# **The Public-Private Myth**

A red tape comparison between government organisation employees

and their private contractors

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# ABSTRACT

There is a broad consensus in the red tape literature that employees from public organisations perceive more red tape than employees from private organisations. The current study investigates if this public-private distinction also holds when government organisation employees are compared with their private consultancy contractors. Despite the large amount of red tape literature and the growing popularity of outsourcing in the public sector, only one other study has addressed red tape in contracting relationships. This study therefore seeks to fill the research gap with the hypothesis that isomorphism processes and similar levels of publicness (defined as dependency on political authorities) reduce red tape differences between government organisations and their private contractors. To test this hypothesis, a self-made survey was distributed amongst policy officers from government organisations and policy consultants from private organisations. This survey was used to gain insight into perceptions of organisational red tape, personnel red tape, contracting red tape, and tender red tape. The results show that red tape does not differ significantly between government organisations and their private consultancy contractors.

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# **1. INTRODUCTION**

In the 1996 State of the Union address, Bill Clinton declared the end of 'big government' and implicitly announced the start of the 'government by contract' era.<sup>1</sup> Even products and services that could be characterised as *pure public goods* became subject to privatisation and contracting (Bozeman & Feeney, 2011). The political scientist Levi-Faur (2005) recognised that these changes in the governance of capitalistic economies had an effect on the relationship between capitalism and regulation. In the new order of *regulatory capitalism*, the state remains responsible for steering the economy while business increasingly takes over the functions of service provision and technological innovation. This new division is accompanied by restructuring of businesses and increased regulation. These state-business relationships are formalised and subject to the proliferation of new technologies. Moreover, globalisation has made states as well as businesses subject to both national and international regulation.

During the past two decades, public administration research has taken a growing interest in understanding the concept of contracting (Bozeman & Feeney, 2011). As government organisations became more experienced with contracting out goods and services, public administration scholars began investigating the way in which contracting affected nearly all aspects of public management, such as human resources (e.g. Hays & Sowa, 2006; Fernandez, Rainey & Lowman, 2006), managerial capacity (e.g. Brown & Potoski, 2003), policy processes and implementation (e.g. Hall & O'Toole, 2000), efficiency, effectiveness, and service quality (e.g. Provan, Isett & Milward, 2004; Sclar, 2000). These scholars discovered a few management reforms that were adopted by governments and were related to the contracting trend, which can be broadly defined as the New Public Management (NPM) philosophy (e.g. Hood, 1995). This philosophy is characterised by the application of private sector management methods in the public sector. Values of performance-based management, including efficiency and effectiveness, consequently became more and more important.

The study of *red tape* is one of the many fields affected by the 'government by contract' movement (Bozeman & Feeney, 2011). Red tape can broadly be defined as burdensome rules, procedures, and regulations that are ineffective with respect to the organisation's objectives (Bozeman, 1993, p.83). There is a broad consensus among scholars in this field that public

<sup>&</sup>lt;sup>1</sup> Full transcript of State of the Union 1996 can be accessed at: http://www.presidency.ucsb.edu/ws/?pid=53091

organisations experience more red tape than private organisations (e.g. Bretschneider, 1990; Bozeman & Feeney, 2009; Lan & Rainey, 1992; Pandey & Kingsley, 2000; Rainey, 1983; Rainey, Pandey, & Bozeman, 1995). These differences can be explained by using the property right theory from the 1970s. The economists Alchian and Demtz (1973, 1972) state that owners or shareholders of private organisations pursue a profit maximisation strategy. These shareholders therefore aim to steer managers towards the desired profit maximising behaviour by giving them financial incentives. Public organisations, however, are owned by members of political communities, who are represented by political authorities. These owners not only value financial performances, but also non-financial ones, such as accountability, fairness, and quality. Hence, using financial incentives is not the only means to achieve this desired behaviour from managers. Non-financial performances are enforced, at least theoretically, by extended rules.

The ethnologist Kaufman (1977) added to this argument by pointing out that rules and procedures are necessary in government organisations in order to have citizens protected by and from the government. Rules and procedures ensure values, such as transparency, accountability, and protection of rights, but also results in "great stacks of official paper and bewildering procedural mazes" (Kaufman, 1977, p.29). While these rules and procedures are beneficial for citizens, they are likely to be perceived as burdensome by government employees. Private organisations have less responsibility in serving the public interest and are, therefore, unconstrained by similar rules and procedures.

Although there is a broad scientific agreement about the public-private differences in red tape perception, there is also a theoretically grounded reason to anticipate different result when comparing government organisations with their private contractors. Private contractors are often heavily dependent on the government as their (main) customer. Institutional theorists and organisational scientists have studied these dependency relations between organisations and found evidence for processes of homogenisation, which they call *isomorphism* (e.g. Pfeffer & Salancik, 1978; DiMaggio & Powell, 1983; Verbruggen & Milis, 2011). The resource dependency explanation of isomorphism states that an organisation that is heavily dependent on a stakeholder, brings its structure in line with the demands of this stakeholder. Government organisations value accountability, protection of rights, and transparency (e.g. Kaufman, 1977; Alchian and Demtz, 1973, 1972) and prefer to cooperate with organisations with similar standards and rules (Wong, Holt & Cooper, 2010). The contractor could meet these demands by adopting the government's

rules, procedures, and regulations that ensure these public values. Processes of bureaucratisation could, therefore, be the result of making the organisation more similar instead of making it more efficient (DiMaggio & Powell, 1983). This is an example of *rule-inception* red tape, a concept introduced by Bozeman (1993) to specify the origins of red tape. In contrast to rule-evolved red tape, which involves rules that transformed into red tape, rule-inception red tape consists of rules that are dysfunctional at their origin.

Another theoretical argument for comparing government organisations with their private contractors, can be found in the *publicness puzzle*: should the degree of publicness be operationalised by legal status or by influence (Bozeman & Bretschneider, 1994)? While the core perspective involves the belief that there are inherent differences between public and private organisations that are captured in a simple distinction in legal status, the dimensional approach supposes that the publicness of an organisation depends on the extent to which an externally imposed political authority affects them. Since private contractors and government organisations are both heavily dependent on political authorities, both can be categorised as having a high degree of *publicness* following the dimensional approach. Bozeman and Loveless (1987) as well as Bozeman, Reed, and Scott (1992) found strong evidence for the effect of political influence on red tape perceptions.

It is reasonable to expect that these isomorphism processes and similarities in publicness levels reduce red tape differences between government organisations and their private contractors. However, it still remains to be studied if the aforementioned public-private red tape differences also hold true for private contractors that are heavily dependent on the government. The aim of this study is therefore to contribute to this branch of literature by examining the red tape differences between government organisations and their contracting partners. The research question is as follows:

**RQ:** *"To what extent do red tape perceptions differ between government organisation employees and their private contractors?"* 

By choosing to investigate red tape *perceptions* instead of objective red tape, this study builds on the branch of research that recognises the difficulty in obtaining objective measures regarding the amount of red tape within or between organisations (e.g. Kaufman, 1977; Rosenfeld, 1984; Pandey

& Scott, 2002; Bozeman & Feeney, 2011). This focus on individualistic perceptions was introduced by Kaufman (1977) and followed by many others. Following this approach, red tape is "best accounted for by the meaning ascribed among those who interact with and are affected by the rules and procedures" (Scott & Pandey, 2005, p. 166).

#### **1.1 Relevance**

Public administration research focuses almost exclusively on organisational red tape instead of conducting research with a multiple-organisation or stakeholder view of red tape. While organisational red tape focuses on red tape perceptions of the single organisation, stakeholder red tape recognises that rules and regulations can have very different meanings and impacts for different stakeholders (Bozeman & Feeney, 2011). The lack of research into stakeholder red tape is somewhat surprising, since organisational theorists introduced this stakeholder view as early as the 1960s with the contingency theory (e.g. Thompson, 1967; Lawrence & Lorsch, 1967). This theory states that the best way to organise a corporation not only depends on the internal situation but also on the external environment. This view was widely disseminated in the 1970s and organisational scientists started to widen their scope by using an open system perspective<sup>2</sup> when investigating organisations. Red tape scholars still seem to lag behind on these developments, since they mainly investigate organisations in isolation. This *closed system* focus on organisational red tape excludes the possibility that rules and procedures may not be perceived as red tape by the employees of the organisation of interest, but could be seen as red tape by focal stakeholders. The current study seeks to make a contribution to the stakeholder red tape literature by studying red tap in contracting relationships.

Despite the large amount of red tape literature and growing popularity of outsourcing in the public sector, only one other study has addressed red tape in contracting relationships. This study, conducted by public management scholars Feeney and Bozeman (2009), examined perceived differences in contracting red tape and organisational red tape between private consultants and public managers working for the Georgia Department of Transportation (GDOT) in 2007. The weak element of this study is that they included all the private consultants who carried out an assignment for the GDOT at that time without adhering to the resource dependency of their consulting firm on the government. If the government was simply a small customer for the

<sup>&</sup>lt;sup>2</sup> The organisation is not viewed in isolation but in relation to its specific environment (Scott, 2003)

consulting firm, the resource dependency model does not apply. This is probably the reason why they found evidence for the general scientific agreement that private organisations perceive less red tape than public organisations.

The current study is - on a number of aspects - distinctive from the study by Feeney and Bozeman (2009). First, the contracting firm included in this study works almost exclusively for government organisations. This created the opportunity to test if the resource dependency model affected the red tape differences between public and private organisations (e.g. Pfeffer & Salancik, 1978; Zucker, 1987). Second, the distinction is made between *tender* red tape and *contracting* red tape. Red tape in contracting consists of rules, procedures, and regulations in the relationship between contracting partners that remain in force and entail a compliance burden, but make no contribution to the objectives valued by the contracting partners. Tender red tape has never been used theoretically or empirically before; the concept refers to red tape associated with the phase prior to the cooperation between contracting partners. Rules, procedures, and regulations could burden the government's efforts to choose a contracting partner and could hinder potential contracting partners when convincing the government of their suitability. This distinction makes it possible to specify where the red tape in contracting comes from: either the execution of the contract itself or the pre-contracting tender phase. Third, the current study not only tests for contracting red tape, but also includes *organisational* red tape, which originates internally and is associated with the content of work, and *personnel* red tape, which is associated with burdensome rules in personnel systems. This enabled the study to specify the origins of the red tape differences with greater accuracy. These distinctive features together subsequently lead to a more detailed description of red tape differences between government organisations and their contracting partners.

The practical relevance is straightforward. Red tape results in, as Bozeman (2000) noted, a waste of organisational resources which draws employees away from the accomplishment of legitimate organisational objectives and imposes significant costs on the organisation. One of the reasons to privatise or outsource certain government tasks is because the private sector is assumed to be less constrained by red tape. If red tape perceptions are not significantly different between government organisations and their contractors who depend on them, this argument is invalid and it is recommended for policy makers to rethink privatisation decisions. Given the growth of

outsourcing in the public sector, it is also important to establish the possible constraints in the relationship between government organisations and their private contractors.

#### **1.2 CONTEXTUAL FOCUS**

The current study focuses on *Dutch* government organisations and their private *consultancy* contracting partners. Social scientists agree that respondents report their views based on (among other things) the context in which they operate (Bozeman & Feeney, 2011). It is, therefore, important to elaborate on the specific context in which this study is conducted. Since the current study falls within the research domain of *red tape*, the rules, procedures, and regulations associated with Dutch government contracting are discussed briefly below.

All Dutch government organisations have to comply with the ARVODI (Algemene Rijksvoorwaarden voor het verstrekken van opdrachten tot het verrichten van diensten<sup>3</sup>) law when they decide to delegate an assignment to the private sector. If the project is executed for an amount higher than the threshold value of  $\notin$ 150,000, government organisations have to run the project through a public tender<sup>4</sup>. This implies that the tender procedure is open on equal terms to all interested natural and legal persons.

The *consultancy* organisation that wishes to participate in the tender has to supply (at minimum) a budget plan, references, the executers' CVs, a declaration of honour, an action plan, and some administrative documents. An assessment commission from the government organisation is then obliged to examine the registrants according to the EMVI (economisch meest voordelige inschrijving<sup>5</sup>) principle<sup>6</sup>. This is a measure of price-quality ratio calculated according to a formula established by law. The members of the assessment committee must rate the quality of the proposal independently without knowing the financial plan. The price and quality assessments together lead to an EMVI score. The organisation with the highest EMVI score wins the tender and may execute the project. The duration of the tender phase differs but on average, this takes about six weeks.

Nonetheless, the current study does not focus on organisations but on *employees*. Red tape studies usually compare private and public managers (e.g. Pandey & Kingsley, 2000; Pandey & Bozeman, 1995). However, the government organisation employees involved in consultancy

<sup>&</sup>lt;sup>3</sup> Loosely translated: General Government conditions for the provision of assignments for the provision of services.

<sup>&</sup>lt;sup>4</sup> This information was obtained from an interview with a tender expert and from a law analysis: Appendix 2 & Appendix 3.

<sup>&</sup>lt;sup>5</sup> Loosely translated: economically most advantageous tender

<sup>&</sup>lt;sup>6</sup> See: Appendix 3.

contracting are usually *policy officers* from government organisations who delegate research or advise projects to *policy consultants*. Policy officers and policy consultants belong to the same occupational group, have similar educational backgrounds, and are involved in the same networks. What distinguishes them the most from each other is that they are active in different sectors. The decision was consequently made to focus the current study on public-private comparisons between policy officers and policy consultants.

# **2. THEORY**

This section outlines the theoretical framework that was used to provide a tentative answer to the research question stated above. The first part of this theoretical framework elaborates on the main definitions of the relevant red tape dimensions included in the current study. Following from this, the current study theorises about the differences in perception between government organisation employees and private contractors for all the relevant red tape dimensions. Hypotheses are subsequently formulated that logically follow from these theories and represent the expected answers on the research question.

# 2.1 DEFINITIONS

Two red tape concepts have dominated post-90s red tape research theory: *organisational* red tape and *stakeholder* red tape (Bozeman & Feeney, 2011). Researchers generally take an organisational perspective on red tape, which is usually defined as: "*Rules, regulations and procedures that remain in force and entail a compliance burden, but do not meet the organisation's functional objective for the rule*" (Bozeman, 2000, p. 12). This perspective takes the legitimate purposes and objectives of a *single* organisation into account. One of the important features of this definition is that red tape cannot be measured apart from the respondent's knowledge of the objectives that the rules seek to serve (Bozeman & Feeney, 2011). Red tape is not about the number of rules,<sup>7</sup> but about the effectiveness of these rules.

