

**The University of Pardubice  
Faculty of Economics and Administration  
Institute of Economics Sciences**

**Corruption and International Trade. The Case of the V4  
Countries.**

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### Thesis guidelines

The main aim is to identify the causes and consequences of corruption and determinants of international trade in the country. Whether corruption is a factor that improves international trade or conversely it hinders international transactions will be analyzed in selected group of countries.

Contents:

- Theoretical definition of corruption.
- International trade and its main determinants.
- Analysis of the impact of corruption on international trade in selected group of countries.
- Summary of the author's analysis and recommendations.

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Elliott, K. A. (1997). Corruption and the global economy. Peterson Institute. Rose-Ackerman, S.

(Ed.). (2007). International handbook on the economics of corruption. Edward Elgar Publishing.

Sayed, A. (2004). Corruption in international trade and commercial arbitration. The Hague: Kluwer law inter-national.

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## **DECLARATION**

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In Pardubice on April 30, 2021

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## **ANOTACE**

*Korupce se stala překážkou v mezinárodním obchodu, kde ovlivňuje tok zboží a služeb mezi zeměmi a v rámci nich. Dohody o mezinárodním obchodu zahrnují řadu úkolů, jako je hledání partnera, vyjednávání smluv a přeprava produktů, které všechny mají dopad na výsledky obchodu a jsou potenciálně korupční. Například v některých zemích může být běžnou praxí, že mezinárodní vyvážející firmy podplácejí dovážející firmy jako součást uzavření obchodní dohody. Hlavním cílem této práce je identifikovat příčiny a důsledky korupce a determinanty mezinárodního obchodu v případě zemí V4. Kvantitativní metoda byla přijata s využitím sekundárních ročních údajů o České republice, Polsku, Maďarsku a Slovensku z konference OSN o obchodu a rozvoji (UNCTAD), Světové banky, Mezinárodního měnového fondu (MMF) a Eurostatu. Údaje o hodnocení korupce, což je index vnímání korupce (CPI), byly získány od Transparency International v rozmezí let 2010 až 2019. S mezinárodním obchodem je zastoupena míra vývozu a míra dovozu. Klíčová zjištění z tohoto výzkumu naznačují, že korupce negativně ovlivňuje míru vývozu v zemích V4, avšak její dopady na míru dovozu v zemích V4 byly tedy odlišné; korupce má pozitivní vliv na míru dovozu v zemích V4.*

## **KLÍČOVÁ SLOVA**

*Vnímání korupce, mezinárodní obchod, dopady korupce, mezinárodní obchod, země V4.*

## **TITLE**

*Corruption and international trade. The case of the V4 countries.*

## **ABSTRACT**

*Corruption has become a roadblock in international trade, where it affects the flow of goods and services between and within countries. International trade deals include a variety of tasks, such as finding a partner, negotiating contracts, and transporting products, all of which have affect trade outcomes and are potentially corruptible. For example, it may be a common practice in some countries for international exporting firms to bribe importing firms as part of forming a business agreement. The main aim of this thesis is to identify the causes and consequences of corruption and determinants of international trade in the case of the V4 countries. The quantitative method was adopted using secondary annual data on Czech Republic, Poland, Hungary and Slovakia from United Nations Conference on Trade and Development (UNCTAD), The World Bank, International Monetary Fund (IMF) and Eurostat. Data on corruption ratings, that is, Corruption Perceptions Index (CPI), was obtained from Transparency International between the year range 2010 to 2019, respectively. With international trade being represented by export rates and import rates. The key findings from this research indicate that corruption negatively affects the export rate in V4 countries; however, its effect on the import rate in V4 countries was different thus;, corruption has a positive effect on the import rate in the V4 countries.*

## **KEYWORDS**

*Corruption perception, international trade, Impact of corruption, International trade, V4 countries.*

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## **LIST OF ABBREVIATIONS AND SYMBOLS**

NPM	New Public Management
PAC	Principle-Agent-Client Approach
CPI	Corruption Perception Index
TI	Transparency International
UNCTAD	United Nations Conference on Trade and Development
TAI	Technological Achievement Index
R&D	Research and Development
FTA	Free Trade Agreements
ICVS	International Crime Victim Surveys
RIA	Regulatory Impact Assessment
IPI	Index of Public Integrity
BI	Business Intelligence
PETS	Public Expenditure Tracking Survey
CEECs	Central and Eastern European Countries
IMF	International Monetary Fund
OLS	Ordinary Least Squares
LSDV	Least Square Dummy Variable
VECM	Vector Error Correction Model
OECD	Organisation for Economic Co-operation and Development
VIF	Variance Inflation Factor
V4	Visegrad Four
EX-rate	Exchange-rate
Inf-rate	Inflation-rate
UK	United Kingdom
Eurostat	European Statistical Office

EU	European Union
WTO	World Trade Organization
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
BPI	Bribe Payers Index
G20	Group of Twenty
US	United States
USD	United States Dollars
H-O	Heckscher-Ohlin

## **Introduction**

Corruption in the open segment is most likely one of the principal components of disappointment in administration, which legitimately influences the institutional quality and, in this manner, the prosperity of the public (Acemoglu and Verdier, 2000). The World Bank and the International Monetary Fund share the sentiment that corruption, as one of the determinants of the poor working in establishments, is an extraordinary hindrance to monetary and social improvement.

Corruption can be classified as big, small, and political, depending on the amount of money lost and the field in which it occurs. Several studies demonstrate how a higher degree of corruption negatively affects economic growth (Mauro, 1995), reduces the flow of foreign direct investment (Wei, 2000), or distorts tax revenues (Mauro, 1998). Lack of confidence in economic decision-making, weak law enforcement affecting contractual deals because of the uncertainty surrounding legal dispute settlement or the inefficiency of disputes in the allocation of resources is the most common arguments that are behind this unpleasant impact.

However, other authors present corruption as a factor that, under certain circumstances, may facilitate economic exchange, thus improving efficiency, Egger and Winner (2005). The reason is that in economic systems with extensive and complex regulations as well as weak institutions, bribes can help companies to avoid formal regulatory barriers. That is, corruption would serve as a mechanism for deregulation. The reasons for believing corruption to have a beneficial or detrimental effect on international trade flows are similar to those discussed above. In addition, the improper functioning of the legal framework can impede the contracts' effectiveness, a reality that discourages international transactions by increasing export costs (Anderson and Marcouiller, 2002). Therefore, corruption would have an effect equivalent to setting a tariff. On the other hand, if tariff and/or nontariff barriers (complex administrative formalities, for example) are high, bribes could facilitate trade, as they would help overcome these barriers.

In this thesis, the main aim is to identify the causes and consequences of corruption and determinants of international trade in the country. Whether corruption is a factor that improves international trade or it hinders international transactions will be analysed in a selected group of countries. The relationship between corruption and international trade is a less explored area.

The first chapter will include a theoretical definition of corruptions from several scholars, followed up by the roots of corruption in some countries. The magnitude of corruption would be discussed. This chapter, therefore, will examine the various impacts that corruption has

caused, both historically and contemporarily, to gauge the prevalence of corruption and its impact on people. The second chapter would discuss international trade and its determinants, the importance of international trade, geography, and the role of distance in international trade, relative endowment factors as well as technological innovation in international trade competitiveness, level of gross domestic product. More so, the positive and negative impacts of corruption and bribery in international business from Bribery Payers Index. The third chapter contains the methodology adopted for this research, research methods, the research questions, research objectives, data sources, and description of data as well as the object of study. The fourth chapter shows the findings and discussions of the effect of corruption in international trade of the selected countries. In addition, the effect of GDP, inflation rate, exchange rate, FDI on export and import were included. It also further discusses the causes of and strategic ways to reduce public sector corruption in the V4 countries. The fifth chapter includes the author's conclusions and recommendations, consisting of transparency and anti-corruption provisions in trade agreements, effective legal and anti-corruption policies as well as and uncorrupted media. Research limitations and suggestions for future research.

# 1. THEORETICAL DEFINITIONS OF CORRUPTION

*Corruption is described as the informal abuse of public, institutional or commercially granted position or power in order to gain an unjustified benefit or advantage (TI 2005)*

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Corruption has been a social problem found in various “degrees and forms altogether dating back to the foremost primitive societies”. According to Ekiyor (2005), in his broad view of corruption, he defined it as the unlawful use of official power or influence by a politician of the government. To either complement himself or further his course and/or the opposite person at the expense of the overall public, in contravention of his oath of office and/or contrary to the conventions or laws that are effective. Unfortunately, this menace knows not any time nor period.

Gould and Kolb (1964) support the above assertion that corruption is not a characteristic of a period in the political history of anybody country, and it is endemic in both authoritarian and party systems of the state. Further still as a shred of evidence that the history of corruption is as old as the globe. Scott (1972) is of the view that corruption “must be understood as a daily, repetitive and integral part of the operation of most political systems”. Additionally, Scott is of the view that corruption is intentional.

Corruption remains seen as a typical phenomenon found not only within the so-called developing countries and societies but also within developed societies like Europe, America, and Japan irrespective of their structural and cultural differences. Some authors believe that corruption is prevalent in Third World countries (Adebayo, 2004). However, evidence has shown that corruption is even prevalent in developed countries and each country, be it in developing or developed world devices suitable methods to affect corruption. According to Adebayo (2004), he explains corruption via faulty recruitment of employees’ exercise within the Nigerian Public service. Adebayo thinks one among the banes of the Nigerian Public Service is putting square pegs in round holes, that is, the recruitment of unsuitable candidates in preference to candidates of high merit. The explanations for this ugly situation are often traced on to nepotism. Corruption plays only a touch part and is usually prevalent within the recruitment of junior employee like messengers and clerks. During this category of recruitment, the recruiting agents are generally officials of lower-middle rank who see a chance of creating some money on the side by collecting little bribes from applicants.

The corruption we all know does not yield to an easy definition, thus the writers’ definitions are varied and divergent. Akinseye (2000) describes corruption as ‘mother of all crimes’ and identifies four sorts of corruption as bribery, *prebendalism*, graft, and nepotism. The Economic

and Financial Crimes Commission is a commission that deals with economic issues in Nigeria. Ngwakwe (2009) defines corruption from an economic perspective as follows: "Non-violent criminal and illicit deed conducted to unlawfully acquire wealth either by a single person or in an organized manner in breach of existing economic activity legislation in the state and its administration". From the varying foregoing definitions of corruption, one can see that there is hardly consensus on the meaning of the term. However, one thing is sure about those various definitions, that is, that they lack the precise elements that constitute corruption. Nevertheless, they all have sufficient indicators of behaviour that can be "considered corrupt, and therefore the distinguishing element of such behaviour is a few moral failures or depravities" Ibrahim (2003). Corruption is no doubt that the immoral or illegitimate benefits offered by the official position. Transparency International defines corruption as the unlawful use of entrusted power for private benefit.

The institutionalization of corruption is feasible because of the low standards of ethics as a feature of other social malaise, like greed. In his own opinion, Stiglitz (2002) suggests that corruption is a systemic, continuous process of deliberate effort created by those in power and advantageous to politically organized groupings. The party supports the liberalization and privatization of the economy and is systematic to corruption in the opinion that the extortionate (extractive) corruption contexts of the institutional agents are perfectly distinguishable and independent, making it easier to authentically specify the order of the victim or precedent between the perpetrator and the beneficiary. The bureaucratic system brought extractive corruption to life, Egwakhe and Johnson (2007).

Critical observation reveals that in the name of the state, the state or some state agents mostly benefit from extra illegal transactions. This kind of corruption occurs when institutional decision-makers misuse the power of the government they are equipped with to tailor their self-interest, money, status, and wealth, and the extractive activity of the agents grows to avoid the "iron cage" of the law while creating reciprocal cooperation between the agent(s) and the lawbreaker. Various forms of corruption are enumerated to include fee fraud known as 419, money laundering, unethical and dishonest trade activities, misappropriation or theft of money, kickbacks, under- and over-invoicing, false statements, abuse of office and collection of illegal tolls.

Other contextual meanings include the impairment of integrity, virtue or moral principles, and any unauthorized use of resources for personal gain. One (as a member of a society, not a public official alone) is not entitled'. Doig (1996) describes corruption to be any use of official position, resources or facilities for private benefit, or a possible conflict of interest between

public position and personal benefit. This, of course, to him, it involves offenses of misconduct in public office and is additionally covered by the spread of internal regulations.

