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The relationship of cultural and non-cultural characteristics of countries with the sharing economy size

Bachelor thesis

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Abstract

Within the thesis, the concept of sharing economy is described and the relationship of cultural characteristics among different countries with its size and adoption is examined. The main aim is to understand whether cultural characteristics are significant at explaining the rate of adoption of sharing economy. The relationship between sharing economy size and non-cultural characteristics is assessed as well. This is done with the use of regression analysis.

Keywords:	Sharing Economy, Digital Platforms, Hofstede, Cultural Dimensions, Internet Penetration, Economic Freedom
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Abstrakt

V této práci je popsán pojem sdílení ekonomiky a je zkoumán vztah kulturních charakteristik mezi různými zeměmi s jejich velikostí a adopcí. Hlavním cílem je pochopit, zda jsou kulturní charakteristiky významné pro vysvětlení míry přijetí ekonomiky sdílení. Hodnotí se také vztah mezi sdílenou velikostí ekonomiky a nekulturními charakteristikami. To se provádí pomocí regresní analýzy.

Klíčová slova:	Sdílena Ekonomika, Digitální Platformy, Hofstede, Kulturní Dimenze, Internetový Průnik, Ekonomická Svoboda
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Počet znaků:	86 841

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

2. The author hereby declares that all the sources and literature used have been properly cited.

3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague   31.07.2019   Ilya Filonau

Influence of Cultural Difference on adoption of Sharing Economy

Research question and motivation

In my Bachelor's Thesis, I would like to investigate how cultural characteristics and other attributes, such as GDP per capita, Human Development Index (HDI), Global Innovation Index (GII), Internet Penetration and others, of a given population influence the adoption of sharing economy in a country.

Research question:

- Does cultural background and other relevant characteristics of a population influence the pace of adoption of sharing economy in a country?

Hypotheses:

1. There is a correlation between adoption of sharing economy practices and cultural characteristics of a population.
2. Cultural attributes are more significant than non-cultural ones in the case of adoption of sharing economy.
3. The Individualism Index is the most significant variable that influences adoption of sharing economy in a country.
4. Other non-cultural attributes, such as GDP per capita, are also significant in relation to the adoption of sharing economy in a country.

The end goal of this research would be to create a profiling of countries based on pace and likelihood of adoption of sharing economy. Each of the studied countries will have a rating from 0 to 100, which will indicate how quickly and how likely the country is to adopt sharing economy practices (with 100 being the fastest scenario with the highest likelihood). It will be possible to see which countries will be trendsetters, which ones will be followers and which ones will be late adopters of sharing economy. Graphing the profiled countries will also be an option with, for example, X-axis representing one of the cultural characteristics, such as individualistic cultures on one side and collectivist

cultures on the other one, and Y-axis having the results of the research on the pace and likelihood of adoption of sharing economy.

Contribution

In April 2016, European Commission has published a report concluding that 'their findings strengthen their point of view that the collaborative economy has now become a deep socio-economic trend that is fundamentally changing the way we live our lives.' However, I have not seen anything that has investigated the relationship between its adoption and cross-cultural characteristics.

In one paper, there was a one page part on "Success and adoption rate of peer-to-peer business models is dependent on the culture and features of local markets". It was stated that culture plays a crucial role, because it influences the extent to which the business models are accepted by the community, and that more positive disposition towards online activities also has a positive effect on adoption. This confirms my hypothesis regarding the fact that there is a correlation between cultural characteristics and sharing economy's adoption. I have also decided to potentially include Internet Penetration into the model due to the second point in the article.

I believe that my contribution of tying sharing economy adoption to cultural background and other relevant characteristics will be valuable in the global community. It will also be very useful for start-ups or already existing businesses in the sharing economy industry as it will help them to decide where to launch or to which countries to expand to in order to gain the most.

Methodology

I will take the data from the reports on sharing economy and combine it with the findings on cultural characteristics and other related statistics.

It will be possible to construct various models with the dependant variable being sharing economy preferences and/or size of sharing economy market. By preferences, I mean variables like awareness, participation, willingness and whether people are willing to participate by making use of the assets and services offered or supplying these. The attributes, so the explanatory variables in the model, can include cultural characteristics

of the populations, but also other relevant parameters such as GDP per capita, Human Development Index (HDI), Global Innovation Index (GII), Internet Penetration etc.

I will use reports by PwC UK, TNS Political & Social and Nielsen on choices and preferences of people in Europe, and data on the size of sharing economy markets collected by PwC and Deloitte. Hofstede's model will be used for cultural characteristics, and non-cultural characteristics are going to be taken from officials reports and investigations that I have already found and cited in the bibliography.

In Hofstede's Cultural Dimensions Model, the relevant dimensions are:

    a. Power Distance, which shows how people deal with inequalities between their status and status of others. I think that sharing economy activities put the population in a 'sharing' state of mind and therefore lead to fairer distribution of power.

    b. Individualism versus Collectivism, which explains that some prefer to support others more and some focus more on their own lives. I believe that collectivism should imply faster and more likely adoption of sharing economy.

    c. Uncertainty Avoidance, which talks about some people feeling more stressed in new situations that others. Sharing economy will bring some uncertainty into people's lives, because it is new. I think that countries with lower uncertainty avoidance will have faster and more likely adoption.

    d. Long-Term Orientation versus Short-Term Orientation, which shows that some people think and focus more on the future and vice versa. I think that more long-term oriented countries will have faster and more likely adoption, because sharing can greatly transform societies in the long term.

Outline
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2. Sharing Economy
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1. Introduction

Why are sharing economy platforms used more in certain countries than in others? Is there any correlation between the cultural characteristics of the society and the use of collaborative platforms? It has always been interesting to me why the sharing economy is more popular in certain countries than others. However, no research has examined this relationship in much detail. Therefore, this thesis aims to be the first one to analyze this relationship and understand whether culture actually has a correlation with the adoption of the sharing economy or not.

The recent development of sharing economy platforms has attracted a lot of attention and spurred a lot of new research. Work of Timbro, a Swedish company that has created the first Sharing Economy Index of 213 countries, and the European Commission, which has carried out a survey about the use of collaborative platforms in the European Union, set the foundation for this thesis.

The connection between culture and sharing economy has been talked about in a few works but has not been investigated thoroughly. Dervojeda et al. (2013) have stated that the culture and features of local markets play a major role in the adoption of peer-to-peer business models. However, they have not presented any concrete findings. In other works, sharing economy's relationship with other factors has been looked at. Bergh et al. (2018) have run a regression in the Timbro Sharing Economy Index Report, which has shown that economic freedom, GDP per capita and Internet connectivity have a significant positive relationship with the usage of sharing economy services. Bergh & Funcke (2016) have also found that information and communications technologies have a positive effect on the sharing economy's adoption.

This thesis studies the relationship between the adoption of sharing economy in different countries and their cultural characteristics, which are represented by Hofstede's Cultural Dimensions. It will also analyze the relationship with non-cultural parameters that might have a correlation with the growth of sharing economy platforms. These include economic, social and political factors. Therefore, it will provide a thorough analysis of

what can influence the use of sharing economy platforms with the data available, hoping for continuation of research in this area in the future, when more data will be at disposal.

The thesis begins with an introduction into the concept of sharing economy and an overview of already written findings in this area. The cultural and non-cultural characteristics and works around them are introduced as well. In the third part of the thesis, the dependent and independent variables are described in more detail. The limitations of the research are acknowledged too. In the fourth chapter, the three different models are introduced. Right after that, the results of the regressions are presented and interpreted. Lastly, the main findings of the thesis are summarized in the conclusion.

The regression results provide us with interesting findings. It has been found that two out four Hofstede Cultural Dimensions have a significant relationship with the use of sharing economy. The Individualism Index has a positive correlation and the Long-Term Orientation Index has a negative one. The results have also shown that non-cultural characteristics, such as Index of Economic Freedom, Internet Penetration, Global Innovation Index and Human Development Index, have a positive relationship with the sharing economy size.

As this thesis is the first paper that analyses the relationship between sharing economy usage and cultural characteristics of countries, its contribution to the global community will consist of the investigation of the relationship. It will also provide more clarity on the correlation between sharing economy and non-cultural factors. Lastly, it will be valuable for businesses and start-ups in the sharing economy sector, as they will better understand in which countries to launch, in order to achieve the biggest success.

The main aim of the thesis is to understand whether cultural characteristics are significant at explaining the rate of adoption of sharing economy. The relationship between sharing economy size and non-cultural characteristics is assessed as well. This is done with the use of regression analysis.

2. Literature review

2.1 Sharing Economy

Sharing economy can be defined as "the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services" (Hamari et al., 2015). Another name of this sector of the economy is "collaborative consumption". The idea of the sharing economy is very broad and can make a lot of parts of our everyday life easier. Therefore, there are many positive predictions regarding its future rapid expansion and growth all over the world, and it being incorporated into our everyday activities. These are based on a number of factors, such as its recent growth, the humanity's path to sustainability, technological progresses and more, which are going to be reviewed and analyzed in this thesis. In the future, "the sharing economy will inevitably become a major part of the global economy" (Yaraghi & Ravi, 2017).

The concept of sharing economy is very broad and new ways of sharing are being constantly introduced. PricewaterhouseCoopers (PwC) has identified the five most important sharing economy sectors:

- Peer-to-peer accommodation, which includes home sharing or renting, either when there is unused space or when the property is totally free.
- Peer-to-peer transportation, which is made up of sharing anything that has to do with transportation, such as vehicles, rides or parking spots.
- On-demand household services, which include people reaching out for on-demand help with household tasks, like cleaning, repair and delivering food.
- On-demand professional services, which consist of businesses reaching out for professional on-demand support in tasks, like accounting and administration.
- Collaborative finance, which includes both, people and businesses, conducting financial activities directly between each other without any middlemen, such as crowdfunding and peer-to-peer lending. (Vaughan et al., 2016)

Sharing, as an action done between two individuals or entities, is a well-known phenomenon and nothing new. However, what has changed recently is the development

of technology and growth of digital platforms, which have enabled the sharing economy to quickly expand by being efficient and scalable in matching the interested parties with the products they are interested in (May et. al., 2017). With the rise of digital platforms, sharing economy has been gaining popularity (Sutherland & Jarrahi, 2018). Another reason in its increased popularity is its rapid expansion. In PwC's 2016 report, it was estimated that the five key sharing economy sectors have "generated revenues of nearly €4bn and facilitated €28bn of transactions within Europe in 2015". PwC has even stated that the rate of sharing economy growth since 2013 has exceeded their expectations, and that it is estimated that just in 2015 the revenues of collaborative platforms in Europe have doubled. A total of 275 sharing economy platforms have been started until 2016 (Vaughan et al., 2016).

In 2014, PwC stated that global revenues from the five key sharing economy sectors accounted for approximately $15 billion, and that they could reach $335 billion by 2025 (PwC, 2014). In 2016, PwC has released another report that has estimated the same values for the five key sectors in Europe. The total value of transactions going through the five most important sectors of the sharing economy was reported to be €28 billion and it was predicted that that number would grow to €570 billion in 2025 (PwC, 2016). Both estimations predict an increase of more than 20 times, which is really impressive. However, at the same time there is not much literature about it, or research done explaining the reasons behind its quick growth.

Businesses in this sector of the economy, such as Uber with their service of ride sharing and Airbnb with their concept of home sharing, have been attracting a lot of attention as they have gained huge success and shown that this business model works. These two sharing economy platforms are very common examples of the sharing economy business model, with which others are being compared (Sutherland & Jarrahi, 2018). With the expansion, the concept is becoming more and more widespread as well. In 2017, PwC has conducted a survey regarding participating in the sharing economy on more than 4500 consumers in six countries: Austria, Belgium, Germany, the Netherlands, Switzerland and Turkey. They have found that 44% of the respondents have made use of sharing economy platforms in 2016 (Beutin, 2017).

It can be clearly seen that the sharing economy is growing and that it will become part of our everyday life. In 2016, PricewaterhouseCoopers has published a report about the presence and size of the sharing economy in Europe. They have found a trend of rapidly increasing participation in collaborative platforms by both, users and providers. Their conclusion was that 'their findings strengthen their point of view that the collaborative economy has now become a deep socio-economic trend that is fundamentally changing the way we live our lives' (Vaughan et al., 2016). In the future, sharing economy platforms will lead to new possibilities of social and economic interaction between its users and providers in the same state, as well as in different states across the European Union. PwC has also identified potentially arising problems in the regulatory framework surrounding the collaborative economy, as it differs across different member states (Vaughan et al., 2016). Therefore, a lot of legal work will have to be done, in order to decrease the amount of issues arising with the expansion of the sharing economy and facilitate its expansion. However, the topic of the relationship between its adoption in different countries and cross-cultural characteristics of these countries has not been investigated yet, which is the motivation for this thesis.