The organisational red tape definition is an umbrella definition of *all* the relevant rules, procedures, and regulations that are perceived as red tape by the focal organisation. This is probably a suitable measure when studying organisations on only one red tape dimension, but it is not distinct enough when including a plurality of red tape dimensions in the study. This general definition of

<sup>&</sup>lt;sup>7</sup> This is part of the 'formalization' research area.

red tape stands in conflict with personnel and contracting red tape since they too fall under the umbrella of organisational red tape when it is defined in this way. It was therefore decided to adjust this general definition by adding the following distinctions: first, that organisational red tape *originates* within the organisation (to distinguish from contracting red tape); and second, that organisational red tape is associated with *the content of the work* (to distinguish from personnel red tape). The new definition of organisational red tape is now defined by the researcher as *rules, regulations, and procedures that originate within the organisation, are associated with the content of the work, remain in force, and entail a compliance burden but do not meet the organisation's functional objective for the rule.* 

A potential drawback of the general *organisational* red tape definition is that it fails to note that rules can have very different meanings and impacts for different stakeholders. Some researchers have therefore taken up the challenge to conduct research with a multi-organisation view of red tape. Bozeman (2000) defines this stakeholder red tape as "*rules [regulations, and procedures]* that remain in force and entail a compliance burden for the organisation, but make no contribution to objectives valued by a focal stakeholder" (p. 83). The more stakeholders one includes, the greater the problem becomes to sort out stakeholder red tape. Government organisations in particular deal with a large number of stakeholders. Since the current study is focused on the contracting relationship, only the contracting partner is included as *focal stakeholder*. Contracting red tape is a sub-concept of stakeholder red tape and is defined in the current study as *rules, regulations, and procedures associated with the contracting relationship that remain in force and entail a compliance burden, but make no contribution to the objectives valued by the contracting partners*. The concept of tender red tape is, in its turn, defined as *rules, procedures, and regulations associated with the tender phase that remain in force and entail a compliance burden, but make no contribution to the objectives valued by the contracting partners*.

Another relevant concept in the current study is personnel red tape. Although this is a common and widely used red tape measure associated with personnel systems, none of the red tape scholars have formulated a clear definition of this concept. Based on the items of the Personnel Red Tape scale (Moynihan & Pandey, 2006), the adopted definition in the current study can be formulated as *rules, regulations, and procedures that remain in force but hinder the effectiveness of the personnel system of an organisation.* The effectiveness of the personnel system is, in this matter, associated with employee mobility, salary adjustments, and firing.

#### 2.2 PUBLIC-PRIVATE DIFFERENCES IN ORGANISATIONAL RED TAPE

A near universal assumption by theorists and empirical researchers is that public organisation employees perceive a higher degree of red tape compared to private organisation employees (e.g. Bretschneider, 1990; Bozeman & Feeney, 2009; Lan & Rainey, 1992; Pandey & Kingsley, 2000; Rainey, 1983; Rainey, Pandey, & Bozeman, 1995). There are a few important theoretical contributions to the public-private comparison debate from the 1970s: the early days of red tape research. One of the pioneers in red tape research is ethnologist Kaufman, author of the book *Red* Tape: Its Origins, Uses, and Abuses (1977). According to Kaufman (1977), strict procedures and rules are necessary for government organisations to have citizens protected by and from the government. However, rules, procedures, and regulations implemented to fulfil the demand(s) of one group – in this case citizens, can be seen as red tape for other groups. Therefore, much of what has come to be known as red tape is the result of the need to deal with the public interest. This might be described as an administrative tragedy of the commons: the more the government caters to the specialised demands for government action, the greater the "stacks of official paper and bewildering procedural mazes" will be (Kaufman, 1977, p. 29). There is consequently a trade-off between the negative aspects of red tape and other public values, such as accountability, protection of rights, and transparency. Private organisations, understandably, do not have to make this tradeoff as they have less responsibility in serving the public interest.

Property rights theorists from the 1970s also endorsed Kaufman's statements. According to economists Alchian and Demtz (1973, 1972), owners or shareholders of private organisations strive for optimal technical efficiency to achieve their single goal of profit maximisation. These shareholders therefore aim to steer the private managers towards this desired profit-maximizing behaviour by giving them financial incentives, such as company shares or rewards based on financial success. However, public organisations are owned by members of political communities, who are represented by political authorities. These owners not only value financial goals, but also non-financial ones, such as accountability, fairness, and quality. Hence, the desired behaviour of managers can not only by reached by using financial incentives. The non-financial goals are enforced, at least theoretically, by extended rules. These theoretical contributions explain why public organisation employees might expect to perceive more red tape compared to private organisation employees. Empirical public-private comparisons seem to support these theories, by showing a higher perceived level of red tape in the public sector compared to the private

counterparts (e.g. Bretschneider, 1990; Lan & Rainey, 1992; Pandey & Kingsly, 2000; Feeney & Bozeman, 2009; Bozeman, Reed, & Scott 1992; Rainey, Pandey, & Bozeman, 1995; Bozeman & Loveless, 1987).

Although there is a broad scientific agreement about the public-private differences in red tape perception, there is also theoretical grounded reason to expect a different result when comparing government organisations with their private contractors. One of these reasons can be explained with the so-called *publicness puzzle*: should the degree of publicness be operationalised by legal status (publicly owned vs. privately owned) or by influence (Bozeman & Bretschneider, 1994)? When investigating public-private differences, the fundamental perspective seems to be that there are essential differences between public and private organisations and that those differences are captured in a simple distinction in legal status (Bozeman & Bretschneider, 1994). This core approach is, however, inadequate in explaining the exceptions that sit outside legal status, because it assumes that differences are *inherent* to it. The dimensional approach on the other hand, states that publicness is not a single attribute: organisations are more or less dependent on the extent to which externally imposed political authority affects them. Publicness is, in this perspective, independent of legal status but gives attention to the organisational resource process.

The introduction of this dimensional approach has also influenced red tape research. Bozeman, Reed, and Scott (1992) have supported both approaches by finding strong and independent effects of legal status as well as government influence – particularly government budget resources – on red tape perception. Additionally, Bozeman and Loveless (1987) have found evidence that challenged the status quo in red tape research. They found little difference between publicly and privately owned research and development (R&D) organisations on a measure of red tape, which was based on perceived levels of internal administrative restrictions placed on scientific and technical personnel. These findings could be explained by the dimensional approach since R&D organisations cannot be easily classified as public or private in terms of resource dependency.

As the private consultancy contractors of government organisations are often heavily dependent on the government organisation as their (main) customer, and the government organisation's budget and expenses are strongly influenced by the political authority, both types of organisations can be categorised as having a high degree of *publicness*. This can result in similar levels of red tape, just as was demonstrated in the R&D organisations investigated by Bozeman and Loveless (1987).

There is yet another theoretically grounded reason for anticipating a result that would challenge the status quo when comparing government organisations with their private contractors on red tape perceptions. This reason is based on neo-institutionalism theory and is called *institutional* isomorphism. Studies of isomorphism focus on explaining homogenisation of organisations in the same field. The sociologists DiMaggio and Powell (1983), two of the founders of isomorphism studies, introduced three mechanisms that could explain isomorphism. First, the normative mechanism stems from the pressures on professionals to adopt similar normative rules and norms even across different organisations. Second, the *mimetic* mechanism comes from organisational uncertainty about technologies, goals, and the environment. Third, the coercive mechanism comes from external pressures to converge with other organisations which the focal organisation is dependent on. Both the normative and the coercive mechanisms are applicable to the current study: policy officers and consultants belong to the same profession (normative) and the contractors are dependent on the government (coercive). The mimetic mechanism perhaps does not apply here; best practices are copied from other consultancy firms or research institutes rather than the government, and therefore, this does not lead to homogenisation between government organisations and private contractors.

DiMaggio and Powell (1983) have derived their three mechanisms from earlier studies. The coercive mechanism is mainly based on the resource dependency model (e.g. Pfeffer & Salancik, 1978; Davis & Cobb, 2009). This model assumes that all organisations must engage with their environment as a condition to survival (Scott, 2003). The need for resources creates dependency relations between the organisation and its resource providers. Isomorphism can be categorised as one of the strategies that organisations implement to deal with the dependency relation; the organisation brings its structure in line with the demands of the resource provider (DiMaggio & Powell, 1983; Verbruggen & Mills, 2001). Therefore, the one-sided dependency relation between contactors and the government could result in efforts by the former to fulfil the demands of the latter. Government organisations value accountability, protection of rights, and transparency (e.g. Kaufman, 1977; Alchian and Demtz, 1973, 1972) and prefer to cooperate with organisations with similar standards and rules (Wong, Holt & Cooper, 2010). The contractor can subsequently increase its organisational legitimacy by adopting the governments' rules, procedures, and regulations that ensure these public values.

This is also a kind of *signalling strategy* used in principal-agent relationships (e.g. Lewis, 2011; Dimoka, Hong & Pavlou, 2012; Spier, 1992). The contracting partner – the agent – is required to execute an assignment for the government organisation – the principal, who involves the delegation of decision-making authority. The agency problem highlights that the principal does not have the same information about the agency's behaviour as the agent itself (e.g Eisenhardt, 1989). Hence, the government organisation does not know for sure if the contracting firm acts in the government's interest or in its own interest. This is especially relevant in the service industry, like consultancy, since the nature of services make it difficult to control or monitor (Brynste, 1996). The contracting partner could use a signalling strategy by adopting public-value-ensuring rules, procedures, and regulations to convey some information about its legitimacy to the government organisation. This facilitates cooperation and increases the chance of survival.

These efforts to fit the demands of the government organisation do not have to result in any benefit for the organisation's own efficiency or effectiveness. Sociologist Zucker (1987) states that the adoption of so-called legitimated elements from the powerful stakeholder does indeed increase the chance of survival but it also draws attention away from task performance. Bureaucratisation and organisational change both occur in this matter "as the result of processes to make organisations more similar without necessarily making them more efficient" (DiMaggio & Powell, p.150). This is an example of *rule-inception* red tape, a concept introduced by Bozeman (1993) to specify the origins of red tape. In contrast to rule-evolved red tape, which involves rules that transformed into red tape, rule-inception red tape consists of rules that are dysfunctional at their origin. Hence, it could be that these isomorphism processes reduce the red tape differences between government and private organisations.

Government organisations are (conceptually) part of public sector organisations and the consultancy organisations are part of the private sector organisations. However, because of the abovementioned reasons, the current study does not hypothesise that government organisation employees perceive higher levels of red tape than their private consultants. Rather, it is expected that the influence of sector on red tape perception is either non-existence or insignificantly small with regard to this public-private comparison. The high levels of publicness and isomorphism processes are more important determinants of red tape perception and make both types of organisations similar on the aspects relevant to organisational red tape. Therefore, the first hypothesis is stated as:

**H1:** *Government organisation employees perceive the same level of organisational red tape in the government agency as their contractors perceive in the private organisation.* 

#### 2.3 PUBLIC-PRIVATE DIFFERENCES ON PERSONNEL RED TAPE

*Personnel* red tape is used to measure the perceptions of employees regarding personnel systems (Rainey, 1983; Rainey, Pandey & Bozeman, 1995; Pandey & Kingsley, 2000; Pandey & Scott, 2002). Bozeman and Kingsley (1998) and Pandey and Kingsley (2000) offer strong, consistent evidence to suggest that personnel rules and regulations vary significantly across the public and private sector. According to Pandey and Kingsley (2000), sector has a stronger effect on the level of personnel red tape than on the organisational red tape level.

This is consistent with the fact that managers in public organisations have to deal with extensive civil service and personnel regulations. Organisations that are publicly owned tend to be more subject to control by external political authorities, accompanied by intense pressures for accountability to them (Rainey, 1983). One of the consequences of these accountability demands is the formalisation of personnel rules. Public administration scholars argued as early as in the 70s and 80s that a trade-off exists between accountability and effective personnel systems (e.g. Savas & Ginsburg, 1973; Rainey, 1983). Indeed, while the formalisation of personnel rules has a positive effect on accountability, it also weakens the relationship between extrinsic rewards and individual performances (Savas & Ginsburg, 1973; Rainey, 1983). Complex procedures for hiring, firing, promotions, and pay raises make it more difficult for superiors in public organisations to ensure that the incentives are contingent upon the performances of their subordinates.

It is therefore more likely that government organisation employees perceive a higher level of red tape in personnel systems than private contracting organisation employees. There is no reason to presume that the dependency on the government organisation influences the personnel system since harmonising the design of the personnel system does not contribute to transforming the organisation into a more legitimate partner. For example, making it more difficult to remove poorly performing employees or to reward a good employee is not of any value to the contracting government partner. Hence, the second hypothesis is stated as:

**H2:** *Government organisation employees perceive a higher level of personnel red tape than their private contractors.* 

#### 2.4 PUBLIC-PRIVATE DIFFERENCES IN CONTRACTING AND TENDER RED TAPE

Contracting red tape can be explained theoretically by using contract theory. The famous economist Ronald Coase (1937), who devoted his entire career to studying the effects of regulation on economies, stated that contracting relations cause a certain level of transaction costs. Both a lack of trust and *asymmetric information* result in the implementation of rules, procedures, and regulations that enable collaboration. However, contracts in an uncertain world are necessarily incomplete and have to be frequently renegotiated due to changing circumstances (Williamson, 1981). The transaction costs of negotiating these contracts and maintaining the rules, procedures, and regulations, can outweigh the benefits of having contracts. As a consequence, contracting partners run the risk of overregulating their relations and this is likely to be perceived as a form of contracting red tape.

Levi-Faur (2005) supported Coase's theory by providing empirical evidence for the positive relationship between contracting and regulation. This political scientist used macro-level data from the whole world to show that privatisation occurred conjointly with the creation of regulatory agencies. Management scholar Meyer (1979) endorsed the same school of thought by stating that privatisation serves as another source of red tape. This form of red tape stems from meeting administrative requirements necessary to receive federal funds, which are implemented to assure compliance with the federal guidelines.

The empirical work of Feeney and Bozeman (2009) proved that members of stakeholder organisations and state agencies have quite similar perceptions of red tape in contracting. In comparison to private consultants, public agencies perceive significantly higher levels of red tape in their *organisation* but not in the contracting relationships. This seems to imply that there is considerable shared meaning and shared response to the perceptual object (rules, procedures, and regulations) that respondents react to. An explanation for such shared meaning and shared response can be found in the *normative mechanism* used by DiMaggio and Powell (1983) to explain isomorphism. This theory states that two aspects of professionalism are important sources of isomorphism: similar formal educational backgrounds and professional networks. These aspects "create a pool of almost interchangeable individuals who occupy similar positions across a range of organisations" (DiMaggio & Powell, 1983, 152). This could explain why professionals on both sides of the contracting relationship tend to perceive red tape in a similar way. Since both parties are confronted with the same rules, procedures, and regulations, only personal characteristics could

result in different perceptions. However, according to the normative mechanism of isomorphism, this is unlikely. The policy officers and policy consultants in the current study belong to the same profession. Hence, the third hypothesis is stated as:

**H3:** Government organisation employees who are directly involved in contracting perceive the same level of contracting red tape as their private contractors.

A different hypothesis is expected with regard to tender red tape. Since the tender phase is organised and directed by the government organisation, the drafted rules and procedures are less likely to make a contribution to the organisational goals of the contracting firm in comparison to the government organisation. Therefore, the fourth hypothesis is stated as:

**H4:** *Government organisation employees who are directly involved in the tender phase perceive less tender red tape compared to their private contractors.* 

# **3. RESEARCH DESIGN**

This section explains how the theoretical framework is used to shape the current study. First, an explanation is given about the confounders and covariates that are included in the model. These confounders and covariates are then used, together with the theoretical framework, to derive the conceptual model. Subsequently, the concepts of the conceptual model are made suitable for empirical research by the operationalisation. Lastly, further elaboration is provided on the research type and method used in the current study to test the operationalised conceptual model.