Additionally, corruption occurs when individuals act negates the moral principle that guides their official obligations. Corruption thus cannot be free from breaching of ethical rules that bind the conduct of official duties. Every official position, either privately or public, is guided by ethics and these ethics are there to manage official conduct. Several factors would make a consensus on the causes and a successful way of combating corruption as a touching problem. Among these factors are consistent with Agubamah (2009) the individuality of every society and or country, the dynamic or changing nature of the socio-political and economic interactions within the worldwide community, and therefore the differences within the perception of corrupt practices by different academic disciplines.

Political corruption research understands this as an abuse of political power, where abuse implies violation of regulations involving the exchange of political power for other resources. Therefore, political corruption denotes a way of influencing political decisions to serve specific interests at the expense of the public at large. Therefore, the classical definition presents corruption as a sort of antonym to the "common good", according to Gebhardt (2003). This definition of corruption was refined in many respects by Gardiner (2005), Kurer (2003) and Philip (2002). Approaches influenced by political theory now propose that a distinction between private and public should be replaced by a distinction between inclusion and exclusion, which is a crucial element of the traditional definition of corruption Warren (2004).

Nonetheless, work on this issue usually positions political corruption at the level of individual actions and intent attribution Graeff (2005), and so critical questions about the conceptualization of its subject matter can be answered only in concrete terms and not with the means provided by the theory of social science. There has been some criticism regarding this very issue. For example, it was asked why research into corruption should be limited to examining the economic benefits gained by individuals. Why acceptance of benefits on behalf of third parties (beyond family or private clique structures) should be excluded, why corruption should only refer to the abuse of public resources, when the legitimate exercise of influence turns into corruption, and how this defines it. Gardiner (2002) addresses issues of this kind, which are inevitably given a definition of corruption based on case studies and trends of deviance.

## **1.1 The Theoretical Roots of Corruption**

The very word "corruption" refers to an aberration, a departure, and violation of something essentially good. The thought of what is good, however, precedes the thought of its perversion. To decry corruption without accepting the original idea that it opposes is adequate to boxing against the storm. One can only know something is corrupt if one possesses a transparent vision of its ideal, perfect, and uncorrupted form. For example, Plato attempted to try within the Republic, to colour a transparent picture of what justice is, in essence, to avoid all confusion that visited the extent of justifying injustice as just. It landed him within the theory of forms and concepts, of course, and prompted him to prescribe that nobody should sit at a place of political authority unless he or she has first had a transparent vision of the idea. While some would disagree with that, one will disagree that to say corruption as evil is to form a press release about morality as stated by Domenic Marbaniang in his book *Corruption Roots, Challenges, and Solutions* in 2013. There are some theories of corruption detailed below in this chapter.

### **Bad Apple Theory**

First, bad apple theories, like the theories of public choice, primarily look for the causes of corruption at the level of the individual corrupting agent. From bad character to illegal actions, there is a causal chain; the root cause of corruption is found in defective human character and tendency towards criminal activity. Causes such as greed are rooted in human weaknesses. When the emphasis is on an official's flawed character, morality is presumed to evaluate action (as in the forthcoming theory of contradictory moral values): people are believed to be behaving based on moral values. Hence, 'false' values are the source of corruption. Of course, one can ask if people are working based on moral values De Graaf (2003). However, the focus on individual corrupt officials and their actions may be of another type as well.

The theories about bad apples are less popular than they used to be. Punch (2000) writes about police corruption, explaining the bad apple metaphor "There has been a tendency in the past to think of corruption as a temporary, extraordinary 'issue' to be eliminated by surgical treatment, as if it were a cancer, to restore an otherwise safe institution. Recently, conventional wisdom has moved toward seeing corruption as a near universal and persistent issue. We see the hypothesis in the literature that the 'bad apple' is often made explicitly or implicitly, but hardly ever based on empirical claims; the conclusion is theorized most often.

What is clear from the research using criminological theories (which are similar to bad apple theories) is that it is too much of a simplification to tell that the corrupt official is just after material gain as propounded by public choice theory. According to Nelen and Nieuwendijk



(2003), an official could also desire a higher social status, anticipation, job enjoyment, or a remedy for dissatisfaction. Unlike the following theories, these criminological theories do not result in any focus on handling ethics. The particular discourse they cause about corruption control is decided by the actual theory that is used. Social control, as in seeing in the delinquent, a person free from romantic ties, ambitions, and therefore moral beliefs that bind most people to live within the law, focuses on factors that should prevent people from criminal activities.

### **Organizational Culture Theories.**

Secondly, most works of the literature are not so much interested in the corrupt official's history or motivations but in the organization's culture and the framework within which the agent works. We are looking for the first time, not at the micro level of individual corrupt agents but at the intermediate level of their respective institutions. The underlying assumption seems to be that a causal direction from a certain society, a certain culture of a population, leads to a certain state of mind. Moreover, that state of mind leads to corrupt attitudes. Failure in the government's "proper machinery," not a faulty character, leads to corrupt acts by public officials. It thus accounts for the context in which corrupt acts occur. For instance, Punch (2000) claims that. "When research is done within police corrupt activities, then it is clear that we are no longer in existence dealing with individuals seeking solely personal gain but with group behaviour rooted in established plans and/or extreme practices that must be located within police work and systems. Punch (2000) concludes that it is imperative to fight against corruption and other forms of police deviance and the negative elements in the culture of the police based on the organization culture.

Once again, in these theories there is a causal path from a particular culture, a particular group of cultures that results in a psychological state, which psychological state results in corrupt behaviour. However, we could question whether this is often a causal link in the slightest degree since not all people within the described organizations become corrupt. At most, we might claim that certain theories explain those conditions under which corruption occurs but that is perhaps saying an excessive amount. It is more a matter of describing 'facilitating factors', which strengthens the causal chain in some cases. These sorts of theory are not so curious about the corrupt official, but within the contextual features that bring the setting of corruption. Most of those theories are of contention that folks in organizations inherently act on the actual dynamics of the organization. Moreover, many good arguments involving economic, natural, or social forces show that institutions, in the sense of collective modes of thinking, feeling, and doing, ultimately determine people's decisions and behaviors. Some dynamics transcend people. This takes us to a related group of corruption theories that should be grouped here, those are who see

corruption as 'contagious', (example, Caiden and Dwivedi, 2001), (Hulten, 2002). Such theories claim that once an organizational culture (or country) becomes corrupt, any person who experiences this culture also runs a great risk of becoming corrupt. Thus, corruption itself seems to be the cause of corruption (although it is difficult to define the specific causal relationship). Sometimes these ideas use the 'slippery slope' metaphor (Punch, 2000). In certain corporate cultures, not becoming dishonest means betraying the party (Punch, 2000).

Such theories contribute to a debate on the regulation of corruption in which the focus is on manipulating an organization's culture, the so-called 'cultural instruments' by, for example, altering the leadership of the organization (Hartman et al. 2000), (Huberts and Kaptein, et al. 2004).

### **Clashing Moral Values Theories**

The third section of the literature distinguishes corrupt officials from their public role and private obligations. As distinguished from the previous theories, on a macro level, corruption is considered, more precisely, the level of the society. Because an organization's culture is also influenced by society, this group and the theory of organizational culture overlap. The causal chain in these theories begins with certain values and societal norms that directly influence individual values and norms. Such values and practices affect individual officials' actions, making them unethical.

There is no clear distinction between one's private and one's public roles within many societies, (Rose-Ackerman, 1999). In the private sector, gift giving is common and highly valued, and it seems natural to provide friends and partnerships with employment and contracts. No one sees any reason why such practices should not be carried into the public realm. Indeed, many people seem alien to the very idea of a sharp distinction between private and public life. Personal utilization of office spoils is not considered morally reprehensible or unconstitutional. Here, like in the second group of theories, there is an opportunity for morality to cause behaviour and thus cause corruption. Out of responsibility to friends or family (which, in some cultures, can be very important), officials take bribes. Therefore, the corrupt official is after not so much selfish personal gain, but the agent feels a need to be corrupt to fulfil important personal (moral) duties, such as maintaining loyalty to friends and family.

The antagonism between two value systems is important in this category of theories, as Hoffling (2002) theory talks of micro and macro-morality. In our social circles (family, friends), micro morality has to do with interactions with close relations. It is about our everyday personal and social lives, beliefs, norms, and moral obligations. Although, micro-morality obligations are based on informal norms, they are much stronger than our moral obligations to strangers.

Reciprocity is a characteristic of moral obligations in our personal lives: we support friends and family just as we want them to help us. By contrast, the macro morality underlines the universal. Problems arise in society as people see themselves in two social roles with moral obligations in contrast: the macro morality of public officials requires them to treat different individuals equally, while micro morality requires them to support friends wherever possible. Particularly in the vast literature on countries of the third World (Williams and Theobald, 2000), patrimonialism is a popular theme, leading to patrimonial administration in which the private-public boundary, fundamental to the Western concept of public administration is blurring.

Corruption is often seen from the ethnocentric point of view as a stage in which developing nations have to go through before maturity is achieved. According to Theobald (1999), despite a widespread agreement in the literature that neo-patrimonial character is the root cause of developing world corruption, there is a danger that we would simply explain the symptom rather than identify the underlying causes. These theories lead to a corruption control discourse where codes of conduct and their enforcement play a significant role. Ethical training' is common as well.

Throughout Third World literature, the focus is on the abolition of patronage and cronyism and calls for merit-based governance concepts. Of course, when a country's underdevelopment is perceived as the cause of corrupt practices, the antidote is development. It is, however, evident that economic development is by no means a guarantee to stop corruption. Corruption is often seen in the current literature as deep-rooted, popular, and long lasting; it occurs in all social institutions, agencies, age groups, and gender groups (Williams, 2000).

### **The Ethos of Public Administration Theory**

The fourth type of research is closely related to the third group (organizational culture), but it differs in that the main concern is the culture of public administration and general society. Like that of the previous (fourth) category, we are mainly looking at corruption at the social level. Like that of the third group, the organizational level plays an important role: the macro factors (unlike the previous group) work through the level of the organization instead of the individual.

Political and economic systems are discussed within these theories. Performance by officials has a causal route from societal pressure through the organizational level. This, coupled with the lack of regard for integrity issues, contributes to the official's emphasis on 'effectiveness,' making him or her unethical. For example, it is believed that reforms of the public sector, under the impact of New Public Management (NPM), would change the mind set of public administration in such a way that standards of ethical probity within public services are

adversely affected, contributing to more cases of corruption. Therefore, the effect of NPM is on the level of the entity that controls the officials; from this point, the causal route of the theory of the third group is observed. According to some economic strategies, which do not tackle the ethical aspect of public service or promote values such as public interest, guardianship, honesty, merit, openness, accountability, and reality have undermined the culture of public organizations thereby weakening public trust, contributing to even more corruption.

It is also argued that developments such as NPM, deregulation, and privatization (Doig and Wilson, 1997) created substantial effect-peddling structures (Heywood, 1997) and eliminated organizations providing for public accountability. Empirical studies in this group seem to be non-existent, likely because the causal connection, as in the previous group of theories, is so indirect that it is difficult to support empirically the claim. Discussing corruption in this way is complex and multifaceted. Theoretically, other authors such as Frederickson (1997) and Gregory (1999) support the claim strongly. According to Gregory, particularly where such changes were largely driven by the new institutional economics and the theory of public choice, that continue to combat more gradual efforts to maintain standards of ethical competence within the bureaucratic system.

These initiatives may need to be strengthened by new methods for rebuilding institutionalized public services, based on a comprehensive understanding of the significant distinctions between public and corporate governance. When speaking of organizational structure and state machinery, we quickly refer to the Scientific Administration discourse. The aims of scientific administration are 'effectiveness' and 'efficiency,' but the theory also holds that it is possible to achieve administrative honesty through administrative control. Like empirical research, it is quite tough to control corruption based on these theories. It is hard to manipulate a society's history after all. Nevertheless, those who argue that New Public Management is contributing to more corruption (Gregory, 1999) are using a discourse promoting the abolition of NPM methods and techniques.

### **Correlation Theories**

The fifth literature group puts forward not so much a theory on the causes of corruption, rather compiles studies with some common features. The root causes of corruption are examined at all stages. Correlation theories are not based on an implicit or explicit model of theoretical interpretation compared to the above theories but specific factors. The analysis has in common that it illustrates those financial, political, organizational, or individual factors. The variables under consideration are at all levels: individual, organizational, and societal. For instance, campaign funding strategies in the U.S. (Williams, 1995) or an elected official's longevity in

power (Heywood, 1997) or economic growth and being a former British territory (Treisman, 2000). These factors are often claimed to be causes of corruption. This is normally done based on the percentages or the variance explained. If we want to add up all supposed variance of these factors in the studies that can be listed here, it would not be shocking unless we found a causal structure in which the variability would be interpreted well over 100 per cent (Schinkel, 2004). This can be clarified, of course by the different circumstances between the countries and within them. Again, we are cautioned to make reasonable general claims about the causes of corruption. Usually, these kinds of studies are not explicit about corruption causality. It often remains unclear how exactly the causal link between macro-variables and the act of corruption becomes blurred.

