Factors affecting the threshold height for public tendering

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ABSTRACT,
Public tendering is the procurement of goods or/and services for a public authority. Certain thresholds determine the point above which a public authority should go for a public tendering procedure, instead of simply selecting a (number of) bidder(s) and inviting them to come with an offer. Every country has different policies on the thresholds for public tendering. Interesting are the differences between the threshold heights for public tendering of countries. We tried to find an explanation for these differences via analysing possible factors which may influence the height of the national threshold. We searched for these factors by looking into literature, making use of theory, and by interviewing experts on the field of public tendering. Eventually we found a set of factors which we tested for their significant correlation with the threshold heights. Some factors are significantly influencing the threshold heights, and based on these we can draw our conclusions about how the threshold heights are set and what is influencing them.

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1. Introduction

Every year, over 250000 public authorities in the EU spend around 14% of the GDP on the purchasing of services, works and supplies. The EU has set directives to lead the procurement processes in the EU. The core principles of these directives are to create transparency, equal treatment, open competition, and sound procedural management. [1]The directives state that when a work/service is estimated to cost more than a pre-set amount of money, it should be acquired via a public tendering procedure. This given amount of money above which they should go for a public tendering procedure is called the EU threshold. The EU has set different thresholds per domain. The dominant thresholds are 209.000 Euro for Services and 5.225.000 million Euro for works.[2] Below this EU given threshold, countries have the right to set their own thresholds.[3] In practice, these countries introduce a second threshold above which they require "national public tendering". So above the national level threshold, companies and institutions in that country must go for a public tendering procedure. Below the national threshold, companies and institutions are allowed to invite a set of suppliers which they selected themselves. You would expect that these national thresholds would be about the same for most of the European countries. However, they are not, as can be seen in the table below. In this research we will try to find potential factors which could explain the difference between the national thresholds of countries. There may be a link between different factors and their impact on the height of the threshold.

Country	Works (euro)	Services (euro)	Supplies (euro)
Australia	400.000	400.000	400.000
Austria	120.000	80.000	80.000
Belgium	135.000	135.000	135.000
Bulgaria	100.000	25.000	25.000
Canada	67.587	16.897	16.897
China	78.773	65.644	65.644
Cyprus	85.000	85.000	85.000
The Czech Republic	210.000	70.000	70.000
Denmark	40.000	67.000	67.000
Estonia	250.000	40.000	40.000
Finland	100.000	15.000	15.000
France	90.000	90.000	90.000
Germany	5.225.000	135.000	135.000
Greece	5.225.000	135.000	135.000
Hungary	50.000	26.700	26.700
Ireland	50.000	50.000	50.000
Italy	40.000	20.000	20.000
Latvia	170.000	30.000	30.000
Lithuania	145.000	30.000	30.000
Luxemburg	100.000	100.000	100.000
Malta	135.000	135.000	135.000
The Netherlands	900.000	70.000	70.000
Poland	30.000	30.000	30.000
Romania	750.000	100.000	100.000
The Slovak Republic	360.000	65.000	65.000
Slovenia	80.000	40.000	40.000
Spain	50.000	18.000	18.000
Sweden	5.225.000	135.000	135.000
The United Kingdom	5.225.000	135.000	135.000

Table 1. Thresholds for public tendering

A public tendering procedure has the advantage that it stimulates the competition between the suppliers in the market. Due to this the tenderer will get best value for money. However in an imperfect market it may be more effective to just invite a given set of suppliers. This because all the work with preparing an evaluation of all the tenders from the bidders, and setting up the procedure may cost more than the extra value a public tendering procedure will give.[4] From an economic perspective the threshold should be a point after which the extra revenue gathered from a public tendering procedure, will be more than the extra costs. However, there are also other factors taken into account when choosing the public tendering procedure. Think of things like quality, delivery and dependability.

Because of the big differences between the European countries in their thresholds, and the seemingly equality between the countries, we are very curious to the reasons for these differences. Therefore we want to find possible reasons and factors which influence the height of the thresholds for public tendering. Our research question will be:

Why do national thresholds for public tendering differ per country?

In this we search for possible 'factors' which may influence the threshold. In order to give a good answer on the research question, the research has some sub-questions:

- *What is known from literature?*
- *What are (possible) factors which influence a countries threshold for public tendering?*
- *Gathering the data of all European countries, and making a good overview.*

[1] https://ec.europa.eu/growth/single-market/public-procurement_en
[2] Molander 2014, p. 182
[3] https://ec.europa.eu/growth/single-market/public-procurement_en
[4] To tender or to negotiate: the buyer's dilemma – 1995 - Holmes

- *Seeking for statistical relationships between the found factors and the height of the threshold.*

This divides the research into 4 sub-parts. These four parts together should give enough ground to answer the research question. In the third point of these four points, we will gather information via the way of interviews with experts on the field of public tendering. The people interviewed can possibly give us some potential factors in which we can do deeper research.

2. Methodology

2.1 Research nature

This paper represents an explanatory study into the explanation between the differences of the threshold heights of different countries. Explanatory research, better known as causal research, studies the cause-and-effect relationship between different variables. We search for the correlation between factors and threshold heights, to find what causes the difference between threshold heights of countries. Due to this we can speak of an explanatory research.

There are two types of research methods that can be used for exploring the cause-and-effect relationship between variables. Namely experimentation and statistical research. We want to test the significance between the possible factors influencing the countries public tendering threshold, and the height of a countries threshold value. To do so, we make use of statistical research methods.

2.2 Literature review

In this section we will search for former research into factors which influence the national threshold for public tendering. One of the things we need to know is why a country chooses for a certain threshold height. The question linked to this point is: 'how did a country come up with this threshold'. So first we will try to understand why countries actually have these thresholds, and then we will try to find out why countries have their own specific regulation on the public tendering procedures. To come up with a good answer we will search through the literature to find reasoning for the thresholds set in the different countries. There are two types of literature we will search through, namely scientific literature, and literature about law and policy. In the search for specific information about research into countries thresholds, search engines like Scopus/Google Scholar/FindUT will be used. Here we will search for prior research into the field of thresholds for public tendering. However we will also need European and governmental sites of countries in order to find out why countries choose certain thresholds and what factors they think are important to take into consideration. These sites will also give us insight into the rules and regulation the country uses, and useful data and figures will also be shown on these sites. By using these websites we hope we will be able to make a graph in which we put all the countries and their thresholds.

The paper will consist of two parts, namely a contextual part and a statistical part. The statistical part will function as a foundation for the statements made in the contextual parts.

2.3 Influencing factors

For the second stage we will come closer to the research question by taking a look at the influencing factors of the threshold for public tendering. We will try to identify potential factors through:

1. Literature;
2. Conducting interviews with experts;
3. By theory;

With theory we mean reasoning by using our own knowledge. An interview is a useful method, however, it should not be used in isolation. In the interviews we will ask experts for potential factors which influence the threshold for public tendering in their country. By asking them about their current knowledge about the threshold value in their country, and what they assume are (potential) factors which influence the threshold height, we hope to get useful information for our research.

Off course there has to be data available about the potential factors which are seen. If there is not any data available, the potential factor will be mentioned, but cannot be statistically researched. To the factors which already is done research, the results will be described. We could also perform the research again, by using a different measuring index/level as the former researcher of the topic used. You could come up with different results and maybe find a significant correlation. In order to do a good analysis, data needs to be gathered from all the factors mentioned. Due to time we will try to gather most of the data needed via sources which are easy to access via for example governmental and European sites. We made the decision to also include data from some non-European countries, to get better and more generalizable results.

