LEIDEN UNIVERSITY

The influence of private military to the public defense sector

MASTER THESIS CRISIS & SECURITY MANAGEMENT

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Abstract

In the last few decades there has been a strong growth in the private military industry. Especially governments are a large consumer in the market of private military firms. New Public Management claims that markets work more efficient and effective than the public sector. This assumption is driven by the idea that competition and private ownership on the market are high-powered incentives for private firms to reduce costs and innovate. There is a lack of such incentives in the public sector. In addition, by outsourcing there will be an increase in efficiency and effectiveness of the public sector.

This research examined whether the efficiency gains of outsourcing could be applied to the military domain. It was assumed that outsourcing would increase the military effectiveness of a government. The military effectiveness was measured by the deployability of the public military because deployability is concerned with the capability to deploy manpower. Deployability is the ratio between the military deployed – which is the number of military personnel on mission – and the remaining military personnel. Thus, deployability indicates the effectiveness of an army in terms of manpower.

Using existing data, both descriptive statistics as well as multilevel regression analysis techniques were used to examine whether outsourcing increases deployability and thereby improves military effectiveness. Taking some nuances and limitations into account, the research showed there might be a relationship between outsourcing and deployability. Nevertheless, the results were not strong enough to conclude outsourcing increases deployability and improves military effectiveness.

Chapter 1: Introduction

In the last couple of decades there has been a rapid rise of private actors in the military apparatus. Many states decided to outsource public military tasks to private firms (Singer, 2001). The privatization of the military sector was and is driven by a gap in the security market after the end of the Cold War and transformations in the nature of warfare (Singer, 2001). The trend of privatization of the military sector could be placed in the bigger picture of the rise in private security provision in all domains (Singer, 2001; 2005). Additionally, this trend is partly driven by the introduction of new managerial types – New Public Management – in government institutions (Hood, 1991; Bovens, 2007). New Public Management is based upon the idea that markets work more efficient and effective than government (Hood, 1991). The assumption that markets will work more efficient and effective compared to government is a fundamental reason for governments to choose for outsourcing regarding public military (MacDonald, 2010; Bakker, 2012). In terms of efficiency, the idea is that outsourcing would increase deployability of public military (Bakker, 2012; Hennis-Plasschaert, 2017) – which implies a better allocation of resources.

§1.1 Research problem

Although the assumption that outsourcing leads to an increase in efficiency of the public military seems solid, there is a lack of quantitative evidence to support the argument that outsourcing leads to efficiency increases of public military (Camacho, 2015). This knowledge gap is identified in detail throughout my research. The following research question is used in an attempt to create empirical evidence in regard to the relation between outsourcing and efficiency of public military:*what is the relationship between the amount of military expenditures in outsourcing and the deployability of the public military in the European Union?*

Usually it is difficult to find data in regard to the military apparatus of states. States are likely to label existing data as classified. However, there is one dataset accessible for the public. This dataset is made available by the European Defence Agency. It contains information concerning the military of European Member States. In addition, the dataset gives insight in deployability and expenditure on outsourcing defence activities of EU Member States over multiple years. Besides, the extensive data enables us to make generalized assumptions about deployability and outsourcing. Considering the data

accessibility and external validity, the European Member States are the research object.

In regard to outsourcing, it is argued in academic literature that outsourcing leads to efficiency gains in the public sector (Hood, 1991; 1995; Alonso et al., 2015). It is assumed these efficiency gains could be applied to the military domain as well. Thus, outsourcing public military activities would improve the effectiveness of the military apparatus. Deployability is a relevant starting point in testing whether this assumption might be true. Deployability describes the number of military personnel deplorable and the number of military personnel already deployed. In addition, deployability gives insight in the military deployment which is related to the combat effectiveness of the armed forces. If outsourcing increases deployability it would mean an improvement to the military effectiveness.

However, there are implications to the idea that outsourcing increases the efficiency of public institutions (Alonso et al., 2015). Therefore, it is necessary to test whether the hypothesis *the higher the military expenditure on outsourcing, the higher the deployability of public military* holds water.

§1.2 Relevance

This research will test if there is a relationship to start with – correlation to that end – and what such possible relationship would mean to its causality derived from academic literature. Considering the objectives of this research its scope is focused on theory testing. As mentioned earlier there is a lack in quantitative research on the relation between outsourcing and its efficiency increase in regard to public military. Besides, there is a lack in quantitative research in regard to private military as a whole (Petersohn, 2015). Due to the majority in qualitative research on this subject the assumptions on private military are very much based upon theoretical considerations rather than statistics. Thus, the idea that outsourcing creates a better deployability of the public military is at the very least in need of verification and clarification. This research would aim to make a contribution to that end – making it scientifically relevant.

Furthermore, there is a social relevance to this research. There are several issues when it comes to privatization of the public military (Singer, 2001; 2005; Heinecken, 2014; Machairas, 2014). The objections to privatization of the military are multiple. It is argued that private actors lack a socially acceptable cause for participating in an armed conflict (Machairas, 2014). Furthermore, legitimacy of private force is questioned – in particular who

is legitimate to use private force and when is the use of private force legitimate? Besides, the use of private actors could result in a lack of transparency (Machairas, 2013). In addition, it is likely that a principle-agent relation emerges if private actors are used by the public sector (Hazeu, 2014). Although all these difficulties in regard to private military, the government still decides to allow the use of private actors in the military sector. In fact, the privatized military industry is growing rapidly (Singer, 2001). If there are multiple objections to private military force then it is relevant to understand why states still decide to use private force. This research aims to contribute to that end.

§1.3 Research structure

To get a good overview of the research structure I will provide a brief summary in this paragraph. In the first chapter I elaborate on the research question and its practical and academic relevance. The second chapter, the theoretical framework, covers the relevant concepts to this research. Especially outsourcing and private military is discussed in-depth. Subsequently, I delve deeper into the relationship between outsourcing and private military with specific attention to efficiency and effectiveness considerations. Lastly, the theoretical framework is wrapped up in a conceptual model and formulating a working hypothesis. This hypothesis is necessary to answer the research question. After the theoretical framework, I discuss the methodology of this research in chapter three. In this chapter I elaborate on the methods used to conduct this research. Furthermore, the considerations as well as limitations to the research method are discussed in chapter three. Chapter four discusses the results of the research and is divided in two parts: descriptive statistic techniques and regression analysis. Chapter five concludes with an answer to the research question by either accepting or rejecting the hypothesis formulated in the conceptual framework. Finally, I discuss and reflect upon the results and do some recommendations for future research on the research topic.

Chapter 2: Theoretical framework

In this chapter I will elaborate on the relevant body of knowledge in regard to the concepts outsourcing and private military – which I will structure as a funnel. Relevant concepts concerning outsourcing and deployability are discussed in order to address the potential relationships between them. Ultimately a working hypothesis is formulated to answer the research question.

I will structure the funnel by starting to conceptualize the concept of outsourcing in a general sense. Outsourcing will be defined – in particular in the context of NPM – and its effects will be discussed. Subsequently, I shall elaborate on the concept military. Military is a broad concept in which multiple – public as well as private – agents are active. Subsequently, the concept of private military will be examined in detail. After conceptualizing the concept of private military I address the relationship between outsourcing and public military. In addition, I delve deeper into the relationship of public military and outsourcing by using the concept deployability. Deployability will address the possible efficiency and effectiveness gains of outsourcing in regard to public military. Finally, a hypothesis is formulated based upon the theoretical framework, in order to answer the research question.

§2.1 Outsourcing

Outsourcing is a broad concept with multiple (often substituting) words and different forms. A lot of academic literature is about the actual definition of outsourcing, especially in the context of New Public Management (Alonso et al., 2015; Hartley, 2004; Hood, 1991). To understand the difficulty of conceptualizing outsourcing it is important to delve deeper into the definition of outsourcing. Furthermore, the (dis)advantages of outsourcing are discussed in this section in order to understand the effects of private military.

2.1.1 Definitions

Contracting-out and contractorisation are words often used to indicate outsourcing (Hartley, 2004). Additionally, there are words like Public Private Partnerships, privatization, competitive tendering and market testing which are closely related to the word outsourcing. Nonetheless, these words often have different connotations. Hartley defined outsourcing as "a choice between undertaking activities in-house or buying-in from external markets"

(Hartley, 2004, p. 200). This is slightly different from McCarthy & Anagnostou's (2004) concept of outsourcing. They emphasize more on the idea that outsourcing is a business approach of gaining competitive advantage. The competitive advantage in outsourcing is gained due to the reduction of costs which is realized in transferring portions of work to outside suppliers (da Conceição da Consta Marques, 2016). In general sense, outsourcing could be seen as a practice to reduce costs by transferring internal activities of an organization to an external agent (Alonso et al., 2015; Belcourt, 2006; Hartley, 2004; Hood, 1991; McCarthy & Anagnostou, 2004). In the context of the management doctrine New Public Management (NPM), outsourcing is commonly defined as the delivery of public services by an agent other than government (Alonso et al., 2015; Hood, 1991 & 1995; Minicucci& Donahue, 2004). It forces activities previously guarded in-house by civil servants to be subjected to new, positive incentives provided by completion and market discipline (Alonso et al., 2015, p. 647). According to New Public Management, the market is more efficient than the public sector. Therefore, outsourcing government activities is used as a mean to improve efficiency and effectiveness of the public sector (Alonso et al., 2015; Hood, 1991).

2.1.2 Motives

New Public Management is an umbrella term which covers a set of public sector reforms carried out from the 1980s across most OECD countries (Alonso et al., 2015). Aim of these reforms was to improve the efficiency and effectiveness of the public sector. At the same time, governments had to deal with multiple cutbacks in their budgets – while the demand for government interference in all sorts of domains increased (Hood, 1995).This gap was an important force for the privatization of multiple domains like healthcare and security – in which the government played an active role before the process of privatization. Additionally, the private actors filled in the gap that government institutions could not. This process of outsourcing government activities was strengthened by the NPM-thought that markets perform more effectively and efficiently than the public sector. Another explanation which is common in academic literature for the rise in New Public Management – and the emergence of outsourcing government activities to private actors – is the political color of governments (Hood, 1995; Elinder & Jordahl, 2013). It is argued that political color of the ruling majority influences the choice whether or not to outsource government activities. More specifically,

there is a theoretical argument that right-wing parties are more eager to use outsourcing than left-wing parties. Commonly used examples are the Thatcher administration in the United Kingdom and the Reagan administration in the United States – both being labeled as right-wing governments which outsourced multiple government tasks and services (Hood, 1995). Elinder & Jordahl (2013)acknowledge the hypothesis of right-wing parties and outsourcing in their research to local policies in Sweden. They found that right-wing local governments used more outsourcing than left-wing local governments. Nevertheless, as Hood (1995) claims it is difficult to ascribe the success – in terms of large scale implementation – of New Public Management and its extensive use of outsourcing, to politics.

2.1.3 Potential benefits

There is a lot of academic literature on the benefits of outsourcing. In general, there are five elements of advantages to distinguish in regard to outsourcing (Abraham & Talyor, 1993; Belcourt, 2006; Hood, 1991): *cost reductions*, *access to new technology*, *access to expertise*, *flexibility*, and *depoliticization*.

First, the argument of cost reductions – which is based upon the perception that private agents perform more effectively and efficiently than public agents due to the elements of competition and private ownership (Alonso et al., 2015). Competition amongst suppliers will reduce costs and increase efficiencies. For a supplier in a competitive market it is unrealistic to increase its price due to the fact the client will chose another supplier which is cheaper. In a competitive market, suppliers constantly have to improve their performances – in terms of cost reductions as well as output – in order to retain its clients. Without improvement, the company will go bankrupt. Besides, there is an incentive for private agents to reduce costs because cost reductions may generate profit – which is the power of private ownership (Alonso et al., 2015). These incentives for private agents is absent in the public sector (Hood, 1991 & 1995). Public institutions live as long as society (politics) wants them to. Public agents are often monopolies which are – considering economic theory – inefficient due to the absence of competition (Hartley, 2004). Nonetheless, by outsourcing public services to the private sector – public services become exposed to the incentives of competition. Thus, outsourcing causes high-powered incentives to create cost reductions (Hartley, 2004). These cost reductions by private agents are for

example realized due risk sharing by pooling risks (da Conceição da Consta Marques, 2016),or creating economies of scale. Furthermore, two common arguments in literature for outsourcing are access to new technology and access to expertise (Belcourt, 2006). Often, private agents have more knowledge, expertise or are better equipped compared to public agents. Private agents are eager to innovate and to gather expertise due to the fact their lifecycle depends on it. Without innovation and expertise, private companies have no chance in surviving the competitive market. Flexibility is another argument for governments to outsource their activities. Governments could change a vendor if required. Changing a poor performing vendor is more easily than changing a poor performing civil servant – who has a permanent contract. Finally, depoliticization could be a reason for governments to outsource their activities. Outsourcing is a perfect solution to getting rid of a troublesome department or avoid democratic accountability (Belcourt, 2006).