# **3.1 CONFOUNDERS AND COVARIATES**

There are a number of other factors that could influence different red tape perceptions between government organisation employees and their private contractors. These factors are divided in two categories: *confounders* and *covariates*. Confounders are variables that influence red tape perception as well as the sector choice of an employee, while covariates only influence red tape perception directly. Controlling for both in the model could help to isolate the impact of sector on red tape perception.

The confounder that influences both sector decision and red tape perception is *public service* motivation (PSM). This is defined as an "individual predisposition to respond to motives grounded primarily or uniquely in public organisations" (Perry & Wise, 1990, p.368). This concept denotes the idea of commitment to the public service, pursuit of the public interest, and the desire to perform work that is worthwhile to society (Scott & Pandey, 2005). Essentially, this is a measure of the value a public sector employee places on intrinsic motivation. Early in the 60s, Kilpatrick, Cummings, and Jennings (1964) found that government employees give higher ratings than private employees to engaging in work that is worthwhile to society. Since that time, many researchers have demonstrated similar findings (e.g. Rainey, 1982; Wittmer, 1992). It is therefore likely that individuals with high degrees of PSM self-select into the public sector despite the fact that sector is not part of the PSM concept. According to an article of Scott and Pandey (2005), PSM could easily be found in both private and non-for-profits organisations, particularly in those organisations engaged in activities of a public service-oriented nature. In the same article, Scott and Pandey (2005) also found a consistent and strong linkage between PSM and red tape perceptions. The relation to sector choice as well as red tape perception makes PSM a variable that should be adopted as confounder in this study.

One influential covariate is the *time in current position*. Pandey and Kingsley (2000) showed that individuals who have spent a longer time in their current positions perceive lower levels of red tape. The reason for this is twofold. First, the longer individuals remain in their current position, the more they develop mechanisms for cutting red tape. Second, individuals who have been in the same position for a long time are able to internalise realistic expectations with regard to the restrictiveness of rules; this also influences their red tape perceptions. The same arguments could be made for *tenure*, which denotes the time someone has been working for the same employer. Tenure is therefore also included as a covariate.

Another influential covariate is the *size* of the organisation. According to James and Jones (1976), increased size results in a larger degree of structural differentiation. This requires greater managerial effort in setting up an organisational structure, coordinating activities, and constructing a clear division of tasks and responsibilities. As a consequence, employees are exposed to more formalised procedures and rules for coordinating and integrating work. The larger the organisation, the greater the incentive for executives to implement these formalised control mechanisms. It is acceptable to assume that the accompanied regulatory pressure forms a new source of red tape as

numerous researchers have empirically confirmed this thesis by James and Jones (e.g. Baldwin, 1990; Bozeman, Reed & Scott, 1992; Rainey, Pandey & Bozeman, 1995; Padley & Kingsley, 2000).

In addition, *functional level* could also influence the red tape perception of an employee. Most red tape studies focus on managers, but this seemed too narrow in scope according to DeHart-Davis (2009) and Walker and Brewer (2008). Employees without any managerial responsibility could perceive more red tape since each level of management adds additional layers of rules and regulations that employees must comply with. Consequently, employees at lower levels have to deal with a larger set of regulations and rules, which makes the perception of red tape more likely (Walker & Brewer, 2008;Van Loon, Leisink, Knies, & Brewer, 2016).

#### 3.2 CONCEPTUAL MODEL

The conceptual model that can be derived from the theoretical framework above is as follows:

# Red tape perception<sub>i</sub> = $\beta_0 + \beta_1 sector_i + \beta_2 PSM_i + \beta_3 time in position_i + \beta_4 tenure_i + \beta_5 size_i + \beta_6 functional level_i + \varepsilon_i$

The *dependent variable* is red tape perception. Different forms of red tape are included in this basic model in order to specify the differences with more accuracy. These are as follows: organisational red tape, tender red tape, contracting red tape, and personnel red tape. As a result, four different models were constructed in order to answer the research question. The *main independent variable* is sector, which acts as a dummy variable for government organisations and their private contractors. The relationships between sector and different forms of red tape were examined.

To explain the effect of the main independent variable on the dependent variable with more precision and less bias, it is necessary to construct a multivariate model. This model enables one to calculate the partial effects by keeping all explanatory variables constant except the variable of interest. Size, time in position, tenure, functional level, and PSM are included in the model as *covariates* and *confounders*. PSM is an especially important control variable, since its exclusion could cause an *omitted variable bias*: according to the literature, PSM correlates with sector choice and has an effect on the red tape perception. Age, gender, and educational level are measured in the current study but excluded from the conceptual model for the following two reasons. First, there is no theoretically grounded reason to expect independent effects of age, gender, or educational level on red tape perception. Second, the degrees of freedom decrease when including more

variables to the model. Since a weak or non-existent effect is expected, this will probably result in a lower adjusted R-squared and, with that, a decrease in the goodness of model fit. Nevertheless, age, gender, and educational level are adopted in the descriptive statistics to gain insight into the personal characteristics of the respondents.

#### **3.3 OPERATIONALISATION**

"Operationalisation is the translation of abstract concepts and their attributes (dimensions) into less abstract ones that can be detected, classified, and measured in the empirical world" (Toshkov, 2016, p.100). In other words, the concepts described in the conceptual model must be converted into measurable variables. An overview of the variables and their operationalisation is given below. This operationalisation is used to construct a quantitative survey (see 3.4 Research Design).

#### 3.3.1 Organisational red-tape

The General Red Tape (GRT) scale was developed by Rainey, Pandey, and Bozeman (1995) and is a common measure of organisational red tape in public administration literature. However, there are a number of reasons why it is not desirable to use the GRT scale in the current study. First, the distinction between different dimensions of red tape in the current study makes the GRTS scale too broad. Second, the term red tape has a strong *connotative meaning*. The GRT scale directly asks respondents to assess red tape, which might create a bias by skewing the responses towards a more negative assessment of rules, procedures, and regulations. Third, the GRT scale only tests one indicator of red tape and therefore does not give any information about the reason why respondents might categorise the rules, procedures, and regulations as red tape. More specifically, it is unclear whether the respondents assess rules, procedures, and regulations as ineffective, unnecessary, or/and burdensome. This is especially a problem when red tape research is used for policy improvements.

It was therefore decided to adopt a relatively new measure from Bonny (2016) called the Three-Item Red Tape (TIRT) scale. This measure focuses on organisational rules and is drawn directly from Bozeman's (1993) original definition. Moreover, the term red tape is not directly included and is measured with several indicators. These characteristics contribute to a more detailed and concrete measure. The following question was included in the survey:

How would you assess the internal rules, procedures, and regulations associated with the content of the work, if you can choose between the following characteristics?

Not burdensome (1-5) Burdensome

Necessary (1-5) Unnecessary

### *Effective (1-5) Ineffective*

The respondents were asked to rate the item on a Likert scale, with 5 indicating the word to the right and 1 indicating the word to the left.

#### 3.3.2 Personnel Red Tape

Personnel red tape was measured with the Personnel Red Tape (PRT) scale. Rainey, Pandey, and Bozeman (1995) introduced this measure by asking respondents to indicate their level of agreement (using a Likert scale ranging from strong disagreement to strong agreement) on five items. Moynihan and Pandey (2006) reduced this scale by one item. These items were used in a survey focused on managers instead of policy consultants and policy officers. The items were, therefore, adjusted accordingly for the current sample:

- 1. Even if an employee is a poor performer, formal rules make it hard to remove him or her from the organisation.
- 2. The rules governing promotion make it hard for a good employee to move up faster than a poor one.
- 3. The formal pay structure and rules make it hard to reward a good employee with higher payments here.
- 4. The personnel rules and procedures that govern my organisation make it easy for supervisors to reward subordinates for good performance (reversed).<sup>8</sup>

A number of research papers have found significant, strong correlations between the items used to capture perceptions of personnel red tape (Chen & Williams, 2007; DeHart-Davis & Pandey, 2005). Hence, it can be assumed that this scale is construct valid.

<sup>&</sup>lt;sup>8</sup> A relatively high score on items 1,2, and 3 represent a high level of red tape while a relatively high score on item 4 represents a relatively low level of red tape. The scale of item 4 must be reversed in the analysis to obtain an unbiased indicator of red tape.

#### 3.3.3 Tender red tape

Tender red tape has never been measured before. However, some researchers have taken up the task to operationalise procurement red tape (e.g. Scott and Pandey, 2005; Welch and Pandey, 2007). The constructed scale is therefore based on the procurement red tape scale and the current author's own judgment. The following statements were included in the survey:

- 1. The rules governing tendering make it easy to establish a contractual relationship (reversed).<sup>9</sup>
- 2. Due to the standard procedures, the governments procurement decision is based more on the organisation's ability to comply with rules than on the quality of goods and services.
- 3. The rules governing tendering make it hard to expedite the tender phase for an urgent project.

The respondents were asked to rank these statements using a Likert scale ranging from strong disagreement to strong agreement.

#### 3.3.4 Contracting red tape

Contracting red tape has only been measured once before in the study of Feeney and Bozeman (2009). In contrast to the other measures in the current study, this measure does not use statements, but directly asks the respondent to assess red tape. It was therefore decided to construct a suitable measure based on the Three-Item Red Tape (TIRT) scale of Bonny (2016) and the measure of Feeney and Bozeman (2009). The following question was included in the survey:

How would you assess the rules, procedures, and regulations associated with the contractual relationship, if you can choose between the following characteristics?

Not burdensome (1-5) Burdensome

Necessary (1-5) Unnecessary

*Effective (1-5) Ineffective* 

<sup>&</sup>lt;sup>9</sup> A relatively high score on item 2 and 3 represents a high level of red tape while a relatively high score on item 1 represents a relative low level of red tape. The scale of item 1 must be reversed in the analysis to obtain an unbiased indicator of red tape.

The respondents were asked to rate the item on a Likert scale, with 5 indicating the word to the right and 1 indicating the word to the left.

#### 3.3.5 Sector

Sector was measured as a dummy variable: government organisation (1) and private contracting firm (0). This was measured indirectly by asking:

# I am working at a:

- a) Municipality (1)
- b) Province (1)
- c) Ministry (1)
- *d*) Consultancy firm (0)

Since the survey was not distributed amongst hybrid organisations, the inclusion of an 'other, namely...' category was not necessary.

#### 3.3.6 Size

There are a large number of measures to express organisation size. However, as described in the theoretical framework, size influences red tape because it requires managerial efforts to coordinate the activities of diverse *groups*. Hence, size is in this regard a measure of the number of employees. Pandey and Kingsley (2000) have measured this variable as *the number of full-time employees*, which is also used in this study. Because the average employee does not know exactly how many colleagues he or she has, three broad categories were constructed. These categories were based on a measure in business studies to distinguish small, medium, and large enterprises (e.g. Urbancova, 2014; Wach, 2014). To overcome a *respondent bias*, the option 'I don't know' was also added to the answer categories.

How many employees are employed at your organisation? Note: count in FTE (full-time equivalent employees)

- a) 50 or less (1)
- b) 51-249 (2)
- *c)* 250 or more (3)
- d) I don't know(4)

#### 3.3.7 TIME IN CURRENT POSITION & TENURE

Pandey and Kingsley (2000) measured *time in current position* by the number of years that someone has held his or her position. The following question was included in the survey:

*How many years have you worked in your current position?* Respondents were asked to fill in a number and round (up or down) to whole years.

Pandey and Kingsley (2000) measured *tenure* by the number of years someone has been working for his or her employer. The following question was included in the survey:

*How many years have you worked with your current employer?* Respondents were asked to fill in a number and round (up or down) to whole years.

#### 3.3.8 FUNCTIONAL LEVEL

Functional level was not measured with a scale because it was likely to induce a respondent bias when asking the respondent to rank their function in (for example) a low, medium, or high functional level. Therefore, it was decided to ask respondents to write down their *job title*. Based on the diversity of job titles, the current author decided which functional levels belong to the different functional titles.

#### 3.3.9 PSM

While the PSM literature distinguishes different kind of motives, only the *attraction to policy making* and *civic duty* motives have significant effects on red tape (Scott & Pandey, 2005). Therefore, only these two motives were included in the operationalisation. Kim et al. (2013) tested different PSM scales and created the composite measure with the highest convergence validity. Both motives were tested with sub-parts of these scales. Respondents were asked to indicate their extent of agreement about statements on a Likert scale:

Attraction to policy making (APS)/ attraction to public service :

- 1. I admire people who initiate or are involved in activities to aid my community.
- 2. It is important to contribute to activities that tackle social problems.
- 3. Meaningful public service is very important to me.
- 4. It is important for me to contribute to the common good.

Self-sacrifice (SS)/civic duty:

- 1. I am prepared to make sacrifices for the good of society.
- 2. I believe in putting civic duty before self.
- 3. I am willing to risk personal losses to help society.
- 4. I would agree to a good plan to make a better life for the poor, even if it cost me money.

#### 3.3.10 Education

Respondents were asked to indicate their highest level of education. This was coded as:

- 1. Primary school / basisschool (1)
- 2. *High school / middelbare school (2)*
- 3. Intermediate vocational education (3)
- 4. University of applied science / HBO (4)
- 5. University / WO (5)
- 6. Other, namely...

#### 3.3.11 Gender

Gender was coded as a dummy variable with 0 signifying male and 1 signifying female.

# 3.3.12 AGE

Age was measured as a continuous variable. The respondent was asked in an open question to write down his or her age.

#### 3.4 Research type and method

The current study follows a deductive positive structure of theory testing: abstract propositions are tested empirically and can either be confirmed or refuted (Toshkov, 2016). The aim is to test *how* the sector type affects the level of red tape perception.

The data source used in the current study was the collected data resulting from the distribution of a self-made survey (see Appendix 1). The quantitative survey consisted of items that correspond with the operationalisation of the key concepts (see 3.3 Operationalisation). The database that emerged from the survey was used to construct a Large-N cross-sectional design: a set of units compared at a single point in time (Toshkov, 2016). This Large-N cross sectional design was intended to identify a causal effect by comparing the distribution of the outcome across the sub-sets of units defined by a particular value of the main explanatory variable. Since the main independent variable was a dummy, only two groups were compared: government organisation employees and private contracting organisation employees.

The main advantage of this design is that it enables one to identify and estimate weak and heterogeneous causal relations (Toshkov, 2016). Since it is expected that sector only partly explains red tape perception and that variation from unit to unit is expected, a large number of observations is needed to detect the systematic 'signal' from the data. Statistical analysis was used to detect this signal. However, statistical analysis does not provide an automatic solution for causal inference.

The chosen strategy to ensure causal inference can be defined as *conditioning*: by taking away the influence of all possible confounders and covariates, the actual relationship of interest 'shines through' (Toshkov, 2016). The time in position, tenure, PSM, and functional level variables were conditioned by measuring it and partial out (or adjust for) the effects. The effect of size on red tape perception was blocked by selecting only government employees and private contractors from organisations with (approximately) the same size. The residual association between the two main variables of interest (red tape perception and sector) could therefore be compared. A combination of blocking and adjusting should ensure causal inference in the observational large N-design.