At the same time, there are studies that also believe that there is a connection between the cultural aspect of a country's population and sharing economy adoption. In a case study done by the European Commission in 2013, there has been stated that "success and adoption rate of peer-to-peer business models is dependent on the culture and features of local markets" (Dervojeda et al., 2013). The reason why culture plays such an important role is because it directly influences the acceptance of sharing economy business models by the community in the country. The case study also describes that, as collaborative economy platforms are to some extent unconventional, cultures that are more open minded to new options show better adoption and success rates. These kinds of differences are incorporated into Hofstede's Cultural Dimensions, which are part of the explanatory variables in the regression models in this thesis. The European Commission has also concluded that a general tendency towards online activities might positively influence the adoption of sharing economy activities in the country (Dervojeda et al., 2013). That is the reason why Internet Penetration has been included as one of the independent variables too. An analysis of already existing research surrounding the topic of sharing economy has found that 91% of the works reviewed have addressed digital technology as an element of the sharing economy (Sutherland & Jarrahi, 2018). This again supports the

decision to include Internet Penetration in the thesis, but also to include the Global Innovation Index, which includes digital infrastructure and technological outputs (GII, 2018).

The European Commission's case study has also used the expansion of collaborative economy in different countries, as examples of its findings. One of these examples is the USA. It has been stated that the USA is the first country, where peer-to-peer business platforms have emerged, due to the culture of its people. The growth and adoption of sharing economy activities has been rapid, because the society is less risk-averse and more comfortable with arranging things online, but also doing business with people they have never met. One of the reasons why the US growth of collaborative business use has outperformed that of Europe is also because people are more used to outsourcing different kinds of tasks, such as cleaning, but also administrative work, to others. (Dervojeda et al., 2013)

The article "The Sharing Economy and Digital Platforms: A Review and Research Agenda" by May, Königsson and Holmstrom has analyzed 435 publications about sharing economy and has concluded that significant amount of research has only been conducted in certain areas of the sharing economy, such as its business model and to some extent its applications and platforms. However, "the future of research in this area must bring together social, economic, and technological research in order to provide a more holistic understanding of the sharing economy" (May et al., 2017).

The goal of this thesis is to analyze the relationship of cultural characteristics with the adoption of sharing economy in different countries. The cultural characteristics are represented by four Hofstede's Cultural Dimensions. However, after reading through the already available literature on the sharing economy, non-cultural characteristics have been added to the explanatory variables, as a lot of papers have mentioned the relationship between them and the size of the sharing economy. The non-cultural variables that have been chosen are Heritage Foundation Index of Economic Freedom, GDP per capita PPP, Internet Penetration, Global Innovation Index and Human Development Index.

In order to analyze the relationship with the adoption of sharing economy, its size needs to be quantified in one way or another. After thorough research through the already done

works, two measures of the sharing economy size, that have a large enough number of countries in them, have been found: Timbro Sharing Economy Index (TSEI) and the results of the Flash Eurobarometer survey regarding sharing economy participation.

Timbro Sharing Economy Index is the first sharing economy index in the world that has been published in 2018. Using its own definition of sharing economy, Timbro has chosen 286 sharing economy services in 213 countries, which they have analyzed. The final score for each country represents the Timbro Sharing Economy Index.

In their report, Timbro has stated that the core ability of sharing economy is to match demand and supple, where there is excess capacity, and to connect strangers with each other, so that they can carry out an exchange. The problem in the past has been the limited scale of the matching, as it was limited to local communities. However, with the development of digital platforms, sharing economy has become a lot more scalable, therefore gaining the ability to include a lot more excess capacity and match a lot more interested parties. Digital platforms now have the ability to scale globally, therefore increasing efficiency and probability of the match of demand and supply (Gansky, 2010). The report also mentions that trust between strangers is needed, in order to settle the transaction, but this can also be eased with certain features of the digital infrastructure, such as quality reviews and the platform taking care of the payment (Bergh et al., 2018).

The second indicator of the sharing economy size is the Flash Eurobarometer survey, which has been initiated by the European Commission, due to the fact that sharing economy has grown quickly and developed significantly in Europe in the last years (TNS, 2018). This has been reported by PwC in reports, that have been described in the previous section, but it has also been noticed by the European Commission. In 2016, it has released a report regarding the use of collaborative platforms in Europe and has agreed that it will be releasing regular reports concerning the development of sharing economy in Europe (COM, 2016). Until now, two reports have been released – one in 2016 and another one in 2018. The total percentage of respondents that have ever used a sharing economy service is used as an indicator of the sharing economy size in this thesis.

2.2 Influence of cultural differences

In order to analyze the correlation of differences between cultures of countries and the adoption of sharing economy, Hofstede's Cultural Dimensions have been chosen. Geert Hofstede is a phycologist, which has given countries a number of indices, based on their different cultural characteristics.

No research has been found, where Hofstede's Cultural Dimensions have been used as explanatory variables of the sharing economy size. However, as they are great indicators of differences between nations and are presented in the form of an index of roughly 0 to 100, there are other works with them as independent variables. One of these is a thesis written on the effect of cultural differences on economic performance of human capital by Jitka Šenkýřová. She has used five Hofstede Cultural Dimensions, together with two other non-cultural independent variables. In the analysis, she has also acknowledged the limitation of a limited sample size due to the inclusion of Hofstede's measures. Her final sample size consisted of 63 countries. (Šenkýřová, 2012) A few other papers have also analyzed the relationship between cultural characteristics and trust on digital platforms, which enable the sharing economy. One of these was written by Cheolho Yoon and has explored the effect of national cultural characteristics, trust, perceived usefulness and perceived ease of use on consumer acceptance of e-commerce in China, using five Hofstede's Cultural Dimensions as moderators. It was found that the Uncertainty Avoidance Index and the Long-Term Orientation Index had a huge effect on the acceptance of e-commerce. Both of these had a moderate effect on the relationship between trust and the intention to use the platforms. (Yoon, 2009) Trust is one of the factors that could influence the use of collaborative platforms as well.

Four Hofstede's Cultural Dimensions, which have been included in the thesis are: the Power Distance Index, the Individualism Index, the Uncertainty Avoidance Index and the Long-Term Orientation Index.

The Power Distance Index represents the distribution of power in the society. A high value of the index means that there is a hierarchy in the society, which is accepted and not fought against (Hofstede et al., 2010). It has been found that wealthier countries score

lower on the Power Distance Index (Hofstede, 2001). Therefore, it is possible that the relationship between the Power Distance Index and the sharing economy size will be negative. This is due to the fact that citizens of richer countries have more money on average, therefore possibly driving more volume into sharing economy platforms.

The Individualism Index tells us to which extend citizens of the country make decisions based on their own desires and needs, or those of the whole society. A high index's value shows that the needs and wants of yourself and your close family are more important (Hofstede et al., 2010). It has also been shown that close to all rich countries have a high Individualism Index, therefore showing that their societies are more individualistic. On the other hand, most poor countries appear to be more collectivist. (Hofstede et al., 2010) This suggests that the Individualism Index can potentially have a positive relationship with the size of the sharing economy, as wealthier countries, which have higher Individualism Index values, are able to achieve higher volumes on the sharing economy platforms simply because they have more funds in availability. However, this goes against the logical connection between collectivism and sharing, which would suggest that more individualistic cultures would not want to share in general, therefore resulting in the Individualism Index having a negative correlation with the sharing economy.

The study done by Andreas Bergh and Alexander Funcke on whether the level of social trust predicts the size of the sharing economy has concluded that "sharing economy services do not require high levels of social trust to succeed. Rather, they provide institutions that facilitate trust-intensive economic activities also where social trust is low." (Bergh & Funcke, 2016) In more Individualistic societies it is logical for social trust to be low, however it can be seen that it is not needed in order for sharing economy activities to thrive. Actually, the provision of digital platforms may spur the usage of sharing economy in more individualistic societies, as they would facilitate transactions. Hofstede has also found that resources are shared within collectivist societies (Hofstede, 2010), which can have a negative impact on the size of sharing economy that can be measures. As collectivist societies consist of larger groups of people, sharing platforms may be used in less cases, as demand and supply can be matched more often than in individualistic societies, where platforms would be used more frequently, in order to match strangers with each other. Hofstede has also found out that information and communication technology (ICT) is used more in individualistic societies (Hofstede et

al., 2010), and the Eurobarometer surveys have shown that more individualistic countries use the Internet, and therefore digital platforms, more regularly for shopping and other purposes (The Gallup Foundation, 2008). More frequent ICT use may result in higher use of digital sharing platforms, and therefore in its bigger size. Then, the Individualism Index would have a positive relationship with the sharing economy.

The Uncertainty Avoidance Index shows us how the population of countries handles uncertainty and ambiguity. A high value of the index means that people often stick to rules and avoid uncertain situations (Hofstede et al., 2010). As sharing economy is comparably innovative, and a new concept that is disrupting our everyday lives, it is possible for the Uncertainty Avoidance Index to have a negative relationship with the sharing economy size. Societies, which dislike uncertainty, could be prone to not engage in sharing economy activities.

The Long-Term Orientation Index tells us whether societies are more long-term oriented or focus more on short-term results. Societies with higher index values are more focused on long-term results and do not avoid changes, if these will lead to better results in the future (Hofstede et al., 2010). From the definition of the Long-Term Orientation Index, countries with higher scores are more flexible and are ready to change parts of their current lifestyle, in order to prepare for the future. Therefore, it would be logical to think that the index would have a positive correlation with the adoption of the sharing economy. Kristina Dervojeda et. al. (2013) have also mentioned in their study that more open-minded societies to innovative solutions, eg. peer-to-peer models, would have higher adoption rates. However, this might not be the case due to a few reasons. Hofstede et al. (2010) have found that for more short-term oriented countries leisure time is more important, which would result in them spending more on sharing economy services. It is also known that, in countries with lower values of the index, short-term spending happens more often (Hofstede et al., 2010). Both of these reasons would create more volume on sharing economy platforms, increasing its size.

2.3 Non-cultural factors

In order to analyze the relationship between non-cultural characteristics of countries and the size of sharing economy, five non-cultural factors have been included in the thesis: the Heritage Foundation Index of Economic Freedom, GDP per capita PPP, Internet Penetration, the Global Innovation Index and the Human Development Index.

The first one is the Index of Economic Freedom, which assesses the level of economic freedom in each country. The index is a composite indicator and therefore it was decided to include it in the model. It has been shown that economic freedom promotes economic growth, in the form of the growth of GDP per capita PPP, greater human development, in the form of the Human Development Index, and also higher levels of innovation, in the form of the Global Innovation Index. (Miller et al., 2018) Economic freedom has a positive relationship with several pillars of the society that can contribute to the usage of sharing economy platforms. Therefore, it is also expected that it will have a positive correlation with the adoption of sharing economy. This is due to, for example, the fact that information and communications technologies have been shown to have a positive effect on the adoption of sharing economy (Bergh & Funcke, 2016; Hamari et al., 2015), and they are part of the Global Innovation Index. As countries with higher levels of economic freedom have lower entry barriers to the market, its population has higher chances to introduce new ways of sharing and set up new platforms in order to facilitate the whole process, therefore resulting in its higher usage. Bergh and Funcke (2016) have also shown that sharing economy services are used more in economically freer countries. The positive effect of an economically open economy on the sharing economy size has also been shown by Bergh et al. (2018) in the Timbro Sharing Economy Index Report.

In order to purely analyze how difference in wealth between countries effects the relationship with the adoption of sharing economy, GDP per capita PPP has been included in the model. The correlation of GDP with the sharing economy size can really differ. From one side, being wealthier provides an opportunity to spend more, therefore also bringing more volume to sharing economy platforms. On the other hand, sharing economy services may be more popular in countries with lower values of GDP per capita, as people would be looking for ways to get access to the needed product or service while spending less. Bergh and Funcke (2016) have found that Airbnb and Flipkey sharing

economy services are used more often in countries with lower values of GDP per capita. Bergh et al. (2018) have also found that the positive effect of GDP per capita on the sharing economy size disappears, once access to Internet is controlled for, meaning that sharing economy services are used less often in wealthier countries, when other factors are constant.