The causal path in social science remains generally in the dark. Statistical significance is often used without actual evidence to indicate successful causal links. The recurrent link between 'employment' and 'corruption' is evident in this regard. Nevertheless, as Huberts (1998) observes, "It is not clear if this relationship is causal". For example, a country's income is directly related to characteristics of the political system, the rating of political democracy. More research is needed to find out how it applies to democracy, wealth, and corruption. One example of this sixth group's work is Holbrook and Meier (1993). According to a quantitative analysis of reported corruption cases in fifty American states led by the Public Officials Integrity Division of the United States Department of Justice (1988), the level of corruption is associated with several factors. It gives four categories of explanations. Urbanization and education are concluded as significant factors on corruption among the historical and cultural factors. Voting turnout and, to a lesser extent, party competition stand out as important factors amongst the political explanations. The scale of the public sector and the arrests of gambling are considered major bureaucratic causes of corruption.

Several Huberts works (in 1995, 1996, and 1998) were based across an international panel survey of experts. Two Hundred and Fifty-Seven (257) respondents from 49 countries responded to questions regarding public corruption and fraud. Methodologies, which use expert panels, are widespread within corruption research. Transparency International's work and its perception indices on corruption are renowned in this regard. In this type of research, causality based on percentages of the explained variance is not explicitly assumed, yet the reasoning is similar. Scientists are questioned on social, cultural, political, organizational, and individual factors they believe are relevant for understanding the corruption cases that exist in their country (Huberts, 1996). Experts are therefore asked which factors they feel correlate with corruption. In that sense, not so much is argued about the real causes of corruption. Huberts (1998) suggests

that the three major causes of corruption in higher and lower-income countries are similar. Corruption is related to the values and norms of individual politicians and civil servants, a lack of commitment to public leadership ethics. Organizational challenges and shortcomings, public-sector-business relationships, and organized crime capabilities. Such type of theories leads to a corruption prevention debate relating to the respective correlations. Such variables also provide less to go through.

### **Principle-Agent-Client-Approach**

Banfield suggested the Principle-Agent-Client Approach (P-A-C) initially in 1975. Unlike the practical strategies, the P-A-C creates a framework of activities in which corruption occurs. In this model, three parties are introduced: the principal representing an authority, such as police, executive, department head, and sheriff; the agent contracting to "perform defined duties for the principal" (Williams, 1999); and the third party who always "seeks to influence the decision of the agent by offering him a monetary payment" (Rose-Ackerman, 1978). Based on the theory of rational choice, this model argues that an agent is easily corrupted if its net benefit from corruption is greater than the net benefit of being honest. Corruption happens when an agent becomes dishonest when, according to Klitgaard (1988), he/she "betrays the value of the theory in pursuit of his / her own" or an agent accepts a payment from a third party and the payments are not passed on to superiors.

Regarding the P-A-C approach, the third approach is to rent seeking originating from economics. The basic assumption of this view is that individuals are motivated by selfishness and are concerned with optimizing their self-interest by looking for "cash" in the government. The rent can be the payment for a resource in a fixed supply or "legalized or systematic manifestation of greed," or "any advantage or surplus created over a certain period by nature or social structure. There are various types of rent, such as differential rent, true rent, quasi-rent, and rent for monopolies. Rent sometimes occurs in society because of imperfections; the political elites sometimes generate rents. When rentals are in nature, their practice is known to be rent seeking, which is corruption. A legislator, for instance, threatens to use the state's judicial, legislative, taxing, and other compulsive forces to intimidate and inflict damages on individuals and companies unless that politician is paid to refrain. In summary, pioneered by Tullock (1967), this method shows that monopoly and other market imperfections generated by private-benefit state action requires more than loss of deadweight.

## **1.2 The Magnitude of Corruption**

Understanding the extent of corruption just does not tell us how bad the issue is. After all, corruption is at least theoretically possible to reflect a move from one party to another party

with little cost of efficiency. Indeed, if the official salaries of bureaucrats were less than their market wages in expectation of the corrupt rents they would earn, and there is evidence that this is exactly what is happening, there could be no net cost of corruption at all.

### **Perceptions**

Until very recently, most corruption figures had been based on perception surveys. Such perception polls have the benefit of good coverage, asking for somebody's opinion of corruption is much easier than assessing corruption directly actually. As such, they tend to form the basis of most cross-country corruption indexes, such as the Annual Corruption Perception Index (CPI) from Transparency International and the Corruption Prevention Index from the World Bank. Some of the first empirical work in corruption economics, such as Mauro's work (1995) about cross-country analysis of the relationship between corruption and development, also employed perception-based interventions.

According to Olken (2009), the challenge with perception-based measures is that they may not measure corruption accurately. For example, villagers estimate of the possibility of corruption in the road project were collected to evaluate the reliability of villagers' perceptions of the level of corruption within a local road-building project. At the same time, by comparing the amount the village government spent on the road to the amount independent engineers predicted the road would cost to construct, he provided a more accurate measure of the amount of corruption that was present in the road project.

Views of the villagers tend to be distorted in two respects. First, villagers are much better at detecting high prices than inflated quantities, that is., billing for 1000 m<sup>3</sup> of rocks but only delivering 800 m<sup>3</sup>), and despite this, it is not shocking that most of the corruption exists through inflation. This may attribute to the relatively low correlation between expectations and real corruption because people need to make inferences about the dimensions of corruption that they cannot perceive, which end up where the bulk of corruption is usually hidden away. Secondly, Olken argues about the individual features, like one's schooling, have far more ability to the anticipate corruption suspected than the actual corruption itself. If a perception survey has different compositions of respondents assessing different projects, the use of perception may establish systematic biases.

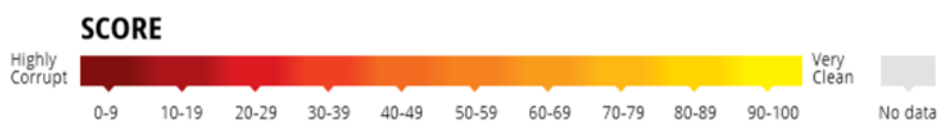
### **Corruption Perception Index**

Transparency International (TI) developed this model, and it has become one of the most popular and reliable methods of measuring corruption in the world. Transparency International has been using its CPI since 1995 annually to rate countries based on their perceived level of

corruption in the public sector through expert analyses, assessments, and opinion surveys. It uses a common definition of corruption, that is, the misuse of public influence for private interests such as kickbacks in public procurement procedures, bribing public officials for the benefits of public funds, and misappropriating them. CPI uses qualitative data to include numerical indices for corrupt acts, rather than quantitative ones. The CPI is a composite index focused on independent business people surveys and corruption indicators in different countries. More than ten reputable organizations across the globe provide surveys and assessments.

Some of these organizations include the World Bank, World Economic Forum, International Institute of Management development (based in Switzerland), African development Bank (based in Ivory Coast), Bertelsmann Foundation (based in Germany), Economic Intelligence Unit (based in the UK) and Global Insight (based in the US). Transparency International updated the methodology used to create the index in 2012 to allow for a greater comparison of scores from one year to the next. The CPI has been using a scale from 0 to 100 since 2012 to rate the countries where 0 means highly corrupt and 100 is very clean. The CPI scores had a scale of zero (0) to ten (10) before this revision, where zero suggests high rates of corruption and 10 low levels. Report of the 2020 Corruption Perception Index; the most recent one draws on 13 surveys and expert evaluations to assess and rank corruption in the public sector in 180 countries and territories. The report shows that over two-thirds of those countries and territories reported an average score of 43 below the 50-benchmark level. This gives an impression of the inability of most countries considerably to curb corruption.





**Figure 1** The perceived levels of public sector corruption in 180 countries/territories around the world in 2020

**Source:** Transparency International, 2020

The CPI scores 180 countries and territories by their perceived levels of public sector corruption, according to experts, business people. 100 is very clean, and zero (0) is highly corrupt. Two-thirds of countries score below 50/100 and the average score is 43/100.

### **Estimation of Bribes**

Perhaps the most straightforward way to measure corruption is by using bribe payer surveys. There is very little stigma associated with paying bribes in most situations, and bribery can be assessed in many cases by corporate or household surveys. One notable example of this is Svensson's work in 2003, which surveyed businesses in Uganda and looked at how much bribes they received. On average, the survey estimates company bribe payments of about USD 88 per worker or about 8 percent of their total costs. Because this form of survey-based calculation of bribes is the easiest to reproduce. It is one of the only places where accurate assessments were performed across countries and over time. One main dataset is the 49-country (ICVS), in which individuals are asked whether they have been requested or required by any government official in that country to pay a bribe for his services during the previous year.

### **Estimation through Direct Observation**

Mostly, the best way to measure corruption is by witnessing it directly. This is hard as officials seldom allow corrupt behaviour to be seen. There are, however, few notable examples of direct observation of illegal behaviour. One such example is the case of Montesinos in Peru, which McMillan and Zoido (2004) reported. Montesinos, who was Chief of Secret Police in Peru under President Alberto Fujimori, bribed judges, politicians, and news media in favour of Fujimori dictatorship. It was noteworthy that he maintained detailed records, including contracts signed by those he bribed and videotapes accepting the bribes.

### **Graft Estimation by Subtraction**

The most common method of estimating graft (government fund theft) is what we call subtraction estimate. In this process, two tests of the same are obtained quantity, the measure before corruption occurs and a measure after corruption occurs. Corruption estimation is the difference between the two steps. The analysis pioneered by Reinikka and Svensson (2004), is one of the first estimates using this approach. Using a Public Expenditure Tracking Survey (PETS), they compare the amount of a special education block grant sent down by Uganda's central government with the amount of the block grant that schools receive. They estimate an 87 per cent leakage rate. A subsequent study found, once the findings were released, that the rate of leakage dropped to less than 20 per cent.

In such a method, one important question is the consistency of record keeping: if schools have bad records, some of the money may not appear on the books, even though it may have been earned. An important issue for the replicability of this technique is the study of the value of record keeping efficiency in PETS.

### **Market Estimation Inference**

In some situations, one can use the principle of market equilibrium to estimate the amount of corruption, combined with data on market activity. Fisman (2001) applied this method in an innovative analysis to estimate the importance of the political connections to Indonesian President Soeharto. Specifically, he received an estimation of how much every publicly traded company was linked to Soeharto on a scale of 0-4 from a consulting firm in Jakarta. He then measured how much the price of each company jumped when Soeharto fell ill in calculating the interest of those political connections in the stock market assessment. If the theory of efficient markets holds, then the increase in stock market valuation that follows these events captures the importance of the political connection to the business. Because investment bankers in Jakarta predicted that if Soeharto died, the total market would decline by 20 per cent, he will calibrate these figures to measure the total value of the 10 Soeharto ties. On average, he estimates that about 23 per cent of their value was attributed to the relations between Soeharto and the most related firm, (Fisman, 2001).

Another way of assessing corruption is by using labour market equilibrium conditions. One can take advantage of the fact that people in the public sector have to be insensitive on the margins between their public sector employment and alternative private-sector jobs. When pay is lower in the public sector, accounting for their employment opportunities, the outcome may simply reflect a compensating wage difference. However, if the pay is lower in the public sector, so consumption levels are the same, it could be concluded that the variance in pay and the consumption in the public sector relative to the same gap in the private sector tells us something about how much people in the public sector are likely to pay bribes.

## **1.3 Causes of Corruption**

Corruption research is difficult, as many causes of corruption often tend to be the effects of corruption. Feedback loop function makes it difficult to isolate the underlying causes. Nonetheless, a lot of recent work has tried to address these issues and draw some conclusions. Some causal factors can be manipulated to minimize the occurrence of corruption; others are contextual factors that policymakers need to take into account. The author will discuss four possible causes, which have been prominent in recent research.

## **Public Sector Size**

Sometimes during the early economic research on corruption tolerated corruption, seeing it as a way around repressive government regulations. Nevertheless, most economists recently rethought the status and became far less tolerant of corruption than their predecessors did. Current research highlights the adverse effects of corruption on welfare nonetheless; the solutions suggested frequently come straight out of economic theory without recognizing the state's critical role in modern society. If corruption includes a self-seeking government whose officials are attempting to enrich themselves, then government power must be restricted to curb corruption (Orchard and Stretton, 1997).

