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A CONFIGURATIONAL ANALYSIS OF CULTURAL DIMENSIONS OF SUSTAINABILITY PERFORMANCE

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Firma dello studente

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CONTENTS

ABSTRACT

In the last few years, sustainable development has gained increasing attention in cross-cultural research, but previous studies employed more regression analysis concentrating on the relationship between stand-alone cultural dimensions and sustainability performances. Our research emphasizes the need to analyze the sustainability performance of a country in relation to its cultural dimensions, by using a set-theoretic configurational approach which further elaborates on the multiple possible combinations. We employ the fuzzy set Qualitative Comparative Analysis to investigate cross-national data consisting of Hofstede's six cultural dimensions and Sustainable Development Goals (SDGs) from 82 countries. Our findings consist of four configurations of cultural dimensions linked with similarly high levels of sustainability performance. Amid the four configurations, there are mainly two types of countries: the first type is characterized by low power distance and high individualism, combined with other cultural dimensions, while the second type is characterized by high power distance and low individualism, also combined with other cultural dimensions. Applying the fsQCA method well explained the inconsistent results of the cultural impact on the sustainability development found by previous research. We then give some examples of the strategies that policymakers and governments can use to improve the sustainability performances of their country taking into consideration their cultural characteristics.

Key words: Cultural dimensions, Sustainability, fsQCA, SDGs

INTRODUCTION

This research focuses on the importance for governments and policymakers of taking combinations of the cultural dimensions into consideration when aiming at increasing the sustainability performances of a country, especially in relation to the Sustainable Development Goals (SDGs) set in 2015 by the United Nations' "Agenda 2030".

The recent Covid-19 pandemic has caused considerable troubles for many aspects of human life and has slowed down the global economy, having a huge impact on social and economic dimensions all over the World (World Bank, January 2021) clearly showing the differences in the policies adopted by different nations to cope with this global crisis. As Sachs, et al. (2020) stated in the Sustainable Report 2020, "*the pandemic will have profound implications on progress towards the SDGs"*, and this means that every country of the world will have to make even bigger efforts than the ones predicted in the "2030 Agenda" to reach the 17 Sustainable Development Goals, which are crucial for the future and wellbeing of humanity and of our whole world. There are countries that are very near to the full achievement of the 17 SDGs, but also some countries that are still far away from achieving them or moving forward too slowly. It all relates to the public policies adopted by the government, and the adoption and implementation of different policies are highly influenced by the cultural dimensions of a country (Husted, 2005; Vogel et al., 1987).

Recent scientific investigations claim that climate change will cause even worse problems for global sustainability development than Covid-19 (Selby & Kagawa, 2020). On one hand, due to the over-exploitation of the nonrenewable resources, the Earth will be used as if there were three by 2050 (European Commission, 2020), so the traditional linear economy growth model is not sustainable anymore. On the other hand, climate change is starting to show more frequently in all its catastrophic aspects (Bertin et al., 2020) and more and more people are concerned about the future of the planet and are becoming more aware of what sustainability is (Tsalis et al., 2020). Therefore, there is an urgent need to do the transition towards a more sustainable future, and in order to achieve higher sustainability performances more efficiently, we should also consider how the combinations of cultural dimensions are linked with the outcome of interest. The propensity of people and policymakers towards proper sustainability

policy interventions is often influenced by their national cultural values. To this end, when designing the policy interventions to achieve the SDGs, governments and policymakers need to take into consideration the important role played by the cultural characteristics of a country. These tend to be underestimated, but they can really change the way the citizens of a nation accept new policies and cooperate to achieve better results, working all together.

When we talk about sustainable development, of course, we do not only think about environmental protection but also about social wellbeing and economic prosperity. Therefore, it is important to strive towards the 17 SDGs, in order to assure the balanced development of all the countries in the World and a sustainable future for ‘‘people, planet, and prosperity”.

Unlike the conventional studies concentrating solely on environmental sustainability, we choose the SDGs as the outcome of interest since it emphasizes not only environmental sustainability but also the social and the economic dimensions. We noticed that some countries have achieved more goals in sustainable development while others haven’t. In order to explore the reasons behind this, various cross-cultural sustainability researches have been conducted based on regression analysis, namely quantitative methodology. To this end, we found some inconsistency in the results mentioning certain cultural dimensions associated with higher levels of sustainability, due to the fact that they concentrate on the correlation effects on the independent cultural dimension, but we need to consider the causal complexity and the interactive characteristic of all the cultural dimensions working together.

To address this limitation that we found in the literature, we proposed two important questions. The first question is: is there any single cultural dimension necessary or sufficient associated with high levels of sustainability performances? The second is: if no single cultural dimension works alone, how do they combine to significantly affect sustainable development, and what do their combinations look like? We decided to adopt a set-theoretic configurational approach to further investigate the multiple combinations of cultural dimensions linked with similar high sustainability performances. By examining the synchronic interdependencies of all the cultural dimensions, we built an insightful framework to better understand how different configurations of cultural dimensions could equally be linked with similar levels of sustainable development in a cross-national context and beyond a conventional focus on a stand-alone cultural dimension only.

In order to answer the questions we mentioned above, we empirically employed the fuzzy set qualitative comparative analysis (fsQCA) with a dataset from Hofstede’s six cultural

dimensions' values as causal factors and the Sustainable Development Goals index results as the outcome of interest to explore how different combinations of the causal factors associated with high levels of sustainability performances across 82 countries. This configurational methodology has been applied in management research in an increasing trend, but its use in cross-culture and sustainability development still needs to be developed. We are here to fill this gap; we hope to enrich previous research results normally built on the regression analysis to further reinforce the understanding of how the cultural dimensions combine differently as facilitators associated with similar outcomes of interest (sustainability performances). This research is not merely useful to help to recognize the specific cultural dimensions that are linked with sustainability performances, but also, from a more systematic point of view, to demonstrate the interdependencies among the cultural dimensions and their presence or absence in the same configuration which is associated with high sustainability performances.

This research is structured as such. First, in chapter one, we analyze Hofstede's six cultural dimensions, the Sustainable Development Goals, and the empirical findings from the classic statistical analysis regarding them. In chapter two, we present the conceptual framework for the set-theoretic configurational approach based on the literature review in chapter one, and then we present the research design and follow the application of the fsQCA on the cultural dimensions and on the sustainability performances' values. The analysis results and its discussion are demonstrated in chapter three. Finally, the conclusions are presented along with the theoretical and practical implications of our findings.

CHAPTER 1: HOFSTEDE'S SIX CULTURAL DIMENSIONS AND THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

1.1 BACKGROUND

Although some studies (Peralta et al., 2018; Samimi et al., 2011) show that developed economies are strongly associated with high sustainability performances, a lot of research (Husted, 2005; Park et al., 2007) has also pointed out how the cultural factors typical of national cultures (Hofstede's dimensions) can have a strong impact on the level of the sustainability performance of a country, nominally the social wellbeing, economic prosperity, and environmental protection (SDGs).

Firstly, regarding the social dimension of the sustainable development, Arrindell et al. (1997) using Hofstede's four initial cultural dimensions, found out that countries with low levels of uncertainty avoidance have higher national levels of social wellbeing, while, on the contrary, countries characterized by high masculinity scores have low levels of social wellbeing. This is easily seen in feminine societies such as the North European countries, which report high levels of social wellbeing of sustainability (Cuomo, 2002; Gallén Ortiz & Peraita de Grado, 2017; Soman, 2017). In a similar study, Veenhoven (1999) compared 43 nations in the early 1990s and found a positive relationship between high individualism levels and high levels of social wellbeing. This means that the more individualistic a society is, the more people perceive their life as enjoyable. This view is consistent with Okely et al. (2018), who similarly assigned to 13,596 participants from 11 European countries their individualism score based on Hofstede's cultural dimensions, and found a significant relationship between individualism and wellbeing, which again proves that people from more individualistic countries have higher levels of wellbeing.

Taking a different look into another important part of sustainability performances, which is economic prosperity, some researchers have studied the association between national cultures and economic prosperity. In her book "Economic Lives: How Culture Shapes the Economy", Zelizer (2010) examines how associated people integrate their own culture and relationships with others into daily economic activities and affairs. By application of their own national culture, people continue to remodel the economy from a small spectrum to a large scale.

Economists are perceived to be reluctant to adopt the cultural factors as determinants in economic activities due to the broad spectrum of the definition of "culture" and the complexity of its feasible research design. Guiso et al. (2006) described the most pragmatic approaches that can be used to explore the causal link between national cultures and their economic phenomena based on the development of the recent techniques for identifying the cultural dimensions. Thereafter, other scholars have focused on examining other aspects of economic prosperity, such as competitiveness. For instance, Cheung & Chan (2010) used a quantitative methodology to investigate how cultural dimensions (Power Distance, Individualism, Masculinity, and Uncertainty Avoidance) fit into the process of meeting the demands of the competitive economy by means of education across regions. They observed that cultural dimensions impact how countries manage the demands of the global competitive economy by means of the educational variables and considered that Hofstede's cultural dimensions could be meaningful factors influencing the educational variables that facilitate to meet the demands of a competitive economy.

Furthermore, Joel & Mokyr (2016) in their groundbreaking book "A Culture of Growth: The Origins of the Modern Economy" claimed that nowadays' economic development in Europe was built on scientific advances and inventions pushed by the culture of growth eradicated in early modern Europe and the Enlightenment era. Mokyr underlined that the models of culture transformation are the decisive factors of economic evolution. In addition, DeBode et al. (2019) were the first researchers to investigate the influences of different cultural dimensions on countries' economic freedom and found that low levels of masculinity had the most significant association with a high degree of economic freedom, while long term orientation was negatively correlated to high degrees of economic freedom and high scores in individualism resulted in high business freedom. Thus, the authors suggested that the countries' policymakers should consider the cultural aspects to gain higher economic freedoms, especially focusing on a transition to a more feminine society.

Finally, when it comes to the causal link between national cultures and sustainability in terms of environmental protection, huge numbers of studies showed significant results in this field. Here we present some important cases to review this literature. Husted (2005) suggested that a solely focal point on the economic explanation of environmental sustainability is not enough and that cultural dimensions should also be considered as an important factor influencing the environmental sustainability phenomenon. In a similar research, Park et al. (2007) built a model to verify the correlations between the scores on the Environmental Sustainability Index obtained from the World Economic Forum and the scores of four cultural dimensions at national level obtained from Hofstede (1983) .They found a significant correlation between national cultures and environmental sustainability; hence this also indicates that the Environmental Kuznets Curve has limited applications to some extent, due to the considerations of the cultural dimensions as added variables. Specifically, they concluded that power distance and masculinity have negative correlations with the environmental sustainability index. This view is consistent with Cox et al. (2011) who selected new dependent variables (gross domestic product per capita balanced with environmental sustainability) to study how cultural dimensions correlate with them. They observed that low power distance and high individualism, characterized by egalitarianism and freedom of expression are associated with balancing economy with environmental sustainability.

While the above literature gives us a very useful insight when starting to figure out the influence of cultural dimensions on sustainability performances in terms of social wellbeing, economic prosperity, and environmental protection, in the next two subsections we will introduce and clarify each of the cultural dimensions on the basis of Hofstede's' theory. Then, we will present the 17 Sustainable Development Goals. Finally, we will explain the need to follow a configurational methodology to examine the causal effects of cultural dimensions on sustainability performances.

1.2 DIMENSIONS OF CULTURE

There are lots of definitions for the concept of culture, but in our opinion, among these, Kluckhohn (1951) gave the most complete one: *"Culture consists in patterned ways of thinking, feeling, and reacting, acquired and transmitted mainly by symbols, constituting the distinctive*

achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional ideas and especially their attached values."

Cross-culture research has widely proliferated in all social sciences, but due to the complexity of culture itself and to the lack of theories on cultural variables, it has been difficult for scholars to quantify different cultures, thus economists and socialists have been less likely to depend on culture as a desirable causal factor of economic prosperity, social wellbeing, or environmental protection (Greif, 1994). Things changed with the advent of the 21st century, when a better approach and the availability of more data made a great contribution to the classification of cultural differences at a national level. Hofstede's cultural dimensions are one of the best academic examples of this, since they classify cultural dimensions in a systematic manner. Hofstede defined culture as the collective programming of the mind that distinguishes the members of one group or category of people from another; his research began in the 60s of the 20th century, matured in the 80s, and found a wide application in the 21st Century. Hofstede's cultural dimensions are still growing, the four initial dimensions became six thanks to the efforts and contribution of other scholars. Hofstede's cultural dimensions have been recognized as an important theory in many research fields and have been widely used in different disciplines.

In 1967 Hofstede stated that people from different countries and regions have different "mental programs", which are firstly formed in the life inside the family in early age, and later enhanced through education in schools, work environments, or various organizations. Each of these "mental programs" is perceived as a collective set of values, habits, and beliefs held by the majority of the people in a nation, and it stabilizes over a long period of time due to the reinforcement of the cultural patterns by the institutions of the nation. These various mental programs carry a combination of different concepts forming national culture, they are very similar in the same country but vary from country to country.

Based on a theoretical inference and statistical analysis, Hofstede was able to identify four cultural dimensions which are considered to be dominant values in different countries, influencing the way people, institutions and public and private organizations think and act.

The data used by Hofstede were first collected from 1967 to 1973 by the subsidiaries of IBM, which were located all over the world. They analyzed seventy countries, from these Hofstede chose the forty biggest ones. IBM continued to expand, and the data also continued to be registered, followed by Hofstede's database, which later consisted of 50 countries and three regions. Here we need to highlight that the initial 4 cultural dimensions were generated by two

different time frame surveys, the first in 1968 and the second in 1972, with a total amount of more than 116,000 people taking part in them. The study was replicated at the beginning of the 21st century, with an additional survey being conducted in other countries beyond IBM respondents, for a total of 76 countries and regions. Today, on the website of Hofstede-insight, we can find the scores of the cultural dimensions of more than 100 countries and regions. In the following subsections, we are going to present in detail Hofstede's six cultural dimensions.

