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THE IMPACT OF ENTERPRISE DIGITAL TRANSFORMATION TO THE DEVELOPMENT OF ENTERPRISE ESG

Abstract:

Using a case study about the iFactory BMW Group and desk research. This study investigates the effects of enterprise digital transformation on the growth of enterprise ESG. Our findings reveal that enterprise digitization and ESG performance are positively correlated. And it improves enterprise ESG by increasing investment in innovation factors.

Keywords:

Enterprise Digital Transformation, ESG, innovation.

Nowadays, digital transformation has become a fundamental requirement for businesses to stay relevant in a rapidly changing business world. It encompasses the incorporation of digital technologies into every aspect of a company. Simultaneously, there is also an amplified consciousness of the significance of ESG factors in making business decisions. Investing in technology solutions to automate operational processes or improve team performance is crucial and can even determine a company's success in today's environment characterized by high investment in innovation. Enterprise Digital Transformation (EDT) integrates digital technologies into an organization's processes, operations, and culture to drive innovation, efficiency, and growth. EDT positively impacts Enterprise ESG by improving sustainability and ethical practices. Digitalization optimizes energy usage, reduces carbon emissions, and enhances waste management for environmental sustainability.

The main characteristics of digitalization in promoting the sustainable development of Visegrad Group member countries have been proven through empirical study. Jinhui and Raghupathi (2015) demonstrated the relationship between digital factors (such as access, affordability, and institutional efficiency) and sustainability (Raghupathi, W and Raghupathi, V 2014) [1]. Further, Raul Gouvea et al. demonstrated the positive effect of digital transformation on economic and educational sustainability from the perspective of the interaction effect mechanism (Gouvea and Montoya, 2022) [2].

Similarly, Raul Gouvea et al. This research has completed the transition from a macro level to a micro level by investigating the effect of digitalization on sustainability.

Chong, V.K., Chan, F.T.S., & Liu, M. (2019). They find that it enhances a firm's environmental performance by improving resource utilization, reducing energy consumption, and enhancing environmental governance.[6]

Dahal, S., Pathak, U., & Dhungana, S. (2021). This systematic review examines the literature on the impact of digital transformation on environmental sustainability. Key factors that influence the relationship include organizational culture, stakeholder engagement, and technological capabilities. [7] Li, J., Shi, J., Wang, M., & Jiang, Z. (2021). This study shows digital transformation positively impacts ESG performance, especially in governance practices. Digital transformation enhances transparency and efficiency in data management, reporting, and stakeholder engagement. It also helps identify and manage risks, including those related to ESG factors for Chinese listed companies. [5].

The study emphasizes top management support for digital transformation to ensure successful integration into the firm's overall strategy. A positive impact on ESG performance is higher in firms with stronger financial performance and higher ESG engagement. These findings are consistent with previous studies.

Overall, these studies provide evidence that has a positive impact on ESG performance in sustainability, social impact, and governance. Companies can improve sustainability and ethical practices, leading to better financial performance and market value by using digital technologies. We hypothesize the following.

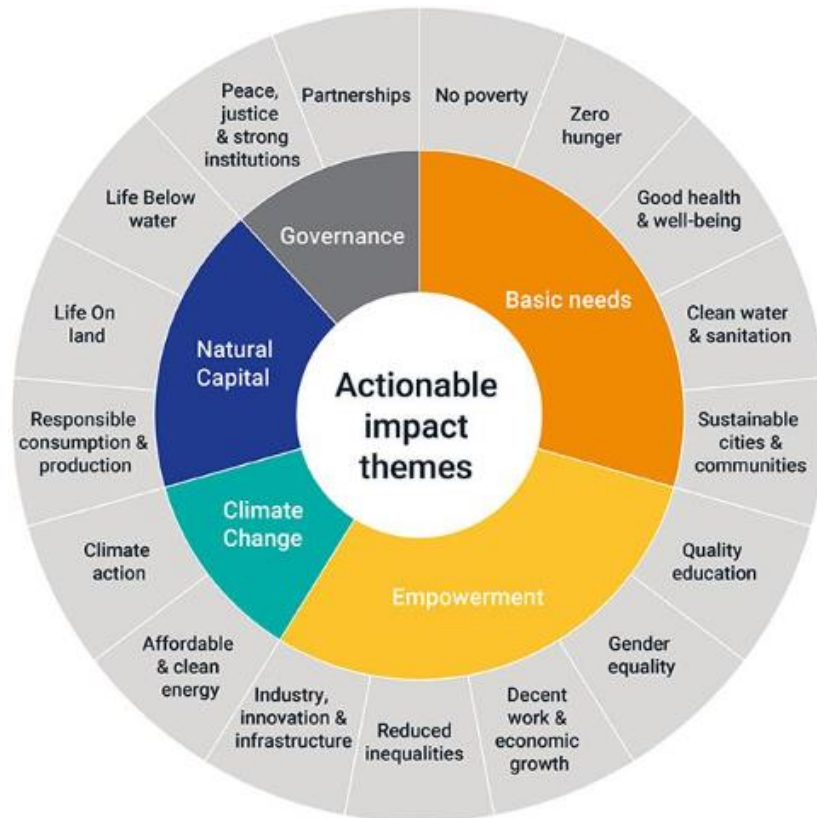
H1: Enterprise digitization and ESG performance are positively correlated.