The argument that corruption can be minimized by reducing the public sector represents the market confidence of economists, as well as their mistrust of politicians. Empirical results, however, provide little support for this proposition on the macro level. There is little connection between overall public sector size and corruption. LaPalombara (1994) does see a correlation, but by claiming that there are exceptions and he leaves the Scandinavian countries out. In comparison, Elliott (1997) notes that the size of the government's budget compared to GDP declines as corruption levels rise for a sample of 83 countries. Adsera et al. (2000) and Montinola and Jackman (2002) are in support of this. Graeff and Mehlkop (2003) conclude that corruption in high-income countries reduces significantly with the size of government. Husted (1999) is of the view that more corruption is caused by bigger government sizes. He asserts that government become larger in societies marked by increased authority acceptance. Such reception would be a cultural determinant of both corruption and government budget weight.

## **Quality of Regulation**

Economists' worldwide points out one crucial cause of corruption: Bad regulation. Ill-designed policies produce corrupt opportunities for policy-makers, officials, and the public. Under this view, the issue is not the size of government but the complexity of programs and their administration. Reform should avoid complex and hard-to-administer regulations and develop individual opportunities to encourage fair decision-making. With this in mind, some good regulations will help to curb corruption. For instance, privatization in Eastern Europe involved bribery because there was too little 'good regulation'; that is, too few legal requirements that restrict corrupt deals.

As a result, it may be helpful to detect bad regulation and misdirected state interventions to identify areas where corruption is likely to occur. Bad regulation and corruption are two sides of the same coin. This may cause corruption when domestic companies are given preferential treatment in public tenders, but it may also be the direct product of powerful private interests

gaining public funds. Many studies support a close link between some kinds of bad regulation and corruption. Broadman and Recanatini (1999), argue that greater barriers to market access contribute to higher corruption for a sample of transition economies in Europe and Central Asia.

The complexity of the entry policy is also concerned as indicated by Djankov et al. (2002). For a cross-section of 71 countries, they determine the number of procedures, time, and official expenses needed to start a new business. These variables are found to be closely correlated with the level of corruption in a country. Svensson (2005) considers a positive correlation between corruption and the number of working days needed for legal status to be achieved. These findings support the argument that entry legislation does not often help to address market failure, but causes problems on its own.

### **Economic competition**

Corruption is simply a reflection of the lack of economic competition. On the one hand, supplier rivalry drives down prices. For example, if the procurement processes were public, the resulting rentals for private companies would decrease. As a result, public servants and politicians have less to 'trade' in return for bribes when there is competition, eliminating their incentive to demand payoffs. On the other hand, when there is restricted competition, revenues rise and politicians will take the opportunity to distribute these profits.

Competition can increase rather than reduce corruption. Competition can force companies into myopic actions where companies compete for quality rather than price. Instead of fostering a reputation of high quality, they might rather bribe inspectors to allow them to ignore substandard quality deliveries. Some research supports an inverse relationship between competition and corruption. Henderson (1999), asserts that corruption has a negative correlation with various economic freedom metrics. Goldsmith (1999) largely supports this finding for a sample of 66 countries where the regression is adjusted for GDP per head. One indicator of competitive pressure is for a nation to be incorporated into the global economy. If competition decreases corruption, then greater openness to international trade and less corruption should go along with investment. Indeed, a study in *Foreign Policy* (2001) found that there is less corruption associated with increased competition.

### **Lack of Transparency and accountability**

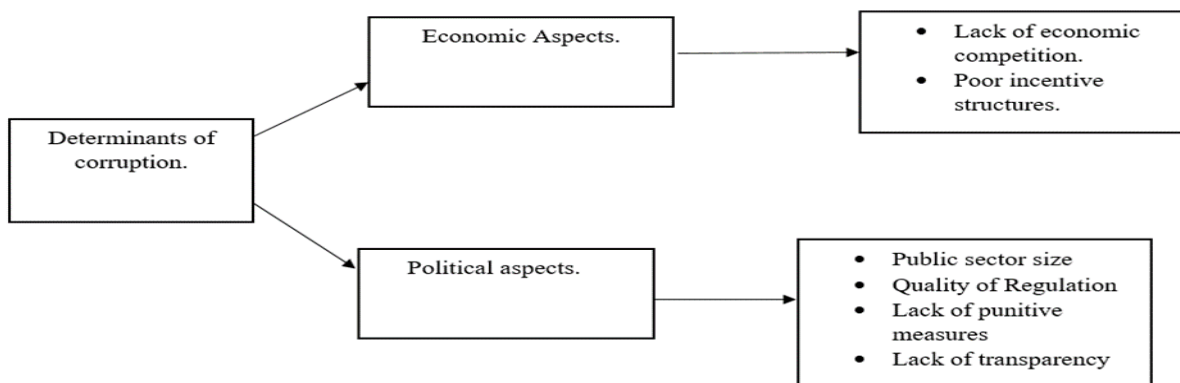
Transparency as defined by Transparency International "is about shedding light on rules, plans, processes and actions". Describes when public knowledge is readily available to people. If the government's laws, policies, and priorities are not available to the public, there is no budgetary and administrative control to regulate government officials' positions, there is a lack

of accountability and corruption can be created. Without budget and rules supervision and accountability, national wealth can be plundered, and authority can only be misused in favour of the corrupt official. Furthermore, if there are no processes in the public sector that direct social desires and particular community grievances to the agencies involved in these grievances, persons in authority do not fulfil their role in serving the people, but will have a free will to do as they please in the public sector. Lack of transparency gives public officials opportunities to abuse their offices for private gain. This relates closely to accountability, and weak accountability mechanisms tend to encourage corruption. In situations where there is a lack of transparency, there is a tendency for corruption to flourish.

### Poor Incentive Structures

Incentives appear when wages are so small that people cannot meet the minimum standards of living for food and housing. As a result, citizens will often take other jobs that cause public officials to be absent and increase government officials' demand for bribes and other paybacks to provide public services. Bad incentives, such as individuals who do not earn a living wage or who do not have job security, also promote unethical conduct, such as bribes supplementing income. Some people who do not have an incentive to fulfil their official duties, but still pay for their work with the expectation that bribes would make them richer. A lack of incentive often occurs when positions of power are assigned because of favouritism and nepotism.

Below is the author's categorization of the causes of corruption into their main aspects in a mapping.



**Figure 2** Causes of corruption in their main aspects **source:** the author's own

## 1.4 Consequences of Corruption

This section concerns with a consideration of the distortions that corruption introduces into the public and private sectors. In the following section, an analysis detailing corruption and its consequences are outlined.

## **Low Rate of GDP**

In countries where the level of corruption is high, there is certainty that the GDP will be low. Linhartova and Owusu (2019), indicate that corruption can make people transition from productive activity to unproductive rent seeking. This attitude shift creates gaps in the productive environment, which reduce economic growth. There is a low rate of economic growth because it depends on the rate of GDP output. There is a major association between the diversion of resources to unproductive activities and corruption, and higher levels of indirect taxation and corruption, thereby reducing growth rates (Tanzi and Davoodi, 2001).

Aidt (2009) comments from on a paper indicating that evidence for the *grease-the-wheel* hypothesis is very weak and that there is a very strong negative relationship between per capita wealth and corruption, and that the impact of corruption on per capita GDP would lead to unsustainable growth.

## **Inequality**

Particular attention has been paid to the impact corruption has on income inequality. Nevertheless, corruption is also likely to result from inequality, which means that inequality should be regulated as a method of reducing corruption. Gupta et al. (2002) analysed the effect of corruption, as calculated by the Gini coefficient, on income inequality. In a cross-section of 37 countries, they find a significant link between corruption and income inequality, when taking into account various other exogenous variables. This effect remains important at a point of 10 per cent when accounting for GDP per person. The writers test different instrumental variables to assess the causality from corruption to inequality. They also find evidence that corruption gives rise to inequality in land distribution and education.

With respect to the study of African countries, Gyimah-Brempong (2002) also found a link between corruption and income inequality; however, Li et al. (2000) consider the impact greater the higher the corruption level. Additionally, Studies by Gupta et al. (2002) examines the bottom 20 per cent of society's income growth. Controlling for various influences, they say a major and negative effect on this variable is exerted by increased corruption. Nonetheless, work on concrete developments in levels of corruption has not begun, and the current data on perceptions may not correspond well to real-level changes. Despite this, it suggests that the findings should be regarded with some scepticism.

## **Investment**

Corruption can have an impact on the economy by reducing the capital stock of a nation. The main reason for this decline is the policy's poor credibility. A dominant ruler dedicated only to

self-enrichment is the best example of this circumstance. Such a ruler is incapable of making commitments credibly. Start-up investments are often sunk and cannot be redeployed when investors become disillusioned with a country's institutional climate. Railroads cannot be transferred; pipelines cannot be relocated, and immovable property cannot be used in another area.

Once investments are sunk, politicians and bureaucrats can abuse their positions. They can withhold the required permits and hold up investors until they give a bribe. Governments with a reputation for corruption have trouble sticking to trustworthy, non-extortionate policies and persuading citizens of their dedication. Because of such shortcomings, both domestic and incoming foreign direct investment should deteriorate with corruption.

More studies that are recent show signs of foreign investors being deterred by corruption. Focusing on bilateral flows in 1990 and 1991 between 14 sources and 45 host countries, Wei (2000) detects a significant negative impact on FDI from corruption. He found that an increase in the level of corruption from Singapore to that of Mexico is equal to an increase in the tax rate by more than 20 percentage points. Moreover, Aizenman and Spiegel (2003) portray a negative effect on the ratio of FDI to total capital accumulation, calculated by Business Intelligence data. One standard assumption is that countries with a better investment environment can achieve higher investment ratios to GDP.

Habib and Zurawicki (2001, 2002) also provide evidence of corruption that discourages foreign direct investment. They conclude that the effect of corruption on FDI is greater than on local investment. They believe that foreign investors are more reactive to corruption than their local counterparts are. The proof of evidence of the consequences of corruption on FDI now seems well established enough to argue in favour of a significant negative effect.

### **Misallocation of Public Resources in the Public Sector**

Bureaucratic corruption results in the misallocation of public resources. Public servants are hired by nepotism or bribery, irrespective of their competence or ability. Embedding corruption in the bureaucracy, public servants produce artificial bottlenecks as a means of extortion of "speed money". Such bottlenecks are likely to reduce efficiency, causes and effects of corruption as well as quality of service. Public servants looking for incentives are likely to prefer initiatives that provide a good basis for kickbacks rather than those that benefit the public. Corruption in recruitment contributes to the selection of candidates who are prone to corrupted practices, rather than to those who provide high-quality work at reasonable wages.



There is also a discussion of how corruption distorts the allocation of public budgets and measures the impact of corruption on the provision of quality of services provided to the public. Many goods are preferred to others because of the need to hide illegal payments. Customized goods offer better opportunities for secret payment arrangements than off-the-shelf products. An example of this scenario: Shleifer and Vishny (1993) gave a report on a Mozambique bottle-making factory requiring a new machine to repair paper labels on the bottles. The basic machine could have been bought for US\$ 10000, but for ten times that price, the manager wanted a more sophisticated version. Since there was only one manufacturer of this tool, this provided the manager with enough room for over-invoicing and kickback.

Gupta et al. (2001) portray that countries with high levels of corruption are related to inefficient government services and low-quality public healthcare delivery, as respondents subjectively evaluate. Certainly, the subjective judgments that relate to impressions of the respondent rather than to fact. Accordingly, the authors expand their analysis by including the quality of government services by more objective proxies: child and infant mortality as well as the proportion of low-birth-weight babies in total births as a proxy for the quality of public health care delivery, and student dropout rates as a proxy for public education quality.

### **Impact on Individuals**

Hunt (2007) illustrates the negative distributional effect of corruption not by arguing that poor people spend a higher proportion of their income on bribes, but by claiming that corruption can be an additional cost to the victims of circumstances, particularly victims of crime. His study is based on an individual survey conducted in Peru to demonstrate that circumstances raise the demand of victims for public services and indirectly increases bribery. In addition, the study shows that crime victims pay more in certain cases than other non-victim users.

## **2. INTERNATIONAL TRADE AND ITS MAIN DETERMINANTS**

International trade refers to the transfer of goods and services from one country to another which include capital goods. This definition is associated with Economics Concepts (2012) which described it as trade across international frontiers. This trade represents a significant portion of the gross domestic product (GDP) in most countries. Although international trade has been present throughout a significant amount of history, in recent centuries, its cultural, social, and political significance has been on the rise. Therefore, nations would be restricted to the goods and services produced within their own borders without international trade.