1.2.1 POWER DISTANCE

Human inequality exists in every aspect of our life, it affects power distribution, wealth, social status, and prestige, and it exists in all kinds of scenarios of our society, from family, school, work, and organizations to the political system. Every nation has its own system machine to deal with this issue, but inequalities are still present, and different societies accept them in different ways (Hofstede & Hofstede, 1984).

Countries with low scores in the Power Distance Index (PDI) show a tendency to reduce the inequalities inside their societies, while countries with higher scores of PDI believe that inequalities give stability to the society. In all kinds of societal scenarios, people living in a society with a low score of power distance show a preference for equality and decentralization of power and decision-making process, they don't like being controlled or supervised, teamwork and open management are preferred, even people with less power are expected to be consulted, and the organizations and institutions tend to be flatter, without different hierarchical levels. People living in societies with higher scores of power distance, instead, perceive that the unequal distribution of power between people is acceptable, accept that the relationships between the senior and junior will be more and more polarized, tend to be optimistic about their leaders' capabilities and follow the rules given by the authorities, while the organizations and institutions tend to be hierarchical (Table 1 indicates more key differences between low PDI and high PDI).

Table 1 Key differences between low power distance and high power distance societies in societal norm.

The Power Distance Societal Norm	
Low PDI	High PDI
All should be interdependent.	A few should be independent; most should be dependent.
Inequality in society should be minimized.	Inequality in society should be minimized. There should be an order of inequality in this world in which everyone has his/her rightful place; high and low are protected by this order.
Hierarchy means an inequality of roles, established for convenience.	Hierarchy means existential inequality.
Subordinates are people like me.	Superiors consider subordinates as being of a different kind.
Superiors are people like me.	Subordinates consider superiors as being of a different kind.
The use of power should be legitimate and is subject to the judgment between good and evil.	Power is a basic fact of society that antedates good or evil: its legitimacy is irrelevant.
All should have equal rights.	Power holders are entitled to privileges.

Powerful people should try to look less powerful than they are.	Powerful people should try to look as powerful as possible
Stress on reward, legitimate and expert power.	Stress on coercive and referent power. power.
The system is to blame.	The underdog is to blame.
The way to change a social system is by redistributing power	The way to change a social system is by dethroning those in power
Older people neither respected nor feared.	Older people respected and feared.

Source: (Hofstede et al., 1984)

Since countries with a lower score of power distance tend to minimize inequalities, and the SDGs scores consider equality as an important indicator, we can assume that nations with lower scores of power distance have better sustainability performances. However, there is research showing that in order to achieve good sustainability performances, PDI does not necessarily have to be low, while high PDI sometimes can be significant to the sustainability performance (Vizcaíno et al., 2021). Therefore, a configurational analysis is needed to further explore how much influence power distance might have on the sustainability performances, along with the other cultural dimensions.

1.2.2 INDIVIDUALISM AND COLLECTIVISM

The cultural dimension of individualism versus collectivism describes the relationship between the individual and the collectivity that dominates in a certain society or nation. It describes how

people live together with others, an example might be preferring nuclear families over extended families. If the members of the society maintain a low degree of interdependence, which means that they show a high degree of independence between one another and do not excessively rely on other people, this society tends to be more individualistic, while a society that maintains a high degree of interdependence between its components tends to be more collectivistic. Hofstede et al. (1984) proposed this definition: *"Individualism stands for a society in which the ties between individuals are loose: everyone is expected to look after him/herself and her/his direct family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty."*

In a collectivistic nation, relationships have a strong influence on business or work tasks. For example, it is much easier to do business after establishing a relationship with people who are from a collectivist culture, since from the moment the relationship starts, they will include the business partners into their in-group, and will be more willing to help and favor them. On the contrary, in individualistic cultures, the tasks and responsibilities will prevail over personal relationships (Table 2 indicates more key differences between low IDV and high IDV).

Table 2 Key differences between low individualism and high individualism societies in societal norm.

The Individualism Societal Norm	
LOW IDV	High IDV
In society, people are born into extended families or clans, which protect them in exchange for loyalty.	In society, everyone is supposed to take care of him-or herself or her immediate family only.
"We"consciousness.	"I" consciousness.
Gemeinschaft (community).	Gesellschaft(society)
Collectivity orientation.	Self-orientation.
Value standards differ for in-groups and out-groups: particularism	Identity is based in the individual."Shame" cultures.c "Guilt" cultures.
Emotional dependence of individual on institutions and organization	Emotional independence of individual from institutions and organizations

Emphasis on belonging: membership ideal	Emphasis on individual initiative and achievement: leadership ideal.
Private life is invaded by institutions and organizations to which one belongs.	Everyone has a right to a private life.
Survival.	Hedonism.
Activities imposed by context.	Self-started activities.
Expertise, order, duty, security provided by organization or clan.	Autonomy, variety,pleasure, individual financial security.
Traditional society	"Modern" or "postmodern" society.

Source: (Hofstede et al.,1984).

A lot of research shows that individualism as a cultural dimension is significantly correlated with high sustainability performances, because people are perceived as more egalitarian (Husted, 2005). However, collectivism does not nullify the individuals' wellbeing, and, in some cases, collectivism prevails on the whole group's interests in order to ensure the personal well-being of the population. For example, during this Covid-19 pandemic, people in collectivistic countries showed a positive attitude in dealing with Covid, they were more willing to stay home and obey the rules, and this consequently led to a faster solution of the pandemic, therefore improving these countries' sustainability performance in terms of ensuring the social well-being of the population (Huang et al., 2020; Maaravi et al., 2021). Therefore, again, a configurational analysis of the cultural dimensions will be useful in further understanding the sustainability performances of a country.

1.2.3 MASCULINITY AND FEMININITY

In previous research, men were usually considered to be more competitive, ambitious, and assertive, while women were considered to be the ones who look after the house and after

children, and they were seen as more tender than men. Different societies have various ways to cope with this fundamental issue, which is how they define the role of men and women (Table 3 indicates more key differences between low MAS and high MAS).

Talking about different types of societies and social norms, Hofstede et al. (1984) proposed that Masculinity and Femininity could be defined as follows: *"Masculinity stands for a society in which social gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life."*

Table 3 Key differences between low masculinity and high masculinity societies in societal norm.

The Masculinity Societal Norm	
Low MAS	High MAS
Relationship orientation	Ego orientation
Quality of life and people are important	Money and things are important
Stress on who you are	Stress on what you do
Work in order to live	Live in order to work
Minimum emotional and social role differentiation between the genders	Maximum emotional and social role differentiation between the genders

Men should be tender and take care of both performance and relationship; women should be the same	Men should be tough and take care of performance; women should be tender and take care of relationships
Men and women should be modest	Men should be and women may be assertive and ambitious
Sympathy for the weak Small and slow are beautiful	Sympathy for the strong Big and fast are beautiful

Source: (Hofstede et al., 1984).

To this end, societies scoring high in masculinity tend to be driven by competition, the need to fulfill specific goals, and fame; evaluation structures accompany people from school to all kinds of institutions, jobs, and organizations, people are willing to sacrifice their leisure time or to tolerate to be distant from intimate relatives in order to pursue better jobs and payments, thus this kind of societies tend to show economic prosperity (Williams & Zinkin, 2008). In societies that score lower in masculinity, also defined as feminine societies, instead, the mainstream culture tends to find more important the quality of life and the wellbeing of the population. Thus, a feminine society tends to care more for its members and have a positive impact on human wellbeing and environmental protection. However, how the masculinity index associated with the SDGs remains unknown, and to what extent it influences the sustainability performance with other cultural dimensions still needs to be explored, so the configurational analysis is needed for further clarifications.

1.2.4 UNCERTAINTY AVOIDANCE

In general, uncertainty is not a good thing, because it creates anxiety and doubts. People from different societies have developed many ways to deal with the uncertainty about the future, such as technology, law, and religion. In organizations, for example, the management sets the rules

in order to reduce the uncertainty and maximize predictability, to ensure that things are under control and everything goes as it should.

Since the methods to deal with uncertainty have been enhanced and reinforced through time thanks to different institutions, e.g., family, school, and the political system, therefore, any society and nation have collective behaviors towards the management of uncertainty. Also, every society perceives uncertainty in a different way and acts consequentially. Hofstede et al. (1984) proposed to define the cultural dimension called Uncertainty Avoidance as: *"the extent to which the members of a culture feel threatened by uncertain or unknown situations"*.

So the score on the uncertainty avoidance scale depends on the level of uncertainty about the future that can be tolerated by society. National cultures with a lower tolerance towards uncertainty and ambiguity tend to set more rules to reduce unpredictable happenings: in these countries, rules seem to be the essence of the bureaucracy, and formalities are rather important. Moreover, good rules will result in a satisfying payoff, while bad rules will be perceived as a burden to society. People from countries with a higher tolerance of uncertainty (so countries with low scores of uncertainty avoidance) tend to feel much more capable of shaping their own lives due to the scarcity of rules restricting them and tend to be more adaptable to unknown situations. People from countries with high scores of uncertainty avoidance, on the contrary, feel the impossibility to change their status quo, since the rules regulating their life are so many and so strict (Table 4 indicates more key differences between low UAI and high UAI).

Table 4 Key differences between low uncertainty avoidance and high uncertainty avoidance societies in societal norm.

The Uncertainty Avoidance Societal Norm	
Low UAI	High UAI
The uncertainty inherent in life is relatively easily accepted and each day is taken as it comes. Ease, lower stress, less anxiety.	The uncertainty inherent in life is felt as a continuous threat that must be fought. Higher stress, anxiety, neuroticism.

Being busy is not a virtue per se.	Inner urge to be busy.
Suppression of emotions.	Expression of emotions.
Subjective well-being.	Less subjective well-being.
Openness to change and innovation.	Conservatism, law and order.
Willingness to take unknown risks.	Only known risks are taken.
What is different is curious	What is different is dangerous.
Tolerance of diversity	Xenophobia
Younger people are respected	Older people are respected and feared
Comfortable with ambiguity and chaos.	Need for clarity and structure
Appeal of novelty and convenience.	Appeal of purity.
Belief in one's own ability to influence one's life, one's superiors, and the world.	Feeling of powerlessness toward external forces.

Source: (Hofstede et al., 1984)

Previous research demonstrated two kinds of finding about how the uncertainty avoidance correlated with the sustainability performance. First, Lenssen et al. (2007) investigated the effect of differences in national cultures on the social and environmental performance of corporations around the world and found that cultural differences with respect to individualism and uncertainty avoidance have no significant effect on the social and environmental performances. Similarly, Parboteeah et al. (2012) used data from World Value Survey to explore the people's propensity to support sustainability initiatives in a cross-cultural context, and found that uncertainty avoidance is not related to propensity to support sustainability

initiatives. Second, Ki & Shin (2015) conducted a study aimed to compare and contrast the content of organization sustainability communication of top 100 enterprises in South Korea and the United States, and found that U.S. companies tend to accentuate more uncertainty avoidance values in their online sustainability communication than their Korean counterparts (which have higher uncertainty avoidance scores), which could be interpreted as lower uncertainty avoidance is more correlated with higher sustainability communication. To some extent, the findings of situation one and two are inconsistent, and we think a configurational approach should be considered in this case, to further explore the different combinations of cultural dimensions associated with sustainability performance.

1.2.5 LONG- VERSUS SHORT-TERM ORIENTATION

This dimension of national culture has been added later (in 1985) to the four dimensions found through the IBM questionnaires mentioned above, and it was introduced after analyzing the "Chinese Value Survey" developed by Michael Harris Bond in Hong Kong, after many suggestions from Chinese scholars. This variable, thus, was the first of the dimensions of culture to be developed with Eastern researchers, while the previous ones have been designed following a specifically Western way of thinking. Therefore, it comprehends values that were not taken into consideration in the first studies and are based on the teachings and theories of Confucius, which still have a key role in many Asiatic countries. This variable, if considered in the economic field, might be the reason behind the fiery growth of the economies of many East Asian countries at the end of the 20th century. This dimension has a strong impact on the economic situation and the development of a country, and it also has strong connotations with the will of the population to achieve a better sustainability performance.

This cultural dimension describes how different nations manage the associations with their own past when confronting present and future problems. Hofstede et al. (1984) stated that: *"long-term orientation stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, Short-Term Orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of 'face', and fulfilling social obligations. [...] It describes how every society has to maintain some links with its own past while dealing with the challenges of the present and future."*

The data collected by Hofstede show that long-term orientation scores are generally high in East Asian countries, and generally low in Western countries and other third world countries. If the scores on this dimension are low, a society is defined as normative, which means that it prefers to stick to traditions and norms while viewing societal change with suspicion. These countries usually have conservative mindsets towards social changes. The nations that score high in the long-term orientation scale tend to accept and adapt to social changes, with a more pragmatic approach, they believe that the future is built on perseverance and thrift and that a good performance is achieved through accumulated efforts. These countries are known as pragmatic (see Table 5 indicates more key differences between low LTO and high LTO).

Table 5 Key differences between low long-term orientation and high long-term orientation societies in societal norm.

