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Corporate Environmental Responsibility: Capitalism, Legitimacy, and Ecological Harm Through the Lens of Green Criminology

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Abstract

This paper explores Corporate Environmental Responsibility (CER) through the lens of green criminology, offering a novel perspective on how capitalist-driven industrial activities contribute to environmental degradation. Integrating insights from the Treadmill of Production (ToP) and Legitimacy theories, it argues that the relentless pursuit of profit accelerates ecological harm through resource extraction (ecological withdrawal) and pollution (ecological addition). These activities heighten global sustainability challenges, including climate change, biodiversity loss, and resource scarcity. Companies increasingly adopt CER practices not merely as voluntary environmental stewardship but as a strategic response to legitimacy risks arising from these ecological impacts. By positioning themselves as environmentally responsible, organizations aim to maintain public trust, reduce regulatory scrutiny, and align with stakeholder expectations. This paper contributes to the literature by offering a theoretical understanding of CER's origin, situating it within broader global environmental concerns, and emphasizing CER's role in mitigating ecological and reputational risks in energy-intensive sectors.

Keywords: *corporate environmental responsibility, green criminology, treadmill of production, capitalism, legitimacy, ecological harm*

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INTRODUCTION

The World Economic Forum (2020) highlighted growing concerns about the impacts of environmental degradation, ecological disruption, and the decline of plant and animal species resulting from the overexploitation of natural resources driven by capitalism. Empirically, global ecological decline is evidenced by two key environmental indicators: planetary boundaries and the ecological footprint (Lynch et al., 2019). Current data for both indicators reveal significant environmental challenges that considerably impede sustainable development.

The planetary boundaries framework, developed by Rockström et al. (2009a, 2009b), is a scientific model that identifies critical thresholds for various ecological systems and offers a comprehensive measure of ecological health and sustainability. According to Persson et al. (2022), the safe operating space for the planetary boundary concerning novel entities has already been breached, as the annual production and release of these substances now exceed global monitoring and evaluation capacities. Among these concerns, plastic pollution stands out as a particularly pressing issue.

Similarly, the ecological footprint is a measure used to evaluate human impact on ecosystems at local, regional, and global levels (Global Footprint Network, 2022). A footprint value of 1.0 or less indicates the sustainable use of ecological resources, while a value above 1.0 means human consumption has exceeded nature's capacity for regeneration (Lynch et al., 2019). Alarmingly, data from 2022 show that most countries have exceeded this threshold (Global Footprint Network, 2022).

The treadmill of production (ToP) framework offers a valuable perspective for understanding the underlying drivers of ecological decline. It shows how ongoing economic production, growth, and capital accumulation inevitably lead to environmental damage (Long, 2012). At the heart of this framework is an analysis of how and why human activities, especially those driven by capitalist systems, result in environmental problems. Capitalism, in its pursuit of constant economic expansion, requires sustained industrial output to keep manufacturers afloat and address social and economic issues such as poverty, shortages, and environmental harm. However, this relentless growth accelerates ecological withdrawals (resource extraction) and additions (pollution), weakening environmental stability.

Corporate Environmental Responsibility (CER) highlights the connection between businesses and the environment (Holtbrügge & Dögl, 2012) and emphasizes environmental stewardship. Bisschop (2010) describes CER as a company's duty to consider the environmental impacts of its actions and the long-term environmental needs necessary to prevent compromising the sustainability of future generations. In this context, 'environmental consequences' refer to CER efforts that directly address concerns about ecological degradation (Belal et al., 2015).

The existing literature broadly categorizes motivations for CER engagement into two perspectives: internal and external. External motivations are often linked to social pressure exerted by stakeholders (Delmas & Toffel, 2008), while internal motivations relate to company-specific characteristics such as size, age, and ownership structure (Etzion, 2007; Zeng et al., 2010), corporate governance attributes like board diversity (Bear et al., 2010; Said et al., 2013; Wang et al., 2020), and company performance.

However, one critical question remains underexplored. What is the origin of CER?