The dynamics of international trade change over time. Theoretical models of trade and development (Redding, 2002; Bond et al., 2003) have stressed these complex aspects of trade. International trade is explained by the existence of comparative advantages between countries according to the most conventional theory of international trade, proclaimed by Heckscher and Ohlin. Such advantages arise because of differences in relative factor endowments across countries and relative intensities with which factors are used in increasing well traded output. There are many theories of international trade; however, in this part of literature the author will discuss about two theories, that is, Ricardian Model and Heckscher-Ohlin model.

### **Heckscher-Ohlin model.**

This model emphasizes production endowment factors as the basis for international trade. According to this theory, countries should specialize in and export those products that make more intensive use of the domestically abundant development factors than those factors that are not quite available in the home country Blaug (2006). This is mostly focused on the abundant manufacturing factors available. A nation should only export what it has in abundance, and import what it has in abundance.

In relation to Ricardian Model as briefly explained above, this model is based on the comparative advantage principle. According to this model, trading countries specialize in producing goods in which they have a comparative advantage. For example, if country A and country B involve producing Y clothes and X cars, and country A produces more clothes in a day at lower cost (£) and fewer cars at high cost (£) in a day, while country B produces less clothes at high cost (£) in a day and more cars at lower cost (£) in a day. Comparatively "A" is supposed to produce amounts of clothes while "B" is supposed to produce number cars due to the benefit that they both have over each other on the cost of production. Heckscher-Ohlin

model focus on international trade and endowment factors of production. According to this hypothesis, countries should specialize in and export those products that make more intensive use of the domestically abundant development factors than those factors that are not quite available in the home country (Blaug, 2006).

## **2.1 Market Openness**

The inflows of foreign direct investment (FDI) have given a strong boost to economic development across countries. FDI thus serves as an important source of domestic investment supply funds, promoting the development of capital in the host country (Omisakin et al., 2009). FDI inflows can benefit the economy by providing opportunities to improve service levels, for wholesale and retail business, and legal services. According to UNCTAD (2009), efforts towards economic liberalization in an increasingly globalizing world, many developing countries, including the least developed ones, have drawn only small amounts of FDI inflows. For a limited number of countries, too, FDI inflows are extremely concentrated.

In this section, the author focuses on trade openness as a major factor affecting FDI inflows and international trade. While openness can be considered a social or socio-economic measure, in this paper the author is concerned only with the economic aspect of openness.

In theory, trade restrictions or openness could have a positive or negative impact on FDI inflow. Any trade accessibility policies could have a considerable impact in attracting FDI. For example, many Latin American countries have been able to attract greater flows of foreign direct investment through the introduction of free trade agreements (FTA). According to the studies by (Biglaiser and DeRouen, 2006), there is a positive relationship between trade openness and FDI flow. On the other hand, Seim (2009) finds a negative relationship between FDI inflows and the degree of openness for transitioning countries. The relationship between trade openness and FDI inflow is, in other words, very broad, requires careful analysis, and may rely on the characteristics of each situation. In theory, the impact of trade openness on FDI inflow varies with the willingness to participate in FDI activities (Markusen and Maskus, 2002).

## **2.2 Geography and the role of distance in international trade**

Companies vary greatly in exposure to international trade. Many businesses are not exporting internationally. Of those that do, just a few are exported to several countries. This variation in individual firms' exposure to foreign markets has significant consequences for international trade trends. Melitz (2003) argues that a reduction in trade barriers will cause aggregate productivity gains, in the presence of heterogeneity in the ability of individual firms to access foreign markets. Chaney (2008) argues that with firm heterogeneity, exports at the firm level

aggregate up to well-established equations of gravity in international trade, but that the responsiveness of trade flows to trade barriers is magnified.

According to Jacob Moreno's social Network theory, potential exporters have two distinct ways of meeting foreign contacts. Secondly, they can spontaneously encounter foreign contacts, which is a reduced type to seek out foreign trading partners. Once an organization has obtained such foreign contacts, the contacts of those contacts can be met. This process creates predictions for the steady-state distribution of the number of foreign contacts across exporters and the geographic distribution of such contacts across exporters.

There is a growing literature on the role that social networks and information gaps play in promoting or hindering transactions in international trade. Rauch and Trindade (2002) indicate in a seminal paper that the involvement of the Chinese ethnic networks promotes bilateral trade. They also show that this effect is more pronounced for trade in differentiated commodities than for trade in homogeneous commodities. Researchers claim that these results are evidence of the importance of communication barriers and that social networks mitigate those barriers. Therefore, geography and the role of distance play a major role in international trade.

### **2.3 Technological Innovation in International Trade Competitiveness**

The theory of international trade stresses the importance of technological innovation in understanding the international competitiveness of a country (Fagerberg, 1997). Empirical research that connects trade with technological innovation based on a gravity system shows that the effects of technological innovation on exports differ from country to country character. Loungani et al. (2002) assessed the value of information links that equate technological progress with lower communication costs and indicated that that barriers to information flow could minimize the negative impact of physical distance on trade.

The effect of communication costs on bilateral trade flows was analysed by Fink et al. (2005) taking into account that this impact may differ with sectoral characteristics. Their results show that cross-country variations in the cost of communication have a significant impact on international trade. However, they found that lower contact costs promote a greater distinction of good trade than that of homogeneous good trade. Wakelin (1997) listed different indicators for technological advancement used and pointed out that the main choice of proxies for technological innovation was to use input into the innovation cycle, such as expenditure on research and development (R&D) or the number of scientists and engineers working in research departments, or production, such as patent number.

In a more recent study, Keller (2004) pointed out that technological innovation is intangible, that is, difficult to objectively measure, and that the three indirect methods that can be used are input (R&D), output (patent) and technological innovation (higher productivity). According to Zahra and George (2002), technological innovation has been defined as the "absorption capacity" of a country, the ability to bring knowledge from abroad into action by developing new products and processes that play a key role in international trade and economic development. Accordingly, the growth of appropriate indicators for measuring the level of technological innovation is viewed as absorption potential across countries.

As the technological achievements of a country are very diverse, it is difficult to capture them in any single index that represents the full range of innovations and quantifies aspects of technology development, dissemination, and human skill. That being said, the Technological Achievement Index (TAI), which was used in the empirical research of (Martínez-Zarzoso and Márquez-Ramos, 2005), is one metric that attempts to capture technical progress in a specific manner. This index was developed using measures of the achievements of a country in four dimensions: technology creation, the dissemination of recent innovations, the dissemination of old innovations, and human skills. These analyses have shown that technological development is essential for promoting exports international trade and gives an upper hand to countries that embrace it.

## **2.4 Level of Gross Domestic Product**

The macroeconomic theory implies that the imports from a country are calculated positively by its national income. In the case of bilateral trade, their trade will have a positive impact on GDP levels in both countries. The new theory of trade finds economies of scale a very powerful determinant of global commerce (Krugman, 1980) and (Helpman, 1981). The GDP level can also be used as a rough approximation of the economies of a country's size. Greater separation of labour and specialisation is possible at a larger scale of service.

Bergstrand (1990) implies that the potential for product diversity trade is broadening the gap between the economic sizes of two countries less. Several empirical studies have verified the positive relationship between bilateral trade flows and the degree and similarity of GDP (Egger, 2000), (Yamarik, 2004). From both theoretical and empirical literature, the general view is that the higher the GDP rates, the higher the trade flow between trading partners; and the more comparable in terms of GDP, the higher the trade-in intra-industry and hence the trade between trading partners.

## **2.5 Relative Factor Endowment**

Based on the assumptions of constant return to scale and perfect competition, the neoclassical trade theory described by the H-O model assumes that international trade is explained by comparative advantages arising from differences in factor endowments including labour, capital, natural resources, and technology between nations. Countries rich in capital should export capital-intensive products and import labour-intensive products, whereas countries low in labour would do the contrary. This theory's popularity is primarily due to its effectiveness in describing the inter-industry exchange, which is the major part of North-South trade. More than half of the foreign trade occurs in industrialized countries today (WTO, 2008).

## **2.6 Positive and Negative Impacts of Corruption on International Trade**

In this part, emphasis is placed on the multifaceted impact of corruption. However, specifically on international trade, whether corruption acts as an obstacle to activities in an international environment of trade or whether it aids international trade.

The author finds some positive impact of corruption on international trade after reviewing a survey by Kaufmann. It is important that the business cost of corruption need not be prohibitive and thus reduces its effect on FDI. Kaufmann (1997) authored surveys of the number of illicit payments received for various business activities in Ukraine and Russia, both considered very corrupt according to Transparency International. His findings show that, on average, the payments represented a small percentage of the overall revenue. In certain cases, if this is so, and then corruption may not be a significant deterrent to FDI.

(Meon and Sekkat, 2005) argue that corruption will make up for poor governance and draw more FDI in second-best countries where there are distortions caused by malfunctioning institutions. This view suggests that when corruption and low governance quality correlate, corruption will minimize the problems resulting from such low quality by speeding up processes in slow administration, by overcoming tedious and restrictive bureaucratic international trade regulations. By offering incentives for badly paid civil servants and by replicating the outcome of a competitive auction under the presumption that licenses appear to be distributed to more generous and effective bribes. Corruption can, therefore, compensate for poor governance and raise more FDI.

On the other hand, there are several negative impacts of corruption on international trade. The points below discuss the negative and adverse effects of corruption on international trade.

International trade researchers have highlighted the key role played by institutional quality in shaping trade and production patterns. According to Andersson and Marcouiller (2002),

corruption is one of the main obstacles to undertaking business in world markets. In this section, the author will examine the multifaceted role of corruption in order to assess its impact on international trade. The position of corruption as an obstacle to trade integration underlies the motivation of the European Union, which seeks to tackle it in the new Member States. Consequently, it has put at the forefront of trade negotiations through the World Trade Organization's facilitation program.

International trade transactions include a wide range of activities, such as partner quests, contracting, and transport of goods, which affect commercial outcomes and can be subject to corruption. In some nations, for example, it may be a common business practice for international exporting firms to bribe the importing firms as part of establishing a business agreement.

The first factor that has an impact on economic exchange and the resulting economic development is corruption trends. This ideal calculation of the extent of the effects of corruption can be used to determine its direct costs, which diminish the competitiveness of productive activities, including import firms and trade transactions. Consequently, in an international trade sense, the extent of the effect of corruption will reduce trade volumes and/or completely block trade transactions. While the level of corruption shows its effect when it happens, an indicator of how often corrupt practices occur is provided by the prevalence of corruption, Miller (2006).

The second discussion is the location of the custom of corruption. Miller (2006) argues that customs authorities tend to be more infiltrated with corruption problems than most other state organizations owing to the strong discretionary power of officials. Since there is no opportunity to avoid customs processing on import transactions, bribe collection can become very lucrative if levied by this authority. In contrast, once passing customs, corruption costs can be reduced by importers who select honest business partners and selective distribution channels for their goods. This indicates that customs corruption typically provides a severe obstacle to economic exchange compared to corruption encountered elsewhere. Dutt and Traca (2010) argue that customs officials who take advantage of their position to take bribes are more likely to pave the way for the distortion of trade regulations.

The third impact of corruption is the characteristic is its function, which discusses whether corruption is used to block the business opportunities of firms. The author will divide the functions into two categories. The first, common category includes corruption that affects firms in the same way and the second, restrictive category includes corruption used to benefit some firms at the expense of their competitors. The common function of corruption works as an additional transaction cost for importers, while the restrictive function can be used to favour

some firms by improving market access for their imports and/or counteracting the market access of their competitors' imports.

The fourth effect is the existence of corruption that influences economic transactions in regard to defining the social norm of business making. Not only is the risk of experiencing corruption higher in a randomly chosen economic transaction with an increased prevalence of corruption, but it also helps to enforce self-sustaining corrupt behaviour, Svensson (2005). Miller (2006) asserts that corrupt agents prefer to do business with corruptible agents, which work to the detriment of honest potential business partners. Therefore, higher corruption prevalence in a partner country means increased search costs in finding an honest business partner and raised expected bureaucratic transaction costs, which raises trade costs.

## **2.7 Bribery in International Business and Bribery Payers Index**

Bribery has two sides, companies offering bribes and accepting bribes from individuals or entities. Today's high prevalence of corruption is driven by this supply of and demand for bribes. Globalization has led to cross-border transactions between businesses that have different standards and bribery regulations. Bribery in foreign business transactions can be seen as a result not only of the demand for these bribes in different countries but also of the supply or ability of international corporations and their representatives to provide bribes.