The Long-Term Orientation Societal Norm	
Low LTO	High LTO
Immediate gratification of needs expected	Deferred gratification on needs accepted
Traditions are sacrosanct	Traditions adaptable to changed circumstances
Family life guided by imperatives	Family life guided by shared tasks
Short-term virtues taught: social consumption	Long-term virtues taught: frugality, perseverance
Spending	Saving, investing
The bottom line	Building a strong market position

Analytic thinking	Synthetic thinking
Fuzzy problem solving	Structured problem solving

Source: (Hofstede et al., 1984).

Research shows that there is a high correlation between LTO and sustainability performances: Memili et al. (2018) aimed that high LTO to some extent moderates the negative influences of family ownership on sustainability practices. Similarly, Kucharska & Kowalczyk (2019) investigated the influence of the company culture factors on corporate social responsibility and found that the cultural dimension of long-term orientation has the biggest influence on corporate social responsibility. However, some previous research did not find a positive relationship between the cultural dimension of long-term orientation and sustainability reporting, instead they found a negative impact of long-term orientation on the integrated reporting (García-Sánchez et al., 2013). In a similar vein, Rosati & Faria (2019) found that SDG reporting organizations are more likely to be located in more individualistic and short-term-oriented countries. Therefore, we will carry on further investigation about this cultural dimension of long-term orientation and the way it influences the sustainability performance with other conditions of a country.

1.2.6 INDULGENCE VERSUS RESTRAINT

Indulgence versus Restraint is the sixth cultural dimension and it has been added later to the five dimensions mentioned above, thanks to the research made by Michael Minkov on the data obtained from the World Values Survey (WVS). After further research and collaboration with Hofstede et al., this value was inserted as the sixth cultural dimension in the 2010 edition of Cultures and Organizations: Software of the Mind (Hofstede et al., 2005).

Hofstede defines this dimension as "*the extent to which people try to control their desires and impulses, based on the way they were raised. Relatively weak control is called "Indulgence" and relatively strong control is called "Restraint". Cultures can, therefore, be described as Indulgent or Restrained. Societies with a low score in this dimension have a tendency to cynicism and pessimism. Also, in contrast to Indulgent societies, Restrained societies do not put*

much emphasis on leisure time and control the gratification of their desires. People with this orientation have the perception that their actions are restrained by social norms and feel that indulging themselves is somewhat wrong. People in societies classified by a high score in Indulgence generally exhibit a willingness to realize their impulses and desires with regard to enjoying life and having fun. They possess a positive attitude and have a tendency towards optimism. In addition, they place a higher degree of importance on leisure time, act as they please, and spend money as they wish." (see Table 6 indicates more key differences between indulgent and restraint societies).

Table 6 Key differences between restraint and indulgent societies in societal norm.

The Indulgence Societal Norm	
Indulgent	Restraint
Higher percentages of very happy people	Lower percentages of very happy people
A perception of personal life control	A perception of helplessness: what happens to me is not my own doing
Higher importance of leisure	Lower importance of leisure
Higher importance of having friends	Lower importance of having friends
Thrift is not very important.	Thrift is important.
Loose society	Tight society
More likely to remember positive emotions	Less likely to remember positive emotions
Less moral discipline	More neurotic personalities

Higher percentages of people who feel healthy	Lower percentages of people who feel healthy
Higher optimism	More pessimism
In countries with well-educated populations, higher birthrates	In countries with well-educated populations, lower birthrates
Lower death rates from cardiovascular diseases	Higher death rates from cardiovascular diseases

Source: (Hofstede et al., 2005)

Although Gallego-Álvarez & Ortas (2017) observed that the cultural dimension indulgence resulted in a negative correlation with corporate environmental sustainability reporting (CESR), this conclusion could be only applied to specific organizations which have a high commitment to CESR. On the contrary, Halkos & Skouloudis (2017) claimed that there is a positive correlation between indulgence and corporate social responsibility. Therefore, a configurational analysis of the six cultural dimensions on sustainability performance will be helpful to understand the relationships intertwining them.

1.3 SUSTAINABALE DEVELOPMENT GOALS (SDGS)

While global changes and the wellbeing of the Earth population have been a matter of discussion for public opinion especially in recent times (partly because climatic changes are drastically showing their influence in human life in these years, partly because of historical happenings impacting on everybody's life such as the Covid-19 pandemic, partly thanks to the visibility that social networks have given to some personalities, such as Greta Thunberg, taking the matter into the consideration of a broader number of people, especially young generations), the issue on how to act to leave a better planet, economy, and society to future generations has actually been considered by the United Nations for many years. The first trace of this commitment was seen in the first United Nations Conference on the Environment held in Stockholm in 1972. This conference was the initial step in making the environment a major

issue and an important value to be taken into consideration for our society's development and wellbeing. The result of the conference was the Stockholm Declaration and Action Plan for the Human Environment and several other resolutions. The United Nations website states that the Stockholm Declaration *"placed environmental issues at the forefront of international concerns and marked the start of a dialogue between industrialized and developing countries on the link between economic growth, the pollution of the air, water, and oceans and the well-being of people around the world."* Another major result of the Stockholm conference was the creation of the United Nations Environment Programme (UNEP).

This was just a first step, followed in 1983 by the World Commission on Environment and Development's President Gro Harlem Brundtland's report "Our Common Future", also called the "Brundtland report". Here, the concept of sustainable development is defined as *"the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* In the opening paragraph of the report, Brundtland stated: *"In the final analysis, I decided to accept the challenge of facing the future, and of safeguarding the interests of coming generations. For it was abundantly clear: we needed a mandate for change. We live in an era in the history of nations when there is a greater need than ever for coordinated political action. [...] Responsibly meeting humanity's goals and aspirations will require the active support of us all"*. It was therefore already clear at that time that the actions to be taken to better the World conditions and ensure a better future for upcoming generations were to be carried out together, by everyone and most of all by every country. Another important step towards sustainable development was taken during the first United Nations Conference on Environment and Development (UNCED), also known as the "Earth Summit", held in Rio de Janeiro, Brazil, in June 1992, bringing together representatives from 179 countries, in order to massively focus on the impact of human socio-economic activities on the environment. The result of this conference was the so-called Agenda 21, "a daring program of action calling for new strategies to invest in the future to achieve overall sustainable development in the 21st century" (United Nations Website). Its recommendations comprehended goals in many different fields, such as the need for new methods of education, new ways of preserving natural resources, and new ways of participating in a sustainable economy. The Agenda 21 goals were to be reached before the start of the 21st century, especially the gain of global sustainable development. In 2000 the Millennium Summit of the United Nations promulgated the Millennium Development Goals (MDGs), eight international development goals for the year 2015, specifically:

- To eradicate extreme poverty and hunger
- To achieve universal primary education
- To promote gender equality and empower women
- To reduce child mortality
- To improve maternal health
- To combat HIV/AIDS, malaria, and other diseases
- To ensure environmental sustainability
- To develop a global partnership for development

All of these conferences, reports, and programs became the basis for the Sustainable Development Goals (SDGs) or Global Goals, set up in 2015 by the United Nations General Assembly. At the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil, in June 2012, Member States adopted the outcome document "The Future We Want" in which they decided, inter alia, to launch a process to develop a set of SDGs to build upon the MDGs and to establish the UN High-level Political Forum on Sustainable Development. Therefore, in 2015, the SDGs were promulgated, 17 interlinked global goals designed to be *"a shared blueprint for peace and prosperity for people and the planet, now and into the future"* (United Nations Website). The SDGs were and are intended to be achieved by the year 2030 and they call for collective actions by all countries and complementary actions by the whole civil society, science, and business. They are included in a UN Resolution called "the 2030 Agenda" or "Agenda 2030". The SDGs were added in the Post-2015 Development Agenda as the future global evolution framework to succeed the Millennium Development Goals which ended in 2015. This year also saw the adoption of the Paris Agreement, a legally binding international treaty on climate change, that entered into force on 4 November 2016.

The 17 SDGs are:

1. No Poverty - End poverty in all its forms everywhere

2. Zero Hunger - End hunger, achieve food security and improved nutrition and promote sustainable agriculture

3. Good Health and Well-being - Ensure healthy lives and promote well-being for all at all ages

4. Quality Education - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

5. Gender Equality - Achieve gender equality and empower all women and girls

6. Clean Water and Sanitation - Ensure availability and sustainable management of water and sanitation for all

7. Affordable and Clean Energy - Ensure access to affordable, reliable, sustainable, and modern energy for all

8. Decent Work and Economic Growth - Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all

9. Industry, Innovation, and Infrastructure - Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

10. Reducing Inequality - Reduce inequality within and among countries

11. Sustainable Cities and Communities - Make cities and human settlements inclusive, safe, resilient and sustainable

12. Responsible Consumption and Production - Ensure sustainable consumption and production patterns

13. Climate Action - Take urgent action to combat climate change and its impacts*

14. Life Below Water - Conserve and sustainably use the oceans, seas and marine resources for sustainable development

15. Life On Land - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

16. Peace, Justice, and Strong Institutions - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

17. Partnerships for the Goals - Strengthen the means of implementation and revitalize the global partnership for sustainable development

Each goal has associated targets and indicators, for a total of associated 169 targets and 232 indicators.

The progress of each country towards reaching the 17 goals is monitored by the UN High-Level Political Forum on Sustainable Development (HLPF). The online publication SDG-Tracker was launched in June 2018 and presents data across all available indicators.

In order to make the project more understandable and easier to follow, the 17 goals were later summarized in the so-called "Six Transformations to Achieve the Sustainable Development Goals":

- Education, Gender, and Inequality;
- Health, Wellbeing, and Demography;
- Energy Decarbonisation and Sustainable Industry;
- Sustainable Food, Land, Water, and Oceans;
- Sustainable Cities and Communities;
- Digital Revolution for Sustainable Development.

Each Transformation identifies priority investments and regulatory challenges calling for actions by well-defined parts of governments working with business and civil society. (Sustainable development, solution network, a global initiative for united nations)

It is easy to see that these transformations will impact the economic, socio-political, and people's well-being, and environmental dimensions and that these changes will be interdependent. A real change will require multidisciplinary and trans-disciplinary research across all these three dimensions (social, environmental, and economic). Although previous research found some proof of the impact of culture on sustainability performances, they remain isolated and dispersed, also because of the barriers given by the approach they adopted: cultural analysis was based on the qualitative method and sustainability performances were evaluated with quantitative methods. Therefore, the findings regarding the influence of cultural factors on sustainability performances appear to some extent inconsistent between each other. All this

calls for a set-theoretic configurational analysis to further explore the causal effects of the six cultural dimensions associated with sustainability performances in a cross-national context.

CHAPTER 2: A SET-THEORETIC CONFIGURATIONAL APPROACH TO THE HOFSTEDE'S CULTURAL DIMENSIONS AND SUSTAINABILITY PERFORMANCES

2.1 THE NECESSITY OF ADOPTING THE FSQCA

The arguments regarding the impact of culture on sustainability performances in terms of environmental protection date back to the end of the 20th Century: Cohen & Nelson (1992) claimed that the link between culture and environment was based on the impact of culture on ethical beliefs and behaviors and that these further reflected in all kinds of organizations inside a certain society, from family and school to corporates and political institutions. To this end, sustainability performances may vary across different countries due to the diverse combinations of cultural dimensions. This initial investigation of the impact of culture on sustainability performances did open a door for later scholars to further explore how the cultural dimensions proposed by Hofstede associated with sustainability performances around the world.

A cross-country analysis carried out by (Husted, 2005) offered a comprehensive view by measuring Hofstede's cultural dimensions' impact on countries' social and institutional capacities for sustainability: the outcome showed that there is a significant correlation between sustainable actions and power distance, masculinity versus femininity, and individualism versus collectivism. Specifically, nations scoring low in power distance, high in individualism, and low in masculinity have higher social and institutional capacities for sustainability.

In a similar vein, Park et al. (2007) conducted another cross-national analysis, uncovering a statistical relationship between cultural dimensions and environmental sustainability performances. They specifically observed that high power distance and masculinity have a

statistically negative impact on environmental sustainability performances, which implies that cultural dimensions do effectively play a role in the application of sustainable policies.

These results are partly consistent with Vachon (2010). He studied the relationship between corporate sustainability development and national cultural dimensions, observing that two of Hofstede's cultural dimensions are significant in explaining better sustainability performances. As a matter of fact, nations scoring high in individualism and uncertainty avoidance are associated with more innovation in sustainability, higher well being of the employees, and higher corporate social responsibility engagement.

The most recent literature explores the effects of cultural dimensions (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence) on sustainability performances, thanks to the adoption of different mediating variables, such as economic and social variables. These research resulted in different statistical outcomes, some of them only interpreting certain cultural dimensions, lacking a comprehensive consideration of the different combinations of the six cultural dimensions (Dangelico et al., 2020; Kumar et al., 2019).

To this end, the approaches they used failed to account for the importance of the different combinations of cultural dimensions and their influence on sustainability performances. Based on our exhaustive literature review, therefore, there is still a gap in the analysis of the combinations of the six cultural dimensions associated with sustainability performance, and we intend to fill this gap.

Following our literature review, we intend to explore the different combinations of the six different cultural dimensions that are associated with high sustainability performances in a cross-national context. It means that we are going to analyze how different combinations of cultural dimensions may result in equally achievable outcomes of interest and why certain configurations achieve high levels of sustainability performances, while others fail. We are the first to explore Hofstede's six cultural dimensions among different countries in terms of sustainability performance by applying the SDGs index with a configurational approach. This research will give us a systematic view to exploring the multiple combinations instead of the influence of the single cultural dimension on sustainability performances. The importance of configurational analysis has been widely recognized by researchers from different fields, such as strategy and organizational research (Fiss, 2011a), cross-nation entrepreneurship (Beynon et al., 2016), and sustainability (Cervelló-Royo et al., 2020).

