**«The Analysis of Influence of National Cultural Diversity on Circular Economy Implementation in European Countries»**

**Abstract**

**Background**

In recent decades an increased concern about overall sustainability and stability for the future due to rapid climate change has arisen. A number of unfavorable signs have appeared: IPCC warns that there are only 12 years left to limit climate change catastrophe (Watts, 2018); World Bank identifies that natural disasters cost 520$ billion a year worldwide (Roman & Cheok, 2017); air pollution will have caused 6-9 million premature deaths by 2060 (OECD, 2016); and wildlife populations have fallen by 60% since 1970s (WWF, 2018). All these facts induce the humanity to change its behavior, especially in terms of consumption, resources distribution and current way of life itself. The UN recently proposed its 17 Goals of Sustainable development (UN, 2015) in order to control the situation. Notably that, for example, the 12th Goal - Ensure sustainable consumption and production patterns - can be achieved via decreasing material footprint and electronic waste production, which in turn, can be closely connected to relatively newly practically implemented, yet popular concept of Circular Economy. However, many sides of CE are still to be investigated. And one of the most obvious ones is CE relation to cultural traits of particular nations. Given the already identified strong relation between national cultures and sustainable development (Piwowar-Sulej, 2021), the relation between CE as a component of sustainability concept and Hofstede’s cultural dimensions theory as a reflector of national cultural diversity is expected to exist as well.

Current studies allow to identify and rank the leading countries according to their contribution in CE (García-Sánchez et al., 2021; Mazur‐Wierzbicka, 2021; Kryshtanovych et al., 2020; Shpak et al., 2021), or to explore and compare the particular strategies of CE implementation (Elia et al., 2016; Bassi & Dias, 2020). The studies related solely to identification of relationship between national cultural diversities and CE can rarely be found, or they are dedicated to other CE-related concepts including innovation performance (Murswieck et al., 2020), waste culture and green-related issues (Halkos & Petrou, 2019), willingness of consumers to pay for environmentally-friendly and reconstructed products (Gregory-Smith et al., 2017; Gaur et al., 2019), cultural determinants of sustainable consumption (Morais et al., 2021), CE implementation barriers (Kirchherr et al., 2018; Singh & Giacosa, 2018), or citizens actions and attitudes related to CE (Davidescu et al., 2020; Cheng & Chou, 2018). Also, the existing researchers of Hofstede’s cultural dimensions pay their attention mostly to spheres of corporate social responsibility, leadership and management practices, technology and media, HR, marketing, sales, workplace relations, education and other solely business-related spheres (Agodzo, 2015). In this regard, no direct relation between CE and cultural differences has been studied in detail.

That is why the following research question, based on investigation of CE in a particular area, Europe, aiming to cover the gap in the existing literature and to find possible explanation of CE implementation differences based on national cultural diversities proposed by Hofstede, was formulated.

*RQ: What is the relation between Hofstede’s cultural dimensions and circular economy implementation levels in European countries?*

**Methodology**

The research area has been purposefully bounded within the European region only due to several reasons. Firstly, as CE implementation is not obligatory but only recommended in the majority of countries of the world, not high levels of CE have been achieved in most of states. Contrary, the countries allocated in Europe, which are mostly the developed ones, pay greater attention to sustainability and environmental issues, thus forming an illustrative example of wide dissemination of CE with levels varying by countries. Secondly, the practical universal measure of CE around the world has not been established yet allowing countries to use different data and bases for measuring CE. However, within the European region there exists a common database (Eurostat) which ensures similar statistical methods to be applied while collecting data on different countries, including the CE indicators.

The sample data has been collected for 28 European countries for the years of 2010-2020 mostly with the help of the Eurostat database and will include such variables as Circular material use rate (DV) and controls: countries’ GDP per capita, median age of a countries’ populations, female population proportion. The scores of Hofstede’s six dimensions will be derived for each country and will act as IV. Also, two moderators concerning proportion of people with higher degrees and Gini index have been added for IDV and PDI dimensions respectively. The choice of the final model for each hypothesis among Pooled / Clustered Robust OLS, Fixed effects approach and Random effects model will be performed based on some corresponding tests (Breusch-Pagan test and Hausman test, F-test on dummies, Serial correlation test etc.). Several models including six separate OLS regressions, panel data analysis (Fixed and Random effects approaches) and several types of multiple linear regressions have been tested with the application of statistical tests (Breusch-Pagan test and Hausman test, F-test on dummies, Serial correlation test etc.) finally resulting in full standardization of variables and choosing the model of multiple linear regression. H3 (“Individualism-Collectivism”), H4 (“Masculinity”), and H5 (“Long-Term Orientation”) have been fully accepted showing significance along with the expected variables relations. At the same time, H1 (“Power Distance”) and H2 (“Uncertainty Avoidance”) have shown significance yet the opposite relations direction thus leading to new interpretation insights. H6 is the only one being rejected completely due to the insignificance of relations between “Indulgence vs. Restraint” dimension and CE. Additional empirical evidence suggests that IDV dimension has the highest impact in prediction of CE, followed by twice less important PDI and UAI, one third – LTO and MAS, which gives approximately six times less importance than IDV.

The obtained results identify the existence of noticeable relation between national cultural diversity and CE implementation degrees in Europe.

**Theoretical and professional significance**

The results obtained can be further used in responsible investing activities while serving as an extended theoretical base for upcoming studies dedicated to circular economy and culture relations investigation. As the research aims to identify particular national cultural traits as determinants of CE implementation levels, both governments and private investors will be provided with criteria which indicates favorable cultural conditions for CE-related projects, thus allowing them to judge their decisions depending on countries’ Hofstede scores. In theory, high scores on dimensions positively related to CE levels as well as low scores of negative relations, which will be revealed in this study, will indicate auspiciousness of implementation of CE, which theoretically can be applicable to countries allocated both inside and outside the European region and provide basis for rational choice of investing in CE activities.

The obtained results might be useful for practical implementation. For example, the patterns of Hofstede’s scores can help identify the potential countries tending to achieve better CE results within and outside Europe. Such countries identification is to be used by responsible investors while making decision which country to choose for investments in CE-related technologies and production to receive maximum benefits. Also, the governments will be able to evaluate the readiness and propensity of the population and economy to accept CE features based on Hofstede’s scores.