# 4. DATA COLLECTION AND PROCESSING

As the conceptual model is now made suitable for research and the design and method used to conduct the study are made explicit, it is time to elaborate on the way in which data were collected and processed. First, a discussion outlines how the relevant population was narrowed down; this is followed by a brief overview of the sample strategy and the practical execution of this strategy. Thereafter, the current study explains further points regarding the collected data; namely, the response rate, functional levels, validity, and reliability. This section concludes with an explanation about the descriptive statistics and the correlations between variables.

#### 4.1 Relevant population and unit of analysis

The level of observation was the same as the level of analysis. Observations were collected on the individual level – employees filled out the survey – and the analysis was performed on the individual level. The relevant total population consisted of all the Dutch government organisation employees and all the employees from private contractors. Since it was practically impossible to get relevant data from all these organisations, the total population had to be narrowed down. This was achieved by focusing specifically on *Dutch* government organisations and their private *consulting* contracting firms. The choice on consultancy was logic, since consultants have been of increasing influence on the transformation of the public sector in the last decades (Politt & Bouckaert, 2000). Some scholars used terms as 'consultocracy' or 'shadow government' to explain this rise of influence (Saint-Martin, 1998; Guttman & Willner, 1976). Consultants have an important share in the 'government by contract' era and were, therefore, a suitable focus of the current study.

#### 4.2 CASE SELECTION

In the context of a large-N design, a case is a selection of observations on variables for a single unit (Tohskov, 2016). Case selection deals with how many and which of these units to observe and include in the analysis. The case selection is important to the extent that it has a great influence on the internal and external validity of the causal conclusions. The most valid way to select cases is through complete random selection of the whole population. This was not possible in this study: the decision to block size and focus specifically on contracting with consulting firms made it impossible to select randomly from the whole population. Therefore, purposeful sampling based on the main explanatory variable was applied in the current study. According to Toshkov (2016),

selecting cases on the main explanatory variable creates no bias provided that the effect is linear. A non-linear effect here was unlikely since the main explanatory variable was a dummy variable.

The cases were selected from policy consultants from the consulting firm Ecorys and their customers at government organisations (ministries, municipalities, and provinces). Ecorys is a research-based consulting firm with a global reach, providing advice and research on economic, social, and spatial policies in more than 100 countries<sup>10</sup>. With a track record dating back to 1929, Ecorys is the first research and consulting agency in Europe to focus on public policy. This is still Ecorys' main focus: its customer base consists almost entirely of government clients on regional, national, and European levels. The only private clients the company has are brought in by the consultants themselves; the sales and tender desk are not directed to recruit them.<sup>11</sup> This made Ecorys a suitable sample pool to test the resource dependency hypothesis described in the theoretical framework.

The 'government organisation' sample was drawn from the customer base of Ecorys. The IT specialist of Ecorys filtered the total customer database based on the following four characteristics: 1) the customer works at a ministry, province, or municipality; 2) Ecorys has worked with the customer in the last three years; 3) the respondent works in a line function (policy officer, policy advisor etc.); 4) the respondent's organisation employs 250+ employees. Based on the search results, the current author received an e-mail database with about 800 contacts. There was, however, a great deal of missing information and outdated contacts that were no longer active in the particular function or organisation (or both). The current author had checked every contact's LinkedIn page to determine if the contact was still relevant. Based on this LinkedIn analysis, the current author compiled a database of 366 relevant contacts.

The 'private contractors' sample was drawn from the employee database of Ecorys. The HR office was contacted to request an employee database with all the consultants (junior, senior, and partner) working at Ecorys Netherlands. The HR office provided the current author with a contact list of 83 consultants.

<sup>&</sup>lt;sup>10</sup> The information about Ecorys is derived from: http://www.ecorys.nl/english/

<sup>&</sup>lt;sup>11</sup> See: Appendix 2

#### **4.3 RESPONDENTS**

The data were collected between 30 March 2017 and 17 April 2017 (see Appendix 4). The response rates by sector and the overall response rate are displayed in Table 1. While an overall response rate of 28.5% is not particularly low, it still raises questions about the non-response bias. It could be that the respondents who decided to participate in the current study, were the ones that perceived a great deal of red tape or, conversely, almost no red tape. They are assumed to be more willing to deliver a message. If the non-response rate is directly related to the variable of interest, errors may occur which can seriously distort the survey results (Lahaut, Jansen, van de Mheen, & Garretsen, 2002). Heberlein and Baumgartner (1978, cited in Lahaut et al., 2002) showed that salience is a key explanatory factor to explain response rate. When the topic is salient to the respondent, the respondent is more likely to participate. To test whether non-response bias was applicable to the current study, it was hypothesized that the observations were overrepresented in the high and low ends of red tape perceptions. The histogram graphics with frequencies show that all histograms are *bell-shaped* distributed, which implies that the extremes are not overrepresented (see Appendix 4). Hence, it is unlikely that a non-response bias was present in the current sample.

Target group	Sample size	Number of	Response rate
		respondents	
Public sector	293 <sup>a</sup>	61	20.8%
Private sector	83	46	55.4%
Total	376	107	28.5%

**Table 1**. Response rates.

<sup>a</sup> Note: 20% of e-mails from the original sample of 366 bounced when the survey was distributed. This is probably due to outdated e-mail addresses.

The government respondents were mainly policy officers (and advisors) from ministries, municipalities, and provinces; the private sector respondents were mainly policy consultants from Ecorys. Both functions entail the development of policies by analysing problems and working out advice plans for management or political authorities. These functions are therefore quite similar, which makes explanations of differences in red tape perceptions based on professional divergence unlikely. It is important to stress that all policy officers and consultants included as respondent were working in a line function: they were concerned with public policy issues and not with staff

policies such as the human resources (HR) or financial management of the organisation. Although staff and line policy officers/consultants share the same functional title, they can be considered as completely different in terms of content. This would have made the comparability negligible. An overview of the variation in function titles is given in Figure 1. Since the respondents and organisations included in the current study were all Dutch, the function titles are also given in Dutch.



Figure 1a. Function titles private sample.



Figure 1b. Function titles government sample.

As already explained in the operationalisation, the function titles were used to construct functional levels. The Dutch government has standardised a career path for policy officers. This career path is formalised by different function titles accompanied with different salaries.<sup>12</sup> Ecorys also has a standardised career path for consultants. Both career paths were used to construct and code four different functional levels; this is displayed in Figure 2. Other functional titles were excluded in the analysis, because they did not follow a clear hierarchical structure.

<sup>&</sup>lt;sup>12</sup> See https://www.werkenvoornederland.nl/vakgebieden/beleidsmedewerkers/wat-bieden-wij



Figure 2. Functional level hierarchy coded from 1 (lowest level) to 4 (highest level)

#### 4.4 VALIDITY AND RELIABILITY OF CONSTRUCTS

The current study used a number of constructs to measure red tape and public service motivation. These constructs were derived from existing literature, but were not yet proven to be valid and reliable in the current dataset. *Confirmatory factor analysis* (CFA) was used to test the construct validity; that is, to see if the observed items actual form a broader unobserved construct (Albright & Park, 2009). In more technical terms, CFA makes it possible to estimate a model that explains the variance between a set of observed variables by a set of unobserved factors. *Cronbach's alpha* was used to test the reliability by determining the internal consistency of the items that belong to the construct.

The results of the CFA are displayed in Figure 3, including the standardised factor loading values for each of the observed values on the unobserved factors of the red tape constructs. All the values were significant at a 1% significance level. Goodness of fit indexes can be used to test the overall fit of the different models. One indicator of a good model fit is a *non*-significant chi-square test. The chi-square value for the personnel red tape (PRT) construct was highly insignificant (p = 0.445) and the other constructs were perfectly insignificant (p = 1.0). This meant that they were equal to the saturated model. The other goodness of fit indicators were RMSEA (<0.05), CFI and TLI (>0.90), and SRMR (<0.5). As shown in Table 2, all the constructs fulfilled the goodness of fit conditions.

Cronbach's alpha results are also displayed in Table 2. George and Mallery (2003) constructed rules of thumb to interpret these alpha scores. Constructs are internally consistent or reliable when they have an index score of 0.7 or higher. The constructs of tender red tape (TRT) and contracting red tape (CRT) fulfilled these conditions. The constructs of personnel red tape (PRT) and organisational red tape (ORT) fell within the *grey area* of reliability: scores between 0.5 and 0.7. Although these scores are not unacceptable, they indicate a lack of internal consistency.

These reliability problems could be explained by a number of reasons. A general reason could be that both constructs included a low number of items, which had a negative effect on the Cronbach's alpha score (Tavakol & Dennick, 2011). An explanation for the low ORT alpha could be that the construct was measured with the TIRT scale, which includes a measure of effectiveness, obstructiveness, and necessity. It is not unlikely, therefore, that respondents perceived rules, procedures, and regulations as obstructive but at the same time necessary or effective. All the three characteristics make theoretical sense and together are essential characteristics of classifying rules, procedures, and regulations as red tape. This makes internal consistency in the construct a low priority. Another explanation could be that some items did not belong to a certain construct, which decreased the internal consistency. However, the removal of single items did not improve the alpha scores for both the ORT and PRT constructs. It was therefore decided to keep these constructs unchanged in further analysis.



Figure 3. Results for CFA red tape constructs (larger version: Appendix 5).

Indexes	PRT	ORT	TRT	CRT
Chi-square $(X^2)$	0.874	0.00	0.00	0.00
RMSEA	0.00	0.00	0.00	0.00
CFI	1.00	1.00	1.00	1.00
TLI	1.09	1.00	1.00	1.00
CD	0.66	0.74	0.57	0.80
SRMR	0.02	0.00	0.00	0.00
Alpha	0.60	0.72	0.53	0.72

 Table 2. Goodness of fit red tape constructs.

Note: PRT = personnel red tape, ORT = organisational red tape, TRT = tender red tape, CRT = contracting red tape. These abbreviations are used from now on in the study.

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

The other relevant construct for the current study was public service motivation (PSM). Two different dimensions of PSM were included in this study: attraction to public policy making (PSMaps) and *self-sacrifice/civic duty* (PSMss). The two dimensions could be used separately or could be merged into one single variable. This decision was based on the goodness of fit of the different options. The block diagrams in Figure 4 show the two options graphically. Table 3 provides more information about the goodness of fit of the two choices. These indexes imply that merging the PSM dimensions into one variable decreases the goodness of fit; as such, the separate variables both score better on all goodness of fit indicators. Hence, further analysis treats the PSM dimensions as separate variables.

The Cronbach alpha scores of the PSMaps and PSMss, as well as the PSMtotal, indicate sufficient internal consistency. The alpha is somewhat higher for the PSM total construct but this is most likely due to the larger number of items included in the construct.

In sum, the reliability and construct validity analysis above led to the decision by the current author to keep the red tape constructs as they were formulated in the operationalisation section and to split PSM into two variables based on the dimensions. For each construct, the multiple items were merged into single construct variables by adding them together and dividing the total by the number of items belonging to the construct.



Figure 4. Results of CFA PSM (larger version: Appendix 5).

Indexes	PSMaps	PSMss	PSMtotal
Chi-square $(X^2)$	13.246***	0.232	83.063***
RMSEA	0.237	0.034	0.178
CFI	0.929	0.998	0.813
TLI	0.788	0.994	0.738
CD	0.880	0.835	0.888
SRMR	0.057	0.023	0.084
Alpha	0.82	0.79	0.85

**Table 3.** Goodness of fit public service motivation (PSM) constructs.

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

#### 4.5 DESCRIPTIVE STATISTICS

Table 4 shows the descriptive statistics of the entire dataset. The first four rows represent the different red tape dimensions.<sup>13</sup> As can be derived from these descriptive statistics, the averages are close to the middle (value 3) of the Likert scale values. Hence, extreme high or low perceptions of red tape were, on average for the entire sample, not detected.

The respondents perceived the highest level of red tape in the tender phase (see TRT). Such high levels of red tape would presume more interest in TRT; red tape researchers could focus their

<sup>&</sup>lt;sup>13</sup> See Appendix 6 for more information about abbreviations (codebook)
studies on those rules, procedures, and regulations that are likely to be perceived as red tape. Since red tape is in general perceived as undesirable, this focus reflects a higher degree of practical relevance than investigating sectors and places where a low level of red tape is perceived. In this regard, it is somewhat surprising that red tape has never been investigated before. Although the mean differences were relatively small, this is a result that supports the relevance of investigating TRT.

Variable	Observations	Mean	Standard	Min <sup>a</sup>	Max <sup>a</sup>
			deviation		
(1) PRT	100	3.13	0.68	1	4.5
(2) ORT	101	2.94	0.72	1.33	5
(3) TRT	100	3.36	0.74	1.67	5
(4) CRT	100	2.83	0.72	1	5
(5) PSMaps	100	4.25	0.52	3	5
(6) PSMss	100	3.32	0.64	1.5	5
(7) Tenure	105	12.38	10.80	0	41
(8) Time position	105	6.07	5.67	0	26
(9) Func level	76	2.46	0.97	1	4
(10) Size	100	3	0	3	3
(11) Sector	105	0.57	0.50	0	1
(12) Age	65	44.18	12.79	24	64
(13) Gender	105	0.70	0.46	0	1
(14) Education	104	4.86	0.38	4	6

### Table 4. Descriptive statistics.

Note: Time position = time in position, Func level = functional level.

<sup>a</sup> The minimum and maximum values are not always whole numbers since the different items of the red tape constructs are totalled and then divided by the number of items.

The fifth and sixth rows represent the PSM constructs of *attraction to policy making* (PSMaps) and *self-sacrifice* (PSMss). The results showed that respondents were more attracted to policy making than they were willing to sacrifice themselves for the public interest. The minimum of the PSMaps construct is even 3. This implies that not one respondent was *not* attracted to policy making. Policy

making is the core task of policy officers and policy consultants. These findings are, therefore, not surprising at all. The seventh and eight rows represent the time the respondent worked in his or her organisation and current function. The respondents worked on average about twice as long for organisation compared with their current function. The minimum values are, at both variables, zero. This does not indicate a respondent bias but instead resulted from the instruction to round (up or down) to whole years (see Appendix 1).

The ninth row represents the functional levels of the respondents. As explained before, the respondents were classified on the basis of the hierarchical pyramid (see Figure 2). Only 76 observations were collected on this variable. The reason for this was twofold. First, this variable was measured with an open question, which asked the functional title of the respondent. Some respondents who were active in policy making were not working in one of the specified categories (for example, the head of the policy department or a project manager); these functions were not included in the functional level variable. Second, the respondents were not required to answer the question. It is likely that some respondents skipped this question out of anonymity considerations.

The tenth row represents the size of the respondents' organisation. As can be seen from the data, all respondents worked in an organisation with 250 or more employees<sup>14</sup> – coded as 3. This indicates that size was effectively blocked. The variables from the eleventh row represent the main independent variable and additional control variables. Fifty-seven per cent of the respondents were working in the public sector, 70% of the respondents were male, the average age was 44 years old, and all respondents were highly educated.

### **4.6 CORRELATIONS**

Correlation is an important measure because it indicates whether two variables are related with each other or not. There is no relation between two variables when the correlation is zero unless there are omitted variables that perfectly cancel out the true relation between two variables.