It is also known that technological progress and the development of digital platforms have contributed to the growth of sharing economy (May et al., 2017; Sutherland & Jarrahi, 2018). However, in order to access these and increase the chance of the demand being matched with the supply, interested parties need to have access to Internet. Therefore, Internet Penetration has been added as one of the explanatory variables. It is expected that Internet Penetration will have a positive relationship with the sharing economy's adoption and size, as digital platforms need to be accessed by the population of the country. The work written by Berg and Funcke (2016) has also shown that Airbnb and Flipkey are used more often in countries with better-developed internet infrastructure.

The Global Innovation Index, which is part of the model too, examines the countries' aspirations and progress in innovation. The index is very composite and its relationship with the size of the sharing economy will be interesting. Some particular pillars of the index, which we know that have an influence on the sharing economy adoption, are the information and communications technologies (ICT) infrastructure and knowledge and technology outputs. These have shown to have a positive effect on the sharing economy's growth (May et al., 2017; Sutherland & Jarrahi, 2018; Bergh & Funcke, 2016; Hamari et al., 2015). Ranchordas (2015) has also stated that sharing has become more common with the development of ICT, as these digital platforms help link strangers and generally assist peer-to-peer collaboration. By itself, the new turn that the sharing economy has taken is innovative and therefore it is expected that the Global Innovation Index will have a positive correlation with the adoption of sharing economy.

Lastly, the Human Development Index is a composite index, which assesses the country's economic and demographic development. Toivanen and Väänänen (2016) have carried out a research regarding the effect of education on innovation and have found out that "the number of inventors can be increased through educational policy". Therefore, it can be stated that the Education Index, which is part of the Human Development Index, will

have a positive relationship with innovation, which then will have a positive correlation with the adoption of sharing economy. However, in the Timbro Sharing Index Report, it has been stated that "education and demography do not seem to matter much", when talking about the relation of different independent variables with the sharing economy size (Bergh et al., 2018). Therefore, it is not completely clear what the correlation of the Human Development Index will be.

2.4 Contribution

There are studies, which have found or believe that there is some correlation between cultural characteristics and the adoption of sharing economy. However, they do not have numerical evidence or analysis on these findings. Therefore, this thesis will analyze the relationship of a number of cultural characteristics, such as the Hofstede's Cultural Dimensions, and non-cultural explanatory variables, such as the Heritage Foundation Index of Economic Freedom, GDP per capita, Internet Penetration, the Global Innovation Index and the Human Development Index, with the adoption of sharing economy in different countries. There are some theoretical findings, but no analysis on a big sample of countries has been found.

The contribution of tying sharing economy adoption to cultural background and other appropriate characteristics will be valuable for the global community, as it might explain why the expansion of sharing economy is more rapid in some countries than in others. More clarity on the relationship between sharing economy and non-cultural characteristics will be provided after the results of the regressions are interpreted. Lastly, it will also be very useful for start-ups and businesses in the sharing economy industry, because it will help them decide where to launch or to which countries to expand, in order to have the biggest potential in the market and gain the most.

The end goal of my research would be to understand whether the size of sharing economy in different countries can be explained by the cultural, economic and social characteristics of those countries or not.

3. Data Analysis

The ultimate goal of this analysis is to analyze the relationship between the cultural differences in different countries and the adoption of the sharing economy in those nations. Other social and economic characteristics are also part of the independent variables in the models, in order to analyze their relationship with the sharing economy's adoption. There is a number of models with different sample sizes and different dependent variables, which will be described in this chapter.

There is a number of sections in this chapter. In the first section, the data, which has been used to carry out the analysis, is described, including its limitations. The second section includes a thorough description of the dependent variables used, and the third part includes a description of the independent ones. The fourth section is the biggest one as it describes the model framework, data used in the regressions and the regression results. There are three major parts in the third section, and in each one of them a different model is described.

3.1 Data & Limitations

The data set consists of data that expresses the size of sharing economy in different countries and cultural, social and economic characteristics of these countries. The sharing economy size is shown differently in various regressions. In the first two regressions, the Timbro Sharing Economy Index is used. In the third regression, the results of the Flash Eurobarometer survey regarding participation in sharing economy activities are used. The correlation of cultural characteristics is being analyzed using Hofstede's Cultural Dimensions. The correlation of social and economic attributes of different countries is shown by the Heritage Foundation Index of Economic Freedom, GDP per capita PPP (in current international dollars), Internet Penetration, the Global Innovation Index and the Human Development Index.

However, limitations, which have risen from several issues, have to be acknowledged. The two main issues that have appeared, while writing the thesis, are the availability of

data about sharing economy and the sample size of Hofstede's Cultural Dimensions data. Regarding the sharing economy data, the main issue is that there is not much of it available, as the topic is new and is only gaining interest now. The first two regressions have the Timbro Sharing Economy Index as the dependent variable. 2018 was the year, when this index was published for the first time. Therefore, there is no consecutive data available for more than one year. This is a limitation that has to be acknowledged, because we do not have insight on the development of sharing economy in the countries examined over time. The total amount of countries analyzed in the index is 213, but the final sample size is smaller, as it only consists of countries, for which we have information for all variables. The sample size had to be significantly reduced due to Hofstede's Cultural Dimensions. To be exact, the final sample size in the first regression (with Hofstede's Cultural Dimensions) is 68 countries, and the final sample size in the second regression (without Hofstede's Cultural Dimensions) is 124 countries. On the other hand, the third regression has a different dependent variable – participation in sharing economy based on the results of the Flash Eurobarometer survey. The survey was only carried out within the EU, which has resulted in a very limited sample size - 27 countries in each of the years, 2016 and 2018. Results of both years have been put into one data set, in order to increase the sample size. However, there are still only 54 observations, which is very limited, and this limitation has to be acknowledged. The third limitation concerns Hofstede's Cultural Dimensions. In total, four of the cultural dimensions are used in the regressions. The issue is that the fourth of these, the Long-Term Orientation Index, was added after the first three, therefore resulting in differences in the sample sizes used. The total amount of countries that have at least one of the four Hofstede dimensions is 109, but the final sample size in the first model is equal to 68 observations, because data about all of the variables is only available for 68 countries.

3.2 Dependent variables

As stated, there is not much data available on the size of the sharing economy. Therefore, all data found online that includes a sample of more than 20 countries has been used in this thesis, in order to compensate for the small sample size and the lack of data for consecutive years. This data is represented by the Timbro Sharing Economy Index and

the results of the Flash Eurobarometer survey on participation in the sharing economy segment.

3.2.1 Timbro Sharing Economy Index

In 2018, Timbro, a Swedish company, has released the Timbro Sharing Economy Index (TSEI). TSEI is the only worldwide sharing economy index and the 2018 edition is also the first published one. This makes the index relevant and not outdated. In order to create the index, Timbro had to form their own definition of "sharing economy" and a "sharing economy service". In order to form these definitions, three assumptions have been made, which have to be acknowledged as the search for sharing economy services was conducted using Timbro's definitions. The three assumptions are: (1) "excess capacity is utilized as a decentralized supply of goods and/or services that are supplied on a case-by-case basis", (2) "large digital networks are mobilized by the use of ad hoc peer-to-peer matchmaking that may or may not be catalyzed by microcapitalism, i.e. micro-transactions related to each exchange" and (3) "trust is at least partly ensured through the matchmaking process and to varying degrees evident from the existence and use of the sharing economy service in question." (Bergh et al., 2018)

Under these assumptions, their formal definition of a "sharing economy service" is:
"A sharing economy service (SES) is a platform that facilitates agreements between identifiable suppliers of marketable services and identifiable customers demanding said services. The transaction may not involve any transfer of ownership and is conducted on a case-by-case basis, where neither party is bound to engage in future transactions. The SES activity must lower the costs of transactions beyond merely providing advertisement. The sharing economy platform is distinct from the supplier and does not refine or significantly transform the supplier's inputs to the supplied service. Further, the suppliers must at least partly make use of excess capacity for the production inputs that combine to produce the final good or service listed.
A sharing economy service provider (SESP) is an organization that primarily provides sharing economy services." (Bergh et al., 2018)

Their formal definition of the "sharing economy" is:

"The sharing economy is constituted by all the exchanges made through SESs." (Bergh et al., 2018)

In order to construct the index, Timbro has made use of two measures – an indicator of Internet traffic brought to the website of a sharing economy service and scraped data regarding the number of active suppliers on the platform of the service. Using their definitions, a total of 286 sharing economy services in 213 countries have been chosen from 4 651 providers, and analyzed. After that, World Bank's data on population size of all 213 countries, that were examined, was collected and a measure of traffic brought to any sharing economy service per capita during an average month was calculated. The composite index is then made by normalizing the metrics using z-scores and combining the mean of both indicators. It has to be acknowledged that there exists a limitation of the index due to the fact that app-centric services are underestimated in it. This is due to the fact that one of the two indicators is the traffic brought to the website. This mostly affects ride-sharing platforms, such as Uber and Lyft. (Bergh et al., 2018)

Timbro Sharing Economy Index is the dependent Y-variable in the first two regression models. The total amount of countries analyzed is 213. The index value is numerical and varies from 0 to 100. The values were taken from the official Timbro report, where they have been presented for the first time. In the first regression model, the final sample consists only of 68 countries, as these have values for all independent variables. In the second regression model, the final sample size is 124 countries, because no Hofstede's Cultural Dimensions data is used and there is more data available on non-cultural parameters of countries.

3.2.2 Flash Eurobarometer survey

The dependent Y-variable that is used in the third regression model is a sum of the results of the survey requested by the European Commission. The Flash Eurobarometer survey has been carried out twice by TNS Political & Social network on the same 28 Member States of the European Union: once in 2016 and once in 2018. In 2016, a total of around 14 050 people was surveyed and this number was increased in 2018 to a total of 26 544

respondents. One of the questions that were asked was: "Have you ever used a service offered via a collaborative platform?". The possible answers were: "No, never", "Yes, once or a few times", "Yes, occasionally (i.e. once every few months)" and "Yes, regularly (i.e. once a month or more often)" (TNS Political & Social network, 2016; TNS Political & Social network, 2018). In order to form the dependent variable that would show participation in the sharing economy, the three positive replies have been summed up and one variable has been formed, which represents the situation when a collaborative platform has been used at least once. Therefore, in the regression model, it is also written as "Used". The values are numerical and range from 0% to 100%. In order to compensate for the small sample size of one survey, results from both years have been included in the same data set. The final data set includes results for 27 out of 28 countries, therefore making the final sample size - 54 observations. The one country that has been excluded is Cyprus, as there was no data available for three out of four Hofstede Cultural Dimensions for it.

3.3   Independent variables

The set of independent variables is the same for The Hofstede Model and The Flash Eurobarometer Model. It includes cultural characteristics, represented by the four dimensions of the Hofstede's work, and social and economic parameters, represented by the Heritage Foundation Index of Economic Freedom, GDP per capita PPP, Internet Penetration, the Global Innovation Index and the Human Development Index.

3.3.1 Hofstede Cultural Dimensions

Geert Hofstede is a social phycologist with a PhD in organizational behavior, who was born in the Netherlands in 1928. In the late 1960s he got access to and started analyzing the survey, that IBM had carried out, about the values of its employees in more than 50 countries. Due to analyzing the data from a personnel survey exercise, that was run across different subsidiaries of the same company, he formed the first four cultural dimensions, which later have been extended to six. The first four dimensions were called: "power distance, collectivism versus individualism, femininity versus masculinity and

uncertainty avoidance". The first version of the dimensions of cultures was published in 1980. (Hofstede et al., 2010)

Later, two more cultural dimensions were added. In late 1980s, Geert Hofstede met with Michael Harris Bond from the Chinese University of Hong Kong, where Michael Bond and a number of his colleagues have identified the same four cultural dimensions, however based on a different survey, conducted over a totally different set of people. One of the issues that they have found was that both surveys were created by Western minds, but also conducted on non-Western nations. In order to solve this issue, Bond asked his colleagues form Hong Kong and Taiwan for help in creation of another survey. The survey was called the Chinese Value Survey and, after conducting it, they have found the same three dimensions, but also one extra one. Geert Hofstede labeled it as "long-term versus short-term orientation" and has added it as the fifth cultural dimension. The sixth dimension was added in 2010 due to the work of Misho Minkov. With time more and more information has become public, including the World Values Survey, and Misho Minkov has found three dimensions, while analyzing it. Due to his findings, the dimension of long-term versus short-term orientation has been significantly extended to more countries and a new, sixth dimension has been added by Geert Hofstede – "indulgence versus restraint". (Hofstede et al., 2010)

After reviewing all six dimensions, four have been chosen to be included in the regression models, as the most relevant in analyzing the relationship between culture and the adoption of sharing economy in different countries. These are the Power Distance Index, the Individualism Index, the Uncertainty Avoidance Index and the Long-Term Orientation Index.

