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## CORPORATE ENVIRONMENTAL MANAGEMENT WITH DIGITAL TRANSFORMATION: THEORY AND APPLICATIONS

Under the wave of informationisation, digital transformation has become an innovative and long-term task for enterprises as part of their overall strategic planning. At the same time, with the continuous development of the economy, industrial pollution has adversely affected the environment and posed a serious threat to social and economic development. Therefore, people have started to explore how to solve the environmental pollution problem in the process of economic development, starting with enterprise environmental management. However, there is a lack of theoretical and applied research on the direct relationship between the digital transformation of enterprises and corporate environmental management. Therefore, there are many theoretical directions worthy of research between digital transformation and corporate environmental management. The special issue of *Ecological Chemistry and Engineering S (ECE S)* collects 17 articles focusing on challenges and problems in the digital transformation and corporate environment management, aiming to share and discuss the latest advances and future trends in theories and applications in academia, promote digital transformation of enterprises, improve environment management, and provide practical insights and experiences for industry developers.

To explore the mechanisms of environmental regulation and environmental policy complexity in improving the efficiency of applied technological innovation in Chinese defence industry firms, the first article incorporates environmental flexibility into the empirical study of the model to explore the feasibility of improving the efficiency of technological innovation in Chinese defence industry firms.

In the second article, a new model SRBM-DBN is proposed, and experiments are conducted by building a deep belief network-based risk assessment model for soil stone desertification, which confirms that the SRBM-DBN model proposed in the article can help predict the degree of soil stone desertification.

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Based on the concept of sustainable development, the third article makes an artistic design of urban wetland park planning.

In order to explore the relationship between outdoor mountain sports and environmental ecology, the fourth article conducted interviews with outdoor sports enthusiasts and club leaders, aiming to build a better environment by strengthening people's awareness of environmental protection.

Different from the previous method of expert scoring to verify the environmental benefit evaluation index system, the fifth article sets up a building information model (BIM) to simulate the carbon emissions in each stage through numerical information to analyse the environmental benefits of green buildings, which provides technical support for setting green building benchmarks in a more scientific way.

Based on the correlation mechanism between industrial transfer and economic growth, pollution transfer theory, and Grossman's health demand model in the context of "One Belt and One Road", the sixth article analyses the impact of pollution industry transfer on the environment, economy and residents' health in the western region.

In addition to the pollution caused by the industrial sector as we know it, industrial art also has an ecological impact. Article 7th provides an in-depth analysis of the impact of the materials used in industrial art on natural systems during extraction, processing, and completion, as well as an introduction to innovative industrial art materials.

The previous articles introduced the influence of many factors on the ecological environment. The eighth article is based on the ecosystem evaluation algorithm of the artificial neural network to construct a model of skiing development under the influence of ecological factors to explore the influence of ecological factors on skiing development and make an introduction to how ecological factors affect skiing development.

Based on the endogenous low-carbon economy (LCEco) growth theory, the ninth article explores in depth the impact of FTI and FPI on the development of LCEco, using the spatial measures of SLM and SEM, and provides a basis for the high-quality development of China's low-carbon economy.

Through representative typical case studies, combined with theoretical studies such as urban design and place theory and field studies, the 10th article proposes a planning and design strategy for waterfront open space in small and medium-sized cities to provide a basis for waterfront open space planning and design.

In the 11th paper, a fuzzy neural network (FNN) control framework based on different working conditions is proposed to optimise the whole process of urban sludge treatment and discharge, which can help cities to accomplish sludge emission reduction optimisation.

Research in 12th paper finds that government intervention in financial development is low, and industrial development can promote environmental protection control through technological innovation, which can promote the rapid development of green finance.

The 13th paper integrates carbon emissions trading with and corporate environmental responsibility into a unified framework, which bridging the gap in mechanism analysis of existing studies.

In order to assist rural construction and improve the artistic quality of the rural environmental landscape, article 14th proposes a visual neural network model-based environmental landscape art design method, which simplifies the process of rural construction and improves the artistic quality of the rural environmental landscape.

In response to the shortcomings of the current smart monitoring system for urban sludge, paper 15th proposes a resource optimisation technology that can help to treat

sewage sludge in cities. It contributes to the realisation of pollution-free urban development.

Based on the perspective of digital infrastructure construction, the 16th article explores the impact of digital infrastructure construction on carbon emission reduction through the DID test method. The research results show that digital infrastructure construction has significant carbon emission reduction effects, which provides a basis for achieving carbon peaking and carbon neutrality through digital infrastructure construction.

In the 17th article, a questionnaire survey was conducted on 1,010 farmers in 8 districts of city A to study farmers' ecological knowledge, the severity of ecological problems, and the causes of ecological problems. Combining the relevant research results, this paper formulated three major strategies to promote the development of an efficient ecological agricultural environment: strengthening rural ecological publicity, vigorously developing ecological agriculture, and actively playing the role of government guidance.