2.2 SAMPLE

This study is based on a global context, analyzing 82 countries, which include the most important countries around the world, across Europe, Asia, Oceania, North and South America, and Africa. These countries are in different economic development stages, have different cultural backgrounds, and score differently in SDGs in terms of social wellbeing, economic prosperity, and environmental protection. To this end, the empirical setting of our study is representative because it includes a large number of countries, and it is indeed a cross-national empirical study.

2.3 METHODOLOGY AND DATA

The research was conducted on the secondary dataset which includes two parts. The first part regards the six cultural dimensions, collected from hofstede-insights.com, that have the most up-to-date scores for all of the six cultural dimensions, concerning 119 countries. The second part of the data comes from the Sustainable Development Goals Index (SDG index) in the Sustainable Development Report 2020. This report analyzes 166 countries, measuring each country's performance towards the reaching of the 17 SDGs. After a careful check of the two datasets, we excluded some countries due to their lack of some cultural values and/or SDG index data. In the end, we obtained a total of 82 countries as our final sample.

We adopted a fuzzy set qualitative comparative analysis (fsQCA) methodology to analyze the data we collected. Qualitative Comparative Analysis was developed by Ragin in 1987 (Ragin, 2006) , he used the set-theoretic method, which is based on logical and both qualitative and quantitative approach to study the causal complexity. It brings a configurational approach to case-oriented research and to variable-oriented research, in order to explore multiple combinations of causal conditions that could lead to the same outcome of interests (Ragin, 1999). Therefore, it enriches conventional regression analysis, which focuses on the explanation of the relationship between independent and dependent variables. This is less exhaustive in explaining why, in certain combinations, a variable combined with others leads to the same successful outcome of interest (Apa & Sedita, 2017). The Comparative Qualitative Analysis method emphasizes the nonlinearity (causal complexity), synergistic effects, and the equifinality, which can close the gap by applying the set-theoretic configurational analysis (Fiss,

2007) .The Comparative Qualitative Analysis approach presumes that the causal complexity of the nonlinear correlations can better describe the situation by combining factors because usually, the independent variables are found to be significantly associated with one another in some cases, but in other cases, it may appear a negative or non-significant correlation (Galeazzo & Furlan, 2018). To this end, synergistic effects could override the relationships between two symmetric variables, since it does not negate the same outcome of interest if a certain variable is absent, which means that the conditions do not compete between the cultural dimensions in order to demonstrate the best solutions, on the contrary, they appear to complement each other to generate the multiple combinations lead to the same outcomes of interest (Papamitsiou et al., 2020). Furthermore, the configurational approach (fsQCA) emphasizes equifinality, which means that for achieving the same final outcome, different combinations of the variables have equal effects (Fiss, 2007).

The main goal of this paper is to find out the multiple combinations of cultural dimensions associated with high sustainability performances. We think that the fsQCA method is the best way to explore the causal conditions behind them: especially when talking about the complexity of the cultural dimensions, the fsQCA method is crucial to handle the causal complexity from a more systematic point of view (Fiss, 2011b). Here we only included 82 countries due to the lack of access to the data of some countries, because we do not have the data of all the 195 countries in the world, which means that quantitative methodology would not have been the ideal way to do research in our case. On the contrary, if we only conducted a comparison between a few countries, the result may be difficult to be generalized. Therefore, fsQCA gives us a chance to build a bridge between the qualitative and the quantitative methods for us to better understand the causal complexity between Hofstede's six cultural dimensions and high sustainability performances.

2.4 MEASURES

Table 7 shows the descriptive statistics, while Table 8 shows the correlation matrix of all the variables that we are going to explore.

Table 7 Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SDG	82	49.28	84.72	73.1950	7.00140
PDI	82	11	100	63.54	21.334
IDV	82	10	91	41.84	22.570
MAS	82	5	100	47.21	19.410
UAI	82	23	100	69.30	20.675
LTO	82	4	100	46.28	24.042
IVR	82	4	97	45.91	21.988
Valid N(listwise)	82				

Source: Created using the SPSS software with the collected data

Table 8 Correlation Matrix

		SDG	PDI	IDV	MAS	UAI	LTO	IVR
SDG	Pearson Correiation	1						
	Sig.(2-tailed)							
	N	82						
PDI	Pearson Correiation	-.473	1					
	Sig.(2-tailed)	0						
	N	82	82					
IDV	Pearson Correiation	.538	-.709	1				
	Sig.(2-tailed)	0	0					
	N	82	82	82				
MAS	Pearson Correiation	-.091	.082	.101	1			
	Sig.(2-tailed)	.417	.463	.368				
	N	82	82	82	82			
UAI	Pearson Correiation	.106	.339	-.320	.012	1		
	Sig.(2-tailed)	.342	.002	.003	.912			
	N	82	82	82	82	82		
LTO	Pearson Correiation	.435	.075	.148	.053	.216	1	
	Sig.(2-tailed)	.000	.504	.186	.635	.052		
	N	82	82	82	82	82	82	
IVR	Pearson Correiation	-.063	-.398	.197	-.018	-.296	-.526	1
	Sig.(2-tailed)	.576	.000	.077	.874	.007	0	
	N	82	82	82	82	82	82	82

Source: Created using the SPSS software with the collected data

2.4.1 SUSTAINABILITY PERFORMANCE MEASURES

In the past decades, the world has been experiencing rapid economic and social growth, which caused a lot of environmental problems, so sustainable development has become a very important topic for all the countries nowadays. Therefore, measuring each country's sustainability level performances is critical to understand the general situation and to state the measures that every country of the world has to take in order to reach the expected goals. Measuring the sustainability performance of a country is a complicated job because it requires a comprehensive criterion suitable to be used in the same way at the same time for every country (Ness et al., 2007). Some scholars also mentioned that sustainability performance measures should include quantitative and qualitative criteria instead of just one aspect of them (Mendoza & Prabhu, 2003). Indeed, the SDGs 2020 represent a very comprehensive dashboard for sustainability performances, including 115 indicators with 85 global indicators and 30 indicators especially added for the Organisation for Economic Cooperation and Development (OECD) countries. The scores are based on the most up-to-date data, covering 193 countries.

In order to have proper metrics for the SDG report, five criteria have been set for the selection of the indicators, they are in detail: (1): Global relevance and applicability to a broad range of country settings; (2) Statistical adequacy; (3) Timeliness; (4) Data quality; (5) Coverage. To this end, the majority of the data is collected from prestigious international organizations, such as World Health Organization (WHO), World Bank, United Nations Children's Emergency Fund (UNICEF), Organisation for Economic Co-operation and Development (OECD), Food and Agriculture Organization (FAO), International Labour Organization (ILO), etc.

The most critical issue was building the SDG index, there are three important steps that ensure performing suitable metrics: (1) censoring extreme values from the distribution of each indicator; (2) rescaling the data to ensure the comparability across indicators; (3) aggregating the indicators within and across SDGs.

Consequently, by applying the methods mentioned above, the SDG index scores from 0 to 100, which could also be considered as the nation's percentage (0-100%) on the path to

achieving its 17 sustainable development goals. These goals have social well-being, economic prosperity, and environmental protection as their three major aspects, see Figure 1 (Zheng et al., 2021) .

Figure 1 Sustainability Development goals classification

Source: (Zheng et al., 2021)

To adopt the fsQCA approach, we needed to transform our initial data (SDG index) into fuzzy sets scoring from 0 to 1. If a fuzzy member scores 1 it means that it is a full member of a fuzzy set, on the other hand, with a value of 0, it represents a full non-member of a fuzzy set, and finally, if a fuzzy member scores 0.5 this means that it is in the intermediate position and that it is the most ambiguous type of fuzzy set because it could be both in or out of the fuzzy set (Rihoux & Ragin, 2008). We named this transformation process into a fuzzy set value (which will be explained more in the next subsection 3.4) "calibration": in this research, we used an indirect calibration method. Basically speaking, we set the full non-membership threshold (value 66.19) calculated by the mean subtracting the standard deviation, and then the intermediate point (value 73.2), equal to the mean, and finally the full membership threshold (value 80.2) calculated by the mean plus the standard deviation.

2.4.2 CULTURAL DIMENSIONS MEASURES

In terms of the cultural dimensions measures, we adopted all the six most up-to-date cultural dimensions from hofstede-insights.com. The first four cultural dimensions, which are power distance (PDI), individualism (IDV), masculinity (MAS), and uncertainty avoidance (UAI) are based on the IBM Attitude Survey which was collected from its subsidiaries spread around the world. The survey was conducted twice, first in 1967and then in 1971, within 70 countries and analyzing up to 117.000 questionnaires. The majority of questions in the IBM survey adopted a 5-point answer scale and the frequency distributions were skewed. Furthermore, the mean is used as the measure of the central tendency, which can ensure a natural rating and avoid just choosing two polarized answers. The fifth cultural dimension, Long-term Orientation, was elaborated from the Chinese Value Survey (CVS), developed by Harris Bond in Hong Kong. This survey was built on a 9-point scale; the initial factor scores of Long-term Orientation varied from -1.00 to .91, but they were later transformed into 0 to 100 like the other cultural dimensions with a linear transformation method. The last cultural dimension is Indulgence Versus Restraint, which was developed by Minkov (2007) based on the analysis of the World Value Survey, by asking the respondents information on their subjective wellbeing, how satisfied they were with their lives, how happy they felt, etc. It was added in Hofstede's book “Cultures and Organization, Software of the mind” in 2010 (Hofstede, 2011).

In this paper, we adopted all the six cultural dimensions based on a 0 to 100 range, so scores under 50 are considered relatively low, 50 is an intermediate level, and scores over 50 mean that the cultural dimension value is considered high. We calibrated the scores into fuzzy set data using the same indirect calibration method as for the sustainability performance measures.

2.5 FUZZY SET QUALITATIVE COMPARATIVE ANALYSIS

2.5.1 FUZZY SET CALIBRATION

When we applied fsQCA to analyze our data, we needed to first calibrate our variables, which are the SDGs index and Hofstede's cultural dimensions values, into fuzzy set values which range from 0 to 1 (Rihoux & Ragin, 2008). We, therefore, considered the fuzzy set data as a group, with values ranging from 0 to 1, and this signifies that a case scoring 1 in the fuzzy set membership is a full member of a fuzzy set, namely full in; a case scoring 0 in the fuzzy set membership is a full non-member of a fuzzy set, namely full out; finally, a case with a score 0.5 means that it is in the most ambiguous position, namely intermediate or crossover point.

There are two ways to calibrate the variables: a direct and an indirect method. Using the direct method, certain qualitative breakpoints (such as 0.95, 0.50, 0.05) are set for the cases to classify tree levels of fuzzy set memberships. The indirect method, such as the sample-dependent method, is more tailored for the specific research based on the substantive knowledge of a certain research area. Therefore, once we decided which were the three thresholds with the sample-dependent method (see Table 9, the threshold we chose to calibrate), we proceeded with the cultural dimensions and SGDs index with the calibration function in fsQCA software, which required inputting the variables and setting up the three thresholds from the highest one to the lowest one (Fiss, 2011b; Rihoux & Ragin, 2008).

Table 9 Threshold setting of Variables

	Full nonmembership threshold	Crossover point	Full membership threshold
Power Distance (PDI)	42,21	63,54	84,87
Individualism (IDV)	19,27	41,84	64,41
Masculinity (MAS)	27,80	47,21	66,62
Uncertainty Avoidance (UAI)	48,63	69,30	89,98
Long-term Orientation (LTO)	22,24	46,28	70,32
Indulgence (IVR)	23,92	45,91	67,90
Sustainable Development Goals (SDGs)	66,19	73,20	80,20

Source: Our own creation

2.5.2 NECESSARY CONDITIONS ANALYSIS

After the calibration, we had to implement the necessary conditions procedure in order to check whether there were any cultural dimension variables (which associated with high sustainability performances) that had to be present, but still, the presence of the necessary conditions could not ensure the occurrence of high sustainability performances. The implementation of the necessary conditions function gave us two scores: consistency and coverage. If the consistency score is higher than 0.9 and the coverage score is higher than 0.5, then this variable is perceived as a necessary condition. We applied the necessary conditions analysis function through fsQCA

with the 6 cultural dimensions (and their negations with"~") as causal conditions and SDGs index as the outcomes of interest, and, as the analysis results show in Table 10, none of the cultural dimensions is above the required value 0.9 in terms of consistency and 0.5 in terms of coverage. Therefore, no cultural dimension is a necessary condition associated with high sustainability performance.

Table 10 Analysis of necessary conditions

	Consistency	**Coverage**
PDI	0.454239	0.466190
～PDI	0.700023	0.805017
IDV	0.699123	0.843691
～IDV	0.453339	0.446512
MAS	0.572521	0.611872
～MAS	0.626490	0.689775
UAI	0.611423	0.630712
～UAI	0.520801	0.595526
LTO	0.668990	0.749748
～LTO	0.468181	0.491966

IVR	0.564426	0.628285
～IVR	0.573420	0.606421

Source: Created using the fsQCA software with the collected data

2.5.3 TRUTH TABLE ANALYSIS AND MINIMIZATION

Once the variables were calibrated into fuzzy set memberships, we proceeded with the generation of the truth table in the fsQCA software, we input the six cultural dimensions in the independent variables column and the SDGs as outcomes in the dependent variable column. By doing so, we run the truth table to compute all the possible combinations of the cultural dimensions (see Figure 4, minimized truth table), it automatically generated 2^k configurations (k is the quantity of the causal condition, here we mean six cultural dimensions), each row represents a possible configuration, the frequency of the configurations is showed in the "number" column, it also shows the raw consistency, which indicates the proportion of cases that display the outcome. Next, in order to reduce the number of the possible configurations, the initial truth table needed to be sorted by setting the frequency and consistency. Considering that our empirical setting, the 82 countries, were not a very large amount, we decided to adopt a very widely acceptable frequency threshold: 2 (this means that the cases with less than 2 countries were not considered), and we set the raw consistency at 0.85 (this means that the 85% of the causal conditions is a superset of the outcome), which is higher than the minimum 0.75 (Fiss, 2011a; Rihoux & Ragin, 2008). To this end, a minimized truth table was generated, see Table 11.