The Power Distance Index is based on the concept of power distribution in the society. There are inequalities in all societies, however there is a difference in their extent and the way that the society handles them. A high Power Distance Index value represents a society, where there is a clear hierarchy, which is accepted by the society. On the other hand, a lower Power Distance Index value represents a country, where the society strives for equality and widespread power between its members. (Hofstede et al., 2010)

The definition formulated in Hofstede's book is the following: "Power distance can therefore be defined as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. Institutions are the basic elements of society, such as the family, the school, and the community; organizations are the places where people work." (Hofstede et al., 2010)

The Individualism Index represents the extent to which people act based on individual needs and wants, or those of the society. A high value of the Individualism Index represents an individualistic society where the individuals take care of themselves and their close family. A low value represents the situation when the society is more collectivist, and everyone helps each other in the same group. (Hofstede et al., 2010)

The definition of the index in Hofstede's book is as follows: "Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after him- or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty." (Hofstede et al., 2010)

The Uncertainty Avoidance Index is centered around the ability of a country's society to handle uncertainty and ambiguous situations. Countries with higher index values tend to avoid abnormal behavior and stick to certain rules, in order to keep order. On the other hand, countries with lower index values are more open to ambiguity and the possibility of different scenarios happening in the future. (Hofstede et al., 2010)

Uncertainty Avoidance is described as "the extent to which the members of a culture feel threatened by ambiguous or unknown situations. This feeling is, among other manifestations, expressed through nervous stress and in a need for predictability: a need for written and unwritten rules." (Hofstede et al., 2010)

The Long-Term Orientation Index is centered around the difference of some societies wanting to see immediate results and acting based on short-term results versus others that are focused on the long-term goal and act in a way to reach it. Countries with low values of the index do not prefer to change already settled traditions, as change is not appreciated.

Societies of countries with high index values are more flexible and appreciate change, if it will lead to better results in the future. (Hofstede et al., 2010)

Long-Term Orientation is defined by Hofstede as "the fostering of virtues oriented toward 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." (Hofstede et al., 2010)

It is possible to see which Hofstede's Cultural Dimensions values belong to which countries in Appendix 1 (page 50) and Appendix 3 (page 55).

3.3.2 Heritage Foundation Index of Economic Freedom

The Index of Economic Freedom is an index that is published annually by The Heritage Foundation. It assesses each country's level of economic freedom, which is defined as "the fundamental right of every human to control his or her own labor and property" (The Heritage Foundation, 2019). The index is calculated using 12 factors, which are put into four types of economic freedom. Each country gets a value of 0 to 100 for each one of the 12 factors, after which the average of all 12 gets taken, which then becomes the value of the Index of Economic Freedom. All 12 factors have the same weight in the calculation. The four different pillars of economic freedom are:

- Rule of Law – the factors included are property rights, government integrity and judicial effectiveness.
- Government Size- the factors included are government spending, tax burden and fiscal health.
- Regulatory Efficiency – the factors included are business freedom, labor freedom and monetary freedom.
- Open Markets – the factors included are trade freedom, investment freedom and financial freedom. (The Heritage Foundation, 2019)

3.3.3 Global Innovation Index

The Global Innovation Index focuses on assessing country's capabilities, efforts and results of innovation. It includes an analysis on 126 countries and is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization. (Cornell University et al., 2018)

The Global Innovation Index consists of two sub-indices: Innovation Input Sub-Index and Innovation Output Sub-Index. The Innovation Input Sub-Index represents five parts of the economy that provide the ground for innovation: Institutions, Human capital and research, Infrastructure, Market sophistication, and Business sophistication. The Innovation Output Sub-Index shows the output of innovative activities in different countries, and the output is classified in two types: Knowledge and technology outputs, and Creative outputs. Each of these seven input and output pillars are composed of sub-pillars, which consist of individual indicators. Sub-pillar scores are weighted averages of the individual indicators, and pillar scores are weighted averages of the sub-pillar scores. (General Innovation Index, 2018)

3.3.4 Human Development Index

The Human Development Index assesses the development of countries not only with the use of economic indicators, but also with descriptors of population's characteristics. It consists of three parts: the Life Expectancy Index, which is the life expectancy at birth, the Education Index, which is the mean years of schooling for people aged 25 years and more, and expected years of schooling for children, and the GNI Index, which is the value of GNI per capita PPP. The geometric mean of these three indices is then taken, and the Human Development Index is calculated. (United Nations Development Programme, 2019)

3.3.5 Overview of the variables

- X_1 independent variable: Hofstede Power Distance Index (PDI)
- X_2 independent variable: Hofstede Individualism Index (IDV)
- X_3 independent variable: Hofstede Uncertainty Avoidance Index (UAI)
- X_4 independent variable: Hofstede Long-Term Orientation Index (LTO)

All data on Hofstede's indices was collected from Hofstede's book on Cultural Dimensions (Hofstede et al., 2010) or from his official website (Hofstede, 2015). Original research was carried out between 1967 and 1973 with additions up to 2010. All of the Hofstede's values are numerical and range between almost 0 and 112 (the exact minimum and maximum values for different cultural dimensions will be shown in the next sections of the thesis).

- X_5 independent variable: Heritage Foundation Index of Economic Freedom (HFIEF)
    - Data is collected from the website of the Heritage Foundation (The Heritage Foundation, 2018). Every value is a number from 0 to 100.
- X_6 independent variable: GDP per capita PPP in current international dollars (GDP)
    - Data is collected from the website of the International Monetary Fund (International Monetary Fund, 2018). The value is in international dollars per capita and at purchasing power parity (International Monetary Fund, 2018). Every value is numerical.
- X_7 independent variable: Internet Penetration (IntPen)
    - Data is collected from the website of the World Bank on Internet usage among countries (The World Bank, 2017). Data is expressed in percentages.
- X_8 independent variable: Global Innovation Index (GII)
    - Data is collected from the official website of the Global Innovation Index (Global Innovation Index, 2018). The index is a numerical value between 0 and 100.
- X_9 independent variable: Human Development Index (HDI)

o Data is collected from the United Nations website (United Nations Development Programme, 2018). The value is a number between 0 and 1.

All data used in the analysis is taken for the same year as the data of the dependent variable in the given model, if possible. In the case of TSEI, all independent data was taken for year 2018, if it was available. In the case that data of a given independent variable is not available for 2018, data for the closest year was taken (in most cases, it was data for 2017). This does not concern Hofstede's Cultural Dimensions, as these are not available for more than one year.

There are also other variables in the regression model:
- β_0 constant
- β_1 - β_9 coefficients of the independent variables
  - These will be estimated, when the regression is run, and interpreted after.
- ε error term

All data of the dependent and independent variables can be found in Appendix 1 (page 50), Appendix 2 (page 52) and Appendix 3 (page 55).

4. Model Framework, Data and Regression Results

In order to compensate for the limitations regarding the sample size and the amount of data available, there is a total of three different regressions used, with the goal of analyzing the relationship between the cultural differences of countries and the size of sharing economy in those countries. The first two regressions, The Hofstede Model and the Non-Hofstede Model, have the Timbro Sharing Economy Index as the dependent variable. The third regression, the Flash Eurobarometer Model, has the results of the survey regarding participation in the sharing economy as the dependent variable. In each of the three regressions, there are multiple models with different variables included, in order to see the difference in the correlation of each one of them.

In all of the three models, the Ordinary Least Squares method was chosen for estimating the characteristics of the independent variables. The regressions were run in the software application called RStudio.

4.1   The Hofstede Model

4.1.1 Description of the model

The first regression model contains four cultural characteristics, in the form of Hofstede's Cultural Dimensions, and five social and economic parameters, which are the Heritage Foundation Index of Economic Freedom, GDP per capita PPP (in current international dollars), Internet Penetration, the Global Innovation Index and the Human Development Index. The dependent variable is the Timbro Sharing Economy Index.

The full regression equation is the following:

$$TSEI = \beta_0 + \beta_1 * PDI + \beta_2 * IDV + \beta_3 * UAI + \beta_4 * LTO + \beta_5 * HFIEF + \beta_6 * GDP + \beta_7 * IntPen + \beta_8 * GII + \beta_9 * HDI + \varepsilon$$

The total sample size in this model is 68 countries due to the fact that data on nine different variables has to be available for each country. The main constraint in enlarging the sample size has been the data on Hofstede's cultural characteristics, as it is very limited.

In total, there are eight models, which differ between each other in the number of independent variables that are included. Hence the fact that the main goal of the thesis is to understand the relationship of cultural differences between countries and the adoption of the sharing economy, the Hofstede cultural dimensions are included in each of the eight models, except for one. The seventh model, which does not have any cultural characteristics, is there because of the second regression, the Non-Hofstede Model. It is interesting to observe the results of the same model on different sample sizes. As non-cultural characteristics are expected to have a correlation with the sharing economy as well, these are also used as independent variables in the models. These are included in different models one at a time, in order to analyze whether the relation of the cultural characteristics varies, depending on which non-cultural parameter is controlled for in the model. The correlation of each of the non-cultural variables can then also be observed individually.

4.1.2 Summary Statistics Table

In Table 1.1, different measures of the variables used in the Hofstede Model are described. These measures include the minimum and maximum values, the mean value and the standard deviation of each of the variables. The total sample size in this model is 68 countries (n = 68).

Table 1.1: Summary Statistics Table of the Hofstede Model

Variables	Symbol	Min	Max	Mean	Standard Deviation
Timbro Sharing Economy Index	TSEI	0.0	100.0	11.4	17.6
Hofstede Power Distance Index	PDI	11.0	104.0	58.1	21.9
Hofstede Individualism Index	IDV	6.0	91.0	44.6	23.8
Hofstede Uncertainty Avoidance Index	UAI	8.0	112.0	66.7	23.9
Hofstede Long-Term Orientation Index	LTO	12.6	100.0	46.2	22.9
Heritage Foundation Index of Economic Freedom	HFIEF	48.5	90.2	68.2	9.1
GDP per capita PPP (in current international dollars)	GDP	4 619.8	106 704.9	34 510.3	21 382.4
Internet Penetration	IntPen	0.155	0.983	0.723	0.192
Global Innovation Index	GII	23.1	68.4	43.7	11.5
Human Development Index	HDI	0.562	0.953	0.831	0.094

4.1.3 Regression Results

In Table 1.2, the results of regressing a number of models originating from the Hofstede Model are presented.

Table 1.2: Regression Results of the Hofstede Model

	Dependent variable			(1) TSEI	(2) TSEI	(3) TSEI	(4) TSEI	(5) TSEI	(6) TSEI	(7) TSEI	(8) TSEI
0	Constant		β_0	15.34	-7.06	9.15	1.15	-7.24	-34.50	-69.25	-38.55
	[p-value]			[0.196]	[0.757]	[0.463]	[0.936]	[0.654]	[0.174]	[0.089]*	[0.367]
1	Power Distance Index	PDI	β_1	-0.16	-0.13	-0.12	-0.11	-0.07	-0.08	—	-0.07
	[p-value]			[0.173]	[0.303]	[0.338]	[0.367]	[0.550]	[0.518]	–	[0.596]
2	Individualism Index	IDV	β_2	0.25	0.23	0.20	0.17	0.14	0.13	—	0.11
	[p-value]			[0.027]**	[0.047]**	[0.081]*	[0.150]	[0.232]	[0.280]	–	[0.369]
3	Uncertainty Avoidance Index	UAI	β_3	0.01	0.04	0.03	0.00	0.05	-0.01	—	-0.00
	[p-value]			[0.916]	[0.675]	[0.700]	[0.973]	[0.557]	[0.915]	–	[0.979]
4	Long-Term Orientation Index	LTO	β_4	-0.14	-0.16	-0.17	-0.17	-0.25	-0.20	—	-0.23
	[p-value]			[0.130]	[0.086]*	[0.061]*	[0.059]*	[0.019]**	[0.032]**	–	[0.042]**
5	Index of Economic Freedom	HFIEF	β_5	—	0.30	—	—	—	—	0.05	-0.05
	[p-value]			–	[0.254]	–	–	–	–	[0.877]	[0.871]
6	GDP per capita PPP	GDP	β_6	—	—	0.0002	—	—	—	-0.0001	-0.0001
	[p-value]			–	–	[0.153]	–	–	–	[0.778]	[0.778]
7	Internet Penetration	IntPen	β_7	—	—	—	23.07	—	—	-4.39	-6.16
	[p-value]			–	–	–	[0.087]*	–	–	[0.871]	[0.813]
8	Global Innovation Index	GII	β_8	—	—	—	—	0.57	—	-0.03	0.25
	[p-value]			–	–	–	–	[0.050]**	–	[0.938]	[0.596]
9	Human Development Index	HDI	β_9	—	—	—	—	—	65.42	100.40	70.41
	[p-value]			–	–	–	–	–	[0.030]**	[0.157]	[0.352]
	Tests										
	R-squared			0.243	0.259	0.268	0.278	0.289	0.299	0.198	0.304
	Adj. R-squared			0.195	0.199	0.208	0.220	0.231	0.242	0.133	0.196
	p-value			0.001	0.002	0.001	0.001	0.001	0.000	0.016	0.008
	Observations			68	68	68	68	68	68	68	68

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

It can be seen that there is a total of eight models tested with various independent variables in each one of them. Section 4.1.4 is a summary of the findings, describing the significant variables and interpreting their relationship. In this summary, only variables, which

exhibit a level of significance of 10% or less, so have a significant relationship with the sharing economy size, will be talked about. In section 4.1.5, the findings are structured in a variable-by-variable form and connected to the literature.