2.4 Statistical relationships

In the third stage the relational significance between the potential factors and the thresholds for public tendering per country will be tested. To test the significance of the potential factors, we will make use of the program called SPSS. This is a statistical program on which the significance of correlations can be tested. The independent variable should be the factor which influences the threshold height, and the dependent variable is the threshold height for public tendering. This means that when one of the factors changes, it should have an effect on the threshold heights. Several methods are needed to test the significance between the independent and dependent variable(s). This because the potential factors can be nominal, ordinal, interval or ratio variables. The dependent variable, the threshold height, is an interval variable, due to the fact that every country has a national threshold, or no threshold, this means that there is no 0 point. For the different types of independent variables, different methods are needed. We assume that the potential factors are mostly ordinal and interval variables. In case that the independent variable is a ratio or interval variable, and the dependent variable is also a ratio or interval variable, we can use a Pearson correlation test to check the significance of the relation. Another assumption which should be met is that the values are approximately normal distributed. The hypothesis in the tests will be:

H_0 = the independent variable doesn't affect the dependent variable;

H_1 = the independent variable does positively/negatively affect the dependent variable;

3. Literature review

3.1 Defining the concept of public tendering

As mentioned before a public agency needs to go for a public tendering procedure after passing a certain threshold. There are various public tendering procedures but the two which are most used, and are the ones which this paper is about, are the open and restricted procedure. Which one of these two is chosen after passing a certain threshold is up to a country self. In the paper of Telgen and Heijboer is stated that the choice between the two procedures is based upon: 'the expected level of market competition, expected tendering costs, and time that will be involved'[5].

In the database of google scholar we found a publication of Molander by the search term: 'Public procurement in the European Union'. In this publication he states that a public tendering procedure is chosen when the estimated costs of a service/supplies/works, pass a certain threshold. It is however hard to estimate what the perfect threshold value is, due to the fact that a lower threshold value brings for example more administrative costs, but also enhances competition. The dilemma about the best threshold value is also subject in the paper of two master students at the University of Twente, they state:

"Using a rather difficult procedure will cost a lot of time and can thus be expensive (indirectly), so this will eventually take up a large percentage of total procurement costs. Companies may therefore be hesitant to use the open or restricted procedure more often and countries may therefore not be willing to lower the threshold, which will eventually enhance competition. Being able to find 'best practices' in other countries and finding a formula for the relationship between the costs of the tendering procedure and will hopefully help countries to lower the threshold and reap the benefits associated with it."[6]

So lowering the threshold value, and reducing the costs which need to be made to participate in an open or restricted procedure, will enhance competition and therefore will generate economic profit than it does now.

Some countries are regarded as 'similar', their thresholds for public tendering differ a lot. This is also stated in the publication of Molander 2014:

'EU procurement directives and national legislation are only to a limited extent based on analyses of potential gains and transaction costs, however; unsurprisingly, there is considerable variation below the EU threshold across otherwise similar countries (OECD, 2010). There exist a number of studies of the gains from competition, but these often refer to more fundamental reforms, such as the transition from in-house production to outsourcing preceded by formal procurement. Therefore, these studies may be difficult to use in discussions on specific aspects of public procurement regulations."[7]

Molander also states that the administrative costs associated with a public procedure are normally lower than expected in the public debate. At an already low contract value, the gains will outweigh the costs. The critical attitude of the procuring entities is very understandable, they want to keep a certain degree of freedom at the focal level to be defended. One explanation that the extra administrative costs associated with a public tendering procedure are often overrated, is that because people forget that for the other procurement procedures also administrative costs have to be made.[8]

Our Belgium expert on the field of public procurement, B. Baeyens, tipped us about his publication about public tendering in Belgium. He gave us a link to Springer, on which we found his publication about the public tendering situation in Belgium, compared to the Netherlands and France. In this publication was stated that one critical issue of the public procurement process is that the government has to balance between various objectives during procurement. Economic efficiency can be considered important, but also things like employment generation, promotion of local and small businesses, making environmentally friendly purchases, etc. It is very logic and possible that sometimes some of these objectives conflict with each other. So an issue with a public tendering procedure is how to address these conflicting objectives.[9] Since we are searching for factors which are influencing the threshold height, it could also be that a country is making a trade-off between the various factors when determining the threshold. Say to fight corruption the country will need a lower threshold, but for better competition they will need a higher one.

We have now already mentioned two factors which are researched and have an influence on the threshold height. Namely the factor researched by Molander, administrative costs, and the factor mentioned in the publication of Baeyens, which is the trade of between various objectives of importance in a tender.

3.2 The role of national thresholds in public tendering

Countries set rules and regulation on the height of their threshold. This is in order to achieve certain goals. Every country may have its own objectives with their threshold height but one of the most common goals is that it is to ensure the open competition. Via the search term: 'public procurement' in google scholar we found the article of Mukhopadhyay in which he stated the same as what was stated prior in the article of Baeyens that: 'public procurement often has to balance between various objectives, some of which may be in conflict with each other. The biggest challenge is therefore to design

[5] Choosing the open ore the restricted procedure: a big deal or a bid deal?
[6] Thresholds - Boerkamp, E., Kerkhof, J.
[7] Molander, 2014 (p. 182)
[8] Molander, 2014 (p.209)
[9] *Evaluating Public Procurement(2011) - Bappaditya Mukhopadhyay*

procurement mechanisms that encourage economic efficiency, fairness, and is transparency'. There is also stated that for the national set thresholds countries often take the EU regulation as an example for their national regulation. They will simplify it, which for example means that they shorten the time limits for submission of applications and tenders, or less demanding rules for publication and selection of tenders. Sometimes they set more relaxed rules for the negotiated procedures and the use of direct invitations to tender. In these cases they only have for example a minimum amount of tenderers they need to invite or requests for prior publication.[10] Molander discusses in his paper the role of administrative costs in setting the threshold for public tendering. He states:

"The threshold value in a procurement regulatory framework determines how large a proportion of all procurement operations will be captured by the framework and subject to competition. Because it is a standard value, there will always be two types of errors: in some procurement operations, the gains from competition will not cover the additional administrative cost incurred, whereas some procurement operations will not be subjected to competition, although the potential gain would justify doing so."[11]

Molander states that when choosing a threshold, it will not serve perfectly one goal. In this case he states that probably not in all cases the extra gains will exceed the extra administrative costs from choosing a public tendering procedure. This is also the case when talking about other goals the threshold needs to accomplish. So there need to be made a trade-off between all the goals which are wanted to be accomplished by a country.

In the paper written by our Belgium expert, B. Baeyens, is stated that Belgium should take an example to the Netherlands and France. This because the national threshold of 85.000 is in their opinion too low. The costs which are related to a tendering process in which there is competition, make that for small contracts it is almost impossible for a tenderer to win back the costs which needed to be made. So the more participants, the less likely a tenderer will be able to win back the costs. They state the following:

So it is clear that the actual strategy that is based on "reducing barriers" by enlarging publicity and improving the opportunities to participate will not lead to more participation, especially not in small contracts, on the contrary! What is needed is that the probability of winning the contract must be enhanced, and this can be done by relaxing the competition and publicity obligations for these contracts and relaxing the rules on technical specifications. The saying attributed to Pierre de Coubertin that participation is more important than winning is clearly not relevant![12]

So the thresholds play an important role in the open competition of a country's market and the goals it wants to accomplish with its public tendering.

A lot of country specific information can be found on the websites of the European Union. Some countries have changed their regulation and thresholds for public tendering in the past years, so the data found in prior research of the European Union needs to be checked. But most of the data is very useful and still up-to-date. For the countries outside of the European Union we used the information from our interview, and information which can be found online to determine their threshold. For China we found the threshold on the site of ICLG. It stated that for supplies and services the threshold is 500.000 RMB (65.644 euro), and for works it is 600.000 RMB (78.773 euro).[13] For Canada we also used the website of ICLG again to find their threshold. They stated that for supplies and services the threshold is 25.000 Canadian dollar (16.897 euro), and for works this is 100.000 Canadian dollar (67.587 euro).[14] Table 1 is given in the introduction where all the thresholds can be found.