This paper addresses the gap by establishing a theoretical link between capitalism, ecological harm, and CER, incorporating the treadmill of production and legitimacy theories. It also provides a supplemental perspective on Bisschop's (2010) earlier work regarding CER's role in criminology. We argue that capitalism is the primary cause of CER, acting as a legitimization mechanism in response to environmental concerns intensified by the treadmill of production.

Additionally, this paper aims to provide a theoretical basis for understanding the relationship between capitalism, ecological harm, and CER. While previous studies generally recognize the link between industrialization and environmental degradation, they often lack a detailed theoretical explanation of why and how capitalist-driven industrialization results in adverse ecological effects. This research fills that gap by framing CER as a strategic tool corporations use to reduce legitimacy risks arising from the ecological harm they cause (Deegan & Gordon, 1996; Patten, 1992).

The rest of this paper is organized as follows; the next section offers a thorough review of the literature discussing the study's theoretical foundations, followed by an introduction and explanation of the proposed theoretical framework. Finally, the paper summarizes key findings and discusses the implications for policy, industry, and future research.

LITERATURE REVIEW

Green Criminology Perspectives

Green criminology originated from Lynch's (1997) work. It is a branch of criminology that examines environmental harm and crime (Lynch et al., 2019). Moreover, criminologists can use this perspective to analyze harm to non-human animals, as well as the regulation and policies related to environmental laws and ecological damage. According to White (2008), green criminology is a 'study by criminologists of environmental harms, environmental laws, and environmental regulation.' As environmental issues become more pressing worldwide, concern over 'crimes against the environment' has grown. Past research and reports have connected rapid environmental destruction, ecosystem decline, and natural resource exploitation to a new type of criminal activity committed by individuals, groups, or corporations, often enabled by transnational organized crime (Banks et al., 2008; Nellemann et al., 2014).

Previous research has argued that the development of green criminology is rooted in political economy analysis through the treadmill of production framework. They proposed using political economy theory to understand green crime or harm, justice, and relevant environmental laws, as well as analyzing capitalism's mechanisms that directly cause ecological harm. A green criminology perspective will be applied as an overarching framework within the ToP framework, aligning with prior literature. This study will employ green criminological perspectives to explain the connections among capitalism, ecological harm, and CER.

Treadmill of Production, Capitalism, and Ecological Harm

The treadmill of production shows how economic growth, production, and capital accumulation ultimately cause environmental damage (Long, 2012; Lynch et al., 2019; Stretesky et al., 2014; Wyatt et al., 2014). Capitalism and nature are fundamentally opposed, with capitalism's expansion inevitably leading to environmental decline and disorder (Lynch et al., 2019; Lynch et al., 2013). This idea highlights capitalism's role in hurting ecosystems, encouraging overconsumption, and promoting unsustainable practices. Business owners often prioritize profit over environmental protection, leading to ecological damage such as air and water pollution, soil degradation, deforestation, and biodiversity loss (Lynch et al., 2019).

Technological advancements and globalization have accelerated the production cycle, intensifying its damaging effects on ecosystems driven by profit motives (Spapens et al., 2018). In accordance with Friedman's (1970) view, businesses are seen as having one primary social responsibility, to use resources efficiently to maximize profits. This focus on profit pushes companies to boost production and consumption, leading to increased ecological extraction (removal of natural resources) and ecological addition (pollution and soil contamination), ultimately causing ecological destruction and chaos. The consequences are evident in the global planetary boundaries (Rockström et al., 2009a, 2009b; Steffen et al., 2015) and ecological footprint indicators (GFN, 2022), which reflect alarming levels of ecological decline. These indicators clearly demonstrate the extent of the global environmental crisis (Lynch et al., 2019).

The most severe repercussions of global capitalism's overproduction have emerged since World War II with the rise of the capitalist treadmill of production. Since then, numerous theoretical and empirical investigations have explored the relationship between capitalism and ecological degradation and disorganization.