4.1.4 Summary of the results

The results of the Hofstede Model have shown some interesting correlations with the size of the sharing economy in different countries. It can be seen that, from all cultural characteristics, only the Individualism Index and the Long-Term Orientation Index show a significant relationship with the Sharing Economy Index. The Individualism Index has a positive correlation, which means that countries with more individualistic societies use the sharing economy more than countries with more collectivistic ones. On the other hand, the Long-Term Orientation Index shows a negative correlation with the sharing economy, which tells us that sharing economy services are used more in countries, which are more short-term oriented. In terms of non-cultural parameters, Internet Penetration, the Global Innovation Index and the Human Development Index have a significant correlation with the sharing economy size. All of them have a positive relationship with the index, which translates to the countries with better Internet connectivity, more developed societies and more efforts put into innovation having bigger sized sharing economies.

4.1.5 Closer look at the significant variables

In this section, the correlations of the significant variables are going to be connected to the theory. Out of nine independent variables in total, five have exhibited a level of significance of 10% or less in one model or more.

The Individualism Index exhibits a level of significance of 5% in Models 1 and 2 and a level of significant of 10% in Model 3. The coefficient value ranges from 0.20 to 0.25, which means that a one-point increase in the Individualism Index would increase the value of the Sharing Economy Index by 0.20 to 0.25. It has a positive relationship with the Timbro Sharing Economy Index in all models, which tells us that more individualistic societies have bigger-sized sharing economies. This can be explained by the fact that

social trust does not play a major role in sharing economy adoption, rather digital sharing platforms increase the level of trust where it is low (Bergh & Funcke, 2016). It can also be explained by the fact that information and communication technologies, which are the basis of sharing economy growth, are used more often in individualistic societies, and by the fact that people in collectivist societies are part of bigger groups, where sharing may be going on without the need of any platforms, and therefore is not recorded (Hofstede et al., 2010).

The Long-Term Orientation Index exhibits a level of significance of 5% in Models 5, 6 and 8 and a level of significance of 10% in Models 2, 3 and 4. The coefficient value ranges from -0.16 to -0.25, which means that a one-point increase in the index would decrease the value of the Sharing Economy Index by -0.16 to -0.25. In all models it has a negative relationship with the size of the sharing economy. This can be explained by the fact that in countries with lower scores on the Long-Term Orientation Index more time is spent on leisure and short-term spending is more common, than in countries that are more long-term oriented (Hofstede et al., 2010). Both of these factors can contribute to more volume flowing into sharing economy platforms, therefore increasing the Timbro Sharing Economy Index for the country.

Internet Penetration is significant at a level of 10% only in Model 4. Its coefficient value is 23.07, meaning that an increase of 1% in Internet Penetration would increase the Sharing Economy Index by 0.23. In Model 4, where it is the only non-cultural variable, its correlation with the sharing economy size is positive. This can be explained by the fact that digital platforms and technological advancements, which have a positive effect on the growth of sharing economy (May et al., 2017; Sutherland & Jarrahi, 2018), need to be accessed by the population, which is shown by the value of Internet Penetration. In the work of Berg and Funcke (2016), it has also been found that home sharing services have been used more in countries with more advanced internet infrastructure. On the other hand, in Models 7 and 8, where other non-cultural variables are also controlled for, the relationship of the access to internet is negative. However, in those models, the coefficient of Internet penetration is insignificant.

The Global Innovation Index exhibits a level of significance of 5% in Model 5, where it is the only non-cultural variable. The value of its coefficient is 0.57, which tells us that

a one-point increase will result in an increase of the Sharing Economy Index by 0.57. As innovative outputs and information and communications technology infrastructure are parts of the Innovation Index, its relationship is positive due to innovation and the introduction of new digital platforms being contributors to the recent growth of sharing economy (May et al., 2017; Sutherland & Jarrahi, 2018; Bergh & Funcke, 2016; Hamari et al., 2015). These platforms help with, for example, matching excess capacity in demand and supply by securely connecting strangers with each other (Ranchordas, 2015). The correlation of innovation is positive in Model 8 as well, but negative in Model 7. However, in both models, the variable is statistically insignificant.

The Human Development Index has shown a statistically significant relationship of 5% with the development of sharing economy in Model 6. Its coefficient is 65.42, which means that an increase of 0.01 in it would result in an increase of 0.65 in the Timbro Index. Its positive relationship with the Sharing Economy Index in Models 6, 7 and 8 can be explained by education having a positive relationship with innovation (Toivanen and Väänänen, 2016), which then has a positive influence on the adoption of sharing economy. In general, a nation with longer life expectancy and more wealth is able to participate in more activities, in which sharing economy activities will be included too.

Other cultural characteristics, such as the Power Distance Index and the Uncertainty Avoidance Index, have not been significant in explaining the relationship with the adoption of sharing economy in 68 countries. Non-cultural variables, such as The Heritage Foundation Index of Economic Freedom and GDP per capita, have not shown statistical significance in explaining the size of sharing economy in different countries either.

4.2   The Non-Hofstede Model

4.2.1 Description of the model

The second regression model only contains the five social and economic parameters, which are the Heritage Foundation Index of Economic Freedom, GDP per capita PPP (in current international dollars), Internet Penetration, the Global Innovation Index and the Human Development Index. The model does not have any cultural characteristics. Even though the primary goal is to see the relationship of the differences in culture, observing the sole relation of non-cultural characteristics is also valuable for the research and for the global community. The dependent variable is the Timbro Sharing Economy Index.

The full regression equation is as following:

$$TSEI = \beta_0 + \beta_1*HFIEF + \beta_2*GDP + \beta_3*IntPen + \beta_4*GII + \beta_5*HDI + \varepsilon$$

The sample size of this regression model is bigger than the sample size of The Hofstede Model. The sample size here is 124 countries. It is significantly bigger and more satisfactory due to the fact that the constraint, which is coming from Hofstede's Cultural Dimensions, is not present.

Here, there are five different models with a different number of independent variables in each one of them. Model 1 includes just one variable, the Heritage Foundation Index of Economic Freedom, Model 2 includes one more, so the Heritage Foundation Index of Economic Freedom and the GDP per capita PPP (in current international dollars), and so on. Model 5 includes all five of the non-cultural independent variables. The models have been set up in this way, in order to observe the relationship of some variables with the Sharing Economy Index, depending on which variables are controlled for in the model.

4.2.2 Summary Statistics Table

In Table 2.1, different measures of the variables used in the Non-Hofstede Model are described. These measures include the minimum and maximum values, the mean value and the standard deviation of each of the variables. The total sample size in this model is 124 countries (n = 124).

Table 2.1: Summary Statistics Table of the Non-Hofstede Model

Variables	Symbol	Min	Max	Mean	Standard Deviation
Timbro Sharing Economy Index	TSEI	0.0	100.0	7.5	14.8
Heritage Foundation Index of Economic Freedom	HFIEF	44.0	90.2	64.4	9.5
GDP per capita PPP (in current international dollars)	GDP	1 199.4	130 475.1	26 599.3	24 128.6
Internet Penetration	IntPen	0.098	0.983	0.613	0.263
Global Innovation Index	GII	18.9	68.4	36.9	12.0
Human Development Index	HDI	0.354	0.953	0.756	0.143

4.2.3 Regression Results

In Table 2.2, the results of regressing a number of models originating from the Non-Hofstede Model are presented.

Table 2.2: Regression Results of the Non-Hofstede Model

	Dependent variable			(9) TSEI	(10) TSEI	(11) TSEI	(12) TSEI	(13) TSEI
0	Constant		β_0	-30.62	-24.66	-23.87	-21.49	-30.37
	[p-value]			[0.000]****	[0.017]**	[0.020]**	[0.031]**	[0.031]**
1	Index of Economic Freedom	HFIEF	β_1	0.59	0.47	0.36	0.14	0.14
	[p-value]			[0.000]****	[0.008]***	[0.052]*	[0.473]	[0.466]
2	GDP per capita PPP	GDP	β_2	—	0.0001	-0.0000	-0.0001	-0.0001
	[p-value]			–	[0.293]	[0.811]	[0.400]	[0.396]
3	Internet Penetration	IntPen	β_3	—	—	14.46	6.39	-1.75
	[p-value]			–	–	[0.068]*	[0.439]	[0.886]
4	Global Innovation Index	GII	β_4	—	—	—	0.49	0.40
	[p-value]			–	–	–	[0.008]***	[0.052]*
5	Human Development Index	HDI	β_5	—	—	—	—	22.41
	[p-value]			–	–	–	–	[0.365]
	Tests							
	R-squared			0.146	0.153	0.177	0.225	0.230
	Adj. R-squared			0.139	0.139	0.156	0.199	0.198
	p-value			0.000	0.000	0.000	0.000	0.000
	Observations			124	124	124	124	124

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level; **** Significant at 0.1% level

There is a total of five models tested with various independent variables in each one of them. Section 4.2.4 is a summary of the findings, where the significant variables are named, and their relationship is interpreted. In this summary, only variables, which exhibit a level of significance of 10% or less, so show a significant correlation with the sharing economy's size, will be talked about. Section 4.2.5 connects each of the significant variables to the literature and further describes them. In section 4.2.6., the

results of this regression will be compared to the results in the Timbro Sharing Economy Index report, as they have a similar model there.

4.2.4 Summary of the results

Regressing the Non-Hofstede Model has yielded interesting results, which tell us about the relationship between the sharing economy's size and non-cultural variables, when cultural variables are not controlled for. It can be seen that the significant variables are the Index of Economic Freedom, Internet Penetration and the Global Innovation Index. All three of them have a positive relationship with the expansion of the sharing economy. This tells us that countries, that have more economic freedom, better Internet connectivity and put more efforts into innovation, have bigger-sized sharing economies.

4.2.5 Closer look at the significant variables

In this part, the correlations of the significant variables are going to be connected to the literature. Out of five variables in this model, three have exhibited a level of significance of 10% or less in one model or more.

The Heritage Foundation Index of Economic Freedom exhibits a level of significance of 0.1% in Model 9, a level of significance of 1% in Model 10 and a level of significance of 10% in Model 11. Its coefficient ranges from 0.36 to 0.59, which means that it has a positive correlation with the sharing economy size. It also tells us that a one-point increase in the Index of Economic Freedom will result in a 0.36-0.59 increase in the Timbro Sharing Economy Index. The positive relationship can be explained by the fact that the Index of Economic Freedom is positively correlated with the growth of the GDP per capita PPP, the Human Development Index and the Global Innovation Index (Miller et al., 2018). Therefore, it is also expected that countries, that have more economic freedom, will have better information and communication infrastructure, due to them having more funds to develop it, and due to the fact that the infrastructure is also part of the Global Innovation Index. More developed information and communication technologies have been shown to have a positive correlation with the growth of sharing economy (Bergh & Funcke, 2016; Hamari et al., 2015). Therefore, the Index of Economic Freedom has a

positive relationship with the sharing economy. Bergh & Funcke (2016) have also shown in their work that sharing economy services are used more often in countries that are economically freer.

Internet Penetration is significant at a level of 10% in Model 11. Its coefficient is 14.46, which exhibits a positive correlation. It also means that an increase of 1% in Internet Penetration in a country will increase the Sharing Economy Index by 0.14. The intuition for the positive relationship is the same as in the Hofstede Model, which is described in section 4.1.5. The intuition is that Internet connectivity is needed, in order to have access to digital platforms and other technologies, the development of which has been shown to have a positive correlation with the growth of sharing economy (May et al., 2017; Sutherland & Jarrahi, 2018). Therefore, Internet Penetration has a positive relationship with the sharing economy's size.