By looking at the role of national thresholds for public tendering we have found again an already researched factor which influences the threshold height. Namely, that when a threshold is set too low, it will not encourage participation, but it even decreases it.

3.3 Legal history

To get a better understanding about how countries come up with their thresholds and what things they take into consideration when choosing a threshold, we take a look into the legal history of three countries: the Netherlands, Germany, and Belgium. We have simply chosen these three countries because of the languages spoken in these countries. For every country we will search in their tendering law for goals they want to achieve with their law in order to find what factors they consider important.

We searched in the Dutch, German, and Belgium law to see if there was mentioned somewhere how they came up with their national thresholds in the formation of the law. However we have not find anything. What we did find were some factors mentioned in reports and by experts about what was taken into consideration when setting the threshold in their country. We will mention these points below because they can be of use for our research.

3.3.1 The Netherlands

Via the site of Euopadecentraal.nl we found a report of the Kwink Group. On the 15th of April, 2015 they published a report about the effects of the Dutch 'Aanbestedingswet 2012'. The purpose of this report was to check if the goals of the tendering law had been achieved within two years after the law coming into force. The Dutch government had the following goals in mind when making the 2012 tendering law:

- Participation of SME's, they wanted to enhance the amount of government procurement awarded to SME's;

[10] Sigma Paper No.45, 2010 (p.7)
[11] Molander, 2014
[12] Small Public Procurement Contracts 2016 – Springer

[13] https://iclg.com/practice-areas/public-procurement/public-procurement-2017/china
[14] https://iclg.com/practice-areas/public-procurement/public-procurement-2017/canada

- Innovation and sustainability as important criteria;

We also took a look into the 'memorie van toelichting Aanbestedingswet 2012'. They state the explanation about the new tendering law in the Netherlands in this memorandum. In here we found the following measures the new tendering law should accomplish:[15]

- Lowering the administrative burdens;
- Integrity in the tendering procedure;

These points of importance link to (former mentioned) factors which (could) have an influence on the tendering threshold.

3.3.2 Germany

ICLG published 'the international comparative legal guide to: Public Procurement 2016', in this guide for every country an expert was interviewed and asked about the public tendering regulation in their Country. The EU regulation focusses on non-discrimination, transparency, and competition.

In the report of the ICLG we found also other national fundamental aspects of the public tendering law in Germany:

- The bidders' right of ensuring compliance with public procurement rules;
- The consideration of medium-sized companies;
- The competence and abilities of bidders;
- Economic efficiency;

3.3.3 Belgium

Again we used ICLG as our source for information, this time for the legislation in Belgium. We will mention the most important/basic underlying principles which are relevant to the interpretation of the public tendering legislation. The most important principles in terms of public tendering are:

- Equal treatment;
- Non-discrimination;
- Free competition;
- Transparency;
- Legal certainty;
- Proportionality;

These principles are regarded important in Belgium (as well as European) law.

3.3.4 Factors

However we could not find anything in the legal history about setting the national thresholds, we have found some information about important points which countries took into consideration when setting the threshold value. The factors which can be distributed from points will be mentioned below.

Due to overlap and relevance for the research we will mention only the ones which are useful in this research. What we mean by this is that there should be a reasonable link between the factor and the threshold height. The first factor is the influence of innovation and sustainability on the threshold value. Due to competition more innovative/sustainable companies will win more often the contract if this factor is considered important. This will give more innovative/sustainable companies in countries in which this is considered more important. There could be a link between countries in which innovativeness and sustainability are considered more important in the requirements for public tendering, and the threshold height in these countries.

The second factor we found is integrity, which can however also be linked to corruption, because more integer processes normally are in less corrupt countries. So we will also be curious between the link of integer/corruption and a country's threshold height.

The third factor we found is the competence of the bidding parties. If bidding parties in a country are less competent, it could have an influence on the height of the threshold value for public tendering.

4. Economic influencing factors

As mentioned before we will use three sources for the search to influencing factors. The first and second were via literature and theory we found during the literature review in the first part of this paper. The third source for finding influencing factors will be via conducting interviews. This third part will be discussed in the next section.

The first factors we found was during the literature research. As mentioned in the former part of comparing the countries, we saw that in all the literature the aspect of corruption was mentioned. The OECD even wrote a paper about it named 'Preventing Corruption in Public Procurement'.[16] We assume that there is a relationship between the corruption level of a country and its national threshold height. Corruption can be fought by setting the national threshold lower, via this way more of the procurement goes via the public way, and makes pledging corruption harder. So our first hypothesis will be that national thresholds in more corrupt countries will be lower. To test this hypothesis we need to be able to measure corruption in a country. This can be done via various ways, think of:

- The amount of criminal activities in a country;
- The amount of people which are in prison in a country;
- The percentage of the population which is in prison;
- By looking at the transparency international index (scale for corruption of a country);

[15] https://zoek.officielebekendmakingen.nl/dossier/34329/kst-34329-3?resultIndex=53&sorttype=1&sortorder=4 + Pianoo expertise centrum aanbesteden

[16] Preventing Corruption in Public Procurement – OECD 2016

In table 1 you can find all the national thresholds. As you can see Denmark and Finland both have a very low threshold. But when looking at the corruption index, Denmark and Finland are both one of the less corrupt countries of our list. So in this case corruption does not explain the low threshold value. What they have in common is that they both are Scandinavian countries. The Scandinavian countries are known for their 'Nordic model', also known as 'Nordic social democracy'. The model refers to the economic and social policies which are common in the Nordic countries. "This model stands for a combination of free market capitalism with a comprehensive welfare state and collective bargaining at the national level." [17]As you can see the Nordic countries have some unique shared values. These are cultural as well as political. The third Scandinavian country in the table is Sweden, Sweden does not have national thresholds. The thing which is the same between Scandinavian countries is that they have a very open culture, which means that it is normal to do things more publicly. So there could be a correlation between culture and national threshold value. But also the political orientation of Scandinavian countries could explain differences between the national threshold values. There is already done research into the influence of Hofstede's cultural aspects on threshold values. However in this research they could not significantly prove that the cultural aspects were affecting the threshold height.[18]

When comparing the countries a thing which could also be interesting to look at are geographical aspects. Smaller countries have a larger share of public consumption in GDP, and they are also more open to trade.[19] Therefore a bigger country will have a different way of dealing with public tendering than a smaller country. Size may also have an effect on how easy it is to keep an eye on and govern a country's processes. On the other hand, larger countries will also have more contracts with a higher value which could also influence the threshold value. There are different ways to measure country size, think of looking at the total GDP of a country, looking at the amount of citizens a country has, or how much people are living per square kilometre.

On the right you see a table in which all the factors we found so far are given.

Factor	Literature	Theory	Interview
Administrative costs	x		
Trade of between various objectives	x		
Local and small/medium businesses	x		x
Environmentally friendly purchases/sustainability	x		
Corruption/Integrity	x		
Culture		x	
Political Orientation		x	
Country size		x	
Participation in relation to threshold height	x		
Competence of bidders	x		
Innovation	x		

Table 2: Factors influencing the threshold height

5. Interview

The third information source will be by interviewing some experts at the field of public procurement. We have send our experts a mail which can be found in appendix 1. In order to get a high response rate we only asked three questions, which are enough to get possible factors, and at the same time doesn't take too much time. This will hopefully lead to a higher response rate.

We interviewed some experts of public tendering in different countries. These countries were mostly located in the EU, but some were also outside of it. The countries in which our experts are located are: Belgium, Germany, Finland, the United Kingdom, Australia, China, and Ireland. In the sections below we will discuss the answers given by the experts per country.

5.1 The interviews

5.1.1 Finland

The expert located in Finland mentioned that the current threshold value is 60.000 euro for works, supplies and services. In the previous laws of 2007 this was 15.000, and in 2010 this was 30.000 euro. Before 2007 there was no threshold, but prejudicial cases indicated that services with a value above 6000 euro should have competition.