The correlations are displayed in Table 5 below. The correlations between sector and ORT and sector and CRT were weak to non-existent. This implies that there was no difference in organisational and contracting red tape perceptions between consultants and government employees. The result for organisational red tape is especially surprising since the literature

<sup>&</sup>lt;sup>14</sup> Some Ecorys consultants indicated that they worked in an organisation of 50-249 employees, because they did not read the note and had only counted employees from their headquarters. Ecorys employs in total over 400 employees. This error was corrected by the author.

suggests that government organisation employees perceive more red tape in their workplace compared to private sector employees. Further (multivariate) regression analyses are needed to decide whether these relations are unbiased, significant, and robust.

A somewhat stronger correlation was detected between sector and PRT and sector and TRT. The correlations were both positive, which implies that government organisation employees perceived more personnel and tender red tape compared to private consultants. The findings with regards to PRT are not remarkable since it was already hypothesised that government organisations have to deal with more extensive civil service and personnel regulations. However, it is surprising to find that government organisation employees perceived more TRT compared to the consultants. The tender phase is organised and directed by the government so it was hypothesised that the drafted rules and procedures contributed less to the organisational goals of the private consulting firm in comparison to the government organisation. Again, further analyses are yet to prove whether there is enough evidence to accept these results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Sector	1									
(2) PRT	.20*	1								
(3) ORT	.09	.36*	1							
(4) TRT	.19	.12	.15	1						
(5) CRT	.00	.19	.25*	.49*	1					
(6) PSMss	.04	08	12	05	04	1				
(7) PSMaps	.24*	03	06	.17	.00	.57*	1			
(8) Time position	.34*	.11	.06	04	18	01	.10	1		
(9) Tenure	.58*	.01	.01	.03	04	.07	.17	.58*	1	
(10) Func level	.28*	.07	.16	.31*	.12	.00	.19	.28*	.25*	1

**Table 5.** Pairwise correlations.

Note: \* p<.05. Time position = time in position, Func level = functional level. Sector dummy: government (1) private (0).

Another notable aspect of Table 3 is the strong correlation between some independent variables. It is undesirable to have strong correlations between two independent variables in the model since it makes it hard to control for both. However, only variables that impose *perfect multicollinearity* – a correlation of 1 - must be removed from the model because it is simply impossible to control for

both (Studenmund, 2014). *Imperfect multicollinearity* implies a strong, but smaller than 1 correlation. This can, but not always, result in a larger variance and standard error of the estimator that increases the chance of a type 2 error.<sup>15</sup> In other words, the probability that the *null hypothesis* can be rejected could decrease and the likelihood of a statistically insignificant model could increase. However, there is no clear measure that distinguishes weak from strong correlations. Studenmund (2014) suggested that the decision to drop one strongly correlated variable has to be based on the theoretical relevance of the relevant variable. Since all the variables belonging to the model are in accordance with the literature, removing one could have generated an omitted variable bias. Moreover, the relatively strong correlations were not strong enough to expect problems with controlling for them. It was therefore decided to keep all the relatively strong correlated variables in the model.

## **5. DATA ANALYSIS AND RESULTS**

Once the data were processed, it was time to analyse the detected correlations between the variables of interest further. This was achieved by conducting a multivariate regression analysis for the four different models. Robustness checks were conducted to test the strengths of the derived relationships between sector and the different red tape constructs.

## 5.1 INTRODUCTION REGRESSION ANALYSIS

The multivariate population model was used to analyse the relationship between sector and red tape perception while controlling for public service motivation (PSM), time in position, tenure, size, and functional level. Since size was effectively blocked, the relevant model was:

## $\begin{aligned} RTpercept_{i} &= \beta_{0} + \beta_{1}sector_{i} + \beta_{2}PSMaps_{i} + \beta_{3}PSMss_{i} + \beta_{4}time \ in \ position_{i} + \\ \beta_{5}tenure_{i} + \beta_{6}functional \ level_{i} + \varepsilon_{i} \end{aligned}$

The true population parameters were estimated using this multivariate model. The Ordinary Least Square (OLS) technique was used to estimate the coefficients. OLS draws the regression lines in such a way that it minimises the summed squared deviations from this line (Studenmund, 2014). These deviations from the regression line are usually called *residuals*.

<sup>&</sup>lt;sup>15</sup> Incorrectly retaining a false null hypothesis.

The estimated model, derived from the OLS technique, is the empirical counterpart of the population model described above. The estimated values of the linear multivariate regression are described in the model below.

# $$\begin{split} RTpercept_{i} &= \hat{\beta}_{0} + \hat{\beta}_{1}sector_{i} + \hat{\beta}_{1}PSMaps_{i} + \hat{\beta}_{2}PSMss_{i} + \hat{\beta}_{3}time \ in \ position_{i} \\ &+ \hat{\beta}_{4}tenure_{i} + \hat{\beta}_{5}functional \ level_{i} + \epsilon \end{split}$$

 $\hat{\beta}_0$  = This intercept value describes the average of red tape perception for private sector employees when all the independent variables have zero effect.

 $\hat{\beta}_k$  = The slope coefficient gives the effect of the independent variable on red tape perception.

 $\epsilon$  = This symbol indicates the residual. This value differs per data point but is on average always zero when using OLS.

In order to interpret the coefficients ( $\hat{\beta}$ 's) in a more meaningful way, the dependent variables were also indexed. This indexation was derived from the original red tape constructs; by subtracting 1 from every construct<sup>16</sup> and dividing the new number by 4, a red tape score between 0 and 1 was created. This enabled the current study to interpret the results in percentage *points* instead of in a 1-5 Likert scale.

It should be noted that the *functional level* variable was included in the model and analysis but is treated marginally in the interpretation and results: there are simply too few observations for the functional level variable. This makes it unclear, for example, as to whether, an R-squared increase after adding functional level occurred because functional level is an important determinant of red tape perception, or because functional level decreases the number of observations by about 25 percentage (and hence the variation). The reduced model without functional level is therefore more meaningful and forms the basis for the final results.

<sup>&</sup>lt;sup>16</sup> The original constructs have a score between 1 and 5. By subtracting 1, the new score becomes a score between 0 and 4.

## 5.2 MULTIVARIATE REGRESSION PERSONNEL RED TAPE (PRT)

It was hypothesized that government employees perceive a higher level of personnel red tape in comparison with their private consultants. Hence, the hypotheses are stated as:

$$H_o: \beta_1 \leq 0$$

$$H_a: \beta_1 > 0$$

The *simple linear* or *bivariate* regression gave a significant positive effect of sector on PRT, assuming a 5% significance level. However, the coefficient on the bivariate regression should not be taken too seriously because the regression likely suffered from an omitted variable bias. Consequently, control variables were added to test if the effect was still significant when adding them, one by one, to the model.

		PRT						PRTindex
Variables	$\beta(SE)$							
Sector	.28**	.29**	.28**	.26**	.42***		.40**	.106***
(1=gov)	(.14)	(.14)	(.14)	(.15)	(.17)		(.21)	(.04)
PSMaps		10	06	06	.72	.02	19	015
		(.14)	(.17)	(.17)	(.17)	(.17)	(.20)	(.04)
PSMss			06	06	.75	79	08	011
			(.13)	(.13)	(.13)	(.13)	(.16)	(.03)
Time				.01	.02	.02	.03	.006
position				(.01)	(.02)	(.02)	(.02)	(.00)
Tenure					02**	01	03**	005**
					(.01)	(.01)	(.01)	(.00)
Func level							.03	
							(.09)	
R-squared	.04	.04	.04	.05	.09	.02	.12	.09
Ν	99	98	98	98	98	99	72	98

 Table 6. Multivariate regression personnel red tape (PRT).

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

As Table 6 shows, adding PSMaps, PSMss, and time in position hardly changed the effect of sector on PRT. But when tenure was added to the model, the effect of sector increased and became significant at the 1% level. This could be explained by the relatively skewed distribution of tenure among the private and public sector employees. Since public sector employees in the current sample worked (on average) about 12 years longer at their organisation, controlling for this factor did have a noteworthy effect on the sector coefficient. Additionally, the R-squared increased with approximately 4 percentage *points*, which implies that more variation in the outcome variable is explained. Tenure seems to be an important determinant of personnel red tape perceptions.

The PRTindex was used to interpret the PRT construct in a more meaningful manner. Public sector employees perceived 10.6 percentage points more red tape compared to their private contractors, *ceteris paribus*. Since the effect was significant at the 1% level, the *null hypothesis* can be rejected and the stated hypothesis is confirmed.

## 5.3 MULTIVARIATE REGRESSION ORGANISATIONAL RED TAPE (ORT)

It was hypothesised that government employees perceive the same level of organisational red tape as the private consultants due to publicness and isomorphism processes. The hypotheses can be stated as:

 $H_o: \beta_1 = 0$ 

$$H_a: \beta_1 \neq 0$$

The effect of sector on ORT was small and insignificant in the bivariate model as well as in the multivariate models (see Table 7). This implies that the null hypothesis cannot be rejected: the effect of sector on organisational red tape is assumed to be zero or non-existent. In other words, government organisation employees perceived the same level of organisational red tape as their private consultants. This was confirmed by analysing the R-squared differences between the entire model except functional level (column 5) and the same model without sector (column 6). R-squared did decrease with only 1 percentage point when excluding the sector variable, which is a marginal change in the explanation of the total variation.

				ORT				ORTindex
Variables	$\beta(SE)$							
Sector	.14	.16	.14	.12	.20		.39*	.050
(1=gov)	(.15)	(.15)	(.15)	(.16)	(.18)		(.23)	(.05)
PSMaps		12	02	02	12	.02	20	006
		(.15)	(.18)	(.18)	(.18)	(.17)	(.21)	(.05)
PSMss			13	13	13	14	07	031
			(.14)	(.14)	(.14)	(.14)	(.17)	(.04)
Time				.004	.012	.01	.009	.003
position				(.01)	(.02)	(.01)	(.02)	(.00)
Tenure					008	003	02	002
					(.01)	(.01)	(.01)	(.00)
Func level							.11	
							(.10)	
R-squared	.01	.01	.02	.02	.03	.02	.09	.03
Ν	100	99	99	99	99	100	73	99

**Table 7**. Multivariate regression organisational red tape (ORT).

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

#### 5.4 MULTIVARIATE REGRESSION TENDER RED TAPE (TRT)

Tender red tape was hypothesised to be more relevant for private consultants than government organisation employees because the tender phase is drafted and organised by the government organisation. Hence, the hypotheses are stated as:

$$H_o: \beta_1 \ge 0$$

$$H_a: \beta_1 < 0$$

A surprisingly different result was found in the current study. The effect of sector on TRT was positive and significant at the 5% level in the bivariate regression (see Table 8). This means that government organisation employees perceived more TRT compared to private consultants. In other words, the estimated effect was the opposite of the expected effect. The effect was still positive

when controlling for the other variables, even though it was less significant. The entire model (except functional level) showed the following result: government employees perceived 7.7 percentage points more red tape than private sector employees, *ceteris paribus*. However, this result should be treated very carefully since it was only significant at the 10% level.

It should be noted that with regard to TRT, attraction to policy making seems to be an important determinant. Moreover, attraction to policy making was the only variable still standing in the entire model when requiring the 5% significance level. An employee that is more attracted to policy making also seems to perceive more tender red tape.

		0		, T	,			
				TRT				TRTindex
Variables	$\beta(SE)$							
Sector	.28**	.22*	.18	.25*	.31*		.40*	.077*
(1=gov)	(.15)	(.15)	(.15)	(.16)	(.19)		(.21)	(.08)
PSMaps		.22	.40**	.41**	.41**	.43**	.57***	.102**
		(.15)	(.18)	(.18)	(.18)	(.18)	(.19)	(.10)
PSMss			24*	25*	25*	27*	36	062*
			(.14)	(.14)	(.14)	(.14)	(.15)	(06)
Time				02	01	01	01	003
position				(.01)	(.02)	(.02)	(.02)	(.00)
Tenure					006	.002	02**	002
					(.01)	(.01)	(.01)	(.00)
Func level							.20**	
							(.09)	
R-squared	.03	.05	.08	.10	.10	.07	.29	.10
Ν	99	98	98	98	98	99	72	98

**Table 8**. Multivariate regression tender red tape (TRT).

Note. \* p<.10, \*\* p<.05, p<0.01\*\*\*.

## 5.5 MULTIVARIATE REGRESSION CONTRACTING RED TAPE (CRT)

Contracting red tape is assumed to be perceived the same way by government organisation employees and their private consultants. The hypotheses are stated as:

$$H_o: \beta_1 = 0$$

## $H_a: \beta_1 \neq 0$

With regard to contracting red tape, the rules, procedures, and regulations are exactly the same for the government organisation employees as for the consultants. Both parties have to comply with and sign the same contract. Differences between the employees from different sectors consequently cannot be explained by sector but only by personal characteristics. Therefore, this dimension is not only relevant in itself but can also be used to check whether there are other omitted variables based on personal characteristics that are not included in the model. If there is still a significant difference between both sectors in the entire model, the model probably suffers from an omitted variable bias.

				CRT				CRTindex
Variables	$\beta(SE)$							
Sector	.01	.00	01	.09	.05		03	.013
(1=gov)	(.15)	(.15)	(.16)	(.16)	(.19)		(.21)	(.05)
PSMaps		01	.04	.06	.06	.07	.16	.014
		(.15)	(.18)	(.18)	(.18)	(.18)	(.20)	(.05)
PSMss			07	08	09	09	18	022
			(.14)	(.14)	(.14)	(.14)	(.16)	(.04)
Time				03*	03*	03	03	008
position				(.01)	(.02)	(.02)	(.02)	(.00)
Tenure					.00	.01	01	.001
					(.01)	(.01)	(.01)	(.00)
Func level							.12	
							(.09)	
R-squared	.00	.00	.00	.04	.04	.04	.10	.04
Ν	99	98	98	98	98	99	72	98

**Table 9**. Multivariate regression contracting red tape (CRT).

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

The effect of sector was small to non-existent and insignificant in the bivariate as well as in the different multivariate models. Additionally, the R-squared did not change when excluding the sector variable from the model. This implies that the null hypothesis cannot be rejected and the hypothesised theory is confirmed: there was no difference in contracting red tape perception between government employees and their private consultants.

## **5.6 ROBUSTNESS CHECKS**

Robustness checks were conducted in order to test the strength of the estimated effects of sector on red tape perception. First, it was tested to see whether the assumptions held for OLS as an unbiased estimation method. Second, the reliability of an important underlying assumption in the current study – that government organisations can be treated as homogenous – was checked. Third, the appropriateness of using one regression model for two different samples was checked with the Chow test. Together, these tests indicated how robust the estimations in the current study were.

### 5.6.1 BLUE

The OLS was applied because it has certain desirable statistical properties; under certain assumptions, the OLS is the Best Linear Unbiased Estimator (BLUE) (Studenmund, 2014). 'Best' is defined as the technique that generates the smallest possible variance. A coefficient is unbiased if the estimated effect is equal to the true population coefficient. This can be expressed in mathematical terms:

$$E(\widehat{\beta_k}) = \beta_k \qquad (k = 0, 1, 2, \dots k)$$

If the following assumptions are fulfilled, the sampling distribution is centred on the true population  $(E(\widehat{\beta_k}) = \beta_k)$  and inferences can be made about the population from the sample (Studenmund, 2014). Under the first four assumptions, the coefficients are unbiased estimates of the population parameters. Under the first six assumptions, the variance is an unbiased estimate of the population variance.