The Global Innovation Index exhibits a level of significance of 1% in Model 12 and a level of significant of 10% in Model 13. Its coefficient varies from 0.40 to 0.49, so the variable has a positive relationship with the sharing economy's size. This means that a one-point increase in the index will result in an increase of the Sharing Economy Index by 0.40-0.49. The intuition is again the same as in the Hofstede Model in chapter 4.1.5. Information and communications technologies and their infrastructure are part of the Innovation Index and are known to contribute to the growth of sharing economy (May et al., 2017; Sutherland & Jarrahi, 2018; Bergh & Funcke, 2016; Hamari et al., 2015).

GDP per capita PPP and the Human Development Index have not shown a level of significant of 10% or less in explaining the relationship with the Sharing Economy Index in 124 countries.

4.2.6 Comparison with the Timbro Report

Timbro has also created a model with five non-cultural independent variables, in order to investigate their relationship with the Timbro Sharing Economy Index. The five explanatory variables that they have included are the Economic Freedom Index by the Fraser Institute, log of GDP per capita, share of the population with connection to

broadband, average years of schooling and share of population under 40 years. Depending on the model, the amount of observations is either 111 or 112.

Variables, which exhibit a level of significance of 10% or less, are Economic Freedom, log of GDP per capita, share of the population with broadband connection and average years of schooling. The relationship between Economic Freedom and the Sharing Economy Index is positive, just like in the Non-Hofstede Model in this thesis. GDP per capita PPP is significant, but only has a positive relationship with the sharing economy size until the variable that represents connection to broadband is introduced. Then, the coefficient of GDP per capita PPP becomes negative, which means that, once connection to Internet is controlled for, sharing economy services are used less often in richer countries, when other factors remain constant. (Bergh et al., 2018) The same effect can be seen in the Non-Hofstede model in this thesis. Once Internet Penetration is introduced, the correlation of GDP per capita becomes negative. However, in the Non-Hofstede Model, GDP per capita is not a significant variable. Lastly, share of the population with connection to broadband is a significant variable, which has a positive relationship with the usage of sharing economy services (Bergh et al., 2018). This is the same in the Non-Hofstede Model in this thesis. However, what is different is that it becomes insignificant once the Global Innovation Index is introduced to the Non-Hofstede Model. This might be due to the fact that Global Innovation Index includes information and communications infrastructure and innovative outputs. Therefore, when the level of innovation in countries is controlled for, Internet Penetration's relationship with sharing economy is not significant, when keeping other factors constant.

In conclusion, the findings of the Timbro's regression and the Non-Hofstede Model in this thesis are in line with each other.

4.3   The Flash Eurobarometer Model

4.3.1 Description of the model

The third and last regression model is very similar to the first one, The Hofstede Model. It also contains four Hofstede cultural dimensions and five non-cultural characteristics, the Heritage Foundation Index of Economic Freedom, GDP per capita PPP (in current international dollars), Internet Penetration, the Global Innovation Index and the Human Development Index. However, the dependent variable is different, compared to the first two regression models. In this case, the results of the Flash Eurobarometer survey, that was initiated by the European Commission, have been used. The dependent variable includes all people that have used a type of a sharing economy platform at least once.

$Used = \beta_0 + \beta_1*PDI + \beta_2*IDV + \beta_3*UAI + \beta_4*LTO + \beta_5*HFIEF + \beta_6*GDP + \beta_7*IntPen + \beta_8*GII + \beta_9*HDI + \varepsilon$

The sample size of countries per survey is 27, however two years, 2016 and 2018, when the surveys were conducted, have been included, in order to increase the sample size. Therefore, the final sample size is 54 observations, which is still quite low and therefore has to be acknowledged as a limitation throughout this analysis. This regression model has been included in the analysis, even though it has a small sample size, in order to potentially find more evidence for the cultural relationship with the size of the sharing economy in countries, as the sample size of The Hofstede Model is limited too, and there is no data on the development of the sharing economy over the years.

There is a total of eight different models for this regression, just like in the case of The Hofstede Model. All of them except for the seventh model include the four Hofstede cultural dimensions, as the primary goal is to find the correlation of these with the sharing economy adoption. The seventh model without the cultural characteristics has been included as well, even though the dependent variable is not the Timbro Sharing Economy Index anymore. It has been included, in order to analyze whether the non-cultural characteristics will have a relationship with the sharing economy participation, without controlling for the cultural characteristics.

4.3.2 Summary Statistics Table

In Table 3.1, different measures of the variables used in the Flash Eurobarometer Model are described. These measures include the minimum and maximum values, the mean value and the standard deviation of each of the variables. The total sample size in this model is 54 observations (n = 54).

Table 3.1: Summary Statistics Table of the Flash Eurobarometer Model

Variables	Symbol	Min	Max	Mean	Standard Deviation
Used at least once	Used	0.040	0.400	0.203	0.087
Hofstede Power Distance Index	PDI	11.0	104.0	51.6	21.0
Hofstede Individualism Index	IDV	27.0	89.0	58.6	17.7
Hofstede Uncertainty Avoidance Index	UAI	23.0	112.0	71.2	22.8
Hofstede Long-Term Orientation Index	LTO	24.0	83.0	57.5	16.4
Heritage Foundation Index of Economic Freedom	HFIEF	53.2	80.4	69.6	6.1
GDP per capita PPP (in current international dollars)	GDP	20 474.2	106 704.9	41 444.9	17 059.7
Internet Penetration	IntPen	0.595	0.978	0.805	0.103
Global Innovation Index	GII	37.6	63.6	49.8	7.6
Human Development Index	HDI	0.807	0.938	0.883	0.038

4.3.3 Regression Results

In Table 3.2, the results of regressing a number of models originating from the Flash Eurobarometer Model are presented.

Table 3.2: Regression Results of the Flash Eurobarometer Model

	Dependent variable			(14) Used	(15) Used	(16) Used	(17) Used	(18) Used	(19) Used	(20) Used	(21) Used
0	Constant		β_0	0.1858	0.1004	0.1591	0.1935	0.2881	0.4807	0.4130	0.5648
	[p-value]			[0.057]*	[0.723]	[0.144]	[0.299]	[0.118]	[0.267]	[0.462]	[0.400]
1	Power Distance Index	PDI	β_1	0.0009	0.0010	0.0011	0.0009	0.0007	0.0007	—	0.0008
	[p-value]			[0.227]	[0.221]	[0.192]	[0.260]	[0.394]	[0.384]	_	[0.398]
2	Individualism Index	IDV	β_2	0.0008	0.0008	0.0008	0.0009	0.0011	0.0011	—	0.0012
	[p-value]			[0.369]	[0.375]	[0.417]	[0.382]	[0.289]	[0.284]	_	[0.266]
3	Uncertainty Avoidance Index	UAI	β_3	-0.0007	-0.0006	-0.0007	-0.0008	-0.0009	-0.0008	—	-0.0009
	[p-value]			[0.287]	[0.483]	[0.323]	[0.319]	[0.222]	[0.245]	_	[0.348]
4	Long-Term Orientation Index	LTO	β_4	-0.0005	-0.0005	-0.0004	-0.0005	-0.0006	-0.0006	—	-0.0006
	[p-value]			[0.543]	[0.508]	[0.576]	[0.548]	[0.476]	[0.475]	_	[0.465]
5	Index of Economic Freedom	HFIEF	β_5	—	0.0010	—	—	—	—	0.0012	0.0002
	[p-value]			_	[0.749]	_	_	_	_	[0.692]	[0.951]
6	GDP per capita PPP	GDP	β_6	—	—	0.000000	—	—	—	0.000001	0.000001
	[p-value]			_	_	[0.581]	_	_	_	[0.485]	[0.344]
7	Internet Penetration	IntPen	β_7	—	—	—	-0.0084	—	—	0.0721	0.0230
	[p-value]			_	_	_	[0.961]	_	_	[0.755]	[0.923]
8	Global Innovation Index	GII	β_8	—	—	—	—	-0.0017	—	-0.0002	-0.0017
	[p-value]			_	_	_	_	[0.508]	_	[0.967]	[0.694]
9	Human Development Index	HDI	β_9	—	—	—	—	—	-0.3236	-0.4197	-0.4136
	[p-value]			_	_	_	_	_	[0.483]	[0.586]	[0.602]
	Tests										
	R-squared			0.062	0.064	0.068	0.062	0.071	0.072	0.030	0.097
	Adj. R-squared			-0.014	-0.033	-0.029	-0.035	-0.026	-0.025	-0.071	-0.088
	p-value			0.523	0.656	0.624	0.672	0.603	0.594	0.910	0.849
	Observations			54	54	54	54	54	54	54	54

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

It can be seen that there is a total of eight models tested with various independent variables in each one of them. In section 4.3.4., a summary of the findings of the Flash Eurobarometer Model is presented.

4.3.4 Summary of the results

The Flash Eurobarometer Model is the regression that has told us the least about the relationship of explanatory variables with the sharing economy. There are no variables that exhibit a significance level of 10% or lower. Therefore, from this model we cannot observe any significant relationships between any of the explanatory variables and the sharing economy's size.

The R^2 and Adjusted R^2 values are extremely low too. They are actually the lowest among all model, including the Hofstede Model and the Non-Hofstede Model.

The reasons for no significant findings in this model might be due to the smallest sample size among all models and the fact that the recordings of the dependent variable, which is participation in the sharing economy, are whole percentage values without any decimal places. This means that, during the recording of the results, TNS Political & Social network, the company that carried out the survey, rounded up the results to whole percentages, which can lead to less accurate results in the regressions. Another reason might be the fact that there are 27 countries that are included twice – once with the result from the 2016 survey and once with the result from the 2018 one. However, both of the recordings have the same Hofstede Cultural Dimensions values, while all other variables are different.

5. Conclusion

The relationship between the adoption of sharing economy in different countries and cultural characteristics of their populations has been established. Significant correlations between the sharing economy size and the Hofstede Individualism and Long-Term Orientation Indices have been found. The relationship between the Individualism Index and the sharing economy size is positive. However, the sharing economy's relationship with the Long-Term Orientation Index is negative. Non-cultural characteristics, such as the Index of Economic Freedom, Internet Penetration, the Global Innovation Index and the Human Development Index, have also shown to have a significant correlation with the size of the sharing economy. All of them have shown to have a positive correlation.

In the first section of the thesis, the concept of the sharing economy is described with the goal of introducing it to the reader and outlining the literature, that has already done any research on this topic, and the factors, that might have an influence on its size and adoption. The two indicators of its size, the Timbro Sharing Economy Index and the results of the Flash Eurobarometer survey, that are used in the regressions, are also introduced and explained. After that, characteristics that might be relevant in describing the differences in the sharing economy size's in different countries are talked about.

In the second section, the two dependent variables and all nine independent variables are described in more detail. The relationship with culture is represented by four Hofstede's Cultural Dimensions: the Power Distance Index, the Individualism Index, the Uncertainty Avoidance Index and the Long-Term Orientation Index. The correlation with non-cultural influences is shown by including the Heritage Foundation Index of Economic Freedom, GDP per capita PPP, Internet Penetration, the Global Innovation Index and the Human Development Index. The limitations of the data used in the models are also presented. These include the small sample size of the regression models and the limited amount of data available on the size of sharing economies.

The third section of the thesis presents the three regression models and the regression results. The Individualism Index and the Long-Term Orientation Index have been found to have a significant relationship with the sharing economy size. The Individualism Index

has a positive correlation with the sharing economy adoption, which means that more individualistic societies have bigger sharing economy industries. The Long-Term Orientation Index, on the other hand, has a negative relationship with the sharing economy size, therefore showing that more long-term oriented countries have smaller sized collaborative economies. All significant non-cultural characteristics have a positive correlation with the sharing economy. These are the Index of Economic Freedom, Internet Penetration, the Global Innovation Index and the Human Development Index.

The aim of thesis is to connect the cultural background of countries to the adoption of the sharing economy in these, which has been done, in order to spur more research in this underdeveloped area. Another goal is to help start-ups and businesses in the collaborative economy sector decide in which countries to launch, in order to achieve the biggest success, based on the country's characteristics.

This thesis is the first research paper that connects culture and sharing economy, and analyzes their relationship, therefore providing valuable findings. The author sees a few possibilities on how to continue the research in this area in the future. Firstly, enlarging the sample size in the regressions will be very valuable in getting more accurate results. That will be possible by taking Timbro Sharing Economy Index's data over a certain amount of consecutive years or, if new research will be done. Another interesting idea is to see how the relationship of cultural characteristics differs across different sharing economy sectors, however the availability of data is a major concern here.