He mentioned that when drafting the new law there was a major issue on what factors should be taken into consideration when setting the new national threshold. The Ministry of Economy and Employment commissioned a report from the Association of Enterprises. This report was mainly looking through the lens of SME's (Small Medium Enterprises). The enterprises were asked what the national threshold should be, the answers were distributed as follow: 15.000, 26% - 30.000, 21% - 50.000, 33% - 100.000, 20%. Another issue was about the small purchases (the ones below the national threshold). Over 80% of the respondents said that these should be advertised, but there should not be any specific procurement procedures for those. Because the

[17] https://en.wikipedia.org/wiki/Nordic_model
[18] Tender thresholds and cultural dimensions - 2017
[19] Openness, country size and government - 1998

procurement entities liked a higher threshold value, they changed it from 30.000 to 60.000. With the change from 30.000 to 60.000, they estimated that around 2% of the procurement volume would fall under the threshold value.

The third and final question asked was if the expert knew any other factors which possibly could indirectly have influenced the national threshold height. He answered that he thought that the discussion on small purchases did have an influence on the height of the threshold.

5.1.2 Germany

The German expert mentioned that there was no national wide threshold in Germany. In Germany they have public procurement law in every state, as well as separate regulations which can even be different for a single public buying institution. Due to the fact that Germany is highly decentralized with states and municipalities, the regulation is mostly done on state level.

He mentioned that on a state level the factors mostly taken into account are the strategic goals of the state government, so if they are in favour of competition, sustainability, and/or other strategic goals.

5.1.3 Ireland

Ireland has a threshold of 25.000 euro at which a public procurement competition has to be advertised nationally. This threshold was established in the Circular 10/14: Initiatives to assist SME's in Public Procurement. Some provisions this circular specifically made were:

- Sub-dividing contracts into Lots: by doing this it SME's will get more access to contracts both quantitatively and qualitatively. The smaller sizes of the lots may better correspond with a company's capacity, and the content of the lots may be more closely related to the specialised sector of the SME.
- Less use of "restricted" buying and greater use of "open" tendering.
- Advertising of contracts opportunities to promote SME participation, as well as publication of Contract Award Notices for contracts valued above 25.000 euro.

So when determining the threshold for public tendering in Ireland, the focus was totally on SME's. Another thing our expert from Ireland mentioned was the poor economic situation Ireland was in at the moment that this circular was produced. So Ireland has two factors which (possibly) influenced their threshold, namely the role of SME's and the economic situation of Ireland at the moment when this circular was produced.

5.1.4 The United Kingdom

The answer on the first question asked to the expert in the United Kingdom was that everything above 10.000 pounds is advertised through Contracts Finder. For goods and services contracts with a value of approximately 1 million pounds, and construction contracts with a value of approximately 3 million pounds, they need to be advertised in the Official Journal of the European Union. Our expert mentioned however that in the near future their public tendering directives will change, due to the Brexit.

Our expert mentioned that in wales there is a strong impetus for supporting local suppliers were possible. By chasing these 'community benefits' there will be more sustainable development in local economy. This impetus could also be an indirect influencing factor on the height of the national threshold in other countries.

5.1.5 Australia

In Australia the rules for public tendering are established and managed by the Australian Government, and Department of Finance. Our expert believed that the thresholds are historically determined and updated from time to time. In Australia there are additional thresholds established that apply according to the Free Trade Agreements. Also these thresholds vary according to state and national interpretations of these agreements.

Australia is divided into six states, namely New South Wales, Queensland, South Australia, Tasmania, Victoria, and Western Australia. It has a national public tendering threshold, as well as ones on a state level. For our research we decided to take a look at the thresholds on a national level. The reason for this was that the national threshold is not higher that the thresholds of the States. So the thresholds will be representative. Our expert gave links to useful pages of the government of Australia about their procurement thresholds. Their threshold for non-corporate Commonwealth entities (other than for procurements of construction services), the procurement threshold is 80.000 Australian dollar. For prescribed corporate Commonwealth entities (other than for procurements of construction services), the procurement threshold is 400.000 Australian dollar. The procurement of construction services by relevant entities has a procurement threshold of 7.5 million Australian dollars.[20] In a construction services contract, the company only delivers the service. The tendering company has to purchase the materials themselves, and therefore this type of contract is not covered as works.

5.1.6 China

Our Chinese expert mentioned that according to Chinese law, the threshold for open tendering by agencies at central level for 2017-2018 is 2 million RMB. The threshold used to be set as: for 2003, any procurement of goods or services above 800.000 RMB, or any engineering above 2 million RMB, and from 2004 to 2016 for goods and services the threshold was 1.2 million RMB, and for engineering 2 million RMB.

As factors which play a role in the height of the threshold, she mentioned that the development of the economy, the workload of administration, and the level of flexibility for modes of procurement play a role. During the past 14 years the threshold for open tendering has been increasing. The

20 https://www.finance.gov.au/sites/default/files/commonwealth-procurement-rules.pdf

local thresholds in China are based upon the national threshold. For more developed areas, such as Beijing municipal, the local threshold is in 2017-2018 the same as the national threshold. However, less developed areas in China have a lower threshold as the national threshold. With a higher threshold, the governments cautiously slip back from where market mechanism dominates. So in less developed areas, the threshold is still lower. Also a higher threshold will provide the procurer with more flexibility in choosing a proper mode of procurement.

As possible indirect factors she mentioned that anti-corruption and consistency with international commitments could have an influence. However the thresholds for goods and services are kept increasing, the threshold for engineering is relevant stable. A probable explanation is that the area of government procurement is an easily rotten area for civil servants. This counts especially for engineering projects which opens more room for negotiation by any excuse. China is currently under negotiation in accession of GPA. Bilateral and multilateral negotiation concerning government procurement are set in the 2017 working target for government procurement. These international commitments might have an impact on the threshold at national level.

5.1.7 Belgium

Our Belgium expert attended us about the fact that the Belgium national threshold will be changed from 85.000 to 135.000 euro. Till the end of the negotiation procedure, the liberals in Belgium lobbied to lower the threshold from 135.000 to 100.000. They had however no success.

Belgium was aware about the fact that the threshold of 85.000 was too low, this was partly due to the paper which was released in August 2016. This paper stated that the costs of following the public procedure were most of the time too high, and the procedure could be made more effective and efficient by enhancing the threshold. Another fact about the new threshold of 135.000 euro was that they included in the new legislation that when the European threshold would change, the national threshold would change too.

5.2 Factors

In the interviews with the experts there were 5 new potential factors mentioned, which could possibly influence the threshold height in a country. One of the first factors which was mentioned was the discussion on small purchases. Our expert mentioned that he assumed that this discussion did have an influence on the height of the threshold. This is however a factor which we cannot statistically test due to the fact that we are not able to measure these discussions. As well as in the literature as in the reviews, competition was always mentioned as an important goal which a country wanted to achieve with its threshold. The assumption is that the lower the threshold is, the more competition due to the fact that way more bidders will take part when a tender is publicized. However it is very hard to measure the competition in a country. You could measure competition of a country by ranking which ones are more competitive and innovative, but this is not the kind of competition which we are talking about. When setting the thresholds a lot of the countries paid attention to what was wanted by the SME's in their country. So SME's played an important role in setting the threshold. With low thresholds, more SME's can join in public tenders and therefore it enlarges the competition. However every country has about the same percentage SME's. So there is no link between the amount of SME's in a country and its threshold. Finally there was mentioned that we should keep the economic situation of a country in mind when discussing factors which influence a countries threshold. Like in Ireland they have very low thresholds, and these were set in the time that Ireland was in a really bad economic situation. Therefore you could make the assumption that the worse the economic situation of a country, the lower the threshold of that country. Finally there was mentioned that consistency with international commitments could also play a role in determining the threshold height in a country. Due to the fact that countries are negotiating bilateral and multilateral concerning government procurement. And commitments made during these negotiations could have an influence on the national threshold.

