption as a stabilising element of business continuity.

Overall, the formation of environmental awareness and culture among employees remains a cornerstone of corporate sustainability in Ukraine. Even amid war, such efforts play a crucial role in improving organisational resilience, enhancing resource efficiency, and fostering long-term environmental performance.

4.3.3. Managerial Implications

The analysis of company practices reveals that even under the extreme conditions of wartime, Ukrainian enterprises have been able to implement adaptive environmental strategies with meaningful employee involvement. While resource limitations, infrastructural damage, and operational uncertainty pose serious obstacles, these challenges have also prompted organisations to reassess their priorities and adopt more flexible, sustainability-oriented approaches.

Importantly, the wartime context has led many companies to introduce environmental programs that are aligned with international standards from their inception. In certain cases, the development of new sustainability-oriented practices under crisis conditions has proven to be more feasible than restructuring pre-existing systems. Established routines and organisational inertia often present greater resistance to change than the design of new procedures that are adapted to current challenges. Despite their disruptive nature, crisis contexts can serve as catalysts for innovation and institutional transformation.

This suggests that crisis contexts, although inherently disruptive, may create opportunities for transformative change. The experience of the analysed companies indicates that wartime challenges have, in some cases, accelerated the institutionalisation of environmental values and the emergence of employee-driven environmental initiatives. Rather than being passive recipients of sustainability policies, employees have become active agents in shaping and implementing pro-environmental practices in the workplace. This shift underscores the increasing importance of participatory environmental governance at the organisational level, where staff engagement contributes to the development of resilient and adaptive sustainability strategies.

Several practical implications emerge for practitioners. First, sustainability initiatives are most effective when integrated into broader organisational strategies and are supported by targeted employee education, clear governance roles, and participatory implementation mechanisms. Second, cross-functional collaboration and feedback channels are crucial for scaling successful environmental practice. Third, digitalisation and process innovation can play a key role in driving behavioural change and increasing efficiency, even when traditional infrastructure is impaired.

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Overall, fostering pro-environmental behaviour during crises requires more than isolated interventions. This calls for a holistic, adaptable, and value-driven approach that positions employees not merely as recipients of environmental policy but as active contributors to sustainable transformation and organisational resilience.

5. CONCLUSIONS

This study underscores the growing relevance of employees' pro-environmental behaviour (PEB) as a component of corporate sustainability, particularly in crisis conditions. The analysis of Ukrainian companies demonstrates a high degree of institutional adaptability and innovation in response to wartime disruptions. The full-scale invasion of Ukraine has served not only as a stress test for corporate environmental responsibility but also as an impetus for embedding sustainability principles into business continuity strategies. Key developments include the intensification of energy-saving measures, integration of environmental education into organisational resilience planning, and evolution of a culture of responsible resource use.

Nevertheless, this study has certain limitations. Notably, the absence of primary empirical data restricts the ability to assess the long-term behavioural outcomes of environmental initiatives at the employee level. Future studies would benefit from empirical investigations involving direct input from employees and managers. Potential avenues include cross-sectoral comparisons, longitudinal assessments of behavioural change, and the role of digital tools in promoting environmental awareness, particularly in hybrid or remote work contexts.

Despite these limitations, this study offers important managerial and theoretical contributions. This highlights the need to view employees not only as implementers but also as co-creators of corporate environmental strategies. Even under resource constraints and external shocks, organisations can foster participatory environmental governance and cultivate sustainability-oriented workplace culture. The insights presented here can support leaders seeking to embed PEBs into organisational routines and enhance business resilience in an increasingly uncertain global environment.

Acknowledgements

The author expresses sincere gratitude to the Defence Forces of Ukraine for their steadfast resistance, which ensures the protection of the country and makes it possible to continue academic research despite the challenges of war. The author gratefully acknowledges the constructive comments of the anonymous reviewers, which significantly contributed to improving the manuscript.

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