In international business, the problem of bribery has attracted the attention of policy-makers, aid donors, civil society advocates, and international organizations. The emphasis is on the understanding that corruption imposes costs on business, distorts competition, misallocates capital, undermines market efficiency and predictability, promotes illegal and unethical behaviour, undermines public respect for the rule of law, undermines development projects and slows down economic growth, particularly in developing countries where poverty is widespread (Mauro, 1995).

The key bribery indicators come from Transparency International, a nongovernmental organization based in Berlin, through its Corruption Perceptions Index and BPI. Based on comprehensive surveys of businesspeople, these indexes provide information as well as coverage on the rate of bribe taking and bribe giving around the world. The BPI is an indicator of bribery on the supply side. Transparency International's indexes are widely reported and recognized as reliable worldwide indicators of the severity of bribery. The Bribe Payers Survey of Transparency International questioned more than 3,000 business executives worldwide about their views on the degree to which corporations from 28 countries in 2011 and 22 countries in 2008 of the world's leading economies that participate in bribery while doing business abroad. The score for each nation is based on the opinions of the business executives who had been



exposed to that country's companies. In the Bribe Payers Index, the countries and territories were chosen based on the value of their outflows from (FDI), the value of their exports and their global importance, and the list includes all G20 nations. Author's interpretation of the table, the countries with high index score explains the level of low supply of bribery in international trade, example of such countries are Switzerland and Netherlands between the years 2008 and 2011. In addition, a country with an average index like South Korea is seen to be in a position, which means even though they pay bribes in abroad but their measurement is not much. In addition, China and Russia are seen to pay the most bribes between the respective years. To conclude, it is clear how some countries improved in terms of their indexes between the two years stated, however other countries experienced a decline in their indexes. The table further gives the countries rankings in 2008 and 2011, which is the most recent report available to the author. A complete figure of the ranks and indexes as below.

COUNTRY/TERRITORY	BRIBE PAYERS INDEX SCORE			BRIBE PAYERS INDEX RANK		
	2011	2008	CHANGE	2011	2008	CHANGE
Netherlands	8.8	8.7	0.1	1	3	2
Switzerland	8.8	8.7	0.1	1	3	2
Belgium	8.7	8.8	-0.1	3	1	-2
Germany	8.6	8.6	0.0	4	5	1
Japan	8.6	8.6	0.0	4	5	1
Australia	8.5	8.5	0.0	6	8	2
Canada	8.5	8.8	-0.3	6	1	-5
Singapore	8.3	8.1	0.2	8	9	1
United Kingdom	8.3	8.6	-0.3	8	5	-3
United States	8.1	8.1	0.0	10	9	-1
France	8.0	8.1	-0.1	11	9	-2
Spain	8.0	7.9	0.1	11	12	1
South Korea	7.9	7.5	0.4	13	14	1
Brazil	7.7	7.4	0.3	14	17	3
Hong Kong	7.6	7.6	0.0	15	13	-2
Italy	7.6	7.4	0.2	15	17	2
South Africa	7.6	7.5	0.1	15	14	-1
Taiwan	7.5	7.5	0.0	18	14	-4
India	7.5	6.8	0.7	18	19	1
Mexico	7.0	6.6	0.4	20	20	0
China	6.5	6.5	0.0	21	21	0
Russia	6.1	5.9	0.2	22	22	0
<b>Average</b>	<b>7.9</b>	<b>7.8</b>				

**Figure 3** Bribe Payers Index Scores 2008 and 2011

**Source:** Transparency International

### **3. RESEARCH METHODOLOGY**

Corruption is studied by direct and indirect means, using qualitative and quantitative methods. Since corruption is conducted secretly, most models of assessments are qualitative reports focused on perceptions. Corruption has been described as the influence of public official's use of their position of power to contravene the laid down procedure to favour a cause of action for individual or interested parties against the overall benefit. This unlawful act of people in position of influence has become a menace, which has truncated the development of many countries globally.

Economically, corruption erodes our confidence in the government's ability to function in our best interests. It also wastes taxes that were set aside for essential projects. Corruption also contributes to the misappropriation of public funds in massive ventures, denying main sectors like health, education, and public services access to these funds. Politically, it stifles democratic changes, placing political stability at risk. Due to injustice and inequality, social systems are collapsing and hatred is spreading among society's classes through corruption.

#### **3.1 Research Aim**

To identify the causes and consequences of corruption and its determinants in international trade, this thesis seeks to analyse the hindrance to international because of corruption. The main aim of this thesis is to identify the causes and consequences of corruption and determinants of international trade.

#### **3.2 Research Objectives**

Research objective describes what the researcher wants to achieve from the research/study. It is the essential part of the dissertation; it is a kind of central idea of the dissertation. Below are outlined research objectives of the research.

- To assess the negative impact of corruption in international trade.
- To determine the causes of public sector corruption in selected countries.
- To identify measures on how to reduce corruption in selected countries.

#### **3.3 Research Questions**

To direct a thesis, this research will need a good research question. It defines precisely what one wants to achieve and gives a specific emphasis and intent. Below are the questions that when answered will enable the thesis to achieve the objectives.

- How does corruption negatively affect international trade in the selected countries?
- What are the determinants of public sector corruption in the selected countries?

- How can corruption be reduced in the selected countries?

### **3.4 Research Method**

Quantitative method was adopted for this research since quantitative methods emphasize objective measurement and statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys or by manipulating pre-existing statistical data. Quantitative method is used to bring theories and assumptions to test or validate them. This form of study can be used to come up with generalizable facts about a subject. According to Boateng (2014), researchers are free to choose between qualitative, quantitative, and mixed methods for their study. Concerning the aim of the research, the research seeks to find the relationship between one thing (an independent variable) and another (a dependent variable or an outcome) within a given population, the quantitative method was best for the research.

### **3.5 Selection and reasons of cases (object of study)**

Regarding this research, the V4 countries were chosen. The Visegrad group is an alliance of four Central European countries namely Hungary, Poland, Slovakia, and the Czech Republic. This alliance also goes by the name Visegrad four (V4), or simply V4, which brings together countries with a common cultural civilization history in an effort to speak in a single political voice within the EU structure. Both in terms of exports and imports, the V4 is also at the forefront not only in Europe, but also in the world (4th in the EU, 5th in Europe and 8th in the world) according to the International Trade Centre, Trade Map, accessed on August 16, 2019. The reason for selecting the V4 is that Czech Republic, Slovakia, Hungary and Poland exhibit substantial corruption ratings. These are suspected to have some consequences in their international trade activities.

### **3.6 Data collection: sources, types, and data description**

Data sources are important as their input affects the results of a study, it is essential to understand and use the appropriate sources for this study. Data sources for this paper include annual data from United Nations Conference on Trade and Development (UNCTAD), The World Bank, International Monetary Fund (IMF) and Eurostat. Data on Corruption ratings, that is, Corruption Perceptions Index (CPI), was obtained from Transparency International between the year range 2010 to 2019 respectively.

#### **3.6.1 Data Type**

This research involves the use of secondary data. Secondary data can be useful for a variety of research topics. Ellram and Tate (2016) suggest that “secondary data sets are often already validated” and have high internal validity. They advise researchers to use established sources

and carefully consider construct validity. According to Houston (2004), the constructive validity of secondary data starts with content validity (whether the indicators appropriately align with the constructs of interest); and ends with *nomological* validity (whether the indicators fit within a theoretically derived network of constructs).

**Table 1** Description of Variables

<b>VARIABLES</b>	<b>DESCRIPTION</b>
Corruption Perception Index (CPI)	Measured in rates in 2010 and 2011 but started with percentile measure from 2019 till date.
Export rate (Exp)	Share of exports measured in percentages
Import rate (Imp)	Share of imports measured in percentages
Exchange Rate (Ex-Rate)	Nominal effective exchange rate measured in percentage change
Inflation rate (Inf-Rate)	Annual inflation rate
Gross domestic Product (GDP)	Measured in million euros.
Foreign Direct Investment (FDI)	Measured in Million euros.

Source: author

#### **4.7 Method of Analysis**

The data analyses consist of 40 number of observations. The data was analysed using *Gretl software*. Ordinary Least squares were used to determine how corruption negatively affects export and import of the V4 countries in international trade.

Given the formula  $\hat{\beta} = (XTX)^{-1}XTy$ .

Where  $\hat{\beta}$  represents ordinary least squares estimator,

$X$  is the matrix regressor variable  $X$ ,

$T$  is the matrix transpose and

$Y$  is the vector of the value of the response variable.

Ordinary least squares were used in this research because the analysis consisted of econometric data. In addition, OLS models assume a fitting model of a relationship between one or more explanatory variables and a continuous or at least interval outcome variable that minimizes the sum of square errors, where an error is the difference between the actual and the predicted value of the outcome variable.

Ordinary least squares regression has been widely used in numerous scientific disciplines like physics, economics, and psychology, and a multitude of text books have been written explaining

this method and its application in different fields of research. Researchers like (Cohen et al., 2003), (Montgomery et al., 2012) used OLS in their research.

The variables were tested to check for their reliability and fitness using the variance inflation factors. The Variance Inflation Factor (VIF) measures the severity of multi-collinearity in regression analysis. It is a statistical concept that indicates the increase in the variance of a regression coefficient because of collinearity. The model test results confirmed the data was suitable for the analysis. The test indicated no collinearity problem and multiple correlations between the variables. The table below displays the variation inflation factors of the variables. According to Akinwande et al. (2015), VIFs between 5 and 10 indicate high correlation that may be a problem, and VIFs > 10 imply the regression coefficients are poorly estimated due to multi-collinearity.

**Table 2** Variance Inflation Factors

<b>VARIABLES</b>	<b>VIF (Variance Inflation Factors)</b>
CPI	1.671
Import	2.844
Ex-Rate	1.292
INF-Rate	1.628
GDP	2.857
FDI	1.198

Source: author's

## 4. FINDINGS AND DISCUSSION

This chapter focuses on the effects of corruption in international trade. These effects were experimented using import and export as the main variables for international trade in the V4 countries. With relation to the main aim of this thesis, thus to identify the causes and consequences of corruption and determinants of international trade, the experimental results table below illustrates the effects of corruption on export in the selected countries. Additionally, given the determinants of international trade activities represented by exchange rate, inflation rate, GDP and FDI and CPI representing the corruption perceptions.

**Table 3** Experimental Results- Export

	CZECH	POLAND	SLOVAKIA	HUNGARY	V-4 COUNTRIES
<b>VARIABLES</b>	<b>Beta (P-values)</b>	<b>Beta (P-values)</b>	<b>Beta (P-values)</b>	<b>Beta (P-values)</b>	<b>Beta (P-values)</b>
CPI	0.011	0.010	0.003	-0.081	-0.024
	(0.940)	(0.787)	(0.967)	(0.029)**	(0.255)
EX-rate	0.160	-0.176	-0.440	-0.693	-0.167
	(0.812)	(0.413)	(0.535)	(0.055)*	(0.296)
INF-rate	-0.156	-0.767	0.360	-2.047	-0.949
	(0.933)	(0.195)	(0.595)	(0.002) ***	(0.002)***
GDP	-2.226	1.77456	-0.000	0.000	1.44331
	(0.954)	(0.722)	(0.230)	(0.022)**	(0.154)
FDI	-0.000	0.000	-0.001	5.81506	-7.39900
	(0.480)	(0.3440)	(0.413)	(0.382)	(0.405)
<b>R-squared</b>	<b>0.395</b>	<b>0.774</b>	<b>0.663</b>	<b>0.958</b>	<b>0.344</b>
<b>Akaike criterion</b>	<b>55.032</b>	<b>38.466</b>	<b>48.443</b>	<b>29.151</b>	<b>183.913</b>
<b>Log- likelihood</b>	<b>-20.516</b>	<b>-13.233</b>	<b>-18.221</b>	<b>-8.575</b>	<b>-85.956</b>
<b>N</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>40</b>

Source: author

To elaborate further on the experimental results given above, the consequence of CPI on international trade represented by exports will be first considered. From the table, it is observed that CPI has a negative effect on the export rate in the V4 countries and no significance on export rate in the V4 countries. In addition, to elaborate on the individual countries, the results showed that CPI has a positive effect and no significance on the export rate in Czech Republic. Focusing on Poland, the table indicates that CPI has a positive effect on the export rate but no significance. In addition, Slovakia showed a positive effect and no significance in their export

rate in international trade. On the other hand, CPI had a negative effect on the export rate in Hungary and moderate significance in their international trade activities.