Regarding the access to new technology, access to expertise and flexibility as motivations for outsourcing – it is considerable to reduce these three motivations to the major reason of outsourcing: cost reduction. Innovation of technology is an expensive process with risks that the investment is higher than the benefits. Carrying such risks would be a burden to governments expenditure. And what about the access to expertise and knowledge? The process of recruiting experts and developing their knowledge is costly, especially if you need the expertise directly – which is closely associated with flexibility. Government could hire private agencies whenever they are needed and close a deal for a certain period rather than contracting personnel on long-term basis.

2.1.4 Potential disadvantages

Although it seems that outsourcing is beneficial for governments there are certain risks related to outsourcing (Alonso et al., 2016; Camacho, 2015; Vaxevanou & Konstantopoulos, 2014). There is critique on the assumption that outsourcing creates cost savings (Alonso et al., 2015;Camacho, 2015). Additionally, its counterargument is based upon transaction costs theory. It is being argued in academic literature that outsourcing could increase transaction costs (Alonso et al., 2015; Hartley, 2004; McCarthy & Anagnostou, 2004). Before explaining this argument it is relevant to discuss two concepts that are related to the transaction costs theory: *principal-agent relationship* and *asymmetric information* (Hazeu, 2007). In a principal-agent relationship, the principal (client) and agent (contractor) have different

interests (Hazeu, 2007). When the government outsources an activity to a private company, the government is the principal and the private company the agent. The main objective of a private company is maximizing profit and minimizing costs – or as Hood would define sigma-type values (Hood, 1991). The currency of success and failure in sigma values is measured in waste, money, and time – in other words it is measured in terms of (in)efficiency (Hood, 1991). Government, on the other hand, has multiple objectives and is not necessarily profit driven – it possess theta- and lambda-type values as well. Theta is measured in terms of trust and entitlements while lambda is measured in security and survival (Hood, 1991). In regard to the lambda-type value a perfect example is that governments objective in Western civilization is to take care of social security – in which sigma is not the main objective. Thus, outsourcing social security could conflict with the interests of private firms.

Besides, there is asymmetric information between principal and agent. The principal is unable to see whether the agent performs optimal – while the agent is fully aware whether it performs optimal (Alonso et al., 2015; Hazeu, 2007). The inability to see whether the agent performs optimal could for instance be explained by the lack of expertise of the principal because the agent is dealing with complex issues. Additionally, the more complex an agent's service/task will be the more difficult it is for a principal to assess the agent's performance. Eventually, due to this asymmetric information in regard to performance – there is an incentive for the agent to show opportunistic behavior on performance considering the fact that agents have different interests than principals. The agent will try to maximize its own interests by possibly harming the interests of its principal – which potentially affects the effectiveness of outsourcing (Alonso et al., 2015).

However, there are solutions to the opportunistic behavior of agents – for instance by monitoring the performance of the agent and try to reduce the asymmetric information, or trying to reduce the difference of interests between principal and agent (Hazeu, 2007). Nevertheless, tackling the opportunistic behavior of agents creates costs – which delves deeper into the concept of transaction costs. Transaction costs – such as monitoring the agent's performance – are necessary costs that are made in order to reach a contract between parties (Hazeu, 2007 , p. 79). Eventually, transactions costs are a necessity in tackling the asymmetric information between principal and agent and the chance of opportunistic behavior from the agent. Nonetheless, the costs of avoiding opportunistic behavior in a contract could be high – especially if complexity and uncertainty are involved

(Hazeu, 2007). In a scenario in which complexity and uncertainty arises, it is difficult to oversee all the possible decisions or options of an agent – let alone the consequences of each decision. Trying to oversee these decisions and its consequences is costly and lead to high transaction costs – and possibly affects the effectiveness of outsourcing.

Nonetheless, there are more risks to outsourcing then transaction costs and asymmetric information. In addition, the principal might risk becoming too dependent on the agent (Alonso et al., 2015; McCarthy & Anagnostou, 2004). Moreover, the principal losses ability to control the agent (Alonso et al., 2015). Such scenarios undermine the legitimacy of a government. Besides, being dependent on a private actor is risky – what if the actor decides to breach contract? Then the government has to find a new vendor – which takes time and money. Another risk are the long-term relationships between client and contractor (McCarthy & Anagnostou, 2004). During a long-term contract technology could develop rather quickly. However, the client is bound by contract and is unable to respond on new unforeseen circumstances (McCarthy & Anagnostou, 2004) – such as technology improvements or natural disasters. In addition, there is a difficulty in banning open ends and uncertainties (da Conceição da Costa Marques, 2016). Eventually, outsourcing might reduce the flexibility of a client.

§2.2 The military

When most people speak or write about military, they associate it with terms of resources that underlie hard power behavior of fighting and threatening to fight, such as soldiers, tanks planes and ships (Nye, 2011). However, the concept military is much broader than this. First, I will elaborate on the concept military. Subsequently, I will delve deeper into private military in order to distinguish public and private military from each other.

2.2.1 Definition

In regard to realism theory, the military is conceptualized as the ultimate power of the state (Glaser, 2003; Edmunds, 2006). Realism assumes that the international community is an environment of anarchy in which states are constantly in conflict with each other (Glaser,2003; Edmunds, 2006). In essence, the military exists to defend a state from such external (potential) threats. Besides, it could be used by states as a coercive tool to promote and protect national interests abroad (Nye, 2011; Edmunds, 2006). Nye (2011) acknowledge the coerciveness of the military. He conceptualizes the military as an instrument of power

(Nye, 2011). According to Nye (2011), the military power instrument is multidimensional and capable to produce behavioral outcomes. In addition, the instrument could be used in four different ways to produce desired behavioral outcomes (Nye, 2011): *physical coercion, threat of coercion, protection* and *assistance*. Physical coercion involves actual combat in which manpower and weapons are used in order to impose the enemy (Nye, 2011). These manpower and weapon sare also a necessity for threat of coercion. A lack of manpower and material affects the credibility of a state's coercive diplomacy (Nye, 2011). Without a strong military the threat of coercion shall not be taken seriously by the opponent (Nye, 2011). Furthermore, the military could be used as an instrument of protection. The instrument of protection is rather different compared to physical coercion. The purpose of physical coercion is a behavioral outcome by combat while the purpose of protection aims for a more softer strategy (Nye, 2011). Protection involves peace-keeping operations and creating alliances in order to influence behavior. The softer strategy is present in *assistance* as well due its focus on offering aid (Nye, 2011). Assistance could take form in multiple ways like training foreign militaries or providing humanitarian aid in a natural disaster (Nye, 2011).

Although military power is still used in all four different ways, it should be mentioned the military is undergoing a profound series of shifts in their core roles (Edmunds, 2006; Nye, 2011). Especially in Europe, the role of the military is debated (Edmunds, 2006). Over time there has been a growing ethic of antimilitarism. Besides, the ultimate form of military force – the use of nuclear weapons – is too costly for nations (Edmunds, 2006). The use of nuclear weapons would lead to devastation on large scale. Furthermore, ruling populations by conventional force has become more costly due to globalization. Globalization increased the mobility of populations in multiple ways which made it more difficult to rule them by force (Edmunds, 2006). In regard to what initiated the changes within the military domain, the emergence of the Private Military Security Companies should not be forgotten. It is an relevant factor concerning the distribution of military power (Singer, 2001).

2.2.2Privatization of the military

In literature Private Military Security Companies (PMSCs) is often used to address the concept of private military (Alexandra, 2012; Mayer, 2010; Petersohn, 2015; Taylor, 2018). Petersohn defines PMSCs as "legal entities that offer an force-related services". These services could be supportive missions – in logistics or consultancy for instance – as well as

combat missions (Petersohn, 2015). Furthermore, Petersohn (2015) emphasizes that PMSCs are not solely hired to execute tasks of armed forces. Petersohn's perspective on PMSCs is similar with Taylor's (2018) idea of private military. Taylor describes PMSCs as companies that "offer a range of services that were conventionally carried out by states' regular armies – from training to front-line combat – in exchange for a fee" (Taylor, 2018, p. 148). Other common words used in academic literature to define private military is Private Military Firms (PMFs) (Singer, 2001 & 2005) or Private Military Companies (PMCs) (Hartley, 2004; Ten Dam, 2013). It is hard to find a difference between PMFs and PMCs – however there is a difference between PMCs/PMFs and PMSCs. Considering the words Private Military Security Companies and Private Military Firms – the difference is in the words itself. PMSCs seems a much broader concept than PMFs by including the word security – although PMFs addresses security just as much as PMSCs. This potential difference in connation is relevant due to the fact it gives the impression that PMSCs have a wider range of services to offer and therefor a wider range of clients than PMFs – although that is not necessarily the case.

Singer defines PMFs as "corporate bodies that specialize in the provision of military skills-including tactical combat operations, strategic planning, intelligence gathering and analysis, operational support, troop training and military assistance" (Singer, 2001, p. 186). Additionally, Singer emphasizes that structure, competition and hierarchy are important elements in defining the concept of private military (Singer, 2001 & 2005).

Although there are multiple words to define private military there are certain features that characterize the concept. Private military organizations compete on the market and are considered legal entities which are contractually bound to their clients (Singer, 2001). Besides, private military institutions have one main objective – which is in the end the objective for each private company – maximizing profit and minimizing costs (Machairas, 2014; Singer, 2001). This objective differs from the main objective of the public military – which is about defending and securing the nation at all costs (Machairas, 2014). Furthermore, private military organizations could work for multiple clients in multiple markets/theaters at once (Singer, 2001). Their business is in services which are related to warfare. Nonetheless, the services which are related to warfare have a wide range of variety. Due to this variety there are different forms of private military organizations. Hartley (2004) classifies this variance by addressing the different roles of private military organizations. He argues that private military organizations could have a supportive or combat role. This idea

of different roles to private military organizations is emphasized by many academics (Hartley, 2004; Petersohn, 2015; Singer, 2001; 2005). One major model is often referred to in illustrating these differences in private military firms – which is Singer's tip-of-the spear typology (2001). Singer conceptualizes three different forms of private military:*military provider firms*, *military consulting firms*, and *military support firms*. Military provider firms offer services at the frontlines and engage in actual fighting or direct command and control of field units while consulting and supportive firms do not engage in combat. The difference between military supportive firms and consulting firms is that supportive firms are solely concerned with supporting their clients in a practical sense – for instance by providing military equipment for combat (Singer, 2001).

2.2.3 Emergence of the private military industry

There are three commonly accepted reasons in academic literature for the post-Cold War emergence of the privatized military industry. First explanation is the end of the Cold War – which caused disruptions in the supply and demand of capable military forces (Singer, 2001; 2005). Multiple new insecurities arose – which caused an increase demand in security forces – while the public supplier of security (defense department) had to deal with government cutbacks. Eventually, this created a market 'security' gap for private firms (Leander, 2005; Petersohn, 2015; Singer, 2001).

Second, the technical advancements after the Cold War caused transformations in the nature of warfare (Singer, 2001). The warfare of today relies upon technology – moreover – the armed forces depend on technology. Considering that technology is an important element to warfare, it seems obvious that expertise is a necessity. This expertise is not always accessible for public security agencies for several reasons (Singer, 2001; 2005). It could for example, be too expensive for them considering the costs of recruitment, training and equipment. Nevertheless, private companies seemed to be a perfect outcome in tackling the lack of expertise at public agencies.

Third, the privatization of the military industry could be explained in the normative rise of privatization (Singer, 2001) – which was driven by New Public Management. It was assumed that private sector is more efficient and effective than public sector (Hood, 1991) – thus public military should outsource services and tasks as well.