Table 11 Minimized truth table

PDI	IDV	MAS	UAI	LTO	IVR	N.	SDG	rawconsist.	PRIconsist.	SYMconsist.
0	1	1	1	1	0	4	1	0.956407	0.918317	0.918317
0	1	1	1	1	1	2	1	0.95231	0.891156	0.891157
0	1	0	0	1	1	2	1	0.934647	0.867347	0.867347
0	1	1	0	1	1	2	1	0.921951	0.84106	0.84106
0	1	0	0	1	0	3	1	0.919861	0.833935	0.833935
0	1	0	0	0	1	4	1	0.897606	0.828889	0.838202
0	1	1	0	0	1	6	1	0.806088	0.683241	0.727451
0	0	0	1	0	1	2	0	0.795948	0.42449	0.42449
1	0	0	1	1	1	8	1	0.845059	0.671986	0.737354
1	1	1	0	1	0	2	0	0.776859	0.488151	0.488152
1	0	0	1	0	0	2	0	0.756066	0.336805	0.336805
1	0	1	1	1	0	6	0	0.753424	0.244755	0.24911
1	0	0	0	1	0	2	0	0.684536	0.145251	0.158537
1	0	0	1	0	1	3	0	0.645081	0.246032	0.246032

1	0	1	0	1	0	2	0	0.629268	0.13308	0.152839
1	0	0	0	0	0	3	0	0.627795	0.0968991	0.0968991
1	0	1	1	0	1	4	0	0.588158	0.0572287	0.0584613
1	0	1	0	0	0	2	0	0.531202	0.028391	0.028391
1	0	1	0	0	1	3	0	0.524887	0.0217391	0.0217391
1	0	0	0	0	1	3	0	0.50208	0.0477453	0.0477453

Source: Created using the fsQCA software with the collected data

CHAPTER 3: RESULTS AND DISCUSSION

3.1 DESCRIPTIVE STATISTICS

Table 12 Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Std. Error	Stat.	Std. Error
PDI	82	11	100	63.54	21334	-.359	.266	-.688	.526
IDV	82	10	91	41.84	22.57	.567	.266	-.963	.526
MAS	82	5	100	47.21	19.41	.048	.266	.250	.526
UAI	82	23	100	69.30	20.675	-.368	.266	-1.043	.526
LTO	82	4	100	46.28	24.042	.218	.266	-1.021	.526
IVR	82	4	97	45.91	21.988	.225	.266	-.908	.526
SDG	82	49.28	84.72	73.1950	7.00410	-1.154	.266	1.933	.526
Valid N(listwise)	82								

Source: Created using the SPSS software with the collected data

Our sample consists of 82 countries from 5 continents, Europe (37), America (14), Asia (19), Africa (10), Oceania (2). We took these countries as representative in terms of their culture, their language, and other aspects in their region, and they are also in different development periods.

Regarding the cultural dimensions, we could see from the Table 12, the power distance and uncertainty avoidance values were slightly skewed left (Statistic -.359 and -.368), and the distribution of the uncertainty avoidance appeared a bit flat (Statistic -1.043). Regarding the four other cultural dimensions: individualism, masculinity, long-term orientation, and indulgence appeared to be slightly skewed right (Statistic .567, .048, .218, .225), only the distribution of the long-term orientation seemed to be flat (Statistic -1.021). In terms of the outcome, the sustainability performance, its value appeared to be skewed substantially left (Statistic -1.154), and it seemed that the distribution was peaked (Statistic 1.933). This is well-aligned with the global sustainability development situation from the findings of (Messerli et al., 2019): most of the countries are still far from reaching the 2030 agenda goals, and peak distribution represents the high inequality between developed countries and developing countries.

3.2 CONFIGURATIONAL ANALYSIS

After obtaining the minimized truth table, we further applied the Standard Analysis function to generate the complex, parsimonious, and intermediate solutions of the cultural dimensions, namely configurations. Different configurations could lead to the same outcome of interest, which here is high sustainability performances. Among the three solutions, the complex solution was the most comprehensive one, because it included all the possible configurations; the parsimonious one was a simplified version of the complex one, including only the core conditions (strong causal conditions associated with the outcome of interest).

The parsimonious solution allows integration of any counterfactual combination which dedicates to the generation of the simpler solution. The minimized truth table generated two parsimonious solutions (simplified configurations) associated with high sustainability performances:

(1) ~PDI*IDV

(2) ~MAS*UAI*LTO

Where ~PDI is the fuzzy set for low power distance, IDV is the fuzzy set for individualism, ~MAS is the fuzzy set for low masculinity, UAI is the fuzzy set for uncertainty avoidance, and

finally LTO is the fuzzy set for long-term orientation. The parsimonious solution revealed that the two combinations of conditions associated with high sustainability performances are: (1) low power distance and high individualism, (2) low masculinity, high uncertainty avoidance and high long-term orientation.

While the intermediate solutions also included a parsimonious solution, the conditions that did not appear in the parsimonious solution but appeared in the intermediate solution are called peripheral conditions, which means that they are weak causal conditions associated with the outcome. The intermediate solution revealed 4 combinations of conditions associated to high sustainability performances:

(1) ~PDI*IDV*~UAI*IVR

(2) ~PDI*IDV*~MAS*UAI*LTO

(3) ~PDI* IDV*MAS*UAI*LTO

(4) PDI* ~IDV*~MAS*UAI*LTO*~IVR

In the four intermediate solutions, low power distance and high individualism appear in solutions one to three, but this does not mean that they necessarily need to be present in all the configurations associated with high sustainability performances. The same outcome could be achieved also with high power distance and low individualism combined with other conditions. These intermediate solutions are important because the causal conditions associated with high sustainability performances are combinatorial in essence, so they allow us to identify all the possible combinations when we apply configurational analysis.

To make the configurational results more visualizable, we further combined the parsimonious and intermediate solutions into Table 13, which highlights both the core conditions and peripheral conditions and makes the presence and absence of the conditions visualizable. To do so, we adopted the methodology proposed by Pappas & Woodside (2021): "*Hypothetically, if we have a parsimonious solution of A + BC + BD and an intermediate solution of AcD + BCE + ABF + ABCDf, we report* ***A****cD +* ***BC****E +* ***A****BF +* ***ABCD****f, with bold characters indicating core conditions".*

The fsQCA results also included the consistency, raw coverage, and unique coverage of each solution. The consistency of each solution measures the proportion of the outcomes, the raw coverage measures the proportion of the memberships in the outcome explained by each term

of the solution, the unique coverage measures the proportion of the memberships in the outcome explained solely by each individual solution term, which means those memberships that are not covered by other solution terms (Ragin, 2009).

Table 13 fsQCA results

	CONFIGURATIONS			
	1	2	3	4
Power Distance (PDI)	⊗	⊗	⊗	●
Individualism (IDV)	●	●	●	⊗
Masculinity (MAS)		⊗	●	⊗
Uncertainty Advoidance (UAI)	⊗	⊗	●	●
Long-term Orientation (LTO)		●	●	●
Indulgence (IVR)	●			⊗
Consistency	0.880	0.943	0.964	0.845
Raw Coverage	0.347	0.177	0.206	0.227
Unique Coverage	0.195	0.0452	0.092	0.160
Overall solution consistency	0.89			
Overall solution coverage	0.67			

Note: Black circles (●) indicate the presence of a condition, and circles with "x"(⊗) indicate its absence. Large circles: Core conditions; Small circles: Peripheral conditions; Blank spaces: "don't care" conditions.

Source: Our own creation based on the results generated by the fsQCA software

Finally, the overall solution consistency measures the degree to which the memberships in the solution are a subset of membership in the outcome, while the overall solution coverage measures the proportion of the memberships in the outcomes explained by complete solutions. The overall solution consistency in our case is 89%, which is higher than the minimum threshold of 80%, and the overall solution coverage is 67%, which again is much higher than the standard threshold which is 25% (Schneider & Wagemann, 2012).

In the next section, we will further discuss the configurations we obtained from the fsQCA.

3.3 DISCUSSION

The configurational analysis provided us with systematic and comprehensive evidence on the possible combinations of cultural dimensions linked to high sustainability performances. The solutions generated by the fsQCA have answered our initial questions: whether cultural dimensions play a role in sustainability performance, and what do their configurations look like? By looking at the results we obtained in previous sections, Table 13, we confirmed that multiple combinations of the cultural dimensions linked to the same high sustainability performances, and no single cultural dimension could lead to high sustainability performances, they always needed to combine with other cultural dimensions.

Looking into the configurational solutions generated by the fsQCA, the findings suggested four empirically crucial causal configurations (Table 13). Configuration one combines the absence of high power distance and the presence of high individualism as core conditions, the absence of high uncertainty avoidance and the presence of relatively high indulgence as peripheral conditions, but regardless of masculinity and long-term orientation. Configuration two reveals the combination of the absence of high power distance and high masculinity, the presence of high individualism and high long-term orientation as core conditions; and the absence of high uncertainty avoidance as a peripheral condition, but regardless of indulgence. Configuration three presents the combination of the absence of high power distance, the presence of high individualism, high uncertainty avoidance, and high long-term orientation as core conditions, and the presence of high masculinity as a peripheral condition, but regardless of indulgence. Finally, configuration four refers to the combination of the presence of high uncertainty avoidance and high long-term orientation and the absence of high masculinity as core conditions, and the presence of high-power distance and the absence of high individualism and high indulgence as peripheral conditions. For the first time high power distance is present and high individualism is absent: this is quite different if compared to the previous three combinations, but the femininity value seems to be rather important in this fuzzy set membership.

3.3.1 COMOMON CHARACTERISTICS OF THE CONFIGURATIONS

According to the initial interpretation of Table 13, we can observe that for all the configurations, except for the fourth configuration, the presence of high individualism is a core condition

associated with high sustainability performances. The important presence of this causal condition was mentioned by many scholars and studies, here we refer to some important examples to give the flavour of these aspects. Komatsu et al. (2019); Taylor (1989) proposed that being an independent self has always been considered as an important keystone of the civilization of the western world, and it has also been considered to be a cornerstone of western modernity, in terms of economic prosperity. Hofstede (1980) also tested a significant correlation (0.82) between individualism and gross national product (GNP) per capita, which could be interpreted in terms of high economic prosperity of the sustainability performance. In a similar vein, Okely et al. (2018) observed that people from individualistic cultures tend to have higher wellbeing, which was more significantly related to a better self-rated health, this study supports our findings: a society with higher sustainability performances in terms of well being tends to be more individualistic. Cho et al. (2013); Yoon et al. (2020) explored individualism and collectivism as antecedents of good environmental behaviors from an environmental protection point of view, they discovered that there is a significant correlation between horizontal individualism and environmental attitudes, which means that individualistic societies emphasize the fact that the unique and independent self does play a role in determining the good attitude towards environmental sustainability.

On the contrary, in all the configurations, again except for configuration four, high power distance is a core absent condition associated with high sustainability performances, which means that power distance values tend to score medium-low. In fact, we checked the cases with greater than 0.5 membership in the first three configurations, the scores of power distance range from 11(Austria) to 54 (Japan), so, according to the rule of thumb: if a score is below 50, it means that the cultural score is relatively low on the specific scale, here only Japan scores slightly higher than 50, but in a reasonable and acceptable range. The lack of high power distance in the configurations resulting in high sustainability performances finds evidence in the literature. Take a different tack to see how the presence of high-power distance is associated with low sustainability performances: Katz et al. (2001) argued that people in countries that have higher-power distance values tend to respect the authority, which could result in lower capacities for sustainable development in terms of social issues, economic prosperity, and environmental protection. This is consistent with Husted (2005) who later empirically investigated the relationship between power distance and social and institutional capacities for sustainability, and found that countries with low levels of power distance associated with higher social and institutional capacity for sustainability, so the characteristic of egalitarianism

seems to connect with the value of being sustainable. In particular, Lenssen et al. (2007) found that countries having higher tolerance of power distance are significantly negatively associated with organizations' social and environmental performances based on a cross-nation OLS regression analysis. This means that maybe social, economic and environmental initiatives are more likely to occur and be discussed even through the engagement of subordinates when power distance is low, it could also mean that high power distance leads to polarization and to the low engagement of staff in decision-making facets. Therefore, high power distance values are actually not helpful in building more inclusive and sustainable management. In the same year, Park et al. revealed that in countries with higher scores of power distance the social and environmental justice for people and organizations who have less power tend to be ignored, because people and organizations that have more power tend to exploit the benefits by the unequal distribution of power in the name of protection of the group benefits and the pursuit of high efficiency. Higher power distance is negatively associated with high environmental sustainability, due to the fact that in countries having a high tolerance of power distance, even if the actions of the authorities are considered illegal or toxic, they can hardly be challenged by low power or non-power people. All these studies demonstrated the strong evidence supporting the fact that high power distance is a core absent condition in our configurations one to three.

Moreover, the distribution of incomes and wages is more unequal in high power distance countries than it is in low power distance countries (Odobasa, 1997), and, while citizens of high power distance countries usually wait for strong actions taken by the government to solve problems, citizens of low power distance countries are more likely to cooperate with the decisions of the government, and this is especially visible in policy interventions such as the ones on environmental protection, an achievement that asks for the help of every person and the strong collaboration between the authorities and the civilians (Hofstede et al., 2005). So, apparently, the SDGs in countries with high power distance tend to be worse than the countries with low power distance.