With the next variable being exchange rate (Ex-rate) in focus, the table indicated a negative effect and no significance on the export and no significance in the international trade of the V4 countries. Individually, it was observed that the effect of exchange rate on export in Czech Republic was positive but not significant. However, Poland indicated a negative effect of exchange rate on their export trade and no significant value. Concerning Slovakia, exchange rate has a negative effect and no significance on export. Hungary indicated a negative effect of the exchange rate and a significant value in their export activities.

The effect of inflation rate (Inf-rate) on the export rate in V4 indicated a negative effect and a highly significant value in the export activities. Furthermore, the results of individual countries taking into consideration Czech Republic, there was an indication a negative effect of inflation rate on export but no significance. As seen in the table, the inflation rate has a negative effect on the export of Poland but no significance. Slovakia showed a positive effect of inflation rate but no significance value was indicated. Hungary indicated negative effect of inflation rate, on their exports with high significance.

In addition, GDP has no significant effect on the export of the V4 countries. Emphasis on individual countries indicated that GDP has a negative effect on the export rate in the Czech Republic but not significant. Meanwhile, the table showed a positive effect of GDP but no significance on the export in the case of Poland. On the other hand, there was an indication of negative effect of GDP on the export of Slovakia and no significance value. Moving on to Hungary, the table portrayed GDP to have a positive effect on exports and a moderate significance.

Furthermore, to elaborate collectively on the V4 countries with attention to Foreign Direct Investment (FDI), there was an observation of a negative effect of FDI and no significance in the export of the V4 countries. However, the result showed a negative effect of FDI on the export rate and no significant effect in the case of Czech Republic. Poland on the other hand, as indicated in the table, FDI has a positive effect on export but no significance. Furthermore, the effect of FDI on the export rate in Slovakia indicated was negative and no significance. Considering Hungary's results in the table, it was observed that FDI has a positive effect on their export and no significant value was recorded.

International trade was represented by export and imports as its main variables in the thesis, the previous chapter elaborated on the effect of corruption on export rates and other international trade determinants in the V4 as well as individual countries. This section will be based on the

effects of corruption on import rate and other determinants of international trade, the table below shows the analytical results, and further discussions are followed up with after the table.

**Table 4** Experimental Results- Import

VARIABLES	CZECH	POLAND	SLOVAKIA	HUNGARY	V-4 COUNTRIES
	<b>Beta</b> <b>(P-values)</b>	<b>Beta</b> <b>(P-values)</b>	<b>Beta</b> <b>(P-values)</b>	<b>Beta</b> <b>(P-values)</b>	<b>Beta</b> <b>(P-values)</b>
CPI	0.050	-0.045	0.016	0.068	0.060
	(0.096)*	(0.224)	(0.701)	(0.198)	(0.008)***
EX-rate	0.134	0.012	0.196	0.417	0.390
	(0.360)	(0.941)	(0.583)	(0.422)	(0.023)**
INF-rate	-0.525	-0.529	-0.528	-0.613	-0.567
	(0.166)	(0.271)	(0.172)	(0.309)	(0.063)*
GDP	-7.326	4.54599	0.001	0.000	-7.143
	(0.397)	(0.309)	(0.011)**	(0.226)	(5.73e-08)***
FDI	0.000	0.000	0.000	-5.07621	-3.60462
	(0.589)	(0.219)	(0.514)	(0.659)	(0.968)
<b>R-squared</b>	<b>0.833</b>	<b>0.678</b>	<b>0.939</b>	<b>0.886</b>	<b>0.648</b>
<b>Akaike criterion</b>	<b>27.079</b>	<b>34.985</b>	<b>34.902</b>	<b>40.914</b>	<b>187.305</b>
<b>Log-likelihood</b>	<b>-7.539</b>	<b>-11.492</b>	<b>-11.451</b>	<b>-14.457</b>	<b>-87.652</b>
<b>N</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>40</b>

Source: author's

Moreover, in this section of the experimental results on the effects on import rate and other international trade determinants shall be explained. To start with the V4 countries collectively taking the variable CPI into consideration, it was seen that CPI has a positive effect and highly significant in the international trade in the V4 countries collectively. Furthermore, in individual countries such as Czech Republic, the results indicated positive effects of CPI on the import rate but showed significance. In addition, the consequence of CPI on the import rate in Poland showed a negative effect and no significance result. Slovakia showed a positive effect of CPI and no significance on the import rate. Similarly, Hungary showed a positive effect of CPI and no significance in their import rate in the area of international trade.

Accumulatively, the results showed a positive effect of exchange rate on the import of the V4 countries however, a moderate significance was observed. Concerning Exchange rate (Ex-Rate), as indicated on the table, it was observed that there was a positive effect of exchange rate on import in the Czech Republic as well as no indication of significance. Similarly, Poland



produced positive effect of exchange rate in import activities and no significance and applicable to both Slovakia and Hungary.

As shown above in the table, it was seen that the inflation rate has a negative effect and significance on the import rate in the V4 countries. Individually, Czech Republic showed a negative effect of inflation rate on imports but no significant value. Poland on the other hand showed a similar result like Czech Republic thus; a negative effect on inflation rate on imports but no significant value. In addition, Slovakia revealed a negative impact of inflation on their import however, no significance was recorded. Focusing on Hungary, the effect of inflation rate were negative but no significant value on imports.

About Gross Domestic Product (GDP) growth rate on imports, the analysis showed that the effect of GDP on import in V4 countries was negative and a highly significant value was indicated. With Czech Republic in focus, the analysis indicated a negative effect of GDP growth rate on import but no significance value. More so, the analysis showed a positive effect of GDP growth rate on the import in Poland, however no significance value was indicated. Slovakia on the other hand showed positive effect of GDP growth rate on import and indicated a moderate significant value. In addition, Hungary showed a positive effect and no significant value of GDP growth rate on their imports.

In connection with Foreign Direct Investment (FDI) flows on imports, the analysis indicated a negative effect of FDI flows on imports in V4 countries as well as no significant value. Moreover, in the case of Czech Republic, the analysis showed a positive effect of FDI flows on import and no indication of significance. Poland and Slovakia showed positive effects and no significance of FDI flows in their imports respectively. Finally, Hungary indicated a negative effect of FDI flows in their import and no significant value.

From the above tables, the variance explained for the two models according to Moore et al. (2007), constitute the effect size of the independent variable on the dependent variable. From the analysis, results on export indicated R-squared of 0.344. This signals that about 34 percent variance have been explained for export. The general conclusion is therefore that CPI and the rest of the independent variables have low effect on the international trade (export) in the V4 countries. On the other hand, the analytical results on import showed R-squared figure of 0.648, which explains about 65 percent of variance is explained. Therefore, CPI and the rest of the independent variables have moderate effect on the international trade (import) in the V4 countries.

## **4.1 Discussions**

Corruption contributes to the misappropriation of public funds in massive ventures, denying main sectors like health, education, and public services access to these funds. On the empirical front of the thesis, the literature explored the causes, consequences, and the roots of corruption. However, in this chapter, detailed emphasis would be laid on the effect of corruption on international trade, which is represented by exports and imports in the V4 countries as well as the international trade determinants.

### **Effects of CPI on Export and Import**

To begin with, the effect of Corruption Perception index (CPI) on the export rate in the V4 countries as shown in the findings, it was observed that CPI negatively affects the export rate in the V4. This finding is consistent with the findings of (S Narayan) in 2019, which indicates that exports of goods to both developed and developing trade partners increase with a fall in corruption. This corruption effect is significant only in the end. Similar to the full sample results, the test found that corruption in Vietnam, unlike corruption in the trading partner country, is a significant determinant of her exports. The cleaner the country from corruption, the higher the trade value. Secondly, the result of this research is supported by the previous researches conducted by Pushan and Traca (2007), Anderson and Marocouiller (2000), showing that corruption perception in a country has a significant and negative effect on export. The researchers Anca Monika Voicu, Horsewood (2006; 2011; 2012) also show that the effect of corruption is more perceived by exporting countries than importing countries.

On the contrary, the research done by Atsir and Sunaryati (2018) departs from the finding of this study, which denotes that the corruption perception index (CPI) variable has a positive and significant effect on Indonesia's export value to destination countries. Secondly, based on the consequences of CPI on import rate, this thesis found that CPI has positive effects on the import rate in the V4 countries. This finding is in congruence with the finding of Chang (2013), which denotes that corruption is a lubricant that is able to support and improve economic performance, particularly for the economy with ill-functioning institutions. Those having "direct access" to public authorities agree to bribery in order to not deal with long bureaucratic demands, such as strict rules and tiring procedures. Bandyopadhyay and Roy (2016) also state that fluctuations in import activities of a country, on the other hand, seem to be less sensitive to changes in the perception of corruption. Considering the arguments above, it is evident that corruption 'greases the wheels' of import rate in the country. The form of bureaucracy and the model of government administration highly determine the progress of international trade in a country.

### **Effects of GDP on export and import**

The result of this analysis indicates that there is a positive relationship between GDP and the export rate of the V4 countries. This finding is supported by the works of Dutt and Traca (2007), Anderson and Marocouiller (2000), Voicu and Horsewood (2006, 2011). It was observed that the increase in GDP triggered an increase in the export of goods and services. This can be explained because an increase in a country's economic income will encourage an increase in production factors. Increased production factors will cause increased supply of goods and services. Increased supply does not only occur in goods and services for domestic demand, but also supply for exported goods. Sachin N. Mehta (2015) tested the relationship between exports, imports, and economic growth in India by using annual data for the period 1976-2014. Engle Granger Co-integration analysis, VECM, and Granger causality tests were employed in the empirical analysis. The results show that there is a long run co-integrating relationship between Gross Domestic Product (GDP), export, and import in India. In long term, the results of Granger causality test show that GDP leads to exports but exports does not lead to GDP, also GDP does not lead to import and import do not lead to GDP. This research done by the previous author considering the long-term results is contrary to the finding of the results of this paper which argued that GDP has a negative effect on the import of the V4 countries.

### **Effect of Exchange rate on import and export**

The analysis indicated that the exchange rate has a negative effect on the export of the V4 countries. A previous research done by Sweidan (2013) supports this finding. His research was done taking into consideration Jordan as the country of analysis and it states that Jordan's competitiveness has a trend of deterioration. The influence of Jordan's exchange rate on exports and imports is active in the short-run only. Additionally, Jordanian workers' remittances have an impact similar to "the Dutch disease effect" via increasing the cost of living, thus reducing export competitiveness. Another research by De-Paoli (2009) argued that exporters usually experience a very erratic and elastic demand curve. Analytical results on the effects of exchange rate on import in the V4 countries showed a positive effect. Contrary to this finding, Morrison and Labonte (2013) argued that subsequent to a depreciation of an importer's currency, thereby raising the cost of imports, the foreign exporter might reduce his local currency export price in order to stabilize the prices in the importing country. Oluyemi and Isaac (2017) using vector auto regression found that the exchange rate does not affect the volume of imports and exports in Nigeria.

### **Effect of Inflation rate on Import and export**

Results of the analysis indicated that inflation rate negatively affects export activities in the V4 countries, this finding is supported by the results obtained by Gylfason (1997), and the study was on the relationship between export and some of its determinants including inflation by statistical methods in cross-sectional data covering 160 countries. He concludes that high inflation has tended to be associated with low exports. In connection with the results obtained from this thesis analysis, which argued that the inflation rate had a negative effect on the export of the V4 countries, Islam (2013) found a result, which departs from this research's findings. His findings indicated that the inflation rate of a country is not the only determinant of the foreign trade of that country. Many factors can affect the volume of foreign trade of a country. In the case of Bangladesh, the dominance of other factors like exchange rate, market demand, interest rate, natural disasters, and population can be much more powerful than the inflation rate. On the other hand, Dexter et al. (2005), considering the US economy in focus, shows that international trade has a significant separate influence on inflation where imports have a negative relationship with inflation and exports have a positive relationship with inflation. Findings of Dexter et al. (ibid) both support and depart from the results of this paper.