Most economic growth occurs because large enterprises can retain capital to invest in future expansion and provide jobs to employees whose wages enable them to increase their consumption. Gains in economic growth must coincide with a rise in natural resource use to sustain the cycle. Over the years, the treadmill of production has intensified, resulting in significant ecological damage, severe pollution, and ecological disorganization, harming ecosystems. From a political-economic perspective on ecological disorganization, two sources of ecological harm related to the treadmill of production are emphasized: ecological additions and ecological withdrawals. These two sources essentially stem from treadmill accelerations. Ecological withdrawal (EW) refers to the extraction of natural resources from their natural state for use as raw materials, chemical agents, or fossil fuels in manufacturing. Withdrawing these resources from nature adversely affects ecosystems, leading to ecological disorganization. Ecological additions (EAs) are by-products of the manufacturing process, such as pollution. They can also arise from ecological withdrawal due to water, air, and land pollution (Lynch et al., 2017).

Legitimacy and Corporate Environmental Responsibility

The Volkswagen AG emissions test scandal in 2015 is a clear example of the relationship between capitalism, ecological harm, and CER. With the relevant greenwashing and green marketing strategies, along with CER, the primary goal is to

achieve a significant positive impact on company sales, profitability, and market performance (capital). However, it results in substantial ecological harm (emission pollution), undermining Volkswagen AG's environmental legitimacy. Ultimately, it leads to considerable ecological damage (emission pollution), further harming Volkswagen AG's environmental credibility (Hotten, 2015).

Consequently, a study by Patten (1992) arguably helps establish the association between ecological harm and legitimacy theory. The study shows that companies respond to external events to publicly legitimize their social image, especially in response to ecological issues such as pollution and deforestation. This reaction encourages the inclusion of social and environmental information in annual reports to reconcile with stakeholders and minimize environmental legitimacy risks. Companies must meet society's standards to survive, or they must validate themselves through perception or assumption. According to the social contract, companies respond to perceived threats to their legitimacy to fulfill community expectations. To survive and grow sustainably, a company must be accountable to and satisfy its stakeholders, particularly key ones, regarding its environmental performance. Stakeholder pressure is the primary driver of Corporate Environmental Responsibility (CER) engagement, and different stakeholders exert varying influences on a company's CER practices, as they are tied to the company by distinct social contracts. To manage legitimacy risks, communicating with stakeholders is crucial for economic legitimization.

Previous studies have suggested that companies use disclosure as a tool for legitimacy, particularly through environmental reporting. Corporate Environmental Responsibility (CER) may also be linked to the growing concern about environmental degradation, as it aims to enhance public awareness of the environmental impact of corporate actions while also helping to reduce pollution and the carbon footprint on natural resources. It seeks to balance economic growth, waste reduction, and cleaner environments. Consequently, CER is essential for mitigating company risks, fostering the legitimacy of innovation, and enhancing corporate reputations. Thus, legitimacy theory posits that CER serves as a strategy to strengthen the appropriateness of actions as perceived by various stakeholders within a defined regulatory framework of norms, values, and beliefs. Stakeholder acknowledgment of a company's economic activities as appropriate is crucial to the business's long-term survival. Therefore, CER plays a significant role as a reconciliation and legitimization tool. Recognition from stakeholders of a company's economic activities is vital to the business's longevity. Hence, CER is important as a reconciliation and legitimization tool.

From a legitimacy perspective, CER serves as a method to gain, maintain, or repair companies' environmental legitimacy. Stakeholder theory, on the other hand, indicates that CER plays a critical role in reconciling with stakeholders regarding the company's environmental stewardship. Consequently, CER may also be affected by isomorphic forces that drive compliance with regulations, standards, and norms, as well as the need to benchmark against competitors. Furthermore, the resource-based view theory suggests that a company's performance is primarily influenced by its resources (Das & Teng, 2000; Wernerfelt, 1982, 1995); thus, companies' decisions to engage in CER are also tied to their profits. Additionally, CER is linked to their profits.

Table 1 synthesizes the key theoretical perspectives that inform this study's conceptu-

alization of Corporate Environmental Responsibility (CER). While each theory has been developed within distinct scholarly traditions, together they provide a coherent explanation of why CER emerges within capitalist systems.