Talking about the policies decided by the governments, that are one of the strongest ways to change the settings and the conditions of a country, since power distance has a strong influence on how different countries treat the dichotomy of authority-citizen (Hofstede et al.,1984), in countries with low power distance the opinion of the citizens is usually able to influence the decisions of the government, while in countries with high power distance the opinions of the citizens are often not taken into consideration: *"Politics is more discussable in lower power*

distance countries" (Hofstede et al.,1984). This means that in countries with high PDI, the decisions of the ones ruling the country, which sometimes correspond to a single person or to a restricted number of people, are able to change the whole future of the nation on certain topics, be it environmental protection or economic regulations.

Moreover, as Hofstede et al. (1984) noted, citizens of high power distance parliamentary countries have a tendency to polarize their votes between the left and the right wing parties, with only a minority of electors voting for center parties. On the contrary, lower-power distance countries' electors tend to prefer center parties instead of purely left or right parties. This means that, with the polarization of the consent on the left or on the right wing in high-power distance countries, the most important decisions are taken by one party, with feeble to no representation of the ideas of the people voting for the opposition or center parties.

This, again, means that strong policy interventions and therefore their impact on the 17 SDGs might be very different over time in the same country, not because the mentality of the people or their cultural characteristics changed, but because the party in charge of the government changed. Moreover, Hofstede et al. (1984) also noted that in countries with high power distance it is very frequent to see revolutions rapidly changing the political settings of the country: *"Larger power distances were associated with more revolutionary fervour"*. This, again, means that a country might change its intervention policies in a short period of time, just because the government has fallen.

This proves that cultural dimensions, again, play an important role in the political system, and, therefore, in the decisions concerning the attainment of the SDGs.

In configuration two to four, long-term orientation appears as a core present condition that is linked with high sustainability performances. This reveals that in countries achieving higher sustainability performances, the long-term orientation scores tend to be higher than in those countries which still have a long way to go to achieve the SDGs. Hofstede & Minkov (2010) confirmed that long-term orientation and its cultural characteristics can influence societies' attitudes and engagement in the protection of the natural environment. In terms of economic prosperity, since people and organizations with this cultural value rely on their thrift, hard work and perseverance, and they struggle to escape from poverty and try their best to cope with the social issues, this brings them to a higher level of sustainability performances, this aspect is

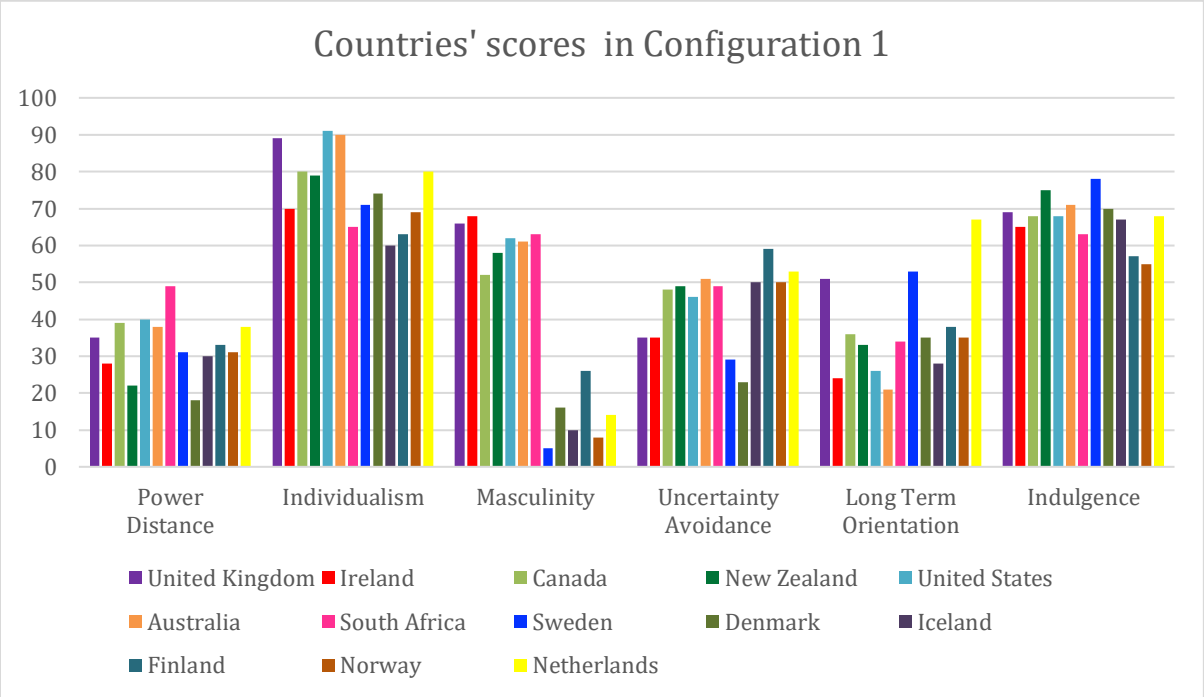
supported by a real-world case: the high score in long-term orientation was significantly linked with the economic miracle of East Asian countries (Hofstede & Minkov, 2010)

This said, we can see that in all the configurations are present groups of countries with common cultures because of historical happenings (e.g., the rich and Commonwealth countries were all ruled by the same government for a long time, and therefore still have many common values) or because of geographical proximity (e.g., the Nordic states or the Baltic states), that usually mean some shared cultural characteristics.

3.3.2 INTERPRETATION OF THE CONFIGURAITON ONE AND TWO

We found that configurations one and two are interchangeable since they both have power distance as their core absent condition, individualism as core present condition, and uncertainty avoidance as a peripheral absent condition. To this end, a high sustainability performance society could differ in the other 3 cultural dimensions: high in long-term orientation and with a more feminine culture value, or being an indulgent society but regardless of masculinity.

Figure 2 Countries' scores in Configuration one

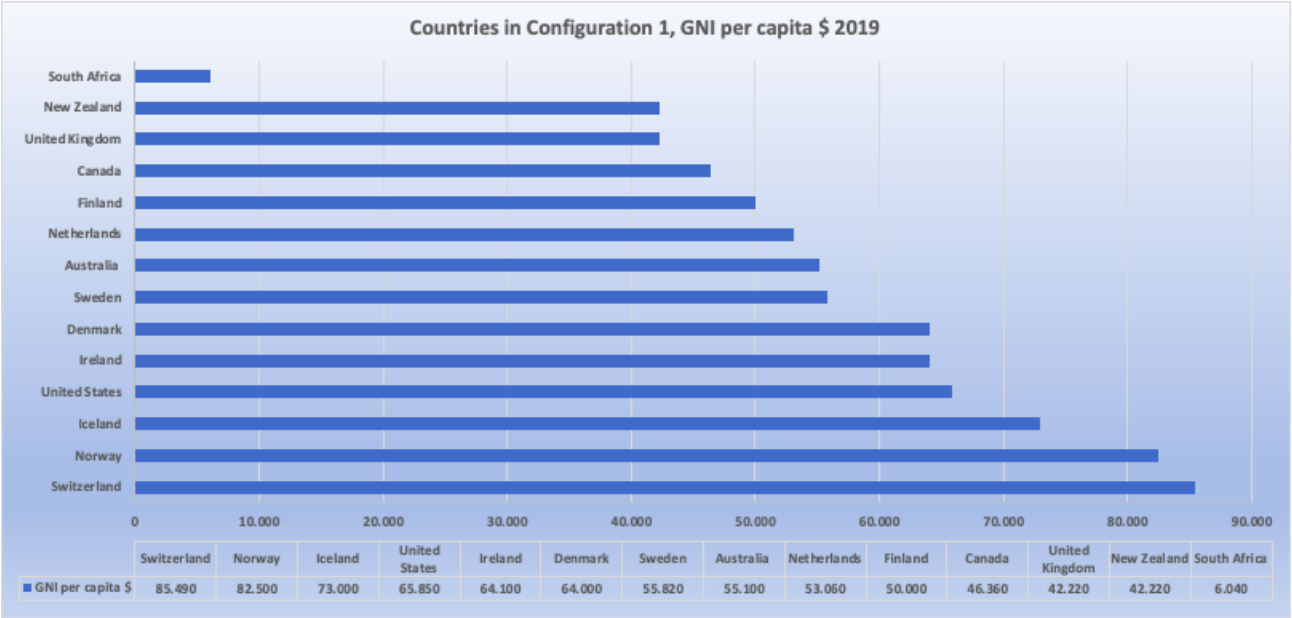


Source: Our own creation based on the collected data

The first configuration (raw coverage=.347, unique coverage=.195) shows countries with a medium to low uncertainty avoidance tendency and at the same time with relatively high scores in indulgence (see Figure 2). As said, these countries' power distance values also score medium to low, while individualistic values are high. The masculinity and long-term orientation levels do not influence the way these kinds of societies deal with the achievement of the SDGs, so either if the values are high or low, it does not have any impact (this is especially visible with the masculinity values). These countries are mainly Anglo-Saxon and rich Commonwealth members (UK, USA, Canada, Ireland, South Africa, Australia, New Zealand), Nordic countries (Sweden, Denmark, Iceland, Finland, Norway), and two Western European countries (Netherlands and Switzerland). These countries maintain a relaxed attitude towards unknown situations, they are adaptable to social changes, they appear to have a more positive perspective towards life, since low uncertainty avoidance and relative high indulgence somehow connect with a relaxed and positive attitude, hence improving their social wellbeing. Analyzing the countries in configuration one, we can see a strong influence left on these countries by the colonialism, that gave them a similar set of values and left them with common cultural characteristics: we can trace down both the United Kingdom and the Netherlands dominations remaining in the behaviours of people from these countries, even if many years have passed from their independence from this system (Acemoglu et al., 2001; Chen et al., 2017).

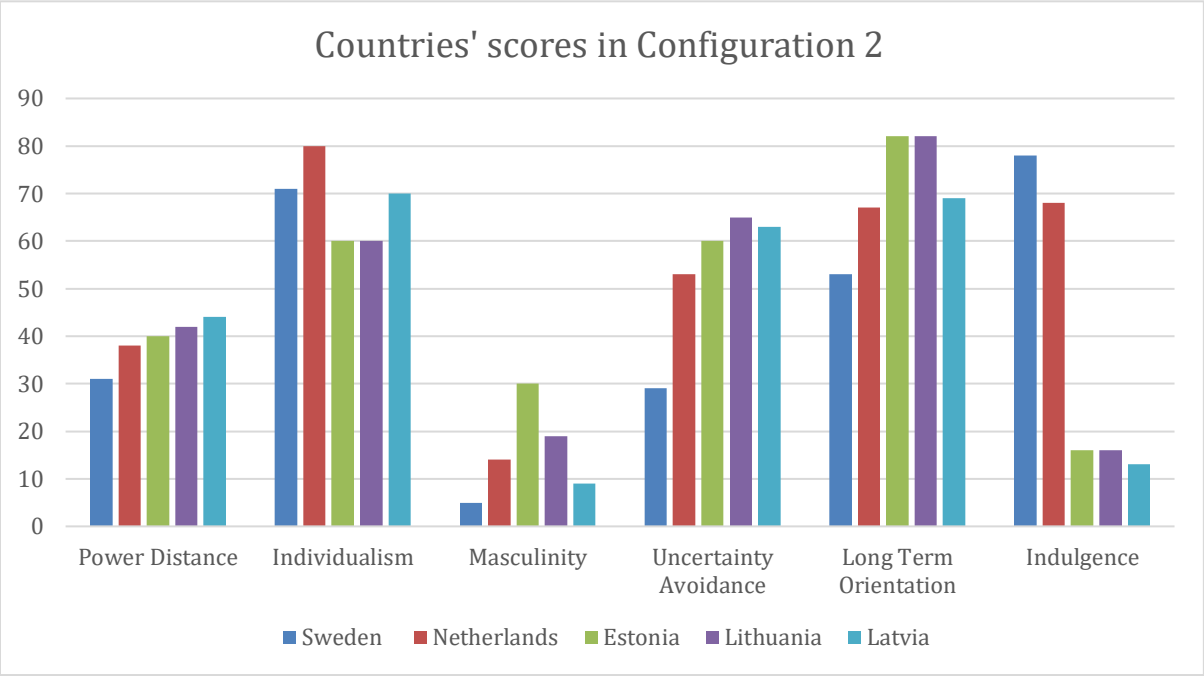
Another common feature of these countries is that they are almost all rich countries, as Figure three shows. Since the economic prosperity of a country accounts for 35% of its SGDs scores, countries with high incomes will naturally be present in the list of the ones with good sustainability performances. But we should note that wealthy countries did not enter automatically in our successful sustainability performances list of countries. Some of the countries with the highest GNI (for example Liechtenstein, Qatar, Singapore, etc.) or with the highest GDP (for example, Brunei, United Arab Emirates, San Marino, etc.) in the world were not present in the countries with successful sustainability performances. This indicates the importance of the other factors comprehended in the SDGs, such as social wellbeing and environmental protection.