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8. Appendices

Appendix 1: The Hofstede Model

In Table 4, the whole data set used in the Hofstede Model is presented. This includes 68 countries, the Timbro Sharing Economy Index, as the dependent variable, and nine independent variables (four Hofstede Cultural Dimensions and five non-cultural characteristics).

Table 4: Data set used in the Hofstede Model

Country	TSEI	Hofstede PDI	Hofstede IDV	Hofstede UAI	Hofstede LTO	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Argentina	2.9	49.0	46.0	86.0	20.4	52.3	20537.06	75.8%	30.7	0.825
Australia	26.2	38.0	90.0	51.0	21.2	80.9	52373.46	86.5%	52.0	0.939
Austria	0.9	11.0	55.0	70.0	60.5	71.8	52137.43	87.9%	51.3	0.908
Bangladesh	0.0	80.0	20.0	60.0	47.1	55.1	4619.79	18.0%	23.1	0.608
Belgium	9.4	65.0	75.0	94.0	81.9	67.5	48244.66	87.7%	50.5	0.916
Brazil	4.0	69.0	38.0	76.0	43.8	51.4	16154.33	67.5%	33.4	0.759
Bulgaria	6.1	70.0	30.0	85.0	69.0	68.3	23155.64	63.4%	42.6	0.813
Canada	16.6	39.0	80.0	48.0	36.0	77.7	49651.18	92.7%	53.0	0.926
Colombia	0.3	67.0	13.0	80.0	13.1	68.9	14943.48	62.3%	33.8	0.747
Costa Rica	0.7	35.0	15.0	86.0	19.0	65.6	17559.06	71.6%	35.7	0.794
Croatia	52.2	73.0	33.0	80.0	58.4	61.0	26221.43	67.1%	40.7	0.831
Czech Republic	0.6	57.0	58.0	74.0	70.0	74.2	37370.97	78.7%	48.7	0.888
Denmark	45.9	18.0	74.0	23.0	34.8	76.6	52120.54	97.1%	58.4	0.929
Dominican Republic	3.0	65.0	30.0	45.0	13.1	61.6	18424.61	65.0%	29.3	0.736
Ecuador	1.8	78.0	8.0	67.0	18.0	48.5	11718.05	57.3%	26.8	0.752
El Salvador	0.6	66.0	19.0	94.0	19.6	63.2	8041.20	31.3%	25.1	0.674
Estonia	14.0	40.0	60.0	60.0	82.1	78.8	34095.76	88.1%	50.5	0.871
Finland	12.5	33.0	63.0	59.0	38.3	74.1	46429.53	87.5%	59.6	0.920
France	25.1	68.0	71.0	86.0	63.5	63.9	45775.15	80.5%	54.4	0.901
Germany	3.4	35.0	67.0	65.0	82.9	74.2	52558.69	84.4%	58.0	0.936
Greece	22.5	60.0	35.0	112.0	45.3	57.3	29122.96	69.9%	38.9	0.870
Guatemala	1.1	95.0	6.0	101.0	19.0	63.4	8436.37	40.7%	25.5	0.650
Hungary	6.5	46.0	80.0	82.0	58.2	66.7	31902.67	76.8%	44.9	0.838
Chile	9.8	63.0	23.0	86.0	31.0	75.2	25978.33	82.3%	37.8	0.843
China	0.3	80.0	20.0	30.0	87.4	57.8	18109.81	54.3%	53.1	0.752

Country	TSEI	Hofstede PDI	Hofstede IDV	Hofstede UAI	Hofstede LTO	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Hong Kong (China)	3.9	68.0	25.0	29.0	61.0	90.2	64215.67	89.4%	54.6	0.933
Iceland	100.0	30.0	60.0	50.0	28.0	77.0	55917.32	98.3%	51.2	0.935
India	0.1	77.0	48.0	40.0	50.9	54.5	7873.73	34.5%	35.2	0.640
Indonesia	0.6	78.0	14.0	48.0	62.0	64.2	13229.54	32.3%	29.8	0.694
Iran (Islamic Republic of)	0.3	58.0	41.0	59.0	13.6	50.9	19556.55	60.4%	33.4	0.798
Ireland	41.0	28.0	70.0	35.0	24.4	80.4	78784.83	84.5%	57.2	0.938
Israel	13.1	13.0	54.0	81.0	37.5	72.2	37972.00	81.6%	56.8	0.903
Italy	21.2	50.0	76.0	75.0	61.5	62.5	39636.99	61.3%	46.3	0.880
Jamaica	6.9	45.0	39.0	13.0	14.0	69.1	9446.57	48.8%	30.4	0.732
Japan	1.9	54.0	46.0	92.0	87.9	72.3	44227.16	90.9%	55.0	0.909
Latvia	6.9	44.0	70.0	63.0	68.8	73.6	29901.29	81.3%	43.2	0.847
Lithuania	1.2	42.0	60.0	65.0	81.9	75.3	34825.79	77.6%	41.2	0.858
Luxembourg	0.0	40.0	60.0	70.0	64.0	76.4	106704.93	97.8%	54.5	0.904
Malaysia	4.4	104.0	26.0	36.0	40.8	74.5	30859.87	80.1%	43.0	0.802
Malta	58.2	56.0	59.0	96.0	47.1	68.5	45605.88	80.1%	50.3	0.878
Mexico	3.0	81.0	30.0	82.0	24.2	64.8	20601.66	63.9%	35.3	0.774
Morocco	2.5	70.0	46.0	68.0	14.1	61.9	8932.58	61.8%	31.1	0.667
Netherlands	14.6	38.0	80.0	53.0	67.0	76.2	56383.25	93.2%	63.3	0.931
New Zealand	52.8	22.0	79.0	49.0	32.7	84.2	40135.41	90.8%	51.3	0.917
Norway	29.0	31.0	69.0	50.0	34.5	74.3	74356.07	96.5%	52.6	0.953
Pakistan	0.0	55.0	14.0	70.0	49.9	54.4	5679.75	15.5%	24.1	0.562
Panama	0.8	95.0	11.0	86.0	19.0	67.0	25674.51	57.9%	32.4	0.789
Peru	0.4	64.0	16.0	87.0	25.2	68.7	14224.26	48.7%	31.8	0.750
Philippines	1.3	94.0	32.0	44.0	27.5	65.0	8935.92	60.1%	31.6	0.699
Poland	1.8	68.0	60.0	93.0	37.8	68.5	31938.66	76.0%	41.7	0.865
Portugal	25.6	63.0	27.0	104.0	28.2	63.4	32006.43	73.8%	45.7	0.847
Republic of Korea (South)	1.9	60.0	18.0	85.0	100.0	73.8	41350.59	95.1%	56.6	0.903
Romania	2.4	90.0	30.0	90.0	51.9	69.4	26446.74	63.7%	37.6	0.811
Russian Federation	1.2	93.0	39.0	95.0	81.4	58.2	29266.86	76.0%	37.9	0.816
Serbia	4.2	86.0	25.0	92.0	52.1	62.5	17555.15	70.3%	35.5	0.787
Singapore	5.6	74.0	20.0	8.0	71.5	88.8	100344.68	84.4%	59.8	0.932
Slovakia	0.1	104.0	52.0	51.0	76.6	65.3	35129.79	81.6%	42.9	0.855
Slovenia	0.5	71.0	27.0	88.0	48.6	64.8	36745.89	78.9%	46.9	0.896
Spain	22.7	57.0	51.0	86.0	47.6	65.1	40138.82	84.6%	48.7	0.891
Sweden	13.4	31.0	71.0	29.0	52.9	76.3	52984.11	96.4%	63.1	0.933
Switzerland	16.0	34.0	68.0	58.0	73.6	81.7	64649.06	93.7%	68.4	0.944
Thailand	2.4	64.0	20.0	64.0	31.7	67.1	19476.48	52.9%	38.0	0.755

Country	TSEI	Hofstede PDI	Hofstede IDV	Hofstede UAI	Hofstede LTO	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Trinidad and Tobago	3.0	47.0	16.0	55.0	12.6	57.7	32253.75	77.3%	27.0	0.784
Turkey	1.8	66.0	37.0	85.0	45.6	65.4	27956.09	64.7%	37.4	0.791
United Kingdom of Great Britain and Northern Ireland	20.5	35.0	89.0	35.0	51.1	78.0	45704.62	94.6%	60.1	0.922
United States of America	9.5	40.0	91.0	46.0	25.7	75.7	62605.59	75.2%	59.8	0.924
Uruguay	11.7	61.0	36.0	100.0	26.2	69.2	23274.14	68.3%	34.2	0.804
Vietnam	0.8	70.0	20.0	30.0	57.2	53.1	7510.53	49.6%	37.9	0.694

Appendix 2: The Non-Hofstede Model

In Table 5, the whole data set used in the Non-Hofstede Model is presented. This includes 124 countries, the Timbro Sharing Economy Index, as the dependent variable, and five independent variables (five non-cultural characteristics).

Table 5: Data set used in the Non-Hofstede Model

Country	TSEI	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Albania	3.3	64.5	13344.54	71.8%	30.0	0.785
Algeria	0.2	44.7	15439.92	47.7%	23.9	0.754
Argentina	2.9	52.3	20537.06	75.8%	30.7	0.825
Armenia	3.7	68.7	10176.09	69.7%	32.8	0.755
Australia	26.2	80.9	52373.46	86.5%	52.0	0.939
Austria	0.9	71.8	52137.43	87.9%	51.3	0.908
Azerbaijan	0.7	64.3	18075.90	79.0%	30.2	0.757
Bahrain	0.3	67.7	50056.50	95.9%	31.7	0.846
Bangladesh	0.0	55.1	4619.79	18.0%	23.1	0.608
Belarus	0.2	58.1	20003.03	74.4%	29.4	0.808
Belgium	9.4	67.5	48244.66	87.7%	50.5	0.916
Benin	0.1	56.7	2426.48	14.1%	20.6	0.515
Bolivia (Plurinational State of)	0.3	44.1	7476.94	43.8%	22.9	0.693
Bosnia and Herzegovina	5.7	61.4	13490.95	69.5%	31.1	0.768
Botswana	1.0	69.9	17965.38	41.4%	28.2	0.717
Brazil	4.0	51.4	16154.33	67.5%	33.4	0.759
Brunei Darussalam	1.5	64.2	79529.86	94.9%	32.8	0.853
Bulgaria	6.1	68.3	23155.64	63.4%	42.6	0.813
Burkina Faso	0.1	60.0	1996.14	15.9%	18.9	0.423

Country	TSEI	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Cambodia	0.9	58.7	4334.75	34.0%	26.7	0.582
Cameroon	0.1	51.9	3828.20	23.2%	23.8	0.556
Canada	16.6	77.7	49651.18	92.7%	53.0	0.926
Colombia	0.3	68.9	14943.48	62.3%	33.8	0.747
Costa Rica	0.7	65.6	17559.06	71.6%	35.7	0.794
Côte d'Ivoire	0.2	62.0	4177.64	43.8%	20.0	0.492
Croatia	52.2	61.0	26221.43	67.1%	40.7	0.831
Cyprus	18.8	67.8	39973.22	80.7%	47.8	0.869
Czech Republic	0.6	74.2	37370.97	78.7%	48.7	0.888
Denmark	45.9	76.6	52120.54	97.1%	58.4	0.929
Dominican Republic	3.0	61.6	18424.61	65.0%	29.3	0.736
Ecuador	1.8	48.5	11718.05	57.3%	26.8	0.752
Egypt	0.6	53.4	13366.47	45.0%	27.2	0.696
El Salvador	0.6	63.2	8041.20	31.3%	25.1	0.674
Estonia	14.0	78.8	34095.76	88.1%	50.5	0.871
Finland	12.5	74.1	46429.53	87.5%	59.6	0.920
France	25.1	63.9	45775.15	80.5%	54.4	0.901
Georgia	20.3	76.2	11485.44	60.5%	35.0	0.780
Germany	3.4	74.2	52558.69	84.4%	58.0	0.936
Ghana	0.3	56.0	6451.72	37.9%	24.5	0.592
Greece	22.5	57.3	29122.96	69.9%	38.9	0.870
Guatemala	1.1	63.4	8436.37	40.7%	25.5	0.650
Guinea	0.0	52.2	2309.62	11.4%	20.7	0.459
Honduras	0.5	60.6	5212.02	32.1%	24.9	0.617
Hungary	6.5	66.7	31902.67	76.8%	44.9	0.838
Chile	9.8	75.2	25978.33	82.3%	37.8	0.843
China	0.3	57.8	18109.81	54.3%	53.1	0.752
Hong Kong (China)	3.9	90.2	64215.67	89.4%	54.6	0.933
Iceland	100.0	77.0	55917.32	98.3%	51.2	0.935
India	0.1	54.5	7873.73	34.5%	35.2	0.640
Indonesia	0.6	64.2	13229.54	32.3%	29.8	0.694
Iran (Islamic Republic of)	0.3	50.9	19556.55	60.4%	33.4	0.798
Ireland	41.0	80.4	78784.83	84.5%	57.2	0.938
Israel	13.1	72.2	37972.00	81.6%	56.8	0.903
Italy	21.2	62.5	39636.99	61.3%	46.3	0.880
Jamaica	6.9	69.1	9446.57	48.8%	30.4	0.732
Japan	1.9	72.3	44227.16	90.9%	55.0	0.909
Jordan	0.8	64.9	9433.46	66.8%	30.8	0.735