- I. The regression model is linear in parameters
- II. Error term has a zero population mean (*algebraic property*)
- III. All independent variables are uncorrelated with the error term

- IV. No perfect multicollinearity between independent variables (see Table 5)
- V. No serial correlation: error terms are not correlated with each other (*time series*)
- VI. No heteroscedasticity: error terms have a constant variance.

Assumption I was, at least for the sector variable, fulfilled because a non-linear relation between sector and red tape perception was not possible due to the use of a dummy as main independent variable. Assumption II was already met by using OLS: a line that minimises the squared residuals already ensures that the mean of these residuals is zero. Assumption III was violated when a relevant variable was excluded that had an effect on the dependent as well as the main independent variable. This assumption cannot entirely proven as there is always the possibility of unknown or forgotten omitted variables (Studenmund, 2014). The literature was used to detect and include possible omitted variables. Only functional level was not fully taken into account in the estimated model, which could form a bias in the coefficient. Although there could be more omitted variables that were not taken into account, the current author believes that the most important potential omitted variables were included in the model. Assumption IV was not violated, which was already explained with the correlations (see Table 5). Because the first four assumptions are fulfilled, the sector coefficient is assumed to be an unbiased estimate of the population parameter.

Assumption V is important for time-series models: an increase in the error term in one time period could affect an increase in another time period. It was assumed that this was not applicable for the current cross-sectional model since the observations were from the same time period and could not have influenced each other. Assumption VI was tested with the *Breusch-Pagan test* (see Appendix 7) of heteroscedasticity. The test results showed that all error terms had a constant variance (homoscedastic), except for CRT. Heteroscedasticity can be resolved by using *robust* standard errors instead of normal standard errors. The multivariate CRT regression results including robust standard errors are displayed in Appendix 7. The coefficients are almost the same since they were still unbiased when assumption VI was violated. The robust standard errors were somewhat larger than the normal standard errors. This resulted in an even more insignificant effect of sector on CRT. Hence, the estimated variance is assumed to be an unbiased estimate of the population variance.

#### 5.6.2 Organisational effects

One of the underlying assumptions in the current study is that government organisations can be treated as one homogenous group in terms of red tape perceptions. The regression analysis excluded the possibility of unique organisational effects of provinces, ministries, and municipalities, by merging them into the group variable 'government organisations'. This section focuses on the legitimacy of this assumption, by splitting the group variable 'government organisations' into its individual components. The current author created separate dummy variables for each organisation type and included all but one (to prevent for the *dummy variable trap*) in the original model. The omitted organisation type/reference group was the consultancy firm: all the interpretations are relative to this organisation type. The relevant model is:

$$\begin{aligned} RTpercept_i &= \hat{\beta}_0 + \hat{\beta}_1 Province_i + \hat{\beta}_2 Ministry_i + \hat{\beta}_3 Muncipality_i + \hat{\beta}_4 PSMaps_i \\ &+ \hat{\beta}_5 PSMss_i + \hat{\beta}_6 time \ in \ position_i + \hat{\beta}_7 tenure_i + \epsilon \end{aligned}$$

Table 10 shows the results of the robustness check. As can be derived from the results, employees from provinces as well as municipalities had a significantly higher PRT perception in comparison with consultancy firms. Surprisingly, ministries perceived *less* red tape in the personnel system than consultancy firms. The robustness of the sector effect on PRT is, therefore, questionable and requires further research.

	PRTindex	ORTindex	TRTindex	CRTindex
Variables	β	β	β	β
Province dummy	.084*	.068	.019	034
	(.05)	(.06)	(.06)	(.06)
Ministry dummy	013	.044	.042	041
	(.06)	(.07)	(.07)	(.07)
Municipality	.160***	.039	.131**	.058
dummy	(.05)	(.05)	(.05)	(.05)
F-score	5.10***	.44	2.38*	1.15

 Table 10. Robustness checks: organisational dummies.

Note: Controlled for: PSMaps, PSMss, time in position, tenure, and size.

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

The findings with regard to sector differences in ORT and CRT seem to be robust: there were no significant differences between organisational types. With regard to TRT, only employees from municipalities seem to perceive more red tape in the tender phase than the private consultants. This confirms that the original findings in the multivariate regression model should be treated very carefully. However, the TRT findings are robust to the extent that the theoretically derived hypothesis should be rejected: private consultants perceived at least *not more* red tape in the tender phase than government organisation employees.

The F-scores in the last row indicate the significance of the multiple dummies together. This is basically a test of the general impact of sector on the different red tape constructs. If a 5% significance level is retained, which is the most common level, only personnel red tape is effected by sector.

#### 5.6.3 CHOW TEST

A *Chow test* was performed in order to test if the government sector sample had a different regression function than the private sector sample. This is important, since significantly different coefficients on the control variables could also represent different magnitudes of the omitted variable biases for each sample group. In this case, a reconsideration of the estimated effects of sector on the different red tape constructs was required. Interaction terms were created to test the following model:

$$\begin{split} RTpercept_i &= \hat{\beta}_0 + \hat{\beta}_1 sector_i + \hat{\beta}_1 PSMaps_i + \hat{\beta}_2 PSMss_i + \hat{\beta}_3 time \ in \ position_i \\ &+ \hat{\beta}_4 tenure_i + \hat{\beta}_5 PSMaps * sector_i + \hat{\beta}_6 PSMss * sector_i \\ &+ \hat{\beta}_7 time \ in \ position * sector_i + \hat{\beta}_8 tenure * sector_i \epsilon \end{split}$$

The results in Table 11 show that there was no reason to build different regression models for the government and private sector samples. The coefficients of PSMss, PSMaps, tenure, and time in position do not significantly differ between samples. This implies that the chosen model specification is, in this regard, correct and does not need to change. The F-test is a test of model difference and confirms the conclusion that the coefficients of the control variables are similar in both samples.

	PRTindex	ORTindex	TRTindex	CRTindex
Variable	β	β	β	β
PSMaps*sector	.062	.102	.020	.023
	(.09)	(.09)	(.10)	(.10)
PSMss*sector	081	101	.027	030
	(.07)	(.07)	(.07)	(.07)
Tenure*sector	005	003	.008	.000
	(.01)	(.01)	(.01)	(.01)
Time in	.020	.000	008	005
position*sector	(.01)	(.01)	(.01)	(.01)
F-test	1.39	.58	.24	.15

 Table 11. Robustness checks: Chow test.

Note: Controlled for: sector, PSMaps, PSMss, time in position, tenure and size Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.

## **6. DISCUSSION**

This section evaluates the findings described in section 5. First, the findings are placed in the theoretical framework constructed in section 2. Second, this section briefly elaborates on the strengths of the current study. Third, the limitations and possible flaws in the findings are made explicit and are supplemented with future research recommendations. Fourth, the findings are translated into practical policy suggestions.

## **6.1 THEORETICAL EXPLANATIONS**

The detected significant positive effect of sector on personnel red tape (PRT) perceptions in the multivariate regression analysis is not surprising. The findings are in line with the current stance of red tape research since there is a strong belief that greater pressures to be accountable in government organisations lead to a large degree of formalisation of personnel rules (e.g. Rainey, 1983). Government organisations must comply with extensive personnel regulations, which are believed to weaken the relationship between individual performance and extrinsic rewards (e.g. Rainey, 1983; Savas & Ginsburg, 1973). The resulting complexity of procedures for hiring, firing, promotions, and pay raises can be perceived as PRT.

Although the current study confirms that, in general, personnel red tape is perceived more in government organisations in comparison to private organisations, this seems only to apply for certain government organisation types. While employees from provinces and municipalities indeed perceived more PRT, ministries however perceived *less* PRT compared to the private contractors. One explanation could be that personnel systems differ between government organisation types: ministries seem to have a less burdensome personnel system compared to the provinces and municipalities. This implies that government organisations cannot be seen as a homogenous group with regard to PRT. Another explanation can be found on the personal level. It is possible that there was an omitted variable that was not included in the current study, which could explain these differences. Pandey and Kingsley (2000), for example, also found a significant positive effect of work alienation on PRT perceptions. It could be that the respondents in the ministries were more satisfied and involved with their jobs compared to the respondents in the municipalities and provinces. This could explain the differences in PRT perceptions even if the personnel systems were similar. However, if work alienation was an omitted variable and was more present in municipalities and provinces, this should also have led to organisation type differences on other red tape dimensions. Since this was not the case, the existence of significant different personnel systems is a more likely explanation of the results than omitted variables on the personal level.

With regard to organisational red tape (ORT), the findings in the current study challenge the current state of affairs in red tap research in which there is a broad consensus that public sector organisation employees perceive more ORT than private sector employees. The current study hypothesised that the influence of sector as legal status was overrated; it was not sector, but publicness and isomorphism that could explain the non-existent differences in ORT perceptions between government and private organisation employees (e.g. DiMaggio & Powell, 1983; Bozeman & Bretschneider, 1994). Organisations that are heavily dependent on government organisations – like the government's contracting partners – are more dependent on political authorities (publicness) and tend to harmonise rules, procedures, and regulations with the government organisation (isomorphism). Both aspects generate similar organisations with regard to red tape conditions. As the findings were proven to be robust, there is a strong case to assume that this theory holds.

The effect of sector on tender red tape (TRT) was slightly significant and positive. An explanation for this remarkable result can be found in the fact that rules, procedures, and regulations in the tender phase could delay the policy making process. As the tender expert (Appendix 2) states:

## "Because there are laws and rules, [the tender phase] eventually costs more time and money than without these rules."

Government organisation employees experience a delay in their work because of this timeconsuming tender phase. They want to delegate tasks to consultancy firms but this cannot be executed with urgency and free choice. Consultants do not feel this delay since their work is not effected by the tender phase. After all, their job begins only when the tender phase is finished.

Another interesting result, that of the relative strong effect of PSM on TRT, could also be explained by the delay of the policy making process due to burdensome rules, procedures, and regulations. Employees who are more attracted to policy making can be presumed to assess these rules, procedures, and regulations as more obstructive to the policy process. They are intrinsically motivated by policy making and are therefore more sensitive to obstructions than people who are extrinsic motivated: if you still get your salary or bonus, why would you care?

Although the above arguments outline a possible explanation for these surprising TRT findings, they are based on limited information from the tender expert, assumptions, and common sense as there is no other study that can be used to explain these findings.<sup>17</sup> Further research into rules, procedures, and regulations in the tender phase is required not only to explain the results in the current study, but also to account for the fact that the highest degree of red tape was perceived in the tender phase and not the other red tape dimensions.

The non-existent effect of sector on contracting red tape (CRT) can be explained with the normative mechanism of isomorphism; professionalism "creates a pool of almost interchangeable individuals who occupy similar positions across a range of organisations" (DiMaggio and Powell, 1983, p. 152). Since the rules, procedures, and regulations with regard to contracting are exactly the same for government employees and private contractors, omitted variables based on personal characteristics are very unlikely.

<sup>&</sup>lt;sup>17</sup> It should also be noted that these findings lack significance and robustness, which makes an explanation unnecessary.

### 6.2 STRENGTHS

This part elaborates briefly on the strengths of the current study. Aside from to the general advantages of using quantitative methods, there are a few other strong points specific to this study. One of these points is that the current study approaches the research question from different angels and perspectives. The theoretical framework consists of a large number of theories derived from different social sciences, such as public administration, organisational science, political science, sociology, and economics. This holistic perspective has resulted in hypotheses that could not have been derived from the existing red tape literature only. These hypotheses consequently challenge prevalent ideas in the field. In addition, multiple red tape dimensions were included in order to answer the research question; namely, organisational, personnel, contracting, and tender red tape. This also ensured a more holistic perspective on red tape differences and enabled the current study to specify with greater accuracy the origins of these red tape differences.

Another strong point is the research design. The organisations included in the current study are 100% privately or publicly owned. The absence of hybrid organisations makes the effect of sector on red tape perception less ambiguous. The lack of grey area organisations is a factor that reduces the likelihood of alternative explanations, especially in the current study where the effect of sector was hypothesized to be non-existent. Additionally, the current study makes a comparison between similar functions. Feeney and Bozeman (2009), who conducted the only other contracting study, compared the perceptions of public managers and private consultants. Because all the managers were from the public sector and all consultants from the private sector, it was impossible to control for function-specific factors in a public-private comparison. It was, therefore, not clear if red tape perceptions differed because of sector differences or because of functional differences. In the current study, the selection of employees with similar functions therefore decreased the probability of an omitted variable bias.

The analysis is strong to the extent that the current study introduced some improvements in red tape analyses. The current study used indexed red tape scales, which makes it easier and more meaningful to interpret the results. Moreover, this study conducted robustness checks to test the assumptions underlying the public-private comparisons. This revealed the inappropriateness of using government organisations as a homogenous group. Last but not least, the current study introduced a new dimension of red tape; namely, tender red tape, which proved to be an important red tape determinant for policy officers and policy consultants.

### 6.3 LIMITATIONS AND FURTHER RESEARCH

The current study has a number of limitations that also point toward directions for future research. One of the most important limitations, in the current author's opinion, is the fact that the respondents from the private consultancy sample all worked at the same organisation: Ecorys. This infers some misgivings about the representativeness of the sample and thereby the findings of the current study. It is important to stress that the private consultancy sample in the current study had to meet two conditions: 1) the government is the main customer of the consultancy firm; 2) the consultancy firm advises the government on policy issues. The former condition was necessary to test the resource dependency explanation of isomorphism, the latter condition was necessary to make the public-private comparison possible between similar functions. In view of these conditions, a sample of the Dutch market could almost consist solely of employees from Ecorys. Ecorys' customer base is mostly comprised of government clients and they are focused on policy advice. There is simply no other Dutch consultancy firm that meets both conditions, except for a few very small firms.<sup>18</sup> These small firms are, however, not suitable because their size makes it impossible to block the size variable.

Although the current sample is representative for policy consultancy firms that are dependent on the Dutch government, one could also question whether the sample is representative for *all* contracting firms that are dependent on the Dutch government. Other contacting firms could, for example, be construction companies active in the infrastructure sector or employment agencies focusing on the public sector. There is no reason to presume that the resource dependency model and publicness theory do not apply to these companies. They are also dependent on political authorities – think of budgets for infrastructure – and it can also be assumed that these companies strive to be a more legitimate partner than their competitors by harmonising rules, procedures, and regulations. So as long as a company is not a monopoly, its efforts to be a more legitimate partner for the government could result in a conciliation of red tape conditions. However, further research is required in order to strengthen and broaden this theory. It is therefore recommended to test similar hypotheses in other sectors, with samples from different contracting partners and their government clients.

Another limitation in the current study is the imperfect control for the functional level variable. Due to a lack of sufficient observations, it was simply not worthwhile to control for this

<sup>&</sup>lt;sup>18</sup> KWINK groep, Roots, DSP-groep.

variable. In the end, functional level did not generate an omitted variable bias (OVB). An OVB exists when a variable is not included in the model that: 1) affects the main independent variable sector; and 2) effects the dependent variable red tape perception. Condition 1 was not fulfilled since sector choice cannot be influenced by functional level.