This is supported by research indicating that digitalization can enhance resource utilization, reduce energy consumption, improve stakeholder engagement and transparency, and enhance governance practices. These improvements can ultimately lead to better ESG performance, which can improve a company's financial performance and market value.

H2: Enterprise digitalization improves enterprise ESG by increasing investment in innovation factors.

Digitalization can contribute to the achievement of ESG goals, and the use of digital technologies can help firms to monitor and manage their ESG performance more effectively.

In the picture 1 below shows there are 17 goals that are based on the SDGs. They are categorized into five actionable impact themes: governance, empowerment, climate change, natural capital, and basic needs. These factors influence a company's ESG rating and how the company improves its ESG rating. [9]



Picture 1 – Five actionable impact themes [11]

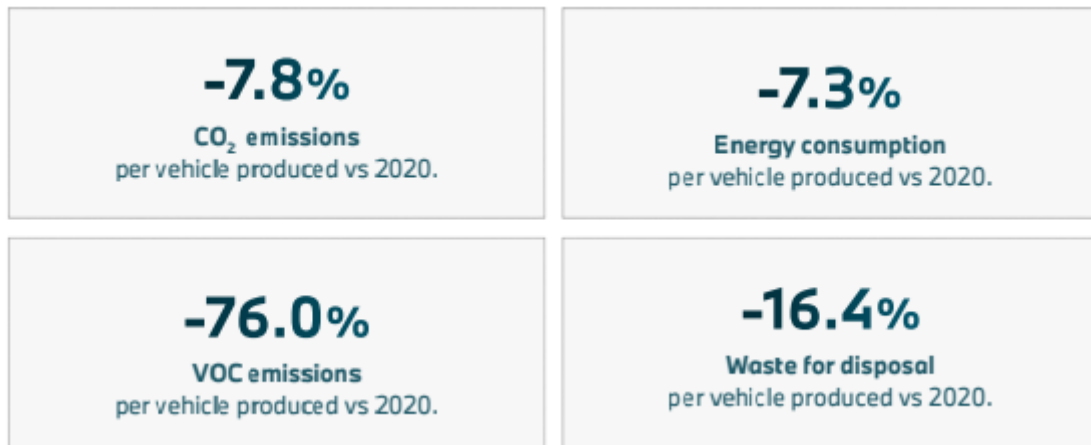
We tested our hypotheses on a case study about the production transformation strategy of BMW Group: Production of Tomorrow: BMW iFACTORY. In order to streamline operations and reduce emissions, BMW has unveiled its new production strategy, called iFACTORY, which will apply digital tools including virtualization and digital twins as well as real-time data collection.[8]. And the goal of this strategy is: The CO2 emissions of the supply chain will decrease by 80% by 2030 compared to 2019.[8]

There are 3 main parts for this strategy: LEAN: means a new, precise, efficient, and highly flexible production. GREEN: the latest technologies – resource-saving and circular. With BMW iFACTORY, the BMW Group focuses on ever more environmentally friendly production. DIGITAL: a new dimension of data transparency [8]: the BMW Group can advance consistently in the area of digitalization thanks to the BMW iFACTORY.

Following the report of the enterprise, all plants have been CO2 neutral since 2021. Around 70% of leftover aluminum and steel offcuts from the pressing plants is recycled. This has allowed the company to reduce CO2 emissions in international production by more than 70% since 2006. Water consumption and waste generation have been reduced. [11]

The table 1 shows the key performance of BMW Group in 2021 after applying iFactory. These figures support both H1 and H2. This is related to the goal SDG 13: Climate Action: The reduction of CO2 emissions is essential to BMW Group's climate policy. They achieve this by growing sales of electrified vehicles, increasing efficiency across all of their drive technologies, increasing the usage of renewable energies, and implementing effective CO2 reduction initiatives in the supply chain.

H1 and H2 are also supported by the following points: This strategy is related to SDG 9: Industry, Innovation, and Infrastructure. The BMW Group is able to create cutting-edge solutions for urban transportation thanks to its close proximity to the world's technology hubs.



Picture 1 – BMW Group's Sustainability Progress: Key performance highlights after applying the iFactory strategy in 2021 [10]

Their research advances important advancements, including hydrogen technology and electromobility. Secondly, SDG 12: Responsible Consumption and Production. By adhering to the principles of the circular economy, the BMW Group is trying to increase resource efficiency across the full lifecycle of their cars, from creative product creation through production to recycling of end-of-life vehicles. Thirdly, Goal 3 is about good health and well-being: Vehicle safety is a crucial component of the BMW Group's product responsibility and helps to guarantee the security and comfort of their customers. The BMW Group prioritizes the suppliers' and workers' access to occupational health and safety. Goal number 8 is related to decent work and economic growth. Electronic training programs that give employees the freedom to train individually and on their own initiative are advantageous to them. They also have access to a wide range of further development alternatives to maintain and improve their abilities. More than 50,000 members of the BMW Group have already received the training required to work in the field of electromobility.

Our findings show that EDT influences Enterprise ESG Development. With new technology keeps changing quickly, digital transformation in enterprises not only increases the company's competitiveness in terms of production efficiency and product quality, but also enhances the company's reputation, because these transformations contribute to improving the social environment. Sustainable development is the trend of the times.

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