Below you see the updated table, now also including all the factors found during the interview stage.

Factor	Literature	Theory	Interview
Administrative costs	x		
Trade of between various objectives	x		
Local and small/medium businesses	x		x
Environmentally friendly purchases/sustainability	x		
Corruption/Integrity	x		
Culture		x	
Political Orientation		x	
Country size		x	
Participation in relation to threshold height	x		
Competence of bidders	x		
Innovation	x		
Competition	x		x
Economic situation			x
Consistency with international commitments			x

Table 3: Factors influencing the threshold height

6. Factor selection

Now we have found all our factors we will make a selection on which ones to use and which ones to neglect for our statistical research. We will mention for every factor we found, how we can measure it, and why or why not we will test it statistically.

Administrative costs was the first factor we found, researched by Molander. Due to lack of data about the administrative costs made during public tendering procedures in all the countries we won't be able to do new research into this factor.

The trade of between various objectives was the second factor we found in literature. It has indirect an influence on the threshold, due to the fact that in low value contracts things like environment or quality are considered less important than for example price. This factor is however hard to measure and we do not have the time to gather all the data in the different countries about tendering procedures and their trade-off between various objectives.

One factor which was mentioned a lot was the role of SME's in setting the threshold value in a country. Around 99% of the companies are SME's in our countries. So we will need another way to measure the share of SME's in each country. We decided to measure the share by looking at the value added by SME's as a percentage of the total value added by all enterprises in a country.

We also found sustainability as a factor which was found important. Sustainability of a country can be measured in various ways, think of total CO^2 emission, or their ecological footprint. We will test the correlation between the ecological footprint of a country, and the height of the threshold in a country. It could be that countries which are more sustainable will have a higher or lower threshold.

Our next factor is corruption. We gave some options of how to measure corruption, and we have chosen to use the transparency international index to measure the level of corruption in a country. This because the data can easily be gathered via the website of transparency international. So does a corrupt country have a lower or higher threshold value?

By making use of own reasoning and the search for sources to support our theory, we found culture and political orientation as possible factors. However we do not have the time and tools to measure or rank both factors. This is why we do no further research into these possible factors.

A geographical factor we will do research into is the country size in relation to the threshold height in a country. We have already mentioned this factor, and have chosen to measure this factor by looking at the population of a country. We chose the amount of citizens because of the fact that some countries are very large in size but have very little citizens, compared to other countries. So does a country with a bigger population have a higher or lower threshold value than a country with a smaller one?

The height of a threshold value in relation to participation in a tender procedure is already mentioned in the research of B. Baeyens. Due to time and the fact that this research already has been conducted, we choose not to test this factor for a second time.

Tendering parties find it important that the bidders have the competence to comply with the tendering requirements. This factor needs an estimation about how skilful bidders are in the different countries, and how far they are able to comply to the tenderers requirements. We do not have the time to measure this factor at the moment.

When innovation is considered important in the tendering process, bidding parties will tend to be more innovative in countries were innovation is considered important. However things like competition on the market do also have a big influence on the innovativeness of companies, and therefore we can cannot measure this factor via the innovativeness of firms in a country. We do not have the right tools to measure this factor in the right way.

Competition in the tendering processes, and also the equal treatment of the bidding parties is considered important by the tendering parties. However we do not have the tools and time to measure the competitiveness in the tendering procedures of all our countries. Therefore we have chosen not to measure this factor.

The economic situation of a country can be measured in various ways. Think of measuring it by looking at:

- The average income in a country;
- The inflation rate in a country;
- The unemployment rate in a country;

However to determine the economic situation of a country, we choose to take the GDP per capita to measure the welfare in a country.

Our final factor is the consistency with international commitments. This factor was mentioned during the interview with our Chinese expert. Due to the fact that we have mostly European countries in our list, we are not able to do good research into this factor, because it will need more countries outside of the European Union.

7. Data gathering

The first data we needed to do was determining which factors we use in our analysis. Due to time we choose for the factors about which we could easily find data online. We found that this was the fact for the factors corruption, country size, and economic situation. For two of these factors, namely corruption and country size, we have already mentioned which type of measurement we will use to come up with data.

In order to do the statistical tests the first thing we will need are the data for the dependent variable, so the national thresholds of the countries. These can be found, as mentioned before, in Table 1.

The first independent variable we will test to see if there is a correlation will be the role of SME's in setting the threshold. We already mentioned that we will measure this variable by looking at the revenue earned by the SME's in country as a percentage of the total revenue in that country. On the European website (ec.europa.eu) we found a table of value added by SME's as a percentage of total value added by enterprises of all European countries. For the non-European countries we could not find any information regarding the added value of SME's. Therefore we will only use the data from the European countries. The data can be found in Appendix 2.

The second factor we will look into is correlation between sustainability and the thresholds. As mentioned before this factor will be measured by looking at the ecological footprint of the countries. The ecological footprint of each

country can easily be found in a table on Wikipedia.[21] The ecological footprint is measured in global hectare per person. Which means how much hectare of biological productive area is used for the consumption of one person. The data can be found in Appendix 3.

Our third factor is corruption. For this factor we will use the transparency international index. We gathered the data via the site of transparency international.[22] In total they have ranked 176 countries, of which we only needed the indexes of 29 countries. We have put everything in a table which can be found in appendix 4.

The fourth independent variable we will test is to see if there is a correlation between the size of a country and its threshold. This variable can only be tested with the countries located in the European Union. This because the size of Australia, Canada, and China are big outliers and will bias the results from the test. The countries sizes are easy to find via Google, and are summed up in a table which can be found in Appendix 5.

The fifth independent variable we will test is the economic situation of a country in correlation to the national threshold. We chose to measure this factor by looking at the GDP per capita. The GDP per capita can easily be found on the internet. A table with all countries and their GDP per capita can be found in Appendix 6.

8. Analysis & results

We have two dependent and five independent variables. Due to the fact that the thresholds for supplies were the same as the thresholds for services, the results in the tables are the same. Therefore the results from the supplies threshold, are the same as those of the services threshold. So we will discuss those two thresholds the same time. The dependent variables are the thresholds for works, supplies, and services. So we want to know if and how much our three independent variables influence these dependent variables. The five independent variables are the role of SME's, sustainability, the transparency international index (corruption), country size, and the GDP per capita.

Because both the dependent variables and independent variables are interval and ratio variables, we can use the Pearson Correlation test. However, one assumption needs to be checked in order to use the Pearson Correlation. Namely the variables need to be distributed normally. We will check the normality by looking at the Q-Q plots of our variables. The Q-Q plots can be found in Appendix 7. By looking at the figures, all variables can be considered normally distributed. Our results from the statistical tests can be found in Appendix 8.

8.1 Works

We will discuss the five tested independent variables for works. First we will mention all the five independent variables with their p-value: Corruption (0,132), Country size (0,020), economic situation (0,416), role of SME's (0,293), and sustainability (0,382).

A significant correlation exists when there is a chance of less than 5% that the correlation occurred pure on accident. So the p-value needs to be lower than 0,05. When looking at the given p-values in the paragraph above, you see that only the factor country size, with a p-value of 0,02 is significantly influencing the threshold value. The link which is seen between the other factors and the threshold values could be based on pure coincidence.