Table 1: Theoretical Perspectives Explaining Corporate Environmental Responsibility

Theory	Core Assumption	Contribution to CER	Key References
Green Criminology	Environmental harm as structural injustice	Frames CER as a response to systemic ecological harm	Lynch (1997); White (2008)
Treadmill of Production	Capital accumulation drives ecological degradation	Explains the origin of ecological harm under capitalism	Schnaiberg (1980); Lynch et al. (2019)
Legitimacy Theory	Firms seek societal approval to survive	Explains CER as a legitimacy repair mechanism	Suchman (1995); Patten (1992)

THEORETICAL FRAMEWORK AND DISCUSSION

Theoretical Model

Figure 1 below illustrates the proposed theoretical model for understanding the origin of CER from green criminology perspectives, based on relevant literature reviews.

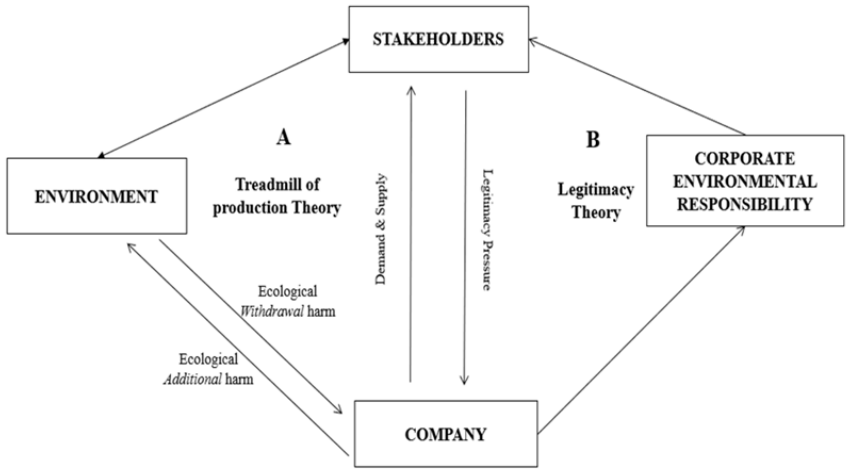

Figure 1: Theoretical Model

It is generally divided into the treadmill of production theory (A) and legitimacy theory (B) as its foundation. Part A discusses the relationship between capitalism, ecological harm, and the demand-supply mechanism. Meanwhile, Part B explores the consequences of ecological harm from the perspectives of legitimacy theory coupled with CER.

Treadmill of Production: Ecological harm

The supply-and-demand mechanism is an economic model shaped by factors such as the availability of substitute products, government regulations and taxes, and suppliers' market power. Stakeholders need commodities for various forms of consumption, while the business community is tasked with producing them.

From the perspective of production, economic expansion and capital accumulation invariably lead to environmental degradation. The structure of the economic system adversely affects the ecological system, highlighting the connection between capitalism and ecology. Demand and supply determine market prices in ways that benefit society, with the profit motive as a defining characteristic of capitalism. This economic system fosters competition among nations and perpetuates poverty in developing countries by prioritizing corporate profits over workers' needs. Unfortunately, capitalism has harmed the environment. It incentivizes business owners to devastate the environment for financial gain. Entrepreneurs promote greater consumption, indirectly harming the environment by extracting or using more natural resources for commodity production. Furthermore, capitalism contributes to air and water pollution, soil degradation, and the destruction of forests and wildlife.

DISCUSSION

The political economy theory serves as the foundation for this study's theoretical framework, with the Treadmill of Production approach as a key ideology. The Treadmill of Production, also known as the theory of production (ToP), explains how and why humans contribute to environmental problems, particularly through economic activities that sustain capitalism. The ToP concept holds that the organization of the economic system negatively affects the ecological system, emphasizing capitalism's impact on the ecosystem. Capitalism necessitates economic growth to address social and environmental issues, such as poverty, shortages, and pollution. Large businesses accumulate capital to invest in future growth and provide jobs for employees whose wages enable them to increase their consumption. Furthermore, capitalism generates government revenue through tax collection, which is allocated for social and economic development.