On the other hand, and this reveals another limitation, the sample size was rather small with only around 100 observations. The law of large numbers prescribes that the larger the sample is, the more similar the sample distribution is to the true distribution (Studenmund, 2014). The true functional level distribution is assumed to be approximately the same in government organisations as in consultancy firms; the amount of people working on a certain functional level decreases when the functional level increases. The problem with a relatively small sample is that the sample distribution is more likely to differ from the true distribution, which makes it also important to control for *covariates* instead of only for *cofounders*. Hence, the lack of opportunity to control for functional level could still form a bias for the detected coefficients and significance levels. It should be noted that the risk of unforeseen omitted variables is inherent to regression analysis and can only be minimised by adding many feasible omitted variables to the model as possible. Although the current author believes that the OVB is minimal, future studies could build on the current study by testing an extended model with more observations.

A more validity-based limitation specifically for this current study (and for red tape research in general) is the way in which red tape dimensions are measured. Respondents are asked to rank *all* the rules, procedures, and regulations together on one dimension (GRT scale) or three dimensions (TIRT scale). These questions trigger a number of psychological biases. The first bias, *availability heuristics*, occurs when people have to make judgments about certain subjects (Kahneman & Tversky, 1974). This is a mental shortcut based on direct examples from people's memory, which reminds them of a certain subject. These examples associated with the subject of interest are strong determinants of the manner in which the whole subject is judged. In other words, when red tape researchers ask people to assess all rules, procedures, and regulations on one (or a few) dimensions, it is likely that respondents base their judgment on a recent (good or bad) experience with one *single* rule, procedure, or regulation instead of all them together. As a consequence, data do not give a good representation of red tape levels, but represent a collection of information about random recent experiences based on the mental availability of examples. The second psychological bias is that the questions all have a *double-barrelled* (or actually triple-

barrelled) formulation. The questions allow for only one answer while essentially asking three different things: how do you assess rules? How do you assess procedures? How do you assess regulations? Imagine that the respondent perceives rules as burdensome, ineffective, and unnecessary, but perceives procedures and regulations as effective and necessary and not burdensome. The question does not give any information on how to weigh the different aspects of the question, which creates a large grey area of judgment.

While the Three-Item Red Tape (TIRT) scale was already an improvement on the General Red Tape (GRT) scale, the current author believes that there is further potential for improvement in the way red tape is measured. Further research could focus on asking questions that target specific rules, procedures, *or* regulations. Red tape research into the tender or contracting phase is especially suitable for 'rule-based' questions because the rules, procedures, and regulations are mostly nationally established and therefore similar across different organisations and sectors. Future research into tender red tape (TRT) could, for example, focus on the ARVODI law or the EMVI principle. The TIRT scale can still be used, but the question should be focused on the specific law or principle. This eliminates double- or triple-barrelled questions and minimises the availability heuristic. In addition, focusing on specific rules, procedures, or regulations enables red tape research to specify more accurately where red tape differences originate. Future research could thus build on the current study, which has already made the first step in this direction by making the important distinction between the tender and contracting phase.

Another way to eliminate the above mentioned psychological biases is by using objective red tape instead of perceived red tape. Scholars who use objective measures usually operationalise red tape as the amount of time required to complete administrative tasks (e.g. Bozeman, Reed & Scott, 1992; Bozeman & Bretschneider, 1994; DeHart-Davis & Bozeman, 2001). Essentially, administrative delay is used as a proxy for red tape. This way of measuring obviously reduces the psychological biases mentioned above. Moreover, it provides a more concrete inside view in the inefficiencies related to rules, procedures, and regulations. If one knows precisely how much time is spend on administrative tasks, it is quite easy to translate this into a financial loss, based on labour costs. Time is, after all, money. However, it is unclear if administrative delay measures the underlying concept of red tape. Administrative delay may not be the result of rules, procedures, and regulations but of informal behaviour and norms within an organisation. According to Bozeman and Feeney (2009), there is not a single red tape study that confirms the usefulness of

administrative delay as a method for measuring red tape. Using objective instead of perceived red tape may therefore be more relevant for applied research instead of scientific research. On the other hand, administrative delay in the current study is assumed to be the main reason for why government organisations perceive more TRT compared to their private contractors. Further research could strengthen this argument by investigating administrative delay in the tender phase.

There are also a number of future research suggestions not related to limitations of the current study. Other scholars could build on this study by proving that the theoretical mechanisms that underlie isomorphism and publicness affect the non-existent ORT perception differences between government and private sector employees. In addition, future research could focus on explaining the differences in PRT perceptions between ministries and other government organisations. Or on a more general note, the legitimacy of treating government organisations as one homogenous group could also be explored further in future research. Moreover, research into tender red tape (TRT) as an independent variable is necessary to determine how strong it affects the performance and effectiveness of government organisations.

## **6.4 POLICY IMPLICATIONS**

There are a number of policy implications that should be addressed in the current study. Rules, procedures, and regulations in the tender phase have not been investigated before; nonetheless, they feature the highest degree of red tape compared to the other dimensions. Government organisations have put much effort into reducing red tape in the organisation and personnel system. This is also referred to as part of the New Public Management reform (e.g. Hood, 1995) where values of performance-based management, including efficiency and effectiveness, have become more and more important. The results of this study seem to uncover a *blind spot* in these efforts to reduce red tape. As Bozeman (2000) notes, the presence of red tape results in a waste of organisational resources and imposes significant costs on the organisation. Given the growth of outsourcing in the public sector, deregulating the tender phase could save money and time (and frustration) in tender activities.

Another implication is that the privatisation or delegation of assignments to the private sector based on the belief that this can reduce red tape, does not seem to hold true for all cases. An *unintended consequence* of delegating tasks is that the contracting firm puts effort into making itself a more legitimate partner by copying the red-tape-causing rules, procedures, and regulations from the government organisation. As such, policy makers should think about changing the

incentives for contracting partners. Following Kaufman (1977), there seems to be a trade-off between incentivising accountability and easy cooperation with the contracting partner on the one hand and incentivising efficiency and red tape reduction on the other hand. The current study contributes to the red tape aspect of this trade-off and could thereby help to make a more conscious *cost-benefit analysis* when deciding how to privatise or delegate policy activities. Accordingly, it is recommended for the same policy makers to rethink the privatisation and delegation decisions they have already made, based on this knowledge that red tape reduction is not an inherent consequence of shifting tasks to the private sector.

## 7. CONCLUSIONS

It is useful to reintroduce the research question in this part of the thesis: *To what extent do red tape perceptions differ between government organisation employees and their private contractors?* The current study focused on *Dutch* government organisation employees and their private *consultancy* contractors. The effect of sector on red tape perception was measured with a multivariate regression model with the following control variables: public service motivation, time in position, tenure, size (and functional level). As multiple red tape dimensions were tested, multiple conclusions can be drawn based on the analysis.

Personnel red tape (PRT) was hypothesised to be more relevant for government organisation employees compared to their private contractors. This is based on, amongst others, the studies of Bozeman and Kingsley (1998) and Pandey and Kingsley (2000); both offer strong consistent evidence that personnel rules and regulations vary significantly across the public and private sector. The current study provides evidence for this theory by demonstrating that public sector employees perceived 10.6 percentage points more red tape compared to their private contractors, *ceteris paribus*. However, when government organisations were not considered as a homogenous group, but as a heterogeneous group varying on administrative levels (ministries, provinces, and municipalities), rather different conclusions can be drawn. While employees from provinces and municipalities indeed perceived *more* PRT, ministries perceived *less* red tape in the personnel system than consultancy firms. One can conclude from this result that government organisations should not be treated as homogenous group with regard to red tape in personnel systems.

There is a broad consensus about the effect of sector on organisational red tape (ORT) perceptions. Economists, sociologists, and public administrators seem to agree that government organisation employees perceive higher degrees of red tape than private organisation employees (e.g. Kaufman, 1977; Alchian & Demsetz, 1972; Bozeman, 1993). However, the current study hypothesised that this does not hold if one compares government organisations and private contractors who depend on the government as their main customer. Processes of *isomorphism* (harmonising rules, procedures, and regulations) and *publicness* (dependency on externally imposed political authority) make these private contractors sensitive to the same organisational red tape as the government organisation employees (e.g. DiMaggio & Powel, 1983; Bozeman & Bretschneider, 1994). The results of the current study show that sector is indeed a negligible determinant of ORT. The difference in ORT perceptions between government organisation employees and their private contractors was insignificantly small, *ceteris paribus*.

Tender red tape (TRT) has not been investigated before, and, the current study hypothesised that government organisation employees perceive *less* tender red tape compared to their private contractors. However, data shows the exact opposite of the hypothesised relation: government employees perceived *more* red tape compared to private contractors, *ceteris paribus*.<sup>19</sup> Although explaining the (non-)existent differences goes beyond the scope of the current study, a possible explanation could be that the rules, procedures, and regulations in the tender phase delay the policy making process (see Appendix 2). This delay is felt less by the contractors because their job begins as the tender phase ends. Another interesting result with regard to TRT is that the respondents perceived the highest degree of red tape in the tender phase, which was even higher than in the organisation or the personnel system.

Contracting red tape (CRT) was hypothesised to be perceived the same by government employees and their private contractors; this is in accordance with the findings of Bozeman and Feeney (2009). This could be explained by the normative mechanism of isomorphism, where two aspects of professionalism – similar educational background and professional networks – create a "pool of almost interchangeable individuals who occupy similar positions across a range of organisations" (e.g. DiMaggio and Powell, 1983, p. 152). Policy officers and policy consultants belong to the same professional group, have the same educational backgrounds (see Table 4) and participate in the same networks. This explains why the results show that professionals on both

<sup>&</sup>lt;sup>19</sup> These findings are only significant at the 10% level and should therefore be treated very carefully.

sides of the contracting relationship assessed the rules, procedures, and regulations in contracting with the same degree of red tape, *ceteris paribus*.

In sum, red tape perceptions only differ in the personnel system and the tender phase. But even these results are questionable due to the heterogeneity of government organisations (PRT and TRT) and the lack of significance (TRT). In general, it can be stated that the results of the current study show that red tape does not differ significantly between government organisations and their private contractors. Hence, the widely acknowledged red tape differences between the public and private sector are, under certain circumstances, based on a *myth*.

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## **APPENDICES**

## APPENDIX 1: SURVEY (INTERNAL REVIEW VERSION; NOT IN ORIGINAL LAYOUT)

**Red Tape** 

Age:		
Gend	er:	
	Male	
A	Female	

 The High school

 A
 Primary school

 A
 High school

 A
 Intermediate vocational education

 A
 University of applied science

 A
 University

 A
 Other, please specify:

## I am employed at a:

- Municipality
- Province
- Ministry
- Consultancy firm

How many employees are employed at your organization? Count in FTE (fulltime-equivalent) & take foreign offices into account.

- ▲ 50 or less
- **A** 51 249
- 250 or more
- I don't know

## How many years are you working at your current employer? Round to whole years

My job title is: for example: policy officer

## How many years are you working in your current position?Round to whole years

The following questions are intended to identify how you perceive internal rules, procedures, and regulations within your organization. A distinction is made between red tape related to the content of your work and red tape in the personnel system.

## To what extent do you agree with the following statements?

## Note: these statements are related to red tape in personnel systems.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
Even if an employee is a poor performer, formal rules make it hard to remove him or her from the organization.		æ	4	•	•
The rules governing promotion make it hard for a good employee to move up faster than a poor one.		æ	4	•	•
The formal pay structures and rules make it hard to reward a good employee with higher pay here.		æ	•	•	•
The personnel rules and procedures that govern my organization make it easy for superiors to reward subordinates for good performance		æ	4	Þ	•

# How would you assess the internal rules, procedures and regulations associated with the content of your work, if you can choose between the following characteristics?

Not burdensome			æ	æ	æ	Burdensome
Necessary	A	æ			A	Unnecessary
Effective	A	A	A	A		Ineffective

Note: this question is focused on red tape related to the content of the work.

The following questions are focused on the rules, procedures and regulations related to the contractual relationship between Dutch government organizations (municipalities, provinces & ministries) and private consultancy firms. A distinction is made between the tender and the contractual relationship itself.

## To what extent do you agree with the following statements?Note: these questions are related to the tender.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
The rules governing tendering make it easy to establish a contractual relationship.		æ	•	•	•
Due to the standard procedures, the government's procurement decision is based more on the organization's ability to comply with rules than on the quality of goods and services.		æ	•	•	
The rules governing tendering make it hard to expedite the tender for an urgent project.		8	4	►	•

After the tender, the Dutch government organization enters a contractual relationship with one (or more) private consultancy firm(s). How would you assess the rules, procedures and regulations associated with the contractual relationship, if you can choose between the following characteristics?

Not burdensome	A	æ	æ	A	Burdensome
Necessary	A	æ	æ	A	Unnecessary
Effective	A	A	A	A	Ineffective

## To what extent do you agree with the following statements?Note: these statements are focused on the public service motivation.

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
I admire people who initiate or are involved in activities to aid my community.		æ	•	•	
Meaningful public service is very important to me.		8	•	►	•
It is important for me to contribute to the common good.		8	4	•	•
It is important to contribute to activities that tackle social problems.		æ	•	•	•
I am prepared to make sacrifices for the good of society.		Ð	•	►	•
I believe in putting civic duty before self.		8	•	•	
I am willing to risk personal losses in order to help society.		8	•	•	
I would agree to a good plan to make a better life for the poor, even if it cost me money.		æ	•	•	

## APPENDIX 2: TRANSCRIPTION INTERVIEW EXPERT ECORYS

#### U werkt bij de tendering desk. Wat houdt dat in?

Wij regelen alle niet inhoudelijke zaken rondom offertes voor alle drie de markten: binnenlandse, Europese en rest of the world. Wij zorgen voor juiste verklaringen, juiste personen ondertekenen enzovoort. Als we onderaannemers betrekken moeten die verklaring afnemen. We zorgen dat iedereen op tijd z'n spullen inlevert.

#### Kan je uitleggen hoe zo'n procedure in elkaar zit?

Consultants nemen contact met ons op, zo van: wij zijn met dit project bezig. Dan gaan wij de 'terms of references' lezen op administratieve eisen. Dan krijgen we overzicht van partners en subcontractors en gaan wij daarmee aan de slag. Die templates zijn standaard, zeker voor Europese commissie. Ze zijn min of meer uniform. Dan zorgen wij ervoor dat juiste projectinformatie, titel en adres erin staat. Zodat het zo compleet mogelijk naar partner gestuurd kan worden.

## Begint dat bij een overheidsinstantie? Ik zie 't voor me dat die een opdracht hebben en die naar verschillende potentiële partners sturen.

Soms wel. Bij volledig openbare aanbesteding wordt het op een tendering site gezet. Er zijn andere teams binnen Ecorys die dat scannen op interessante leads. Als beslissing genomen wordt van 'hier gaan we voor' dan komen ze naar ons.

#### Het is niet zo dat aanbestedingen bij jullie binnenkomen en jullie dat doorsturen naar consultants?

Voor de Nederlandse markt doe ik dat wel. Tendernet is een portal waar zowel offertes moeten worden ingediend als overzicht van alle aanbestedingen die Nederlandse overheden publiceren, van schoonmaakwerk tot baggerwerk tot dit. Ik stuur relevante dingen door naar betrokken mensen hier.