We find a positive correlation between country size and the threshold height for works. Which means that the bigger the population is, the higher the threshold will be. One weak spot of this factor is, that the countries used in this test were only European countries. This means that you cannot generalize it for countries outside of the European Union.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,463[a]	,214	,007	1774644,632

a. Predictors: (Constant), Ecological_footprint, Country_size, SME_value_added, Transparency_international, GDP_per_capita

Figure 1. Model summary of works

Above the Model summary of the multiple regression between the threshold for works and the five independent variables is given. As you can see it gives an r-square of 0.214, which means that 21.4% of the chance in the dependent variable, so the threshold for works, is caused by the five independent variables. The adjusted R-square (0.07) is however lower, due to the fact that it corrects for the fact that more factors does not automatically mean that the model is predicting more of the chance in the dependent variable. The adjusted R-square has a value of 0.007, which means that only 0.7% of the change in the dependent variable can be explained by this model. When looking at our results, with only finding one significant correlation, this is a logical result.

8.2 Supplies and services

Now we will discuss the five independent variables in correlation with the threshold for supplies and services. The independent variables and their p-values were: corruption (0,093), country size (0,198), economic situation (0,115), role of SME's (0,437), and sustainability (0,031).

Again we have a 5% significance level to test the correlation between the factors and the threshold for supplies and services. When looking at the factors you see that only sustainability is significantly influencing the threshold value.

There is a positive correlation between the two variables which means that the higher the threshold value is, the

21 https://en.wikipedia.org/wiki/List_of_countries_by_ecological_footprint

22 https://www.transparency.org/news/feature/corruption_perceptions_index_2016

bigger the influence on the environment. So the worse they pay attention to sustainability. With a p-value of 0.031 there is a significant correlation between the two values. So the worse a country is at sustainability, the higher the threshold value for supplies and services.

When setting the significance level a bit higher, to 10%, we find another significant factor which influences the threshold for supplies and services. Corruption has a p-value of 0,093, which is significant with the 10% significance level. We find a positive correlation here, which means that the higher the threshold value is, the higher a country scores in the transparency international index. The higher a country scores in this index, the less corrupt a country is. So there is also a weak significant correlation between the threshold value for supplies and services, and the corruption in a country.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,447[a]	,200	-,011	74900,246

a. Predictors: (Constant), Ecological_footprint, Country_size, SME_value_added, Transparency_international, GDP_per_capita

Figure 2. Model summary of supplies and services

Above the Model summary of the multiple regression between the threshold for supplies and services, and the five independent variables is given. As you can see it gives an r-square of 0.200, which means that 20.0% of the change in the dependent factor can be explained by the five independent factors. We find a negative Adjusted R-square (-0.011), which means that you chasing too little information with too many variables. This is logical because we only found one strong and one weak significant correlation.

9. Conclusion

The first thing that became clear during the literature research is that there is little research done in factors which have an influence on the threshold height of a country. Subjects like corruption, the size of a country and sustainability are influencing the height of national thresholds for public tendering. This means that there are factors which significantly influence the threshold height, so when determining their own threshold, countries could take a look at those factors and adjust their threshold on these based on what they find important. So let say that a country finds sustainability very important, it should maybe make some regulative changes, but more sustainable countries also have a lower threshold value. So a country should also consider to adapt their threshold based on this. So these factors also explain the differences in threshold heights between countries. The difference in points of important make that a country is having different regulation and threshold about the public tendering processes.

Finally we will answer our research question: "*Why do national thresholds for public tendering differ per country?"*. In this research we found that countries choose their threshold based upon certain goals they want to achieve. And also, like in Belgium, based upon reports which are published about more effective thresholds. So the threshold is based upon a weighing between different factors, like experience, goals they want to achieve, research and by looking at other countries. Based on these factors they set the right threshold height.

10. Limitations & further research

I already mentioned that there is little known about factors which are influencing the threshold height. Some of the possible factors mentioned in the literature and in this research have a significant effect on the threshold height, however the sample size is low, and most of the countries in the sample are located in the European Union. So to generalize the results future research needs to be done with a larger and more representative sample. Also the tools and time were missing to do research into the factors we did not test. So these factors are still open for research. Also a larger base of experts would be needed to get more and specific data about the reasoning behind the thresholds in the different countries. Especially because of the fact that there is little information available about the factors which are taken into consideration when determining the threshold height.

11. Acknowledgments

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13. Appendix

1.)

Dear Mrs./Mr.

My name is Bart Somhorst, and I am an International Business and Administration student at the University of Twente. For my bachelor graduation assignment under supervision of Professor Jan Telgen, I am studying national thresholds in public tendering.

My supervisor, Prof. Dr. Jan Telgen, gave me your contact information because of your expertise on the field of public procurement. From your expertise point of view, I would like to ask you some questions about the national thresholds in your country.

I would appreciate it very much if you would take the time to answer these 3 questions:

1. What is the threshold above which tenders have to be published so all interested suppliers can react?
2. What are the factors taken in consideration when they set the national threshold in your country?
3. Can you think of any other factors which could indirect also have had an influence on the height of the national set threshold?

If possible I would like to have a response by mid-June as my thesis deadline is July 1st.

Thank you beforehand for your cooperation!

With kind regards,

Bart Somhorst
E-mail: b.p.somhorst@student.utwente.nl
Mobile: +31 611814414

Ps: If you have any interest in the results/data of my research. Please note this in your response and I will send the results to you afterwards.

2.)

Country	SME value added as % of total value added
Australia	
Austria	61,64
Belgium	62,20
Bulgaria	66,26
Canada	
China	
Cyprus	71,91
The Czech Republic	54,86
Denmark	60,88
Estonia	75,04
Finland	61,46
France	57,79
Germany	53,14
Greece	75,13
Hungary	52,46
Ireland	47,30
Italy	67,97
Latvia	72,12
Lithuania	70,33
Luxemburg	71,86
Malta	80,35
The Netherlands	62,65
Poland	52,32
Romania	49,86
The Slovak Republic	57,30
Slovenia	62,61
Spain	61,35
Sweden	61,26
The United Kingdom	52,06

3.)

Country	Ecological Footprint (gha/person)
Australia	9,31
Austria	6,06
Belgium	7,44
Bulgaria	3,32
Canada	8,17
China	3,38
Cyprus	4,21
The Czech Republic	5,19
Denmark	5,51
Estonia	6,86
Finland	5,87
France	5,14
Germany	5,3
Greece	4,38
Hungary	2,92
Ireland	5,57
Italy	4,61
Latvia	6,29
Lithuania	5,83
Luxemburg	15,82
Malta	
The Netherlands	5,28
Poland	4,44
Romania	2,71
The Slovak Republic	4,06
Slovenia	5,81
Spain	3,67
Sweden	7,25
The United Kingdom	7,93

4.)

Country	Transparency international index
Australia	79
Austria	75
Belgium	77
Bulgaria	41
Canada	82
China	40
Cyprus	55
The Czech Republic	55
Denmark	90
Estonia	70
Finland	89
France	69
Germany	81
Greece	44
Hungary	48
Ireland	73
Italy	47
Latvia	57
Lithuania	59
Luxemburg	81
Malta	55
The Netherlands	83
Poland	62
Romania	48
The Slovak Republic	51
Slovenia	61
Spain	58
Sweden	88
The United Kingdom	81

5.)