2.2.4 Political motives of using private military

The considerations to use private military companies could change over time and differ from country to country (Bakker, 2012). Take the maintenance of warships – which is done by private companies in England – as an example. In contrast with England, the Dutch Marine is responsible for maintenance of its ships instead of a private firm (Bakker, 2012). These differences between countries could be explained by *political* and *economic* motives (Bakker, 2012).

As discussed in the subsection "potential benefits", the economical motives for government in hiring private organizations are based upon efficiency considerations. Outsourcing could lead to cost-reduction and innovation due to competition of markets and discipline of private ownership (Alonso et al., 2015). Nonetheless, politics have motives to welcome outsourcing in the military domain as well. Sometimes private contractors could accomplish missions that public army could not (Ilan, 2013). In addition, public military could lack expertise, technology or manpower to accomplish a particular mission. Another political reason for contracting-out public military services is avoiding democratic accountability (Taylor, 2018). Democratic accountability slows down the decision-making process. Besides, there are missions thinkable that would lead to debate and uproar in society (Taylor, 2018). Eventually, by contracting-out military missions the complexity and issues with responsibility and accountability are outsourced as well. For government outsourcing is a perfect manner to get rid of (defense)departments which are not functioning or are heavily debated (Belcourt, 2006). Nonetheless, there are issues and limitations in outsourcing public tasks – in particular to the domain of the military. These objections mainly focus on issues with lack of a socially acceptable cause for private actors for participating in an armed conflict, complications to the balance of power, difficulties to legality, and a lack in accountability (Elias, 2015; Machairas, 2014; Singer, 2001).

First, it is argued that private actors lack a social acceptable cause to engage in combat. The objective of private actors is making profit – which is not a sufficient reason to justify combat activities (Singer, 2001 &2005; Taylor, 2018). Contrary to private actors, public military has several objectives. Besides, public soldiers are not necessarily driven by profit in contrast to private soldiers – which is about the different incentives between public and private soldiers. Private soldiers are solely motivated to engage in combat by financial gains – their salary. Considering the fact that private military is profit-driven, private military

firms will try to maximize their profit and minimize their costs. This could lead to adverse selection and opportunistic – perhaps immoral – behavior (Singer, 2001).

Second, the use of private military affects the balance of power in war (Singer, 2001). Each and everyone has access to the market – which empowers non-state actors. States as well as non-state actors could hire private military companies to strengthen their forces. Furthermore, due to open market it is impossible to predict an enemies power because an enemies power could change over time by hiring private military companies (Singer, 2005). As a result, small players could become big ones due to their economic prosperity – a prosperous state or non-state could buy its own army. This huge turn in the balance of power has impact on the international system. The monopoly of violence no longer lies with the state due to emergence of private military.

legality and accountability issues are in academics another common accepted disadvantage to outsourcing public military activities (Belcourt, 2006; Mayer, 2010; Singer, 2001; 2005; 2007; Taylor, 2018). In fact, there is no clear jurisdiction in regard to private military. The Blackwater case illustrates this lack in accountability. Blackwater was a private military firm active in Iraq and contracted by US military to protect diplomats. On 16 September 2007 security guards of the company Blackwater killed seventeen Iraqi civilians and injured more than twenty Iraqi civilians (Ten Dam, 2013). The Blackwater company claimed the security guards thought they were under attack (Ten Dam, 2013). However, there is a lot of contradicting evidence to this argument. Besides, Blackwater was notorious for its modus operandi – their use of force was often questionable (Ten Dam, 2013). Considering their questionable use of force a large investigation was expected in search for accountability. Nonetheless, the Blackwater case showed that it is difficult to hold private military companies accountable for their deeds. Although there was a case there was no actual tribunal that had jurisdiction over (possible) crimes committed by Blackwater in Iraq (Ten Dam, 2013). Additionally, the US authorities were uncertain whether they had the right to prosecute Blackwater (Ten Dam, 2013). And, there was a difficulty in proving the criminality of particular actions. The difficulty of proving criminality of particular actions and the absence of a clear-cut jurisdiction results in the fact that few private military companies are actually trailed (Singer, 2007). If a precedent is created in which private military companies are not trailed at all for their actions then there is an incentive for private military companies to perform reckless. Besides, government has insufficient control to monitor

whether the company performs reckless. Two factors are relevant to this insufficiency: expertise and working abroad. Often governments lack expertise and skills to assess the performance of the private agent (Singer, 2001 & 2005). This could even be more troublesome if the mission of the private company is abroad. In sum, there is an absence of regulation, oversight and enforcement regarding the use of private military.

2.2.5 Public/private military differentiation

In the previous paragraphs I elaborated on the concept private military. The concept private military is useful in understanding what military is and how private military is influencing the core functions of a (public) military. The distinction between private and public military lies within the economic framework. Private military organizations compete on the market and have one main objective: maximizing profit and minimizing costs. Although minimizing costs is relevant for a state's military as well, the core objective is defending and securing the state from all threats (Glaser, 2003; Edmunds, 2006; Nye, 2011). In addition, the public military is more concerned with survival of the state (Glaser, 2003) while private military organizations are concerned with the execution of their contracts in order to obtain profits. Nonetheless, private military organizations could be a useful instrument to the state's military. As discussed, there is a growing ethic of antimilitarism in Europe (Edmunds, 2006). States could tackle this growing ethic of antimilitarism by reducing their number of soldiers and operations and instead hire private military organizations. In addition, hiring private military organizations is often not noticed by the public due to a lack of transparency by governments (Hartley, 2004). However, the existence of private military is intertwined with the willingness of governments to outsource their (public) military activities.

§2.3 Deployability

The public military could be measured in terms of deployability. In this paragraph the concept deployability is examined in detail. Furthermore, it is placed in different contexts by using institutions like NATO and the European Union.

2.3.1 Military deployment

According to the European Defence Agency (2016), deployability is the ratio between the military deployed – which is the number of military personnel on mission – and the remaining military personnel. Deployability is subdivided into two indicators by the

European Defence Agency (n.d.). First, there is the "average number of troops deployed throughout the year" by all EDA participating Member States (EDA, 2016, p. 38). Second indicator is deployable forces which measures the number of troops "structured, prepared and equipped for deployed operations" (EDA, 2016, p. 38). This includes everything necessary to deploy troops which is a wide range from material to the number of soldiers. In addition, this is in line with the United States' definition of military deployment. The United States defined military deployment as the movement of armed forces – which includes "any movement from a military personnel's home station to somewhere else outside the continental U.S. and its territories" (U.S. Department of Veterans Affairs, n.d.). Furthermore, there is an EU indicator *sustainable forces* – which is a subset of deployable forces – measuring the number of troops "undertaking or planned for sustained operations" including those on high readiness standby (EDA, 2016, p. 38).

In regard to military deployment, rotation of forces is an important element to discuss. The rotation of forces (Biscop, 2004) is related to deployability. The rotation of forces is enforced by the duration and intensity of a mission. For operations with a short duration and low intensity, you need less resources than for operations with a long duration and high intensity. Several resources are necessary. Think for instance of vehicles to move armed forces, weapons, or setting up a supply chain from the home station to the front zone. Thus, the number of forces to deploy could be higher at missions with a short duration and low intensity than at missions with a long duration and high intensity (Biscop, 2004). Nonetheless, the issue with resources could often be reduced to the military budget of a country. Deployment of the military implies a severe budgetary impact which is sometimes difficult to sustain for countries with limited defence budgets (Biscop, 2004).

Another relevant factor to deployability of the military is the equipment of the armed forces (Herrly, 1989). Armed forces are often heavily equipped. It requires a lot of load carriers to bring a division to the battlefield. Nonetheless, it is equally relevant that concerning division arrives in time. Therefore, strategic deployability became relevant (Herrly, 1989). In addition, strategic deployability addresses to what extent armed forces are light enough to get them quickly at the physical point where it is desired (Herrly, 1989). According to Herrly (1989), the armed forces were more in need of middleweight forces. He argued these forces could be more quickly deployed than the heavy weight forces (Herrly, 1989). Eventually, Herrly (1989) seemed to have a clear vision on the future. NATO

established a high readiness force – NATO Response Force (NRF) – which comprised land, air, sea and special forces units, back in 2002 (NATO, n.d.). The NRF is capable of being deployed quickly on operations wherever needed. It is based on a rotational system in which allied nations commit their forces for a period of 12 months (NATO, n.d.). In 2014, the NRF package was expended with the Very High Readiness Joint Task Force (VJTF). The VJTF unit is about 20,000 soldiers strong and includes a multinational land brigade of 5,000 troops and air, maritime and special forces components (NATO, n.d.). Most relevant to deployability is that the VJTF could be deployed within two to three days (NATO, n.d.). In addition, the VJTF scores high on Herrly's concept of tactical mobility. Tactical mobility is associated to deployability because it measures to what extent a force is able to move quickly and decisively around the battlefield. While NATO scores well on deployability in terms of rapid deployment, the European Union seems to lack such force. In addition, the issues lies partly within limited multination cooperation between EU Member States. EU Member States want to cooperate but they do not want to specialize. Although there are synergy advantages in multination cooperation, they often refuse. In addition, they might be afraid to lose authority over their military by choosing for specialization. This affects the deployability of the EU's military as a whole.

In regard to military deployment, there is one perspective that should not be ignored: military health. In addition, there have been an increasing concern regarding psychological consequences of deployment (Harvey et al., 2012). It is important to acknowledge that deployment of military soldiers might have consequences to their mental health (Asbury & Martin, 2013; Hoge et al., 2006; Harvey et al., 2012). Deployment affects both soldiers as well as their families. A survey of Newby among deployed soldiers showed that most of them missed their families. This number was even higher for soldiers who were married (Newby, et al., 2005). Furthermore, there are a number of stressors that are common to most military deployments: uncertainty, separation, isolation, danger and fatigue (Newby et al., 2005). Deployed soldiers are far away from their homes and comfortable environments. Actually, homesickness is lurking. Even more disturbing are the potential long lasting effects of a deployment. Think for instance of a posttraumatic stress disorder (PTSD) due to traumatic experiences on deployment (Asbury & Martin, 2013). PTSD is troublesome because it affects the daily life of a soldier. Additionally, sometimes it is even impossible for

a person to function normally. Therefore, after a deployment it is relevant to provide a high level of psychological aftercare (Hoge et al., 2006).

2.3.2 Deployability and outsourcing

Deployability is multidimensional due it covers the number of military soldiers equipped, trained and structured for operations. Being equipped, trained and structured for operations are three different elements in which private military could be useful. As we have seen, the roles of private military is various (Singer, 2001). Private military organizations could be supportive to public military by for instance supplying material (Singer, 2001). There is also a possibility that private military organizations engages in actual combat (Singer, 2001). Both scenarios are related to deployability.

Private Military Firms pride themselves for rapid deployment of forces (Bosch & Kimble, 2015). They claim to have specialized skills and the ability to deploy rapidly in order to outnumber traditional armed forces in conflict zones (Bosch & Kimble, 2015). This might be the case bearing in mind that outsourcing could have several advantages over public institutions due to competition and private ownership of the market. In addition, it is assumed that outsourcing might cause cost reductions (Alonso et al., 2015; Hood, 1991;1995). Furthermore, outsourcing could give access to new technology and expertise and increases government's flexibility (Abraham & Taylor, 1993; Belcourt, 2006). Considering these advantages of outsourcing, private military firms might improve military deployment of states. Take for instance the improvement of flexibility. To execute a mission governments are no longer dependent on their own equipment. If a government lacks equipment in order to deploy a military mission it could hire equipment from private military firms. Eventually, the improvement of flexibility works the same with access to new technology and expertise. If a government lacks expertise or technology to deploy a mission, it could hire this expertise or technology from private military firms. Furthermore, the existence of private military firms enables governments to outsource combat missions (Singer, 2001). Nevertheless, outsourcing combat missions is done few.

In regard to military, the benefits of outsourcing might affect deployability. Taking into account that deployability covers the number of military soldiers equipped, trained and structured for operations. Due to the benefits of outsourcing – improvement of flexibility, expertise, knowledge and cost reductions – deployability might increase.