Figure 3 GNI per capita 2019 (World Bank)



Source: Our own creation based on the collected data

Figure 4 Countries' scores in Configuration 2



Source: Our own creation based on the collected data

The countries belonging to Configuration two (raw coverage=.177, unique coverage=.045) share with the ones in Configuration one medium to low power distance values and high

individualistic values. However, differently from the countries in Configuration one, they have long-term orientation driven societies, which means that they are very pragmatic, they believe that success is achieved through thriftiness and perseverance and they show high adaptability towards social changes. Societies scoring high in long-term orientation's struggles to escape from poverty and accumulate wealth connect them with the economic prosperity of SDGs, but this kind of countries are not necessarily high competition-driven: they are good at balancing work and life, they stress the importance of the quality of life, and people are allowed to engage more in proposal and discussion about the initiatives for solving the social and environmental issues, and this is namely a feminine society. In fact, in this configuration, we see that high masculinity is a core absent condition. Uncertainty avoidance also scores relatively low, and is a peripheral condition, while indulgence is not important for the sake of the good sustainability performances of these countries. As we can see from Figure 4, the countries falling in configuration two are the three Baltic countries (Latvia, Lithuania, and Estonia) and two north European countries (Netherlands, Sweden). They are not only in geographical proximity, but also share a common history. We find, again, the traces and imprints left by colonialism, since Estonia and Latvia have once been conquered and ruled by Sweden. The cultural impact from Sweden is still there, this also helps explain why these countries appear in the same configuration two, which is a long-term orientation and more femininity driven society associated with higher sustainability performances (Manzhynski et al., 2016).

Since the values of masculinity and long-term orientation in Configuration one and indulgence in Configuration two are "don't care" values in those situations, which means that they can have high or low scores without changing the results of the combination of the other factors, we see that we actually have two countries overlapping and being present in both configurations one and two. These countries are Sweden and the Netherlands, whose values are represented in Table 14. Since the values of masculinity, long-term orientation and indulgence are "don't care" values, they might take the values of the other column. So, actually, we can say that Sweden and Netherlands' configuration might also be seen like this, with the "don't care" values expressed by the values they really have.

Table 14 Configuration of Netherlands and Sweden adjusted with “Don’t care” conditions

Power Distance (PDI)	⊗
Individualism (IDV)	●
Masculinity (MAS)	⊗
Uncertainty Advoidance (UAI)	⊗
Long-term Orientation (LTO)	●
Indulgence (IVR)	●

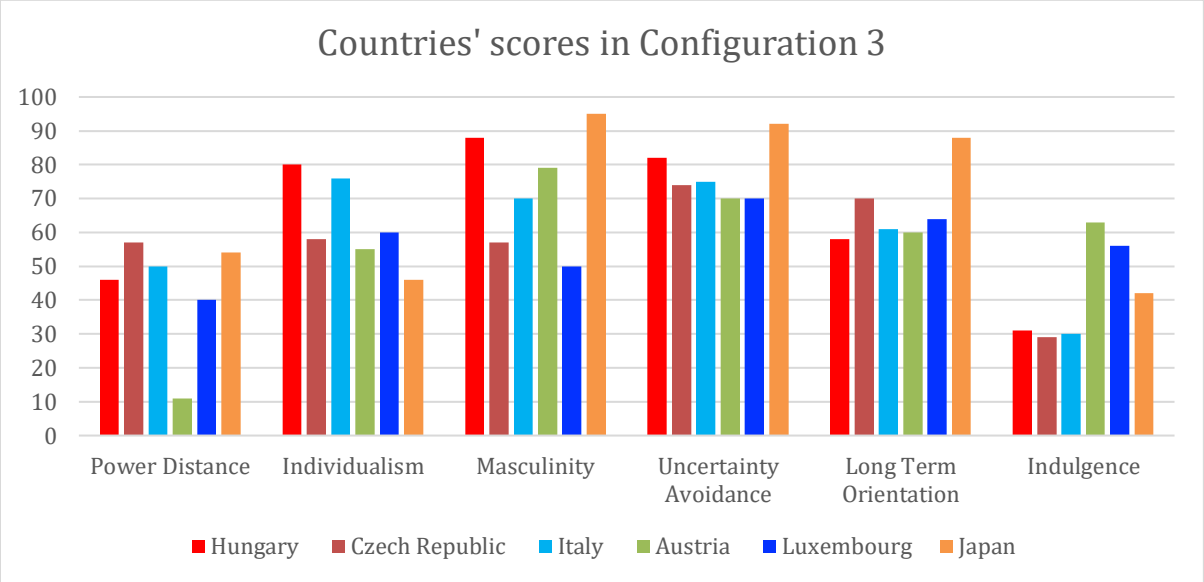
Source: Our own creation based on the results generated by the fsQCA software

3.3.3 INTERPRETATION OF CONFIGURATION THREE

Configuration three (raw coverage=.206, unique coverage=.092) represents a model of culture in which competition, high uncertainty avoidance, and a long-term orientation approach drive the society. Masculinity as a peripheral present condition is an important characteristic of these countries, the competition is present from school to corporate, especially for Japan, whose economy and management are driven by its culture of competition (Manzhynski et al., 2016). Also, the so-called “East Asian economic miracle” is well explained by the long-term orientation values shown by Japan (here in configuration three, long term orientation is a core

present condition), which is characterized by thriftiness and perseverance (Hofstede & Minkov, 2010). Talking about the environmental protection of the SDGs, long-term oriented individuals tend to protect the natural environment, and this accounts for many benefits achieved in this part of the SDGs (Parboteeah et al., 2012). In fact, such a situation is visible in the Baltic region countries Estonia, Latvia, and Sweden, and also in central European countries, such as Austria, Hungary, Czech Republic and Luxembourg, with high levels of future orientation, and a concern for the natural environment (see figure 5).

Figure 5 Countries' scores in Configuration 3



Source: Our own creation based on the collected data

However, in the high sustainability performances societies of Configuration three, to maintain high competitive positions, people and organizations try to control everything they can and to avoid uncertain and ambiguous situations. This tendency leads to comprehensive and strict formalities, rules, and norms to be followed in order to ensure stability. Parboteeah et al. (2012) suggested that high uncertainty avoidance is a plausible factor for supporting sustainable development in terms of economic prosperity. Lastly, similarly to the countries in configuration two, the ones in configuration three show high levels of individualism, low levels of power distance and no importance for the levels of indulgence. This means that the only differences in configuration two and three, as shown Table 15, are the values of masculinity and uncertainty avoidance values: the combination of high masculinity as a core absent condition and high

uncertainty avoidance as a peripheral absent condition equates to the combination of high masculinity as a peripheral condition and high uncertainty avoidance as a core condition, both situations could link with higher levels of sustainability performances: these cultural dimensions don't compete with each other, instead, they complement each other to reach the same outcome of interests.

Table 15 Comparison between Configurations two and three

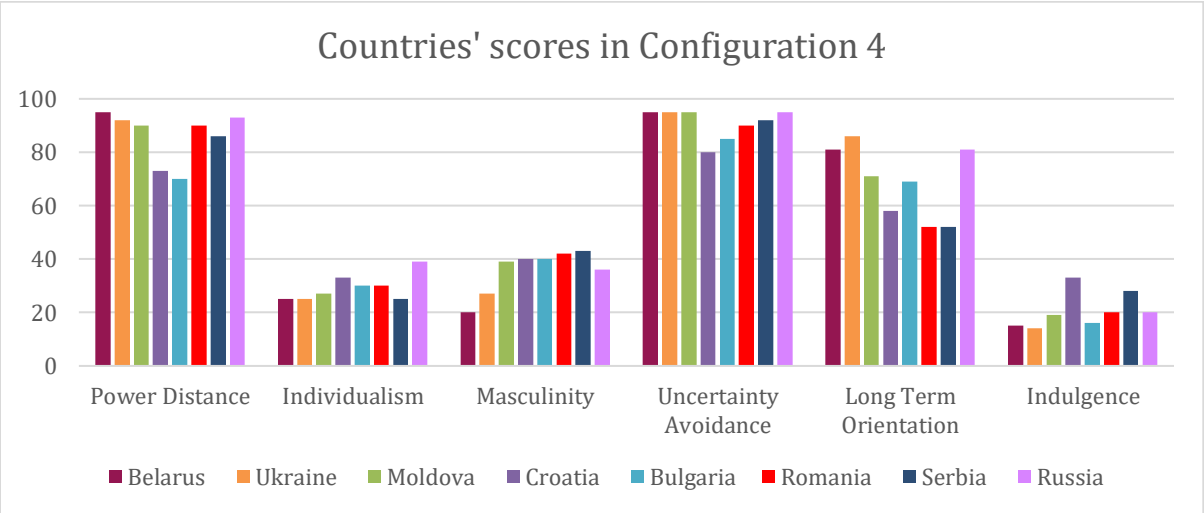
Configuration	2	3
Power Distance (PDI)	⊗	⊗
Individualism (IDV)	●	●
Masculinity (MAS)	⊗	•
Uncertainty Advoidance (UAI)	⊗	●
Long-term Orientation (LTO)	●	●
Indulgence (IVR)		

Source: Our own creation based on the results generated by the fsQCA software

3.3.4 INTERPRETATION OF CONFIGURATION FOUR

Finally, configuration four (raw coverage=.227, unique coverage=.160) offers a completely different situation if compared to the previous three configurations. In this configuration, in fact, high-power distance (as a peripheral present condition) is an important characteristic, while individualism is absent, meaning that these societies tend to be collectivistic, and these are the only collectivistic countries appearing in our result for high sustainability performances. Configuration three countries, on the contrary, appear to be more individualistic, more competitive and with low tolerance of the unequal distribution of power (see figure 10). However, similarly to the ones in configuration three, countries in configuration four show high levels of uncertainty avoidance and long-term orientation as core conditions to explain their good sustainability performances. Further looking into the fourth configuration, we found out that masculinity is a core absent condition, which is similar to configuration 2, meaning that these are all femininity driven societies, which means that they emphasize the quality of life, care for others and a more inclusive view towards all (Hofstede et al., 2005). This is, of course, very important in terms of the social wellbeing aspect of sustainable development. Finally, configuration 4 countries have low levels of indulgence, which means that these are medium-high restrained societies, that the inhabitants control their desires and feel indulging themselves as something wrong, moreover they might have an attitude towards cynicism and pessimism (Hofstede et al., 1984). All the countries (see Figure 6) in configuration four are the former Soviet republics and Communist Bloc states (Russia, Ukraine, Belarus, Moldova, Croatia, Serbia, Romania and Bulgaria).

Figure 6 Countries' scores in Configuration 4



Source: Our own creation based on the collected data

The last configuration underlines the fact that, although a lot of research found a significant correlation linking low power distance and high individualism with high sustainability performances, as we found for example in configurations one, two and three, the nations in configuration four with a presence of high power distance and the absence of an individualistic culture are still associated with high sustainability performances. This happens because no single cultural dimension works alone to impact a society, and in fact, fsQCA offers a systematic view to interpret the causal condition of the cultural dimensions linked with higher sustainability performances, giving us a new, comprehensive view.

CONCLUSION

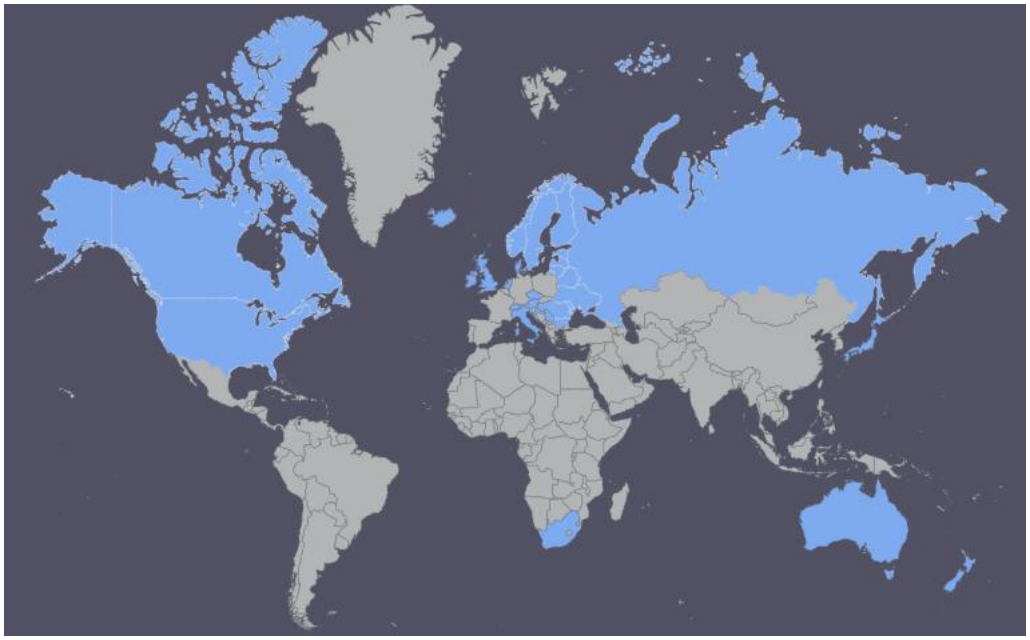
This research has been the first step to explore the complex combinations of the Hofstede's six cultural dimensions behind a good sustainability performance outcome in a cross-cultural context. Our research aims at examining the relationship between Hofstede's cultural dimensions and sustainable development goals (SDGs), thus trying to understand how different combinations of cultural dimensions may or may not support sustainable development. While sustainability research has been dominated by statistical linear models, the cross-culture research has been dominated by a trait approach, trying to understand how a sustainable development can be improved, but only examining one cultural dimension at a time. Cultural dimensions show complex and highly interrelated patterns within a nation, some empirical research appeared inconsistent in the findings based on the regression models regarding the relationship between the six cultural dimensions and high levels of sustainability performances. All this calls for a more systematic view, which is not focused on the stand-alone effects of a single cultural dimension but is obtained by investigating the combination of all the cultural dimensions which are linked with a sustainability performance. Therefore, we adopted a set-theoretic configurational approach to explore which kinds of configurations of cultural dimensions are necessary and/or sufficient for higher levels of sustainability performances in a cross-national context.