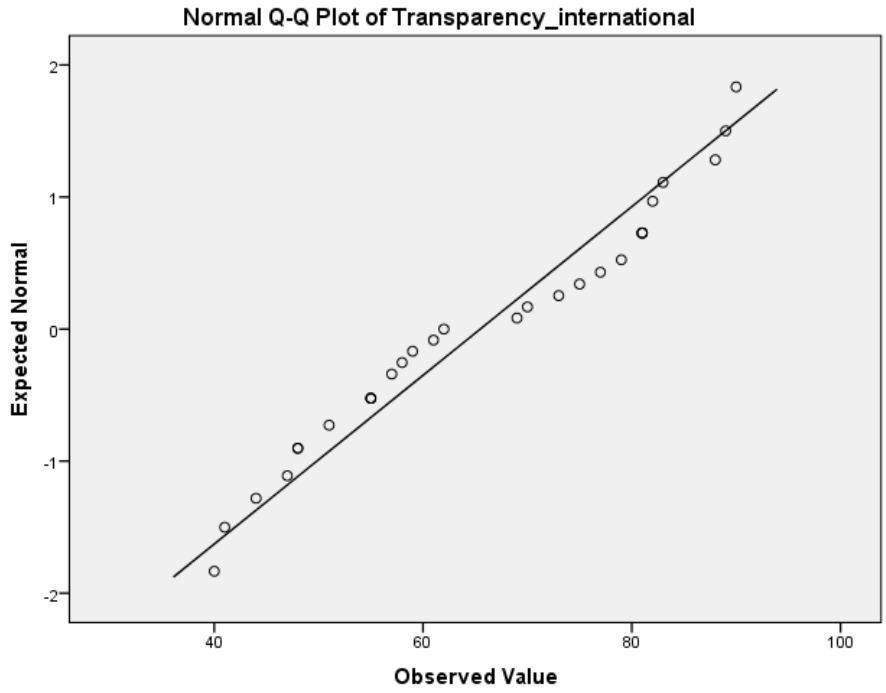
Country	Population
Australia	24.576.000
Austria	8.783.198
Belgium	11.362.602
Bulgaria	7.101.859
Canada	36.586.800
China	1.384.070.000
Cyprus	848.300
The Czech Republic	10.579.067
Denmark	5.756.170
Estonia	1.317.797
Finland	5.505.575
France	67.055.000
Germany	82.800.000
Greece	10.783.748
Hungary	9.799.000
Ireland	4.757.976
Italy	60.589.445
Latvia	1.939.500
Lithuania	2.823.618
Luxembourg	590.667
Malta	429.344
The Netherlands	17.134.800
Poland	38.424.000
Romania	19.760.000
The Slovak Republic	5.435.343
Slovenia	2.064.241
Spain	46.468.102
Sweden	10.048.800
The United Kingdom	66.418.700

6.)

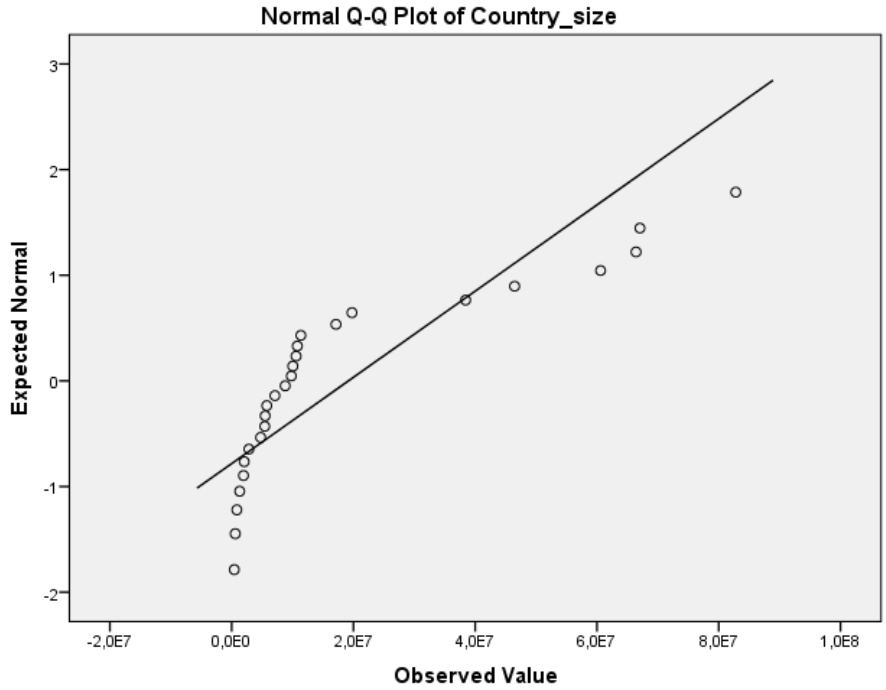
Country	GDP per capita
Australia	48.899
Austria	48.005
Belgium	45.047
Bulgaria	20.327
Canada	46.437
China	15.399
Cyprus	34.970
The Czech Republic	33.232
Denmark	47.985
Estonia	29.313
Finland	42.165
France	42.314
Germany	48.111
Greece	26.669
Hungary	27.482
Ireland	69.231
Italy	36.833
Latvia	25.710
Lithuania	29.972
Luxemburg	104.003
Malta	39.834
The Netherlands	51.049
Poland	27.764
Romania	22.348
The Slovak Republic	31.339
Slovenia	32.085
Spain	36.416
Sweden	49.836
The United Kingdom	42.481

7.)

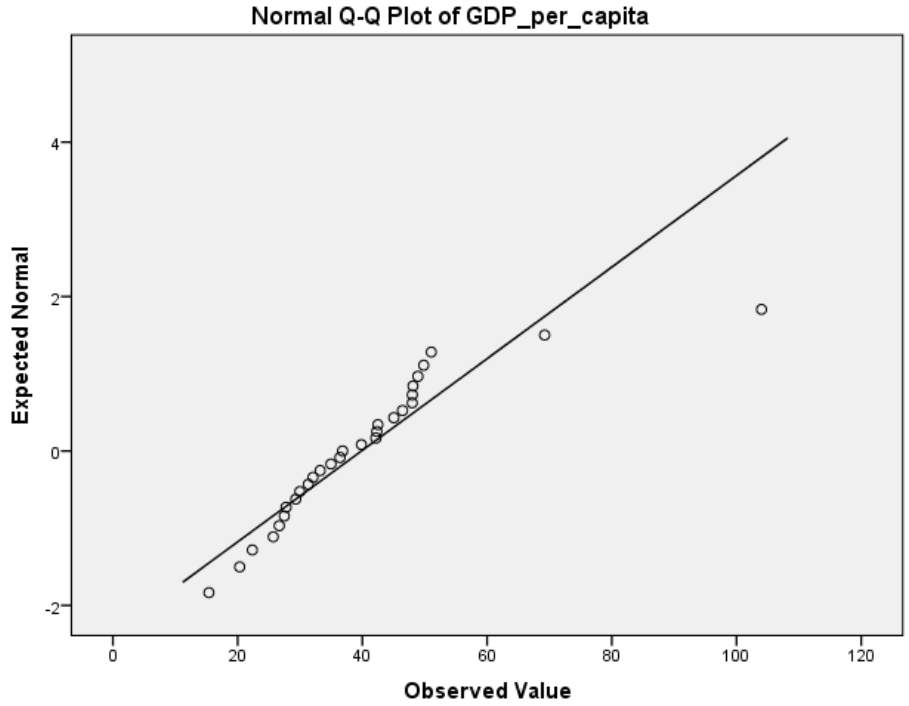
a.)


Normal Q-Q Plot of Transparency_international
Expected Normal
Observed Value
2
1
0
-1
-2
40
60
80
100

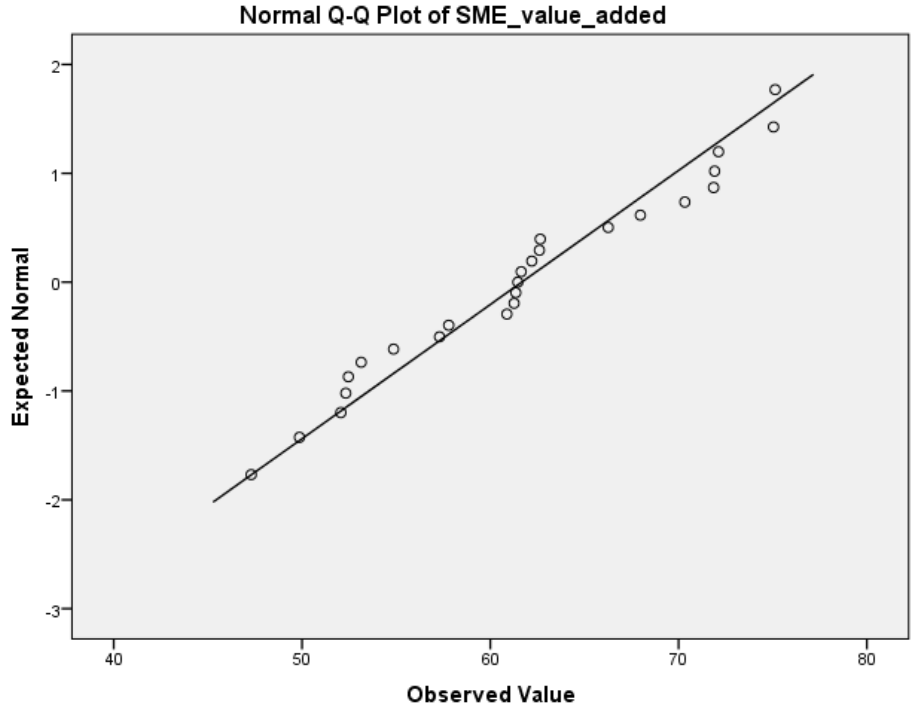
b.)