§2.4 Effectiveness of outsourcing

As mentioned in the previous sections there are some questionable remarks to the economic effects of outsourcing – in particular to public military. The theoretical assumption considering the effects of outsourcing is that outsourcing leads to efficiency and effectiveness gains in the public sector due to the market elements of competition and private ownership. Efficiency implies attaining maximum productivity with least waste of time and effort (Hood, 1991). In regard to private organizations, it implies maximizing profit and minimizing costs. Effectiveness on the other hand, is not necessarily about means – effectiveness measures to which extent objectives are achieved (Bovens, 2007).It is assumed that outsourcing public activities leads to an increase in efficiency and effectiveness. This assumption is based upon the theoretical consideration that competition of markets and its discipline of private ownership stimulates private organizations in innovation and cost reduction (Alonso et al., 2015). By outsourcing public military it becomes exposed to these innovation and cost-reduction incentives. In addition, the economic motive for outsourcing public military activities is increasing the effectiveness and efficiency of the public military.

2.4.1 Relative effectiveness

According to Taylor starting point to outsource public services should be the relative effectiveness of public and private agents in carrying out the task or service in question (Taylor, 2018). Additionally, the effectiveness is measured in terms of efficiency –more precisely it is about the ability of an agent to meet a particular goal efficiently. As Hood argued (1991) efficiency is concerned with attaining maximum productivity with least waste of time and effort. Achieving this particular goal is about effectiveness. Considering the theoretical assumptions on outsourcing – the improvement in flexibility, innovation, expertise and the reduction of costs (Abraham & Taylor, 1993; Alonso et al., 2015; Belcourt, 2006; Hood, 1991) – outsourcing should increase efficiency and effectiveness. Taylor's relative effectiveness embraces both efficiency and effectiveness and reduces the decision-making process of outsourcing to a simple cost-benefit analysis – if the benefits of outsourcing are higher than the costs, then outsourcing should be done. In regard to the military it implies that if the benefits of outsourcing public military activities are higher than the costs, governments should outsource. As mentioned before outsourcing might increase

the deployability of the military. Nonetheless, what are the consequences of outsourcing to the military its effectiveness?

2.4.2 Deployability and effectiveness

Deployability indicates the strength (manpower) of an army (EDA, n.d). Besides, deployability describes the number of troops already deployed and the number of troops which are deployable (EDA, n.d). Bearing in mind that this research wants to delve deeper into the effects of outsourcing on public military, deployability is a relevant concept to examine. On the one hand, it addresses to what extent outsourcing is efficient by identifying the number of troops deployed at a certain level of outsourcing. It is assumed that due to competition and private ownership outsourcing leads to cost reductions (Alonso et al., 2015). This efficiency gain is based upon the theoretical assumption that private companies are specialized in particular services which creates a comparative advantage to public agents (Hood, 1991; Hazeu, 2007; Alonso et al., 2015) – making private military companies cheaper than public military. These cost reductions of outsourcing are driven by improvements in flexibility, expertise and technology(Abraham & Taylor, 1993; Belcourt, 2006; Hood, 1991). Due to the aforementioned efficiency gains of outsourcing it is assumed public military could attain more productivity with less waste of time and effort. Considering that outsourcing might increase productivity of the military it would increase deployability.

On the other hand, deployability is about the effectiveness of an army since it is concerned with the capability to deploy manpower. Deployability identifies to what extent nations possess the capability to deplore their most import mean in regard to the public army: public soldiers. An relevant element to the effectiveness of deployability is the rotation of forces. As discussed, the rotation of forces is enforced by the duration and intensity of a mission (Biscop, 2004). Operations with a short duration and low intensity, require less resources than operations with a long duration and high intensity. Therefore, if there is a lack in military resources, it would be difficult for government to execute operations with a high intensity. However, governments are able to obtain these resources on the private market (Singer, 2001;2005). Governments could hire private military firms that offer services as consultancy or practical assistance by providing military equipment for combat (Singer, 2001). Moreover, they could even hire private firms that engage in actual combat (Singer, 2001). However, hiring private firms for combat is not very common,

especially in Europe. Nonetheless, private military firms enable governments with limited military resources to execute missions with a long duration and high intensity. Moreover, the use of private military firms might enable a government to deploy more military forces because government itself needs less resources to deploy a military force. Eventually, the use of private military firms might increase the military effectiveness of a government.

§2.5 Hypothesis

In regard to the findings derived from the body of knowledge a working hypothesis could be properly formulated. I will first give the working hypothesis which is needed to answer the research question. Second, a number of theoretical assumptions following the knowledge about the effects of outsourcing and private military are discussed. These assumptions are relevant in relationship to the hypothesis.

The working hypothesis of this research is as follows: '*The higher the military expenditure on outsourcing, the higher the deployability of public military*.' This assumed relationship between outsourcing and deployability is shown below in diagram 1. In general, it was found by the theoretical framework that the marketmight have multiple advantages compared to public institutions. This theoretical assumption is derived from the managerial doctrine of New Public Management which claims that markets work more efficient and effectively than public sector (Hood, 1991; 1995). Since the military is a public institute, these assumptions regarding outsourcing could be extended to the military domain. Private firms – and therefore private military firms – have high-powered incentives to reduce costs (Hartley, 2004). Government lack such incentives. Furthermore, it is assumed use of private military firms improves the expertise and technology within the public military. Due to competition and private ownership on the market it is necessary for private military firms to innovate at a fast pace. Considering the efficiency gains of outsourcing and outsourcing might have a positive effect on the productivity of the public military, and bearing in mind that outsourcing might increase deployability, it is assumed that outsourcing possess the ability to increase the military effectiveness of a government. However, there are several theoretical assumptions that conflict with the idea that outsourcing increases efficiency. An example to that end is derived from the principal-agent theory (Hazeu, 2007) – which assumes there is information asymmetry between client and contractor and client and contractor have different interests. This principal-agent relationship is applicable to the

relationship of a government and private military company. The private military company (contractor) will have more information on its performance than the government(client) – which could be an incentive for the contractor to show opportunistic behavior (Hazeu, 2007). This opportunistic behavior could occur in trying to achieve the goals of a mission at minimal costs. Besides, private firms gain by cost reductions. This is worrisome because it could result inscenarios in which the private military firm provides the client with insufficient equipment (in case of a supportive firm), poorly trained personnel (in case of a provider firm) or unsubstantiated advice (in case of a consulting firm). To tackle this issue of asymmetric information it is necessary to monitor the contract – in particular the performance of the private military company – which in fact costs money.

It is interesting to test whether the working hypothesis holds water bearing in mind that in theory outsourcing is often defined as an increase in efficiency and effectiveness to public institutions and this assumption is extended to the military domain without quantitative evidence. Besides, there is theoretical evidence outsourcing not necessarily improves efficiency and effectiveness of public institutions – take for instance the principal-agent relationship. The research is particularly interested in testing whether outsourcing increases deployability and thereby improves military effectiveness of a government. If the analysis shows that outsourcing not necessarily increases deployability of the public military then it is possible to draw conclusions about the effectiveness of outsourcing in regard to the military.

Diagram 1: Independent and dependent variable.

Chapter 3 Methodology

In this chapter I will elaborate on the data collection of this research first. After discussing the considerations made regarding the data, I will explain the methodological benefits and limitations of the research design chosen. In particular, I will argue why the specific research design chosen suits this research project. Furthermore, I will cover the different variables used in this research in order to operationalize the different concepts derived from the theoretical framework. Subsequently, the previous mentioned elements – research design and data collection – will be brought together in the data analysis. Finally, the validity, reliability and limitations of this research will be discussed in the last two paragraphs.

§3.1 Research design

The research question was characterized as causal in nature. Its aim was to clarify whether outsourcing had any influence on the deployability of public military, by using statistical methods. Based upon theoretical considerations, outsourcing should increase the deployability of the public military. Regarding this line of thought, it made the objective of this research testing correlation between variables. Correlation is something different than causation. While correlation is solely about the relationship between variables, causation is about determining whether the relationship is a cause-and-effect relationship. There are different forms of causation, nonetheless, this research was interested in direct causation – is the difference in the dependent variable (deployability) explained by the independent variable outsourcing.

A deductive quantitative analysis was best suited to execute this research considering the fact the interest of this research was theory testing. Additionally, it was tested whether there is a relationship between outsourcing and deployability. In nature, qualitative research is about processes and meaning making in trying to understand (verstehen) empirical phenomena while quantitative research is much more about explaining (erklären) an empirical phenomenon. These two different perceptions on executing research leads to the situation in which quantitative research is more concerned with theory testing while qualitative research is much more focused on the emergence of theory (Bryman, 2008, p. 408). Eventually, this research project was about theory testing because it aimed to test the theoretical considerations – based upon NPM doctrine – in academics which assumes that outsourcing affects the deployability of the military apparatus. Therefore, it makes

quantitative research in essence best suited. A qualitative design makes a better option if one wants to delve deeper into the process which creates a causal relation. Furthermore, it should be mentioned that the available data was more suitable to analyze with a quantitative research design due to its numerical characteristics – while qualitative research is much more familiar with the analysis of words rather than numbers (Bryman, 2008, p. 408).

The research design took the form of a longitudinal design, in particular a panel study. The dataset contained observations of multiple phenomena obtained over multiple time periods – 2005 to 2014 – for the same 27 EDA Member States. Often such dataset would enable the researcher to make generalized assumptions over multiple time periods. However, multiple Member States kept their information confidential. Besides, there are a couple of Member States which started to record their data beyond 2005. Thus, it was difficult to make general conclusions concerning time periods. Nonetheless, there are no difficulties to the research aim – which is solely concerned whether there is a relationship in the first place – due to the fact there were enough cases to examine whether there is a relationship between outsourcing and deployability. Besides, the amount of data accessible was one of the reasons why this research focused on the European Union. Although there are some countries in the dataset which kept their data on public military confidential, it is one of a few datasets that gives insight on the deployability of the military and at the same time is accessible for everyone. Furthermore, the European Union was an interesting level of analysis because the unit of observation in this dataset are the 27 EU members - which in essence differ from each other. In fact, the dataset gave some insights in if and how the European Member States differ. In regard to the theoretical framework on outsourcing this could be interesting because it is often claimed that Western EU countries have more affinity with outsourcing than Eastern EU countries.

§3.2 Data collection

In an attempt to find answers to the hypothesis an existing dataset was used – the EDA Collective and National Defence dataset. The European Defence Agency (EDA) is an intergovernmental agency of the Council of the European Union. It provides a platform for cooperation between defense departments across Europe. The agency falls under the authority of the Council of the EU, to which it reports and from which it receives guidelines.

One of its priorities is examining and reviewing the status of the armed forces of each member state. They are reviewed by the data EDA collects and compiles of each member state. Nonetheless, some national data are restricted by Member States and therefore not published in the EDA Collective and National Defence Dataset. The dataset is a panel dataset which consists of aggregated national defence data over multiple time periods – from 2005 to 2014 – for the same 27 EDA Member States. Thus, the data is structured into a time level as well as a country level. As already mentioned in the previous paragraph, one of the reasons to use this dataset was its accessibility. Besides, it is a large dataset which contains much information on the status of the armed forces of an EU country. Often such information is hard to find due to its sensitivity. In addition, the degree of sensitivity is clearly visible in the because some countries kept parts of their data classified.

The EDA Collective and National Defence Dataset contains information on defence expenditure, defence personnel, collaborative expenditure and deployability. These different subjects are divided into different subtopics. The amount of defence expenditure for instance, is split up in expenditure on personnel, infrastructure, investment, operation & maintenance, operation costs, outsourcing and other defence expenditure – while the subject personnel is divided in subtopics as total civilian personnel and total military personnel. Subsequently, the indicator total military personnel is measured by the divisions of the armed forces – Army, Maritime, Air Force and Other. Furthermore, the dataset gives information about the European collaboration in regard to the military. In fact, the dataset contains information about how much money is spend by a EU member state on European collaboration in regard to the military. Nonetheless, since the focus of the research is to what extent outsourcing affects the effectiveness of the public military – which is in particular about deployability and outsourcing – and the resources of this research are limited, other indicators on defence expenditure, personnel and EU collaboration are not taken into account.