Country	TSEI	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Kazakhstan	0.7	69.1	27549.81	76.4%	31.4	0.800
Kenya	1.2	54.7	3690.92	17.8%	31.1	0.590
Kuwait	0.1	62.2	67000.19	98.0%	34.4	0.803
Kyrgyzstan	0.6	62.8	3843.58	38.2%	27.6	0.672
Latvia	6.9	73.6	29901.29	81.3%	43.2	0.847
Lebanon	1.4	53.2	14684.07	78.2%	28.2	0.757
Lithuania	1.2	75.3	34825.79	77.6%	41.2	0.858
Luxembourg	0.0	76.4	106704.93	97.8%	54.5	0.904
Madagascar	0.1	56.8	1630.21	9.8%	24.8	0.519
Malawi	0.1	52.0	1199.40	13.8%	23.1	0.477
Malaysia	4.4	74.5	30859.87	80.1%	43.0	0.802
Mali	0.1	57.6	2383.96	12.7%	23.3	0.427
Malta	58.2	68.5	45605.88	80.1%	50.3	0.878
Mauritius	11.3	75.1	23699.48	55.6%	31.3	0.790
Mexico	3.0	64.8	20601.66	63.9%	35.3	0.774
Mongolia	1.6	55.7	13446.54	23.7%	35.9	0.741
Montenegro	58.0	64.3	19043.32	71.3%	36.5	0.814
Morocco	2.5	61.9	8932.58	61.8%	31.1	0.667
Mozambique	0.1	46.3	1291.45	20.8%	23.1	0.437
Nepal	0.5	54.1	2904.86	21.4%	24.2	0.574
Netherlands	14.6	76.2	56383.25	93.2%	63.3	0.931
New Zealand	52.8	84.2	40135.41	90.8%	51.3	0.917
Niger	0.0	49.5	1216.76	10.2%	20.6	0.354
Nigeria	0.0	58.5	6027.17	27.7%	22.4	0.532
Norway	29.0	74.3	74356.07	96.5%	52.6	0.953
Oman	0.5	61.0	46583.97	80.2%	32.8	0.821
Pakistan	0.0	54.4	5679.75	15.5%	24.1	0.562
Panama	0.8	67.0	25674.51	57.9%	32.4	0.789
Paraguay	0.4	62.1	13395.30	61.1%	28.7	0.702
Peru	0.4	68.7	14224.26	48.7%	31.8	0.750
Philippines	1.3	65.0	8935.92	60.1%	31.6	0.699
Poland	1.8	68.5	31938.66	76.0%	41.7	0.865
Portugal	25.6	63.4	32006.43	73.8%	45.7	0.847
Qatar	0.5	72.6	130475.07	95.9%	36.6	0.856
Republic of Korea (South)	1.9	73.8	41350.59	95.1%	56.6	0.903
Republic of Moldova	1.0	58.4	7304.50	76.1%	37.6	0.700
Romania	2.4	69.4	26446.74	63.7%	37.6	0.811
Russian Federation	1.2	58.2	29266.86	76.0%	37.9	0.816

Country	TSEI	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Rwanda	0.2	69.1	2280.09	21.8%	26.5	0.524
Saudi Arabia	1.4	59.6	55943.86	82.1%	34.3	0.853
Senegal	0.7	55.7	3651.16	29.6%	26.5	0.505
Serbia	4.2	62.5	17555.15	70.3%	35.5	0.787
Singapore	5.6	88.8	100344.68	84.4%	59.8	0.932
Slovakia	0.1	65.3	35129.79	81.6%	42.9	0.855
Slovenia	0.5	64.8	36745.89	78.9%	46.9	0.896
South Africa	4.7	63.0	13675.34	56.2%	35.1	0.699
Spain	22.7	65.1	40138.82	84.6%	48.7	0.891
Sri Lanka	3.4	57.8	13397.47	34.1%	28.7	0.770
Sweden	13.4	76.3	52984.11	96.4%	63.1	0.933
Switzerland	16.0	81.7	64649.06	93.7%	68.4	0.944
Tajikistan	0.1	58.3	3415.78	22.0%	26.5	0.650
Thailand	2.4	67.1	19476.48	52.9%	38.0	0.755
Macedonia (TFYR)	4.7	71.3	15709.49	76.3%	29.9	0.757
Togo	0.1	47.8	1745.57	12.4%	18.9	0.503
Trinidad and Tobago	3.0	57.7	32253.75	77.3%	27.0	0.784
Tunisia	1.6	58.9	12371.69	55.5%	32.9	0.735
Turkey	1.8	65.4	27956.09	64.7%	37.4	0.791
Uganda	0.2	62.0	2497.56	23.7%	25.3	0.516
Ukraine	0.6	51.9	9283.43	57.1%	38.5	0.751
United Arab Emirates	2.6	77.6	69381.71	94.8%	42.6	0.863
United Kingdom of Great Britain and Northern Ireland	20.5	78.0	45704.62	94.6%	60.1	0.922
United Republic of Tanzania	0.6	59.9	3443.66	16.0%	28.1	0.538
United States of America	9.5	75.7	62605.59	75.2%	59.8	0.924
Uruguay	11.7	69.2	23274.14	68.3%	34.2	0.804
Vietnam	0.8	53.1	7510.53	49.6%	37.9	0.694
Zambia	0.3	54.3	4103.50	27.9%	20.7	0.588
Zimbabwe	0.3	44.0	2787.63	27.1%	23.1	0.535

Appendix 3: The Flash Eurobarometer Model

In Table 6, the whole data set used in the Flash Eurobarometer Model is presented. This includes 54 observations, the participation results of the survey (used at least once), as the dependent variable, and nine independent variables (four Hofstede Cultural Dimensions and five non-cultural characteristics).

Table 6: Data set used in the Flash Eurobarometer Model

Country	Used	Hofstede PDI	Hofstede IDV	Hofstede UAI	Hofstede LTO	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Belgium 2016	8%	65	75	94	82	68.41	45280.98	86.5%	51.97	0.915
Belgium 2018	18%	65	75	94	82	67.50	48244.66	87.7%	50.50	0.916
Bulgaria 2016	17%	70	30	85	69	65.86	20474.21	59.8%	41.42	0.810
Bulgaria 2018	17%	70	30	85	69	68.30	23155.64	63.4%	42.60	0.813
Czech Republic 2016	7%	57	58	74	70	73.22	33520.03	76.5%	49.40	0.885
Czech Republic 2018	19%	57	58	74	70	74.20	37370.97	78.7%	48.70	0.888
Denmark 2016	14%	18	74	23	35	75.26	48950.10	97.0%	58.45	0.928
Denmark 2018	26%	18	74	23	35	76.60	52120.54	97.1%	58.40	0.929
Germany 2016	20%	35	67	65	83	74.37	48843.15	84.4%	57.94	0.934
Germany 2018	19%	35	67	65	83	74.20	52558.69	84.4%	58.00	0.936
Estonia 2016	20%	40	60	60	82	77.22	30106.88	87.2%	51.73	0.868
Estonia 2018	31%	40	60	60	82	78.80	34095.76	88.1%	50.50	0.871
Ireland 2016	35%	28	70	35	24	77.31	67776.46	84.5%	59.03	0.934
Ireland 2018	34%	28	70	35	24	80.40	78784.83	84.5%	57.20	0.938
Greece 2016	9%	60	35	112	45	53.21	26849.57	69.1%	39.75	0.868
Greece 2018	22%	60	35	112	45	57.30	29122.96	69.9%	38.90	0.870
Spain 2016	19%	57	51	86	48	68.48	36522.30	80.6%	49.19	0.889
Spain 2018	24%	57	51	86	48	65.10	40138.82	84.6%	48.70	0.891
France 2016	36%	68	71	86	63	62.32	42525.48	79.3%	54.04	0.899
France 2018	33%	68	71	86	63	63.90	45775.15	80.5%	54.40	0.901
Croatia 2016	24%	73	33	80	58	59.13	23361.84	72.7%	38.29	0.828
Croatia 2018	27%	73	33	80	58	61.00	26221.43	67.1%	40.70	0.831
Italy 2016	17%	50	76	75	61	61.17	37003.67	61.3%	47.17	0.878
Italy 2018	18%	50	76	75	61	62.50	39636.99	61.3%	46.30	0.880
Latvia 2016	24%	44	70	63	69	70.41	25716.66	79.8%	44.33	0.844
Latvia 2018	40%	44	70	63	69	73.60	29901.29	81.3%	43.20	0.847
Lithuania 2016	10%	42	60	65	82	75.23	30129.43	74.4%	41.76	0.855
Lithuania 2018	18%	42	60	65	82	75.30	34825.79	77.6%	41.20	0.858
Luxembourg 2016	13%	40	60	70	64	73.86	102325.40	97.8%	57.11	0.904
Luxembourg 2018	22%	40	60	70	64	76.40	106704.93	97.8%	54.50	0.904
Hungary 2016	16%	46	80	82	58	66.01	27868.51	79.3%	44.71	0.835
Hungary 2018	33%	46	80	82	58	66.70	31902.67	76.8%	44.90	0.838
Malta 2016	4%	56	59	96	47	66.70	39994.72	77.3%	50.44	0.875

Country	Used	Hofstede PDI	Hofstede IDV	Hofstede UAI	Hofstede LTO	HFIEF	GDP per capita PPP	Internet Penetration	GII	HDI
Malta 2018	35%	56	59	96	47	68.50	45605.88	80.1%	50.30	0.878
Netherlands 2016	12%	38	80	53	67	74.55	51783.06	90.4%	58.29	0.928
Netherlands 2018	30%	38	80	53	67	76.20	56383.25	93.2%	63.30	0.931
Austria 2016	15%	11	55	70	60	71.67	48290.40	84.3%	52.65	0.906
Austria 2018	19%	11	55	70	60	71.80	52137.43	87.9%	51.30	0.908
Poland 2016	15%	68	60	93	38	69.29	27834.13	73.3%	40.22	0.860
Poland 2018	20%	68	60	93	38	68.50	31938.66	76.0%	41.70	0.865
Portugal 2016	8%	63	27	104	28	65.08	29162.68	70.4%	46.45	0.845
Portugal 2018	17%	63	27	104	28	63.40	32006.43	73.8%	45.70	0.847
Romania 2016	20%	90	30	90	52	65.64	22509.15	59.5%	37.90	0.807
Romania 2018	23%	90	30	90	52	69.40	26446.74	63.7%	37.60	0.811
Slovenia 2016	10%	71	27	88	49	60.63	32232.32	75.5%	45.97	0.894
Slovenia 2018	30%	71	27	88	49	64.80	36745.89	78.9%	46.90	0.896
Slovakia 2016	14%	104	52	51	77	66.55	31475.81	80.5%	41.70	0.853
Slovakia 2018	31%	104	52	51	77	65.30	35129.79	81.6%	42.90	0.855
Finland 2016	8%	33	63	59	38	72.56	42597.77	87.7%	59.90	0.918
Finland 2018	21%	33	63	59	38	74.10	46429.53	87.5%	59.60	0.920
Sweden 2016	15%	31	71	29	53	71.96	49805.77	89.7%	63.57	0.932
Sweden 2018	21%	31	71	29	53	76.30	52984.11	96.4%	63.10	0.933
United Kingdom of Great Britain and Northern Ireland 2016	8%	35	89	35	51	76.41	43013.11	94.6%	61.93	0.920
United Kingdom of Great Britain and Northern Ireland 2018	30%	35	89	35	51	78.00	45704.62	94.6%	60.10	0.922