Normal Q-Q Plot of Country_size
Expected Normal
Observed Value
3
2
1
0
-1
-2
-2,0E7
0,0E0
2,0E7
4,0E7
6,0E7
8,0E7
1,0E8

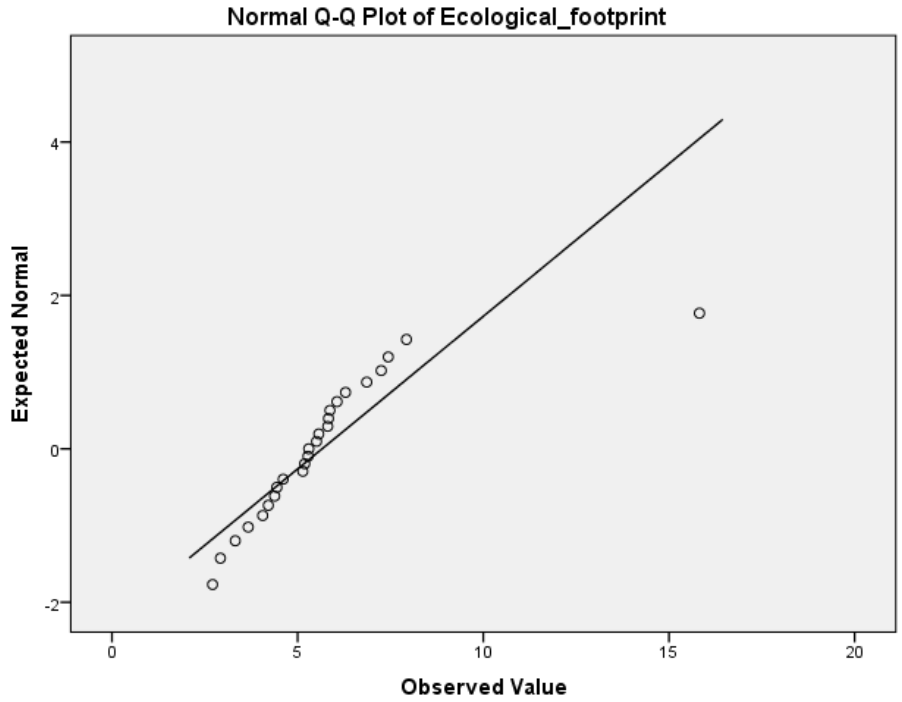
c.)


Normal Q-Q Plot of GDP_per_capita
Expected Normal
Observed Value
4
2
0
-2
0
20
40
60
80
100
120

d.)


Normal Q-Q Plot of SME_value_added
Expected Normal
Observed Value
2
1
0
-1
-2
-3
40
50
60
70
80

e.)


Normal Q-Q Plot of Ecological_footprint
Expected Normal
4
2
0
-2
0
5
10
15
20
Observed Value

8.)

a.)

Correlations

		Threshold_works	Transparency_international	Country_size	GDP_per_capita	SME_value_added	Ecological_footprint
Pearson Correlation	Threshold_works	1,000	,214	,406	,041	-,112	,059
	Transparency_international	,214	1,000	,100	,660	-,188	,598
	Country_size	,406	,100	1,000	-,023	-,404	-,137
	GDP_per_capita	,041	,660	-,023	1,000	-,021	,804
	SME_value_added	-,112	-,188	-,404	-,021	1,000	,297
	Ecological_footprint	,059	,598	-,137	,804	,297	1,000
Sig. (1-tailed)	Threshold_works	.	,132	,020	,416	,293	,382
	Transparency_international	,132	.	,313	,000	,179	,000
	Country_size	,020	,313	.	,456	,020	,257
	GDP_per_capita	,416	,000	,456	.	,459	,000
	SME_value_added	,293	,179	,020	,459	.	,075
	Ecological_footprint	,382	,000	,257	,000	,075	.
N	Threshold_works	29	29	26	29	26	28
	Transparency_international	29	29	26	29	26	28
	Country_size	26	26	26	26	26	25
	GDP_per_capita	29	29	26	29	26	28
	SME_value_added	26	26	26	26	26	25
	Ecological_footprint	28	28	25	28	25	28

b.)

Correlations

		Threshold_supplies	Transparency_international	Country_size	GDP_per_capita	SME_value_added	Ecological_footprint
Pearson Correlation	Threshold_supplies	1,000	,253	,174	,230	,033	,357
	Transparency_international	,253	1,000	,100	,660	-,188	,598
	Country_size	,174	,100	1,000	-,023	-,404	-,137
	GDP_per_capita	,230	,660	-,023	1,000	-,021	,804
	SME_value_added	,033	-,188	-,404	-,021	1,000	,297
	Ecological_footprint	,357	,598	-,137	,804	,297	1,000
Sig. (1-tailed)	Threshold_supplies	.	,093	,198	,115	,437	,031
	Transparency_international	,093	.	,313	,000	,179	,000
	Country_size	,198	,313	.	,456	,020	,257
	GDP_per_capita	,115	,000	,456	.	,459	,000
	SME_value_added	,437	,179	,020	,459	.	,075
	Ecological_footprint	,031	,000	,257	,000	,075	.
N	Threshold_supplies	29	29	26	29	26	28
	Transparency_international	29	29	26	29	26	28
	Country_size	26	26	26	26	26	25
	GDP_per_capita	29	29	26	29	26	28
	SME_value_added	26	26	26	26	26	25
	Ecological_footprint	28	28	25	28	25	28

c.)

Correlations

		Threshold_services	Transparency_international	Country_size	GDP_per_capita	SME_value_added	Ecological_footprint
Pearson Correlation	Threshold_services	1,000	,253	,174	,230	,033	,357
	Transparency_international	,253	1,000	,100	,660	-,188	,598
	Country_size	,174	,100	1,000	-,023	-,404	-,137
	GDP_per_capita	,230	,660	-,023	1,000	-,021	,804
	SME_value_added	,033	-,188	-,404	-,021	1,000	,297
	Ecological_footprint	,357	,598	-,137	,804	,297	1,000
Sig. (1-tailed)	Threshold_services	.	,093	,198	,115	,437	,031
	Transparency_international	,093	.	,313	,000	,179	,000
	Country_size	,198	,313	.	,456	,020	,257
	GDP_per_capita	,115	,000	,456	.	,459	,000
	SME_value_added	,437	,179	,020	,459	.	,075
	Ecological_footprint	,031	,000	,257	,000	,075	.
N	Threshold_services	29	29	26	29	26	28
	Transparency_international	29	29	26	29	26	28
	Country_size	26	26	26	26	26	25
	GDP_per_capita	29	29	26	29	26	28
	SME_value_added	26	26	26	26	26	25
	Ecological_footprint	28	28	25	28	25	28