Relevant to the dataset and this research were the EU Member States that kept their information on outsourcing and/or deployability confidential. These EU Member States – Germany, Croatia, Hungary, Malta, Poland and Slovenia –were not taken into account in the analysis. In fact, four countries from Central & Eastern Europe (Croatia, Hungary, Poland and Slovenia), one country from Western Europe (Germany) and one country from Southern Europe (Malta) – according to the EuroVoc (2018) definition – were excluded from the

analysis. Nevertheless, 21 EU Member States remained to be analyzed. However, these 21 EU Member States had some missing observations as well. This could be explained by classified information on the one hand and on the other hand a starting point of recording data which is beyond 2005 – Bulgaria and Romania for instance joined the EDA in 2007 (EDA, n.d). Bearing in mind these two factors, it lead to a dataset which consisted of 178 observations. Eventually, these observations will enable us to chart trends and perhaps relate these trends to wider social changes (Bryman, 2012, p. 321).

§3.3 Data analysis

3.3.1 Measurement

The dependent variable in this research was deployability of public military. The data for this variable was obtained from the European Defence Agency dataset which provided data on sustainable and deployable forces. The definition for deployability used in the dataset is as follows; "deployability shows the ratio between the military deployed in crisis management operations and the remaining military personnel" (EDA, 2016, p. 1). The concept of deployability was split up in multiple indicators by the European Defence Agency. These indicators are each interval in nature. In the statistical analysis these indicators were used to measure the concept of deployability. Each indicator was used as a dependent variable. Since these variables were interval in nature, they are characterized by identical distances between categories across the range of categories (Bryman, 2012, p. 335).

First there is an average number of troops deployed. This number was also expressed in a percentage of the total military personnel. The total military personnel is defined as "the authorized strengths of all active military personnel on 31 December of each year" (EDA, 2016, p. 37). It includes all personnel in uniform who could operate under military command and can be deployed outside national territory (EDA, n.d.). In the analysis, the percentage of average number of troops deployed relative to the total military personnel was used. The use of this relative percentage contributes in minimizing standard errors. Second, deployability is defined in terms of total deployable (land) forces. Deployable (land) forces are "(land) forces troops structured, prepared and equipped for deployable operations" (EDA, 2016, p. 38). In the analysis, this indicator was also taken as a relative percentage of the total military personnel. Furthermore, the dataset contained data on sustainable (land) forces. Sustainable land forces are a subset of deployable (land) forces. It is about the

"strength of (land) forces troops undertaking or planned for sustained operations, including those on high readiness standby" (EDA, 2016, p.38). Due to the fact sustainable forces is a subset of deployable forces, it was found irrelevant to include the sustainable forces in the statistical analysis.

In order to measure the deployability correctly, it is necessary to use the right indicators. This research project was in essence interested in the relationship between outsourcing and deployability since there is theoretical groundwork which assumed that outsourcing leads to a change in deployability of the public military. Since this research was interested in examining whether there is a relationship at all – it should use the indicators total deployable (land) forces, and the average number of troops deployed. Since there was little statistical evidence at all for the assumption that outsourcing affects deployability, it was a logical choice to use both. Furthermore, it was relevant to take the number of total military personnel into account in analyzing the relationship between deployability and outsourcing, since it is possible that the effect of outsourcing on deployability correlates with the total military personnel. Besides, relative indicators enabled us to make a better comparison between the EU Member States.

The independent variable in this research project was outsourcing. Outsourcing of public military tasks was measured by the amount of military expenditure on outsourcing. Data on the amount of military expenditure on outsourcing was retrieved from the EDA Collective and National Defence Dataset (EDA, n.d.). The amount of defence expenditure on outsourcing was in Euros. Furthermore, the defence expenditure on outsourcing was an interval variable. The definition used in the dataset for defence expenditure on outsourcing was as follows: "defence expenditure for which services have been contracted at central level with service suppliers from outside the MoD and/or Armed Forces" (EDA, 2016, p. 38). Due to the cross-country nature of the dataset it was necessary to take the defence expenditure on outsourcing as a percentage of the total amount of expenditure on defence. This relative variable made it easier to compare countries within the European Union and minimizes errors in the analysis.

The control variables were very important in this research, as mentioned previously, to secure validity and minimize potential bias. The control variables were derived from academic literature which examined effects of outsourcing on government in order to make

sure irrelevant control variables stayed out of the analysis. Using irrelevant variables should lead to errors in the results. Thus, the control variables – which were chosen based upon construct validity –helped to secure the measurement validity in this research. The control variables were: GDP *per capita*, unemployment rate, age and urbanization. It is found these variables were positively associated with government expenditure (Alonso et al., 2015). GDP *per capita* and the unemployment rate were included in order to control for underlying economic trends while age and urbanization were used to control for the effect of demographics and economies of scale.

Variable	Description	Source
	Dependent variable	
Deployability		
Number of troops deployed %	Interval-ratio variable. Indicates the average number of troops deployed by a country. Is measured as a percentage of the total military personnel.	European Defence Agency (2014)
Total deployable (land) forces %	Interval-ratio variable. Indicates the strength of (land) forces which are structured, prepared, and equipped for deployable operations.Is measured as a percentage of the total military personnel.	European Defence Agency (2014)
	Independent variable	
Defence expenditure on outsourcing	Interval-ratio variable. It indicates the amount of money spend (measured in millions €) on outsourcing military activities. Is measured as a percentage of the total defence expenditure.	European Defence Agency (2014)
	Control variable	
GDP *per capita*	Interval-ratio variable. GDP *per capita* is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Data are in current U.S. dollars.	Data was extracted from The World Bank (2019) and is based upon national accounts data, and OECD National Account data files.
Unemployment rate	Interval-ratio variable. Unemployment refers to the share of	Data was extracted from The World Bank (2019) and is based

	the labor force that is without work but available for and seeking employment. The variable is measured in a percentage of the total labor force.	upon the International Labour Organization database (ILOSTAT).
Age dependency ratio (% of working-age population)	The ratio of dependents – people younger than 15 or older than 64 – to the working-age population (those ages 15-64). Data are shown as the proportion of dependents per 100 working-age population.	Data was extracted from The World Bank (2019) and is based upon United Nations Population Division's World Population Prospects (2017).
Urban population (% of total)	Interval-ratio variable. Urban population refers to people living in urban areas as defined by national statistical offices. The variable is measured in a percentage of the total population of a country.	Data was extracted from The World Bank (2019) and is based upon the United Nations Population Division, World Urbanization Prospects (2018).
Urban population growth (annual %)	Interval-ratio variable. Urban population refers to people living in urban areas as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects.	Data was extracted from The World Bank (2019) and is based upon the United Nations Population Division, World Urbanization Prospects (2018).

3.3.2 Statistical method of analysis

The method of analysis of this research consists of two consecutive parts which are statistical. In order to conduct the statistical analysis Stata was used. The first part consisted of descriptive statistics while in the second part a regression analysis was executed. As in many quantitative analyses (Healey, 2012) the descriptive statistics were used to delve deeper into the dataset being used – in trying to detect any anomalies, outhers and patterns in the dataset. Graphs and figures were constructed by using descriptive techniques as measures of central tendency and frequency distributions, in order to find patterns. Furthermore, the findings were placed – if possible – in the context of the research.

The second part of the analysis was primarily focused on the inferential statistics, in particular the regression analysis. An regression analysis is relevant if the researcher wants to predict the dependent variable or wishes to make causal inferences (Healey, 2012). Nonetheless, these two reasons are not mutually exclusive. In this research causal inferences was most important because we were interested in testing whether there is a direct relationship between outsourcing and deployability. To test on causal inferences it was necessary that the estimate is unbiased and efficient (Bryman, 2012; Healey, 2012). Starting

point in creating an unbiased and efficient estimate in this research was the Gauss-Markov theorem.

The Gauss-Markov theorem assumes that Ordinary Least Squares method gives unbiased and efficient estimates if certain assumptions are met. The first assumption is that there should be linearity between the dependent and independent variable. If there is no linearity between outsourcing and deployability it is still possible to use OLS by transforming the variables using logarithmic or quadratic transformation. Nonetheless, since the dependent variable and independent variable were both interval-ratio variables, OLS was the right way to go. However, if nonlinearity cannot be accommodated into OLS through transformation, there are several nonlinear estimation techniques to analyze the relationship like logit and probit (Allison, 1999). Besides, a probit analysis could tackle the issue of heteroscedasticity as well.

The third assumption is that the mean of the random error equals zero and for that reason not depends on any of the independent variables. In fact, this assumption is about potential biases in the analysis. In addition, issues like reverse causation – you assume that X causes Y, but in fact Y causes X – and specification error by including irrelevant variables or excluding relevant variables, should be avoided. Control variables should help in tackling these issues in bias. As mentioned before, the control variables were derived from theoretical groundwork on outsourcing and controls for the possible relationship between outsourcing and deployability. The involvement of control variables in this research made the analysis multivariate. In such analysis the effects of other variables (control variables) on the relationship between the dependent and independent variables, are observed (Healey, 2012). If the control variable has an effect, the relationship between outsourcing and deployability will change under the various conditions of the control variable (Healey, 2012).

In order to conduct the regression part of the analysis, multilevel regression analysis was used to analyze the dataset. The regression analysis was executed in Stata using its clustering functionality. This method produces similar results to a traditional multilevel regression model (Serricchio, Tsakatika & Quaglia, 2013). Multilevel regression analysis was necessary due to the fact that data of deployability (troops deployed and deployable forces) and defence expenditure on outsourcing were nested in the EU Member States. Each observation in the dataset represented a country in a single year. It is possible that observations regarding the number of troops deployed, deployable forces and defence

expenditure on outsourcing within an EU Member State are more similar than concerned observations between EU Member States. Failing to acknowledge this multilevel nature of the dataset would cause underestimation of standard errors and could affect the internal validity of this research. This multilevel regression method examines if there is a correlation between the independent and dependent variable controlled by various other variables – which are derived from the theoretical framework. In sum, this leads to the following two statistical equations:

$$TD_{st} = a_0 + \beta_1 O_{st} + B_2 C_{1gt} + \beta_3 C_{nst} + e_{st}$$

$$DF_{st} = a_0 + \beta_1 O_{st} + B_2 C_{1gt} + \beta_3 C_{nst} + e_{st}$$

TD are the average number of troops deployed by a EU Member State (s) in time (t) measured as a relative percentage of the total military personnel. DF are the deployable forces of an EU Member State (s) in time (t). The deployable forces are the number of troops which are structured, prepared and equipped for deployable operations. In addition, the deployable forces are also measured as a percentage of the total military personnel. According to the statistical equation the average number of troops deployed and the number of deployable forces are explained by the independent variable outsourcing (O). The amount of outsourcing expenditure varies from time (t) and EDA member (s). The control variable(s) were included in the equation with the letter C. Lastly, e_{st} is the residual in the statistical equation.

Since deployability consists of two indicators – the number of troops deployed and the deployable forces – it was essential that both indicators were included in the analysis. The exclusion of one indicator would cause errors and influenced the validity of the results. Thus, the inferential analysis contained the number of troops deployed as well as deployable forces.

§3.4 Validity and reliability

Using an existing dataset involved several advantages. First, it saved time and money (Bryman, 2012, p. 320). Besides, it is likely that you are working with high-quality data (Bryman, 2012, p. 313) – which strengthened the validity of the research. The extensive database helped to minimize any potential bias enhancing the internal validity and reliability of the research project in the process. This research was in particular interested in internal

validity – which relates to the question whether a conclusion that incorporates a causal relationship between two or more variables holds water (Bryman, 2012, p.47). This relationship was between outsourcing and deployability. To minimize potential bias in the causality, control variables were used in the analysis. These control variables were derived from academic literature which focused on the effects of outsourcing on government. Although control variables were used, threats – like unknown confounding factors – will remain to the internal validity in the research. Actually, the choice of research design is not that strong in testing causality, however, it is suitable in finding correlation. In testing whether outsourcing had an effect on the deployability of public military at all – the focus was very much on the possible relationship itself rather than causality. Nonetheless, it should be possible to make some nuanced conclusions on the causality in the end.

Regarding the reliability of the data it was taken into account that if there are issues with the dataset it will affect the credibility and trust of a nation state– which is undesirable for any EU member state. Furthermore, it would harm the reputation of the EDA due to the fact they are responsible for publicizing incorrect information. Considering these two possible incentives for producing correct information, this research project assumes – although there are some uncertainties – that the database consists of valid information.