Our research offered meaningful insights into the relationship between cultural dimensions and high-level sustainability performances, going beyond the conventional statistical context. It provided us with four different combinations of the cultural dimensions which are associated with a similarly high sustainability performance from not highly developed countries (former Soviet and Communist Bloc states) to highly developed countries (Commonwealth members, Nordic countries). Thus, our research makes a contribution to the cross-culture sustainability development literature by deepening the investigation on the relationship between cultural dimensions and high sustainability performances by using a more inclusive approach (a set-theoretic configurational analysis).

Of the 82 countries that composed our research group, only 31 countries resulted in having high sustainability performances. These countries followed four different configurations, made up by diverse combinations of Hofstede's six cultural dimensions. The majority of these countries are set in Europe, and, on a broader view, they are all in the Northern Hemisphere, apart from Australia, New Zealand and South Africa, as Figure seven shows.

The geographical proximity, as well as the common history these countries shared (especially Colonialism for configuration one and two and the Sovietic Bloc for configuration four, as explained in our discussion) certainly left a grand imprint on these countries' cultural values, still visible today. Therefore, it is not surprising that the Baltic countries, for example, share common cultural values and habits.

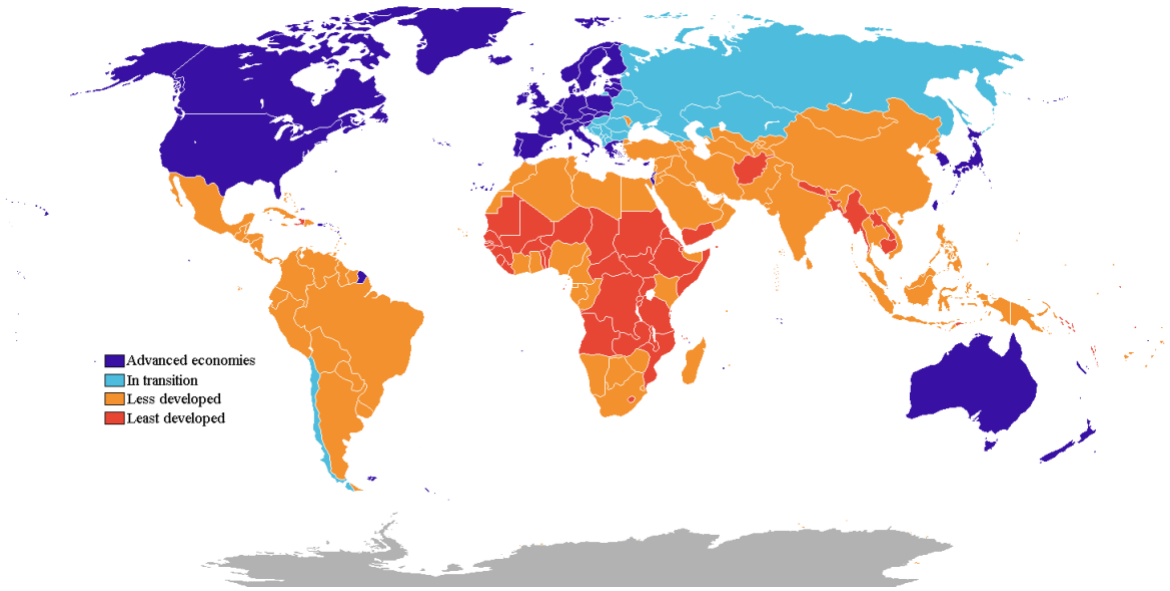
Figure 7 Countries appearing in our four configurations



Source: Our own creation based on the collected data

Also, the majority of the countries are developed countries, and only a few are developing countries (see Figure 8). This, of course, reflects the fact that economic prosperity is an important part of a sustainability performance, so wealthy countries are of course favoured on this side. However, as our research displays, not so rich countries also show very high sustainability performances. This, again, demonstrates the importance of the combination of the different cultural factors existing in every society, which makes a difference in sustainability performances.

Figure 8 Worldwide economic development classification.



Source::Developed and developing countries (Wikimedia Commons)

Also, our research demonstrates that even countries that have high power distance and low individualism scores could link with similarly high levels of sustainability performances by combining other cultural dimensions, such as low scores in masculinity and high scores of uncertainty avoidance and long-term orientation. This configuration well explains why previous research results have shown inconsistency about the relationship between cultural dimensions associated with high sustainability performances.

According to our findings, configuration one (raw coverage=0.35) is the most diffused, probably because, since it presents two "don't care" conditions, it is the most flexible and easy to reach combination. The second most diffused configuration is number four (raw coverage=0.227), showing, once again, that countries with high power distance and low individualism can have high sustainability performances too. All in all, the most frequent core conditions are the combination of low power distance and high individualism (present in the 75,8% of our countries) and high long-term orientation (57,8% of the countries show this core condition).

Since these are the most important factors affecting the good results of a sustainability performance, governments and policymakers need to consider them and their influence when working to reach the 17 Sustainable Development Goals.

Our findings can be used by policymakers in two ways: as a direct means to improve their policies towards sustainable development and as an indicator on how to best use the cultural characteristics of their societies in order to make these policies work better.

First of all, the configurations we summoned explain the elements of successful sustainable development cases: therefore, the governments can analyze the actual situation of their societies and enhance the cultural dimensions that can lead them to have a combination of factors corresponding to one of the configurations we obtained. We know, of course, that changing the cultural dimensions of a whole country is very difficult, especially because culture changes very slowly, and it involves many consequential adjustments. Policymakers can, therefore, start from the cultural dimensions more directly imputable to them: for example, while it is very difficult to intervene on the individualistic attitude of a country without radical changes in all the aspects of the citizen's life, and without, as history shows, an act of force, it will be easier to intervene on the power distance index. This is because the power distribution depends, mainly, on the people and institutions holding the power. Since we demonstrated that a more equal distribution of power not only has many benefits on the whole society but is also a strong factor of good sustainability performances (it is present in the 75,8% of our "good" countries), a shift towards it is definitely a good idea, at least for high individualistic countries.

Moreover, since changing the cultural aspects of a country is so difficult, policymakers can start making small changes in order to build a greater picture. For example, implementing the awareness of the population towards what is considered a sustainable future, using the media, teaching it at school and proposing campaigns of small gestures that everybody can do daily in order to make the place and community they live an example of sustainable living.

Another possible method is cooperating with the companies and industries of the territory, implementing the funds for sustainable projects, and giving incentives to companies with good results on the sustainable aspect (not only on the environmental protection side but also on the treatment of employees, the welfare level inside the company, attention to the quality of the life of the workers, etc.). In this way, the government is not left alone to work towards a better future, but it can count on the help of a network of companies, organizations and citizens all joining forces towards a better future for everybody. Education is a key aspect to be taken into consideration in order to change the future of a country, therefore concentrating not only on environmental respect but also on civic education, in order to gain a more equal and just society, is fundamental and necessary. Also, countries should concentrate on the aspects that can

improve the daily life of the citizens, with economic incentives to help realize functional projects and reduce inequalities.

Secondly, our findings can be used by the countries to better know themselves and act consequently: cultural dimensions are still little considered when it comes to calculating the efficacy of policy interventions, but they are a very relevant factor for the success of good sustainability policies. For example, the policies designed by the countries in configuration four, that have collectivistic societies with high levels of uncertainty avoidance and long-term orientation, will surely not work for the citizens of the countries in configuration two, because they have high levels of individualism and low levels of uncertainty avoidance. Each country, therefore, needs to develop and implement methods appropriate to the cultural characteristics of its population.

Also, knowing which values are more important for the population of a country and better understanding which ideals lead their behaviours, can help policymakers to better target the policy purposes and, most of all, attract the collaboration of the citizens, by touching points that are important for them.

The configurations discussed above offer an important implication for sustainability management in a cross-cultural context and point out several possible directions for future research based on our research limitations. The first path for future research could add other rational causal conditions such as economic factors to Hofstede's cultural dimensions to explore their relationship for the sake of sustainable development. Our research concentrated on the combinations of cultural dimensions, but sustainable development is also obtained through other important factors, as we said, such as the economic spectrum and policy interventions. The second direction for future research can concentrate on the fact that the fsQCA method is flexible in the adoption of the calibration threshold and the interpretation of the configurations, it suggests a direction of adopting various thresholds to facilitate the understanding of cultural dimensions associated with the sustainability performance. Finally, sustainable development includes three main aspects: social wellbeing, environmental protection and economic prosperity, so future research can concentrate singularly on each of these dimensions, to better understand their relationships with the cultural dimensions. Our research focuses on the three dimensions together at a time by adopting the SDGs, whose advantage is the width, but depth could be reached by concentrating on a single dimension of sustainability (social dimension, environmental dimension or economic dimension).

APPENDIX

Dataset for fsQCA: Hofstede's six cultural dimensions values (PDI, IDV, MAS, UAI, LTO, IVR) and Sustainable Development Goals (SDGs).

Country	PDI	IDV	MAS	UAI	LTO	IVR	SDG
Albania	90	20	80	70	61	15	70.82
Algeria	80	35	35	70	26	32	72.27
Angola	83	18	20	60	15	83	52.59
Argentina	49	46	56	86	20	62	73.17
Armeinia	85	22	50	88	61	25	69.86
Australia	38	90	61	51	21	71	74.87
Austria	11	55	79	70	60	63	80.7
Arzebaijan	85	22	50	88	61	22	72.61
Bangladesh	80	20	55	60	47	20	63.51
Belarus	95	25	20	95	81	15	78.76
Belgium	65	75	54	94	82	57	79.96
Bolivia	78	10	42	87	25	46	69.27

Bosnia and Herzegovina	90	22	48	87	70	44	73.48
Brazil	69	38	49	76	44	59	72.67
Bulgaria	70	30	40	85	69	16	74.77
Canada	39	80	52	48	36	68	78.19
Cape Verde	75	20	15	40	12	83	67.18
Chile	63	23	28	86	31	68	77.42
China	80	20	66	30	87	24	73.89
Colombia	67	13	64	80	13	83	70.91
Croatia	73	33	40	80	58	33	78.4
Czech Republic	57	58	57	74	70	29	80.58
Denmark	18	74	16	23	35	70	84.56
Dominican Republic	65	30	65	45	13	54	70.17
Egypt	70	25	45	80	7	4	68.79
El Salvador	66	19	40	94	20	89	69.62

Estonia	40	60	30	60	82	16	80.06
Finland	33	63	26	59	38	57	83.77
France	68	71	43	86	63	48	83.77
Georgia	65	41	55	85	38	32	71.88
Germany	35	67	66	65	83	40	80.77
Ghana	80	15	40	65	4	72	65.37
Greece	60	35	57	100	45	50	74.33
Hungary	46	80	88	82	58	31	77.34
Iceland	30	60	10	50	28	67	77.52
India	77	48	56	40	51	26	61.92
Indonesia	78	14	46	48	62	38	65.3
Ireland	28	70	68	35	24	65	79.38
Italy	50	76	70	75	61	30	77.01
Japan	54	46	95	92	88	42	79.17
Jordan	70	30	45	65	16	43	68.05

Kazakhstan	88	20	50	88	85	22	71.06
Latvia	44	70	9	63	69	13	77.73
Lebanon	75	40	65	50	14	25	66.68
Lithuania	42	60	19	65	82	16	74.95
Luxembourg	40	60	50	70	64	56	74.31
Malaysia	100	26	50	36	41	57	71.76
Malta	56	59	47	96	47	66	75.97
Mexico	81	30	69	82	24	97	70.44
Moldova	90	27	39	95	71	19	74.44
Montenegro	88	24	48	90	75	20	70.91
Morocco	70	46	53	68	14	25	71.29
Netherlands	38	80	14	53	67	68	80.37
New Zealand	22	79	58	49	33	75	79.2
Nigeria	80	30	60	55	13	84	49.28
Norway	31	69	8	50	35	55	80.76

Paraguay	70	12	40	85	20	56	67.71
Peru	44	16	42	87	25	46	71.75
Philippines	94	32	64	44	27	42	65.5
Poland	68	60	64	93	38	29	78.1
Portugal	63	27	31	99	28	33	77.65
Romania	90	30	42	90	52	20	74.78
Russia	93	39	36	95	81	20	71.92
Saudi Arabia	95	25	60	80	36	52	65.85
Serbia	86	25	43	92	52	28	75.23
Slovakia	100	52	100	51	77	28	77.51
Slovenia	71	27	19	88	49	48	79.8
South Africa	49	65	63	49	34	63	63.41
South Korea	60	18	39	85	100	29	78.34
Spain	57	51	42	86	48	44	78.11
Sweden	31	71	5	29	53	78	84.72

Switzerland	34	68	70	58	74	66	79.35
Tanzania	70	25	40	50	34	38	56.64
Thailand	64	20	34	64	32	45	74.54
Trinidad and Tobago	47	16	58	55	13	80	65.76
Turkey	66	37	45	85	46	49	70.3
Ukraine	92	25	27	95	86	14	74.24
United Kingdom	35	89	66	35	51	69	79.79
United States	40	91	62	46	26	68	76.43
Uruguay	61	36	38	98	26	53	74.28
Vietnam	70	20	40	30	57	35	73.8
Zambia	60	35	40	50	30	42	52.67

Sources: hofstede-insight.com and sdgs.un.org

GNI per capita $ (World bank,2019)

Countries	GNI per capita $
Switzerland	85.490
Norway	82.500
Iceland	73.000
United States	65.850
Ireland	64.100
Denmark	64.000
Sweden	55.820
Australia	55.100
Netherlands	53.060
Finland	50.000
Canada	46.360
United Kingdom	42.220
New Zealand	42.220
South Africa	6.040

Sources: World Bank

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