Economic expansion must be matched by increased resource utilization from the natural environment to sustain the cycle. The treadmill of production acceleration has intensified, resulting in excessive pollution and ecological disorganization that harms ecosystems through ecological withdrawal or additions (Lynch et al., 2017). From the legitimacy theory perspective, ecological harm could pose a significant environmental legitimacy risk to environmentally sensitive companies. Growing environmental damage from both sources (withdrawals or additions) will raise concerns among stakeholders (local communities, non-governmental organizations, and related government agencies) about environmental sustainability. Hence, in response, the ‘social contract’ of companies will be scrutinized by stakeholders, potentially imposing significant legitimacy risks and indirectly compelling these companies to adopt sustainable business practices. This is because society allows companies to possess and exploit natural resources and hire individuals; they are ultimately account-able to society for their operations and actions (Deegan, 2002). This aligns with Suchman's (1995) argument that a company's actions must meet society's standards to

continue to exist. In this context, companies must minimize the environmental impact of their business operations while meeting demand and supply for commodity production.

To mitigate environmental legitimacy risks, companies often engage in Corporate Environmental Responsibility (CER) to address stakeholder pressures. From the perspective of legitimacy theory, disclosures in annual reports serve as a medium for legitimization, helping companies secure their 'social contract' with stakeholders (Che Ku Kassim et al., 2019; Laan, 2009; Patten, 1992). CER disclosures allow businesses to demonstrate their commitment to society by addressing the negative environmental impacts of their activities. One of the most frequently cited reasons for publicizing environmental data is to hold businesses accountable for environmental stewardship. Additionally, many individual shareholders seek such information due to growing concerns about climate change. Climate change, one of the most pressing threats to the future (World Economic Forum, 2020), underscores the need for transparency and accountability in corporate practices.

POLICY AND GOVERNANCE IMPLICATIONS

Understanding CER as a tool for legitimacy has significant implications for environmental policy. If CER practices are primarily symbolic, voluntary self-regulation is unlikely to result in meaningful change. Therefore, policymakers need to design regulatory frameworks that guarantee accountability, transparency, and measurable environmental outcomes.

This analysis supports a more substantial alignment between corporate disclosures and international climate agreements, such as the Paris Agreement, a legally binding international treaty on climate change, and the Sustainable Development Goals (SDGs). Without robust oversight, CER risks becoming a vehicle for greenwashing rather than serving true environmental responsibility.

CONCLUSION

In summary, this paper concludes that the origin of Corporate Environmental Responsibility (CER) lies in the dynamics of capitalism, which, through relentless cycles of production and consumption, accelerates environmental degradation. By integrating insights from the treadmill of production and legitimacy theories through the lens of green criminology, we illustrate how the continuous pursuit of profit, capital accumulation, and industrial expansion leads to significant ecological harm. Capitalism’s inherent demand for growth exacerbates resource extraction and pollution, breaching planetary boundaries and exceeding the Earth's regenerative capacity.

Our analysis further argues that CER has evolved beyond its traditional portrayal as a voluntary or philanthropic environmental initiative. Instead, corporations increasingly use CER as a strategic tool to legitimize their operations, protect their reputations, and respond to growing societal, regulatory, and stakeholder pressures regarding environmental performance. This is especially relevant in today's global landscape, where businesses, particularly those in energy-intensive sectors, face mounting

pressure to comply with international sustainability commitments, such as the Paris Agreement and the United Nations Sustainable Development Goals (SDGs).

Understanding the underlying motivations behind Corporate Environmental Responsibility (CER) is crucial for shaping effective policy interventions and corporate governance practices that promote genuine environmental accountability. Policymakers and industry leaders must recognize that if left solely to voluntary actions, CER may be insufficient to counterbalance the ecological impacts of capitalist production systems. Instead, integrating CER within stronger regulatory frameworks, transparent disclosure requirements, and sustainability-focused corporate strategies is essential for driving systemic change.

Ultimately, this paper lays the groundwork for future empirical research on the implementation of CER across key industries, particularly in the global energy sector. Understanding how CER contributes to achieving decarbonization targets, fostering renewable energy adoption, and supporting ecological restoration efforts will be vital to linking corporate governance, environmental policy, and sustainable development. This investigation will enhance both academic and practical insights into how CER can mitigate environmental risks and promote long-term planetary health.

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