§3.5 Limitations

There is a chance – although it is perhaps a slight one – of a lack in the validity of the data. Additionally, data on the capabilities of the defense apparatus of a nation – which is the case with deployability – could be sensitive information. Moreover, this dataset proved that it consists of sensitive information since there are multiple EU countries that kept their data on outsourcing and/or deployability classified. Since this research project worked with sensitive information and the information is transferred to the EDU by each EU member themselves – it must be taken into account that such information could be manipulated by a nation to disorientated or disinform (potential) enemies. In that case, it would affect the reliability of the research. Besides, if data of multiple EU Member States is missing – which is the case in this research – it could affect the external validity. In other words, it would create difficulties in generalizing the results beyond the research project. The analysis was at the national level – The EU Member States – , however, it is desirable to say something about the regional and EU level as well given the fact it is an EU database. Considering the

exclusion of Croatia, Hungary, Poland and Slovenia it was difficult to make generalized conclusions about Central and Eastern Europe in regard to outsourcing and deployability. With the exclusion of these four countries only Bulgaria, Czech Republic, Romania and Slovakia remained as part of Central and Eastern Europe – using the definition of EuroVac (2018). This was taken into account in making conclusions on regional level. Although six EU Member States did not provide their data to the EDA regarding deployability and/or outsourcing, it was still possible to make some nuanced conclusions on the deployability and outsourcing at European level – given the fact that 21 EU Member States were included in the analysis.

Chapter 4 Analysis

This chapter reports the results of the data analysis conducted as described in the methodological chapter. The results are presented in various tables and figures. Each table or figure is accurately discussed. Furthermore, the results are interpreted and placed in the context of the theoretical framework.

The analysis is structured into two different parts: descriptive statistics and inferential statistics. The descriptive statistics are used to find any patterns in the dataset. The second part of the analysis is concerned with the results of the inferential statistics. These results are divided into two different parts: number of troops deployed and deployable forces. Two multilevel regression analysis are used to gather the results of each part.

§4.1 Descriptive statistics

In the first part of the descriptive statistics I elaborate on the expenditure of outsourcing defence activities within the European Union. Subsequently, I delve deeper into the deployability variable. Furthermore, it is discussed to what extent the descriptive statistics of deployability and defence expenditure on outsourcing relate to one another.

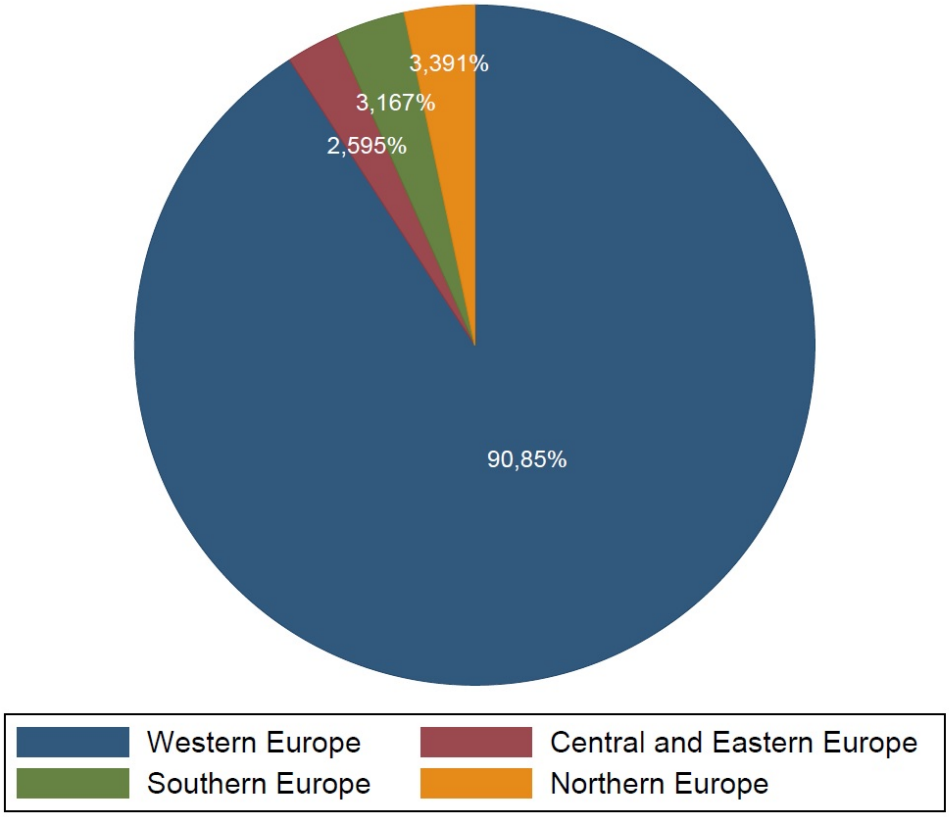
4.1.1 Expenditure on defence outsourcing

Figure 1 – which is found on the next page – gives a general overview of the defence expenditure on outsourcing within the European Union. The diagram shows the distribution of total amount of money spend on outsourcing defence activities in Europe over the years 2005 until 2014. In addition, the diagram is divided into four parts, each representing a region of Europe. The diagram is based upon the absolute expenditure on defence outsourcing.

According to figure 1, Western Europe is by far the highest spender on outsourcing defence activities. In addition, 90,85% of the total amount spend on outsourcing defence activities in the period 2005-2014 was by Western Europe. Furthermore, it should be taken into account this result is without the defence data of Germany – which is a great power in regard to the military domain. Thus, the share of Western Europe in regard to the absolute expenditure on outsourcing defence activities could be higher. However, relevant to mention is that defence budgets of Western European countries are often higher than the

rest of Europe – making it more obvious Western European countries could spend more on outsourcing defence activities. Therefore it is relevant to look at the relative numbers of expenditure on defence outsourcing. In addition, figure 2 shows the relative expenditure on defence outsourcing. The relative expenditure on defence outsourcing

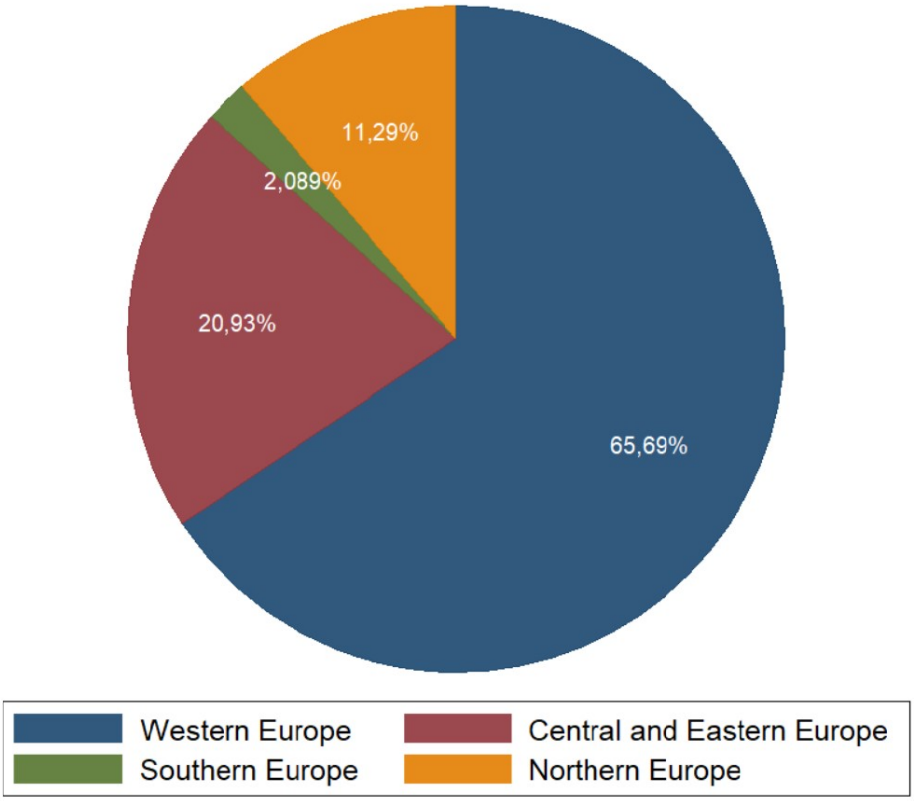
Figure 1 – Absolute defence expenditure on outsourcing



is the expenditure on defence outsourcing divided by the total expenditure on defence.

The relative percentages in figure 2 shows us that it is indeed important to look at relative numbers when comparing expenditure of regions on outsourcing defence activities. The share of Southern Europe and Central & Eastern Europe is greater compared to figure 1. The share of Central & Eastern Europe is interesting bearing in mind that several countries (Poland, Slovenia, Hungary and Croatia) within this region are excluded from the analysis. Table 2 gives a closer look to how the relative expenditure on defence outsourcing is distributed within Central & Eastern Europe. The N shows there was unfortunately not one country which possessed data on all years of the period 2005-2014. Notable are the results of Bulgaria and Romania. Both countries did not spend any money on outsourcing defence –

Figure 2 – Relative defence expenditure on outsourcing



activities in the period 2005-2014. Slovakia on the other hand, spend on average base 22,94% of its military expenditure on outsourcing defence activities. In addition, there was even a year in which Slovakia spend 47,47% of its military expenditure on outsourcing defence activities. Nonetheless, it seems difficult to claim that Central and Eastern Europe have a great share in expenditure on outsourcing since four countries are missing and two countries do not outsource defence activities at all. Table 3 shows if this issue occurs in Western Europe as well.

The relative expenditure on defence outsourcing (which is a percentage of the total expenditure on defence) within Western Europe is shown in table 3. As already mentioned, Germany is missing in the analysis due to classified data. Therefore, we do not know if Germany outsources defence activities. Nonetheless, we do know that all other countries within Western Europe outsources defence activities. Furthermore, all countries – except from Belgium and France – have data over the whole period 2005-2014.

Table 2 – Relative defence expenditure on outsourcing within Central & Eastern Europe (in % of total expenditure on defence activities)

	Mean	N	Max	Min
Bulgaria	0	8	0	0
Czech Republic	10,97	9	7,18	2,91
Romania	0	8	0	0
Slovakia	22,94	7	47,47	3,39

Table 3 – Relative defence expenditure on outsourcing within Western Europe (in % of total expenditure on defence activities)

	Mean	N	Max	Min
Austria	13,98	10	18,65	10,52
Belgium	5,84	6	7,18	5,17
France	3,0	6	4,32	1,90
Ireland	2,39	10	3,36	1,67
Luxembourg	38,06	10	55,48	17,22
Netherlands	1,18	10	2,63	0
United Kingdom	20,50	10	25,10	7,99

And according to table 3, during the period 2005-2014 there was only one country which did not spend money on defence outsourcing for at least one year: the Netherlands. In addition, the minimum of the Netherlands is zero, which implies there was no expenditure on defence outsourcing. Taking a closer look at table 3 is clear some countries in Western Europe outsource more than others in regard to the military. The United Kingdom (20,5%) and Luxembourg (38,06%) are leaders in outsourcing defence activities while France (3%), Ireland (2,39%), and the Netherlands (1,18%) have a small average percentage on outsourcing defence expenditure. Thus, it is evident that defence expenditure on outsourcing is not equally distributed between EU Member States within Western Europe. Nevertheless, this has no influence to the fact Western EU Member States seem to spend more money on outsourcing defence activities than the rest of the EU Member States. An explanation for these differences in defence expenditure on outsourcing could be derived from the theoretical framework. In academic literature it is argued that political color of the ruling majority influences the choice whether or not to outsource government activities (Hood, 1995; Elinder & Jordahl, 2013). In addition, right-wing parties are more eager to use outsourcing than left-wing parties (Elinder & Jordahl, 2013). Perhaps the ruling majority in Western EU Member States are often more right-wing than left-wing while the rest of the EU Member States are often more left-wing than right-wing.