### **Effects of foreign direct investment on export and import**

Moreover, there was an observation of a negative effect of FDI on the export rate in the V4 countries as indicated in export result table. Several researches explored the effects of export on FDI, however, the effect of FDI on export were seen to be a really less explored area. Nevertheless, scant researches found some effects of FDI on export. Damijan et al. (2013) performed a research for six non-core countries and their results showed no correlation between the relative growth of industries' FDI and export shares. Results even suggest a negative correlation between the variables for the group of medium-low tech industries. Their findings support the results obtained from the analysis of this thesis research. Same authors did another research on countries endowed with high technology and found contrary findings to the findings of this thesis paper. Their research empirically accounted for the importance of the 'global supply chain' concept for export restructuring, and productivity growth in core Central and Eastern European Countries (CEECs) in the period 1995-2007. Using industry-level data and accounting for technology intensity, their results show that FDI has significantly contributed to export restructuring in the CEECs. The effects of FDI are, however, heterogeneous across countries. The main difference in their findings is that in non-core CEECs, FDI did not have a significant effect on export restructuring, while in core CEECs FDI has contributed to faster export growth in high-tech and medium-high-tech industries. Additionally, several authors

found positive effects of FDI on both export and import. Yousuf et al. (2008) highlight the impact of FDI on exports and imports of Pakistan during the period 1973 to 2004. The results suggest that FDI has a positive impact on real exports and real imports in the end. Hailu (2010) determined the relationship between FDI and trade balances of 16 African countries for the period from 1980 to 2007. Using the Least Square Dummy Variable (LSDV) regression method, he reported that FDI stock has positive effects on both exports and imports. The overall net effect of FDI on trade balance was inferred to be positive.

## **4.2 Causes of public sector corruption in the V4 countries**

### **Quality of regulation**

Quality of regulation is important for economic recovery to prevent excessive bureaucracy or adherence to official rules and formalities. A good system of regulatory management is a vital part in making good policies, which also decreases irrelevant burdens on citizens, businesses, and encourages transparency.

According to the most recent publication on Regulatory Impact Assessment by OECD, the Czech Republic has a well-developed regulatory impact evaluation framework, which includes quality management processes overseen by the RIA Board, which is independent of the government. Both draft primary and secondary legislation prepared by the executive must be followed by a simple impact assessment; those drafts with fresh and substantial impacts must undergo a full RIA.

In Hungary, the structural and policy structure for regulatory efficiency has remained relatively unchanged in recent years. All main and secondary legislation must provide stakeholder consultation. Comments on the draft legislation may be submitted by email or posted on the government's website. In the early stages of legislation development, no consultation is needed. The State Secretary in charge of territorial administration in the Prime Minister's Office makes recommendations for reducing regulatory burdens on people and companies, but does not conduct quality checks on RIAs.

Since 2015, Poland has made a range of changes to its regulatory management procedures, based on the current Council of Ministers rules of work, which was a Better Regulation Program activity. The Council of Ministers' regulations, which went into force in 2015, made public consultation a general concept of the regulation-making process and required a consultation report. There has been a significant improvement in stakeholder engagement with the public via the introduction of a central government website, and the government now maintains an

active list of participants who have indicated that they want to be updated about regulatory proposals.

The Republic of Slovakia has made substantial strides in applying regulatory management tools. The RIA 2020 – Better Regulation Strategy is a holistic approach to whole-of-government regulatory policy that focuses on enhancing regulation assessments. Despite these advancements, many Slovaks still struggle with quantifying broader impacts, concentrating mostly on budgetary and, to a lesser degree, industry impacts.

### **Economic competition**

The EU's competition laws intend to provide companies with fair and equitable conditions while allowing for innovation, unified standards, and the growth of small businesses. However, less competition can lead to corruption due to the presence of cartels (monopolies) creating an avenue for corruption related activities, for example, if there is a monopoly in a country, a small company or industry will be encouraged to pay bribes in order to have access to the market. Shleifer and Vishny (1993) analysed a bureaucracy issuing complementary permits to perform some economic activity in exchange for bribes. On the other hand, increased competition can also cause corruption. This is supported by the findings of Alexeev and Song (2013); they argued that stronger product market competition is associated mostly with greater corruption of the cost-reducing variety.

### **Public sector size.**

The relationship between corruption and government size has yielded mixed results in research. According to Goel and Nelson (2010) and Rose-Ackerman and Palifka (2016), more opportunities for officials to seek rent. Contrary to the argument of the above authors, Gerring and Thacker (2005), state that the scale of government has no bearing on the extent of corruption. Briefly, one can clearly say that the relationship between corruption and government size is influenced by other factors such as regime form, political stability, as well as the quality of government.

### **Lack of transparency and accountability**

Transparency and accountability may be an important solution to corruption; the absence of these could lead or encourage corruption. Transparency International 2019 Corruption Perception Index, Czech Republic, scored 56, ranking 44th place out of 180 countries which is perceived as less corrupted. Slovakia scored 50-ranked 59th out of 180 countries, which is perceived as less corrupted. Hungary scored 44 ranking 70th perceived as more corrupt, Poland scored 58 ranking 41th, and seen as less corrupted. From the above results from the CPI in

2019, it can be concluded that Hungary is more corrupted and lacks adequate transparency and accountability. According to Johnson (2016), the public procurement process in Hungary has red flags, which point to potential malpractice. In more than half of public procurement procedures, there is only one bidder, compared to the EU average of 5-6 bidders per procedure. Procurement tenders without prior notification amount to 13% of all tenders. Transparency International, Hungary estimates that 70% of public procurement procedures may be infected with corruption.

### **4.3 Corruption reduction strategy**

The majority of the V4 countries have high levels of corruption, but this does not have to be the case. Reduced corruption is a target that can be achieved. These countries must review and streamline their government departments to jumpstart the process. These countries' citizens must have access to the knowledge they need to make informed decisions. They must also keep their political leaders accountable after they have made their decision. For instance, Czech Republic should standardize its public consultation process and encourage all stakeholders, including the public, to participate. Furthermore, evaluation of the performance of existing regulations should be regularly and used often and not on an ad hoc basis. In addition, in Hungary, the office of the State Secretary should exercise quality checks on RIAs and older reviews. The introduction of oversight mechanisms to ensure sufficient quality of RIAs, post evaluation and consultation. Greater engagement with stakeholders in the early stages when drafting legislation will also help in strengthening the quality of regulation. According to OECD publication on RIA in 2018, Poland was seen to have the best quality of regulation among the V4 countries. The Legislative Council must provide legal scrutiny on the quality of regulatory proposals. This action will ensure the continuous success of regulatory quality. In the case of Slovakia, the ministry should broaden the quantification of wider impacts of regulations and not focus just on budgetary impacts and impact on businesses. There must be further strengthening of regulatory oversight and placing one body closer to the central government to carry out the evaluation on integrated impacts.

For economic competition, regulatory body should control prices of goods and services. This would serve as a supremacy institution and prevent cartels from increasing the cost of goods and services and limiting the quantity. In addition, all firms should be included in competition laws and principles in order to reduce monopoly in the market. This will prevent potential monopolistic firms from gaining the ability to influence the decisions of mergers. There should be an existence of fair economic competition in the V4 countries.

Concerning transparency and accountability, the four-eye principle is one strategic way to fight corruption. It applies to the rule that at least two people must support public sector operations or decisions. According to Bodenschatz and Irlenbusch (2019), the four-eye concept is a control and accountability tool based on the idea that it is more difficult to corrupt two individuals than one. Furthermore, in order to achieve transparency, an organization in the V4 countries must provide stakeholders with reliable, full, and timely information about its operations and governance. Accountability is made possible by transparency. However, this is not to say that all details should be made public. Certain forms of information, such as private information should not be made public.



## **5. CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF STUDY**

Corruption is one of the main obstacles in the economic growth of nations. The World Bank and the International Monetary Fund share the sentiment that corruption, as one of the determinants of the poor working in establishments, is an extraordinary hindrance to monetary and social improvement. Corruption may manifest in various forms such as political, governmental, bureaucratic corruption, etc. Whichever form corruption may take has adverse effects on the international trade, hampering the flow of capital, which manifest in the inefficiency of economic activities. Regarding the foregoing assertions, the thesis sought to identify the causes and consequences of corruption and determinants of international trade. The main objectives of the thesis sought to achieve were as follows.

- To assess the negative impact of corruption in international trade.
- To determine the causes of public sector corruption in selected countries.
- To identify measures on how to reduce corruption in selected countries.

Moreover, the quantitative method together with Ordinary Least Square analysis was conducted in this research and the following research questions were developed in order to fulfil the aims of the thesis.

- How does corruption negatively affect international trade in the selected countries?
- What are the determinants of public sector corruption in the selected countries?
- How can corruption be reduced in the selected countries?

The thesis used Quantitative method for the analysis, which emphasized on the objective measurement and statistical, mathematical, or numerical analysis of data collected. This help the author to validate research assumptions or questions seeking to bring out generalizable facts about a subject. The V4 countries were chosen for the analysis due to their common cultural civilization history and their political, administrative alliance within the EU supranational structure. More so, their economic prowess in terms of international trade is enormous, with the main reason for their selection being open secret of the perceiving corruption practices as captured by the appalling CPI current corruption ratings in juxtaposition with other EU member states. Data was collected from secondary sources from annual reports of United Nations Conference on Trade and Development (UNCTAD), The World Bank, International Monetary Fund (IMF) and Eurostat. Regarding corruption ratings data, CPI data was sourced from Transparency International between the years ranges 2010 to 2019 respectively.

The research used export and import as dependent variable representing international trade, which means the share of export and import in percentages. The independent variables included Corruption Perception Index (CPI); Exchange Rate (Ex-Rate); Inflation rate (Inf-Rate); Gross domestic Product (GDP); Foreign Direct Investment (FDI). The OLS regression analysis was conducted using *Gretl* software.

## **5.1 Conclusions**

The findings of the analysis showed that CPI has a negative effect on the export rate of the V4 countries. Exchange rate has no significance and negative effect on the export rate, but this exchange rate has a positive medium significant effect on the import rate in the case of the V4 countries. In addition, the inflation rate has a negative and highly significant effect on export, at the same time, the inflation rate has the least significant negative effect on the import rate of V4 countries. GDP has no significant effect on exports, surprisingly; GDP has the highest significant negative effect on imports in these countries. FDI has no significance and negative effect on both imports and exports of the V4 countries.

Research revealed weak quality of regulation as a cause of corruption in some of the V4 countries. These countries must review and streamline their government departments to jumpstart the process. These countries citizens must have access to the knowledge they need to make informed decisions. Moreover, evaluation of the performance of existing regulations should be regularly and used often and not on an ad hoc basis. The introduction of oversight mechanisms to ensure sufficient quality of RIAs, post evaluation and consultation. Greater engagement with stakeholders in the early stages when drafting legislation will also help in strengthening the quality of regulation. The degree of economic competition in a country is also an avenue for corruption. All firms in the V4 countries should be included in the competition laws and principles in order to reduce monopoly in the market. Regulatory body that controls prices of goods and services. This would serve as a supremacy institution and prevent cartels from increasing the cost of goods and services and limiting the quantity. Moreover, ensuring the continuity of a fair market competition in the V4 countries. The low rate of transparency and accountability was seen as a cause of corruption in the V4 countries. A strategic way to ensure transparency and accountability in the V4 countries.

## **5.2 Recommendations**

Considering the impact, corruption has on the economic performance in countries. For example, the analysis showed that the CPI negatively affects exports in the V4 countries. To improve the situation, these are some recommendations to aid in the mitigation process of corruption.

Strong oversight institutions to ensure resources reach those most in need. Anti-corruption agencies and oversight bodies must have adequate funding, personnel, and independence to carry out their responsibilities. Additionally, the establishment of an anticorruption law and agencies responsible for strong monitoring of behaviour sufficiently to publicly amend contracts and prevent the payment of kickbacks in the international trade of the V4 countries.

The proposal is an indirect way of capturing the national level of control of corruption through an Index of Public Integrity (IPI) as a form of digitalization (Dadašov and Kossow, 2016). Relying on objective and actionable data, it combines six different indicators reflecting aspects of red tape, transparency, judicial constraints, and social accountability. This method would monitor change over time and consider the effects of reform efforts.

Promotion of transparency and involvement. Most countries with a successful corruption curbing strategies have a long tradition of government openness, transparency, access to information, and press freedom. When people has access to information, it increases the feedback of government bodies, which in turn gives a positive effect on the rate of public involvement in the country. This action would improve the CPI in the V4 countries. From the above depositions, the objective intended for this research thesis has been fulfilled inadvertently helping the researcher to fulfil the aim of the thesis.

### **5.3 Limitations**

Despite the strong propositions and findings of the analysis undertaken, this thesis has some limitations that need mention. One can observed that only quantitative methods and secondary data were used for the research. Based on the CPI variable a qualitative data could help the researcher establish and affirm the findings of the secondary data. However, due to time constraint, that was not possible, hence, it is proposed for the future research, the qualitative method can be adopted and at the same time, primary data can be obtained by interviewing the officers in the public sector. We can develop more variables and larger sample size in the future. Besides, the analysis of the thesis constitute small variables and sampling sizes were employed in the thesis.

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