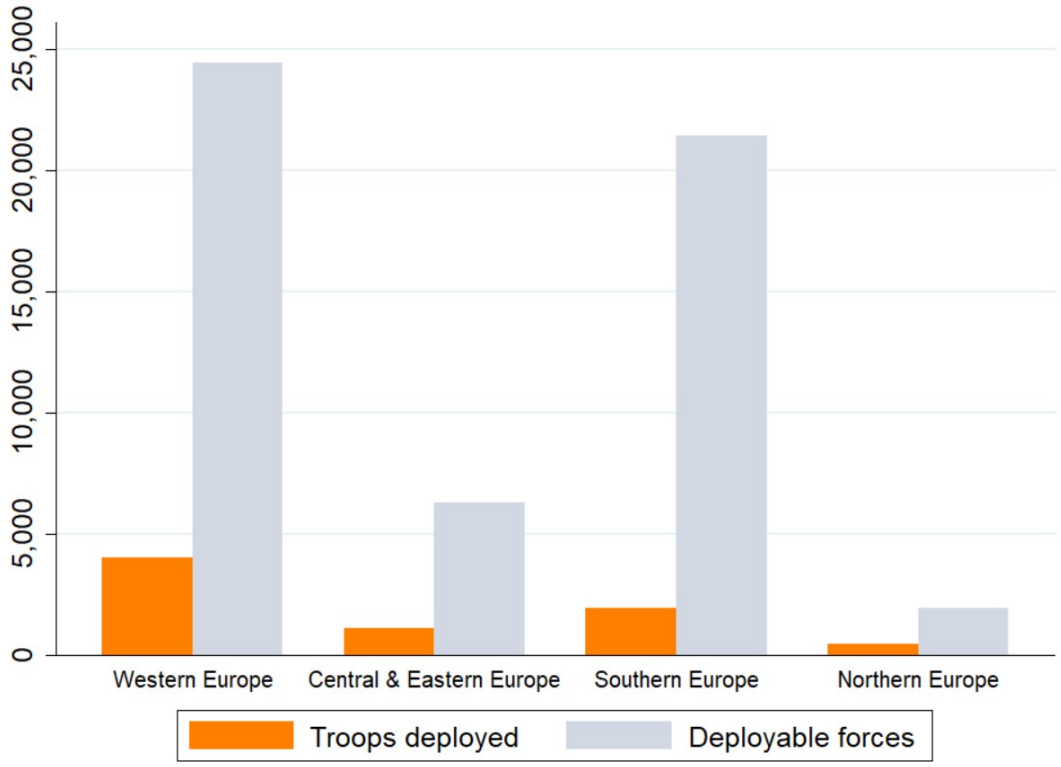
4.1.2 Deployability in detail

The bar chart (figure 3) shows the European absolute numbers of troops deployed and deployable forces (Y-axis) at a regional level (X-axis). The number of troops deployed and deployable forces are an average of the period 2005 until 2014. In regard to the deployable forces, Western and Southern Europe score twice as high than Northern and Central & Eastern Europe. Northern Europe is capable to deploy almost 2500 forces which is little compared to the nearly 25.000 deployable forces of Western Europe. Nonetheless, to make a better comparison it is important to look at the relative numbers of the troops deployed as well as the relative numbers of deployable forces since.

The relative numbers of deployable forces and troops deployed is both taken as a percentage of the total military personnel. Figure 4 shows these relative numbers at a regional level. Remarkable result in figure 4 is the degree of deployable forces compared to figure 3. Western Europe and Southern Europe might have more forces to deploy in absolute

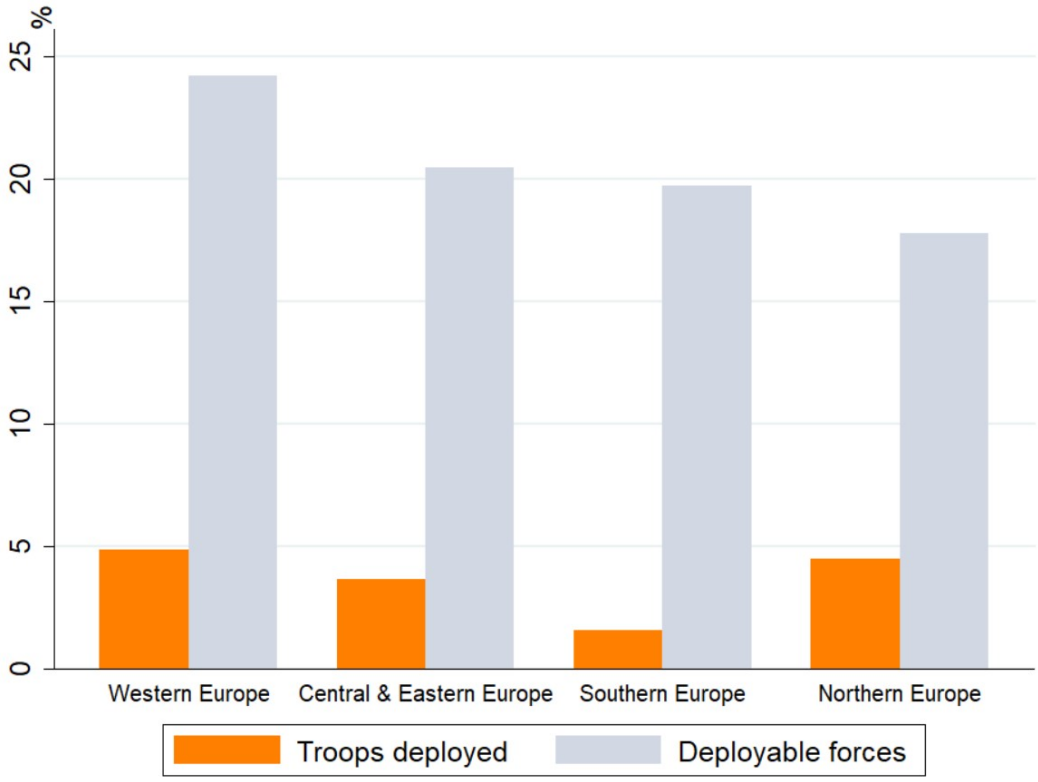
numbers, but in relative numbers Central & Eastern Europe and Northern Europe are not inferior to these two regions. There is also a difference between relative and absolute numbers in regard to the number of troops deployed. Figure 4 shows a more equal distribution of the number of troops deployed than figure 3. Nonetheless, there

Figure 3 – Absolute deployability of European regions



similarities between the figures. In addition, figure 4 shows that Western Europe scores highest on the relative number of deployable forces as well as the relative number of troops deployed. Over the period 2005-2014 Western Europe was on an average base able to deploy almost 25% of its total forces. Considering that expenditure on defence outsourcing in Western Europe is by far the highest of whole Europe and Western Europe score highest on deployability it might be that outsourcing correlates with deployability. Inferential statistics will help us to test this assumption. For now, it is too early to make such claims.

Figure 4 – Relative deployability of European regions



§4.2 Inferential statistics

The previous section – descriptive statistics – showed there might be a relationship between the defence expenditure on outsourcing and the deployability of a nation its army. In this subchapter, I delve deeper in this relationship by using regression analysis. This will allow us to draw conclusions based on variance between the 21 EU Member Countries in the dataset. For each of the two indicators that measures deployability two regression analysis are conducted. In case of the first regression analysis standard errors are robust, while in case of the second regression analysis the standard errors are adjusted for cluster/country. Adjusting for cluster/country-level provide us with similar results as compared to a traditional model multi-level regression analysis (Serricchio, Tsakatika & Quaglia, 2013). Adjusting for cluster/country-level is relevant because each observation in the dataset used, represents a country in a single year. In addition, the dataset consists of multiple observations which are characterized by this. By adjusting the standard errors for cluster/country at the country level analysis the results have greater validity due to the fact

each observation in the analysis represents a country in a single year.

This subchapter is divided into two different sections: inferential statistics on troops deployed and inferential statistics on deployable forces. Each part involves one table which contains the results of two regression analysis. I will try to interpret and reflect upon these results by using the theoretical framework – in particular the working hypothesis.

4.2.1 Inferential statistics troops deployed

Table 4 (below) shows the results of the regression analysis between the dependent, independent and control variables measured at the country level. The number of observations is 177. Considering the number of observations is above the thumb rule of N>100, it is possible to make generalized assumptions on the outcome of the analysis. In fact, all analysis (see also table 4 and 5) contain more than 100 observations. The explanatory power (R^2) of both models is weak, 0,162. The R^2 coefficient, 0,162 implies 16,2% of the variances in the variable troops deployed is explained by the models. In regard to the constant, there is no significance. The coefficient of the constant theoretically implies that if the independent and control variables equals zero, the number of troops deployed is 1,907. Nevertheless, there is no significance in this according to the models.

Delving deeper into the results of the variables, we see few significance in both models. There is solely significance in the variables *defence expenditure on outsourcing* and *unemployment rate*. First, there is a strong significance in the OLS robust model with the independent variable *defence expenditure on outsourcing* 0,042($p<0,05$ in both instances). The positive correlation coefficient shows there is a relationship between defence expenditure outsourcing and the number of troops deployed. In addition, the coefficient implies that more expenditure on outsourcing defence activities increases the number of troops deployed. This result corresponds with the assumption that outsourcing increases deployability of the public military, derived from the theoretical framework. However, when adjusting for cluster/country-level the independent variable *defence expenditure on outsourcing* is insignificant. This insignificant result makes it more difficult to argue that outsourcing affects deployability.

In regard to the control variables there is only one significant – the unemployment rate. The unemployment rate shows strong significance -0,138($p<0,01$) in both models. The

negative coefficient implies that an increase in unemployment rate would reduce the number of troops deployed. Academic literature claimed that economic factors as GDP per capita and unemployment have effect on government spending and therefore could influence the amount of money spend on outsourcing. Thus economic factors could influence the possible effect outsourcing has on deployability. This theoretical assumption may be partly true due to the significance of the unemployment rate, on the other hand, there was no significance found concerning GDP per capita. Therefore, it is too early to draw any conclusions on the impact of economic factors to the effect of outsourcing on deployability.

Table 4 – Inferential analysis troops deployed

	Dependent variable: troops deployed	
Independent variables	OLS (SE: robust)	OLS (SE: Cluster)
Defence expenditure on outsourcing	0,042** (0,187)	0,042 (0,040)
GDP per capita	2,590 (0,000)	2,590 (0,000)
Unemployment rate (%)	-0,138*** (0,029)	-0,138*** (0,050)
Age dependency ratio	0,078 (0,050)	0,078 (0,110)
Urban population	-0,0133 (0,016)	-0,013 (0,039)
Urban population growth (%)	-0,093 (0,219)	-0,093 (0,450)
Constant	1,907 (2,272)	1,907 (5,088)
R^2	0,162	0,162
Observations	177	177

*Note: * = p<0,1 ** = p<0,05 *** = p<0,01*

As for the demographic control variables *age dependency ratio*, *urban population* and *urban population growth* no significance was found in neither models. Moreover, the age dependency ratio has no significant effect at all throughout the analysis – taking into

account the results of table 4 and 5. In the analysis with deployable forces, the age dependency ratio was insignificant too. Thus, it seems unlikely that age dependency correlates with deployability.

4.2.2 Inferential statistics deployable forces

In the inferential statistics with deployable forces both models show a R^2 of 0,353. Compared to the R^2 in the previous models (0,162) the explanatory power is stronger. 35,3% of the variances in the variable deployable forces is explained by the models. Interesting to discuss is the negative coefficient of the constant – which is strongly significant in the OLS robust model -32,559($p<0,01$). It assumes that if the independent and control variables equals zero, the number of deployable forces is negative. In practice, it would be impossible to have a negative number of deployable forces. Nonetheless, the negative coefficient could imply that certain circumstances are necessary to deploy forces. Think for instance of money and manpower. Without money it is impossible to pay manpower and without manpower it is hard to deploy a force. More generally, these means – money and manpower – are essential to have a military force in the first place. However, when adjusting for country level there is no significance found on the constant – making the interpretation and generalization on the constant weaker.

In regard to the independent variable *defence expenditure on outsourcing* in table 5, a strong significance is found 0,305($p<0,01$) in the OLS robust model. The positive coefficient of the independent variable assumes that an increase in the defence expenditure on outsourcing would lead to more deployable forces. In addition, this positive effect is in line with the theoretical assumption that outsourcing increases deployability. However, equally as in the analysis with troops deployed – the independent variable is not significant when adjusting for cluster/country level.

In comparison to the inferential statistics on troops deployed, there are some interesting results to elaborate on in regard to the control variables. In the regression analysis with the number of troops deployed as the dependent variable the unemployment rate was significant at both instances (cluster functionality and robust standard error). However, the unemployment rate is not significant on deployable forces in the cluster model. While unemployment rate is not significant in the deployable forces analysis, GDP per capita is significant -0,0003($p<0,01$). Even when adjusting for country/cluster level GDP

per capita remains significant -0,0003(p<0,05). Nevertheless, the coefficient is GDP per capita is very small which makes the effect on deployable forces little. Furthermore, strong significant correlation is found on some demographic control variables. The variable urban population is strongly significant in both models 0,562(p<0,01). And the variable urban population growth is significant at a robust standard error 3,624(p<0,01) as well as OLS cluster 3,624(p<0,05). Considering the positive coefficients and significances on the control variables urban population and urban population growth, it might well be the case urban population has a positive effect on deployable forces. In addition, a more urbanized EU Member State has more deployable forces then a less urbanized EU Member State.

Table 5 – Inferential analysis Deployable forces

	Dependent variable: Deployable forces	
Independent variables	OLS (SE: robust)	OLS (SE: Cluster)
Defence expenditure on outsourcing	0,305*** (0,108)	0,305 (0,239)
GDP per Capita	-0,0003*** (0,000)	-0,0003** (0,000)
Unemployment rate (%)	0,135 (0,165)	0,135 (0,355)
Age dependency ratio	0,360 (0,245)	0,360 (0,594)
Urban population	0,562*** (0,073)	0,562*** (0,172)
Urban population growth (%)	3,624*** (0,744)	3,624** (1,388)
Constant	-32,559*** (10,952)	-32,559 (26,244)
R^2	0,353	0,353
Observations	176	176

*Note: * = p<0,1 ** = p<0,05 *** = p<0,01*

Chapter 5 Conclusion/discussion

In this chapter I draw my conclusions to this research by answering the research question '*what is the relationship between the amount of military expenditures in outsourcing and the deployability of the public military in the European Union?'*. Based on the results from the analysis the formulated working hypothesis derived from the theoretical framework shall be accepted or rejected. Furthermore, in regard to the theoretical framework I will discuss the several different theoretical assumptions raised and tested in this research. Finally, I shall reflect upon the research in the discussion paragraph.

§5.1 Conclusion

The primary objective was to test the following hypothesis: 'The higher the military expenditure on outsourcing, the higher the deployability of public military'. The hypothesis was formulated following the notion derived from the theoretical framework that markets work more efficient than public institutions (Hood, 1991; Alonso et al., 2015). Due to elements such as competition and private ownership on the market, private firms have high-powered incentives to reduce costs and to innovate. These theoretical claims were derived from the managerial doctrine of New Public Management which claims that markets work more efficient than the public sector (Hood, 1991;1995). It was assumed these theoretical assumptions could be extended to the private military sector. In addition, the defense department of a nation is a public institute and therefore part of the public sector. Being part of the public sector implies efficiency losses compared to the private sector (Hood, 1991). Furthermore, there is a large private military industry in which governments are a big consumer. It might well be the case governments choose to hire private military firms due to their efficiency gains. Considering the efficiency gains of using private military firms it was assumed that outsourcing might have a positive effect on the productivity of the public military. Anyhow, it is interesting to test whether economical assumptions on outsourcing in regard to the military holds water. Deployability was chosen to measure the potential positive effects of outsourcing to the military – in particular to what extent outsourcing would improve the effectiveness of a nation's military.

Following the results of this research the working hypothesis should be accepted or rejected. The inferential analyses showed a significant correlation in OLS robust standard error models between defence expenditure on outsourcing and troops deployed as well as

defence expenditure on outsourcing and deployable forces. In addition, it is hard to ignore the robust standard error significances of defence expenditure on outsourcing in regard to the indicators of deployability (troops deployed and deployable forces). These results – 0,042($p<0,05$) and 0,305($p<0,01$) – suggests that outsourcing increases the number of troops deployed and deployable forces in an EU Member State. In addition, the aforementioned significant results assumed that outsourcing increases the deployability of an EU Member State its army. The increase in deployability is an improvement to the military effectiveness of a nation. However, by adjusting for country/cluster level, the relationship between the indicators of deployability (troops deployed and deployable forces) and outsourcing was not found significant. It might well be the case that correlations in OLS robust models were caused by the variances of EU Member States. Therefore, there is a difficulty in accepting the working hypothesis '*the higher the military expenditure on outsourcing, the higher the deployability of public military'.*

The research showed that if there is a relationship at all between outsourcing and deployability, then its direction is rather positive instead of negative. In addition, outsourcing could increase the deployability of public military – bearing in mind that the OLS robust standard error models showed a positive effect of outsourcing on the number of troops deployed and deployable forces. Nevertheless, I reiterate the comment that correlation in OLS robust standard error models might be caused by the variances of EU Member States. Therefore, the working hypothesis is rejected.

Rejection of the hypothesis could be explained by academic literature on transaction cost theory. The problem of asymmetric information occurs if government outsources defence activities to private agents. To avoid opportunistic behavior of the private agent, a contract is necessary (Hazeu, 2007). Besides, it is relevant to monitor whether the private agent complies to the contract. Monitoring these contracts is time-consuming and requires manpower (Hazeu, 2007). Thus, on the one hand government outsources defence activities which reduces the number of soldiers but on the other hand government due to outsourcing government needs people to monitor the contract with the private agent. Furthermore, the military domain is complex and full of uncertainties. Therefore, it is difficult to oversee all the possible decisions or options of an agent – let alone the consequences of each decision. Besides, it is important to realize there is a difficulty in banning these uncertainties and open ends in a contract between agent and client (da Conceição da Costa Marques, 2016). Trying

to oversee all decisions and its consequences is costly and lead to high (monitoring) transaction costs (Hazeu, 2007). In addition, it is possible that the costs of monitoring affects the potential positive effect outsourcing has on deployability.

In the statistical analyses GDP *per capita* and the unemployment rate were used to control for underlying economic trends while age and urbanization were used to control for the effect of demographics and economies of scale. Unemployment and GDP per capita were both significant. Unemployment was significant -0,138($p<0,01$) in the models regarding number of troops deployed while GDP per capita was significant -0,0003($p<0,01$) & - 0,0003($p<0,05$) in the models regarding deployable forces. There was also significance in the demographic variables. These significances were solely found regarding the models in which deployable forces was the dependent variable. Urban population was – even by adjusting for country-level – strongly significant with 0,562($p<0,01$) while urban population growth was significant with 3,624($p<0,05$) adjusted for country level. Thus, it seemed relevant to acknowledge that economic and demographic trends might have effect on deployability.

The main research question of this research was formulated as followed: '*what is the relationship between the amount of military expenditure in outsourcing and the deployability of the public military in the European Union?*'. The hypothesis 'the higher the military expenditure on outsourcing, the higher the deployability of public military' was related to the idea using private military (outsourcing) would cause efficiency gains to governments. This thought was based upon the theoretical argument that private firms have incentives to work more efficient and effectively than public institutions (Hood, 1991; Alonso et al., 2015). Although the results showed the use of private military not necessarily improves military effectiveness it is important to say that the use of private military is not necessarily an efficiency waste. There is a possibility that private military causes efficiency gains which are beyond the scope of this research.

§5.2 Discussion

The results on outsourcing and deployability are not surprising considering the transaction cost theory. Besides, the academic literature emphasizes several disadvantages to outsourcing which might explain why outsourcing is unable to increase government's military effectiveness. Due to outsourcing, a client will become less able to control the

contractor (Alonso et al., 2015; McCarthy & Anagnostou, 2004). And a client is bound to the contract – which makes the client unable to respond on new unforeseen circumstances (McCarthy & Anagnostou, 2004). These consequences of outsourcing – being unable to control your own army and unable to respond on new unforeseen circumstances – are perhaps too risky for a government. Thus government's decision to outsource might not be driven by reduction consideration but is driven by several other advantages of outsourcing. In addition, perhaps a reason to outsource military activities is the mental consequences of military deployment. The deployment of military involves mental illness after deployment to some soldiers (Asbury & Martin, 2013; Hoge et al., 2006; Harvey et al., 2012). By outsourcing military missions, government outsources the problem of mental consequences to the contractor. Furthermore, political motives to outsourcing should not be underestimated. Outsourcing is to some a perfect manner to get rid of a worrisome department or to avoid democratic accountability (Belcourt, 2006). In addition, democratic accountability often slows down the decision-making processes (Taylor, 2018) – which is sometimes undesirable in the military domain. However, there are non-political incentives to outsourcing as well. Outsourcing might give access to new technology and expertise. Furthermore, it could increase the flexibility of a government (Abraham & Talyor, 1993; Belcourt, 2006; Hood, 1991).

In terms of social relevance, there are multiple implications to the use of private military (Singer, 2001; 2005; Heinecken, 2014; Machairas, 2014).The aim of the social relevance was to better understand why states outsource military activities, even if there are multiple objections to the use of private force. In this research and in other academic literature it was argued that private actors lack a socially acceptable cause for participating in an armed conflict. Furthermore, private military lack legitimacy and transparency. Although there are multiple objections to outsourcing military activities (and therefore to the use of private military) governments still decide to hire private military companies. It is often mentioned that outsourcing increases efficiency and effectiveness. It was assumed that due to the efficiency benefits of private firms compared to public institutions, outsourcing would increase deployability and thereby improves military effectiveness. However, the results of this research showed it is difficult to make such claims. Nonetheless, the results contribute to the social relevance of the research. It was an attempt to better understand why states outsource military activities and at the same time create more

awareness to the (dis)advantages of private military. It could be argued that an increase in deployability might not be a relevant factor in the decision-making process of governments in regard to outsourcing.

In terms of academic relevance, this research tested whether there is a relationship between outsourcing and deployability. In fact, aim of the research was theory testing by the use of statistical analyses. The results show the idea outsourcing causes efficiency gains to public sector is at the very least in need of verification and clarification. This research contributed to that end by showing outsourcing not necessarily improves military effectiveness of a nation. Furthermore, the statistical method used in this research regarding the relationship between outsourcing and public military had not been used before. Eventually, it is more the reason the result of this research is an interesting contribution to academic literature on private military.

§5.3 Limitations

In this paragraph the limitations of the research are discussed. Due to these limitations it is difficult to make generalized conclusions in regard to the relationship between outsourcing and deployability and to the effects of outsourcing to the military in general. To a certain extend the limitations were covered in the methodological chapter, however, it is still relevant to mention. Furthermore, I shall reflect upon the academic and social relevance to the research. Finally, I will formulate recommendations and potential pathways for future research.

The research was based on existing data. The dataset was retrieved from a governmental institution, the European Defence Agency. The extensiveness of the data allowed for a relative high degree of validity and generalization. This degree would not have been possible if the data would have been collected by the researcher. In addition, there was not enough time and financial constraints to make this a possibility anyhow. However, the downside is that the research was limited by the constraints already present in the data being used. The research focused on 21 EU Member States due to the fact there was a lack of data concerning the other 6 EU Member States. The 6 EU Member States excluded from the analysis were: Germany, Croatia, Hungary, Malta, Poland and Slovenia. Considering the exclusion of Croatia, Hungary, Poland and Slovenia it was more difficult to make generalized conclusions about Central and Eastern Europe. These Member States represent 50% of the

cases concerning Central and Eastern Europe. Furthermore, the absence of Germany in the analysis is a difficulty in making generalized assumptions on outsourcing and deployability in Western Europe. Especially bearing in mind that Germany possesses one of the largest armies in Europe. Nevertheless, some EU Member States – like Germany – chose to keep their military data classified. This may have to do with the sensitivity of information. Nonetheless it was assumed that even without 6 EU Member States, it should still be possible to make generalized conclusions in regard to the relationship between outsourcing and deployability.

However, the data of the remained 21 EU Member States possessed flaws too. There were multiple EU Member States which did not possess data over the entire period 2005-2014. Therefore, it was too difficult to detect trends or patterns over the entire period.

In regard to the control variables there is room for improvement. The economic (GDP per capita and unemployment rate) and demographic variables (age and urbanization) were taken into the analysis as control variables. Thus, it was assumed these variables might have a relationship with deployability. However, there is a reason to believe these economic and demographic variables have an effect to outsourcing as well. Think for instance of the idea that the degree of GDP per Capita correlates with the spending pattern of a government. In addition if GDP per capita is high, then government could earn more taxes. By collecting more taxes, government could spend more money on outsourcing activities. In other words, if the used control variables influence both dependant and independent variables, then further research should examine the possibilities of an interaction effect. In an interaction effect the control variable affects both independent and dependent variable.

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