#### Het is niet zo dat de overheid al een keuze maakt van: dit zijn relevante partners?

Soms wel. Dat heeft met drempelwaardes te maken. Ik weet niet precies hoe hoog die zijn, maar boven bepaald bedrag moet het openbaar, daaronder kunnen ze direct mensen aanschrijven. In sociaal domein gebeurd dat erg veel. Worden 4/5 mensen benaderd. Daar zit wel een bepaalde transparantie in.

#### Dus voor grote opdrachten moet het juist openbaar?

Ja, Ja. Dat is Europese regelgeving.

#### Wie is bevoegd te reageren?

Je moet een kvk nummer hebben. Maar er worden altijd referenties gevraagd. Dus als jij als ZZP'er begonnen bent en geen referenties hebt dan is he uitgestloten dat je het überhaupt krijgt.

#### Stel dat je aanbesteding doorstuurt naar consultant en die heeft interesse. Wat gebeurd er dan?

Er wordt steeds meer elektronisch aanbesteed. Daar kun je je registeren als je interesse hebt. Op een gegeven moment sluit de registratie als de deadline verstreken is. Dan ziet de klant wie er gereageerd heeft en wie niet. Daarvoor moet je dus laten weten van we gaan er wel of niet voor. En bij die openbare hoeft het niet.

#### Moet je dan plan meesturen al?
Nee

#### Werkt het eenvoudig?

Ja. Maar op tendering net staan er al veel opdrachtgevers in. En veel organisaties kennen je al, dus ze weten al vaak / hebben een idee wie hier op gaat reageren.

# Vervolgens hebben ze dus al die registraties binnen. Dan moet er keuze gemaakt worden. Aan de hand waarvan doen ze dat?

Bij alles wordt aanbesteed via EMV (economisch meest voordelige) principe. Dus dat is een meting van prijs-kwaliteit verhouding. Daar is een formule voor. Die staat ook altijd in het tendering net uitgelegd. Je krijgt dan bepaalde score op plan van aanpak.

### Wanneer verstuur je dat plan van aanpak?

Na registratie wordt offerte ingediend, daarbij zit een plan van aanpak, cv's van teamleden en budget waarvoor je het wel doen. Je moet vaak je budget, prijs waarvoor je het wel doen, in apart document zetten zodat inhoudelijke mensen het niet zien. Een commissie geeft je dan aantal punten voor plan van aanpak.

#### En indienen voor offerte, doen consultants dat zelf?

Consultants schrijven de teksten. Secretariaat maakt het mooi op. Afhankelijk van hoe het ingediend moet worden doen ze het zelf. Als het via tendernet moet, dan doe ik het.

#### Zijn er regels of manieren waarop je dat moet doen?

Soms zijn er strenge regels voor: staat er precies wat erin moet, in welk lettertype etc. Soms is het heel vrij.

#### Zijn er meer wat je erin moet zetten?

Zijn meestal wel richtlijnen: dit moet er minimaal inzitten. Als je zelf extra dingen erin wil is dat op eigen risico. Er staan altijd wel minimum eisen in.

#### Worden die gezien als logisch?

Soms niet, soms wel. In elke offerte is er een mogelijkheid om vragen te stellen tot 1 of 2 weken voor de inleverdatum. Die vragen worden anoniem behandeld. Daar komt regelmatig uit van kunnen jullie dit wijzigen of dat. Vaak wordt concept van contract rondgestuurd. Daarin vinden we vaak boeteclausule te strict oid. Bij de offerte uitvraag wordt conceptcontract gestuurd zodat je weet waar je rekening mee moet houden

#### Heeft Ecorys invloed op dat contract?

Meestal wel. 9 van de 10 vragen waar wij het niet mee eens zijn wordt afgewezen. Er is ook een aanbestedingswet, de AVOLI. Dat zijn algemene aanbestedingsregelingen voor Nederland.

#### Zit er verschil tussen private en publieke klanten?

Private doen we eigenlijk niet zoveel mee. Als we iets privaats doen gaat het via consultants zelf.

#### Is het zo dat private partijen minder openbaar hoeven aan te besteden, zitten er minder restricties aan?

Ja precies. Als je door bedrijf zelf benaderd wordt dan kennen ze je al goed, meer benaderbaar. Als aanbesteding puur openbaar is moet je aan veel meer formaliteiten voldoen.

#### Zou het voor Ecorys prettig zijn om soms wat informeler te doen, die aanbestedingen?

Ja, zeker die administratieve eisen. Dat je telkens weer kvk nummers en administratieve dingen moet doorsturen.

#### Consultants zelf doen geen administratieve dingen?

Nee. Ze zijn niet verplicht dat te doen, wij doen het meestal.

#### Zie je verschil tussen gemeenten en ministeries?

Hoe groter de instelling en opdracht, des te meer eisen ervoor zijn. Gemeenten vaak tevreden met kvk uittreksel, bij EC vul je bij elke offerte een declaration of honour in: we zijn nooit veroordeeld, zijn niet failliet, houden ons aan mensenrechten. Als je opdracht wint moeten we daar nog bewijsstukken van sturen. Gedragsverklaring, aanbesteding. Dat directie nooit veroordeeld is etc. Hoe groter de klant, hoe meer van dat soort eisen er zijn.

#### Over offertes hebben we het nu gehad. Ecorys heeft aanbesteding gewonnen. Hoe gaat het dan in z'n werking?

Dan krijg je awardlettre: hierin staat dat je gewonnen hebt. In die brief staat uitgelegd dat verliezende partijen op de hoogte zijn gesteld en die hebben dan nog 2 weken de tijd om bezwaar te maken. Dus tot die tijd gebeurd er niks. In die 2 weken moet je dan bewijsstukken sturen, soms in kopie, soms origineel. Als dat binnen en rond is moet je doorsturen naar directlieleden die het moeten tekenen (als het boven 150.00 euro is). Dat is vrijwel altijd zo bij EC.

#### Hoeveel weken zit er tussen?

Verschilt per project. Meestal als je awardlettre kijkt duurt het week of 2. Bij EC duurt het meestal maand of 6 voordat uitslag er is, soms zelfs jaar. Op NL markt kun je soms in januari project indienen en ga je in februari aan de slag. En dan is het ook maar project van 3 of 4 weken soms. Dus zijn lijntjes veel korter.

#### Wat voor project pakken jullie op?

We hebben drie practices: finance & trade, connectivity en sociaal domein. Connectivity is volgmens mij het grootst.

#### Is het per practice verschillend of komt het overeen?

Formule eisen zijn hetzelfde. In hoofdlijnen zelfde AVOLI wet. Maar bijv. Rijkswaterstaat wil alles met elektronisch beveiligde licentie hebben. Zij zijn die enige die daar gebruik van maakt. Dat soort details wisselen wel eens.

#### Hoe denk je dat de mensen bij de overheid die wetten zien?

Hangt er vanaf met wie je het daarover hebt. Inhoudelijke mensen vinden dat helemaal niks. Ging over goederenvervoer. Inhoudelijke mensen wilden eigenlijk met Ecorys medewerker in zee. Kennen elkaar, vaker opdrachten gedaan. Maar omdat contractwaarde boven bepaalde waarde zat moest het openbaar worden aanbesteed. Inkopers van Rijkwaterstaat hebben gepusht van: geef 'm aan Ecorys. Als een ander bedrijf die opdracht zou krijgen moesten zij eerst al die informatie gaan verzamelen waardoor de opdracht gewoon langer duurt. Uiteindelijk hebben we opdracht gekregen omdat we gewoon beste offerte hadden. Omdat die procedure zo lang duurden heeft het 3 a 4 maanden langer geduurd. We hadden eigenlijk de opdracht kunnen uitvoeren voor 60.000, maar uiteindelijk werd het 80.000. Als het aan inhoudelijke medewerkers had gelegen waren procedures vermeden. Omdat er nou eenmaal wetten en regels zijn kost het uiteindelijk meer tijd en geld.

#### Heeft elke ministerie eigen tendering afdeling?

Ja. Beleidsmedewerkers geven vaak de call dat er onderzoek gedaan moet worden. Die geven seintje aan inkopers en die doen aanbesteding.

#### Hoeveel mensen werken op tendering afdeling?

Zijn nu met z'n 3en. Is wel te doen.

#### Over het contract zelf: zijn er bepaalde vaste regels voor?

Bij EC durf ik niet te zeggen. Nederlandse contacten moeten aan AVOLI voldoen. De meeste consultants hebben juridische afdeling die daar naar kijkt, die hebben wij niet. Ecorys BV is overkoepelende organisatie(alle landelijke Ecorys afdelingen vallen daaronder), die hebben wel jurist. Toch merk je vaak bij andere bedrijven dat er veel vragen over contracten zijn, bij ons is dat niet. Dat komt omdat we geen jurist hebben. Aan de andere kant ,een klant heeft geen belang bij malafide zaken. Toch is het handig om naar te kijken.

#### Toch kan ik me voorstellen dat sommige regelementen voordeliger zijn voor overheden dan voor Ecorys?

Ja, als je bijvoorbeeld een deadline van eindrapport niet haalt. Boeteclausules kunnen best pittig zijn. Daar gaan vaak bezwaren over. Staat gewoon niet in verhouding tot contractwaarde.

#### Hoe gaat de communicatie tijdens contract met klant?

Gaat via projectleider. In de offerte stel je team voor dat aan opdracht gaat werken en meest ervaren consultant is dan contactpersoon tussen klanten en Ecorys. Op het moment dat contract binnen is heeft de tenderdesk er niks meer mee te maken.

#### Is he lastig als niet-projectleider te communiceren met klant?

Ik weet niet of dat vastgelegd is. Is gewoon bepaald. Dat proces hebben wij ook niks mee te maken.

#### Er zijn 3 makten, welke zijn dat?

EU, NL en rest of the world. Is geen echt juridisch onderscheid.

#### Binnen Nederlandse markt, voornaamste klanten?

Miniseries.

#### Gemeenten?

Kleiner. Budgetten zijn minder. Bij elke offerte die we indienen wordt gevraagd: is dit rendabel of niet? Soms benaderd voor detacheringsvragen, daar doen we eigenlijk niks mee. Uurtarief te laag, niet rendabel voor ons. Daar gaan we sowieso niet op in. Ons uurtarief moet wel zo'n 120, 130 euro zijn. Provincies wel regelmatig. Maar weinig gemeenten.

#### **Binnen Ecorys nog regelingen omtrent contracting?**

Ja. Voordat plan van aanpak ingeleverd wordt moet er eerst aan directie verantwoord worden wat Ecorys ermee gaat verdienen. Als dat goedgekeurd is, dan pas tekent directie voor project. Om te voorkomen dat we niet voor verliesgevende projecten gaan.

Opdrachten zijn vooral onderzoek en adviesopdrachten. Hoeven consultants niet vaak bij klant te zijn?

Gedeeltelijk. Als voor Wereldbank project in south-sundaan doen, wordt wel verwacht dat we erheen gaan. Als het voor Nederland gaat dan hoef je niet veel weg.

# APPENDIX 3: TENDER LAW

### 4.1 Algemeen

Ondernemingen die in aanmerking willen komen voor gunning van de opdracht moeten een tijdige, volledige en correcte inschrijving indienen via het dashboard van deze aanbesteding.

Bij de inschrijving dienen de documenten zoals genoemd in de onderstaande *Tabel inschrijvingsdocumenten* via TenderNed te worden ingediend.

Document	Eis aan document
Inschrijvingsbiljet	Zie de beschrijving in deze leidraad
Inschrijvingsbegroting	Via dashboard van TenderNed gunningcriterium 1
Verklaring sociale voorwaarden	Via dashboard van TenderNed gunningcriterium 1
Plan van Aanpak hoofdstuk Proceskwaliteit	Via dashboard van TenderNed gunningscriterium 2
Plan van Aanpak hoofdstuk Onderzoek	Via dashboard van TenderNed gunningscriterium 3
Plan van Aanpak hoofdstuk Implementatie	Via dashboard van TenderNed gunningscriterium 4
Eigen verklaring	Zie par 4.5 van de leidraad en het dashboard van TenderNed eisen 1 en 5
Bijlagen "Model opgave referentieprojecten geschiktheidseisen 1, 2 en 3"	Zie dashboard van TenderNed eis 6 t/m8
Documenten die de aanwezigheid van de vereiste kerncompetentie aantonen	Zie dashboard van TenderNed eis 6 t/m 8

Tabel inschrijvingsdocumenten

#### 7.5 Beoordelingsmethodiek

De inschrijving met de laagste fictieve inschrijvingssom komt voor gunning in aanmerking. De fictieve inschrijvingssom wordt als volgt berekend:

Rekenblad EMVI

Criterium	Maximale kwaliteitswaarde	Score (punt)	Behaalde Kwaliteits waarde	Totalen Euro			
1. Proceskwaliteit	€ 80.000	Min. 0 - max. 5	€ [XX],-				
2. Onderzoek	€ 140.000	Min. 0 - max. 5	€ [XX],-				
3. Implementatie € 140.000 Min. 0 - max. 5 € [XX],-							
Totale kwaliteitswaarde kwaliteitscriterium 1 t/m 3: € [XX],-							
Totale kwaliteitswaarde							
4. Inschrijvingssom							
Fictieve inschrijvingssom = inschrijvingssom – totale kwaliteitswaarde							

De fictieve inschrijvingssom wordt berekend door de totale kwaliteitswaarde in mindering te brengen van de inschrijvingssom. De totale kwaliteitswaarde wordt bepaald door de waardering van de meerwaarde op de kwalitatieve criteria, de behaalde kwaliteitswaarde.

#### 7.6 Beoordelingscommissie

De beoordeling van de kwalitatieve criteria gebeurt door een beoordelingscommissie die geen kennis heeft van de inschrijvingen op de financiële criteria. De leden van de beoordelingscommissie zullen onafhankelijk van elkaar, de kwalitatieve inschrijvingsbescheiden bestuderen. Vervolgens zal er in overleg tussen de leden van de beoordelingscommissie per criterium een unanieme score worden vastgesteld.

De beoordelingscommissie is samengesteld uit:

Rol	Functie
Procesbegeleider	Inkoopadviseur Rijksvastgoedbedrijf
Lid 1	Projectdirecteur Rijksvastgoedbedrijf
Lid 2	Senior beleidsadviseur gemeente Den Haag
Lid 3	Categoriemanager Energie Rijksvastgoedbedrijf
Lid 4	Senior expert vastgoed Rijksvastgoedbedrijf
Lid 5	Coördinerend beleidsmedewerker DGOO
Lid 6	Coördinator duurzaamheid Rijksvastgoedbedrijf

#### 7.7 Gelijke economisch meest voordelige inschrijving

Indien twee of meerdere inschrijvers een gelijke economische meest voordelige inschrijving hebben gedaan, wordt de opdracht gegund aan de inschrijving met de hoogste totaalscore op de kwaliteitscriteria. Indien ook dan nog meerdere inschrijvers een gelijke inschrijving hebben gedaan, wordt door loting bepaald welke inschrijver in aanmerking komt voor gunning.



# APPENDIX 4: NON-RESPONSE BIAS HISTOGRAMS





5

Response timeline



# APPENDIX 5: RESULTS FACTOR ANALYSIS







# APPENDIX 6: CODEBOOK

Variable	Name in dataset	Measurement	Scale	Data sources
Personnel RT	"PRT"/"indexPRT"	Moynihan & Pandey (2006) PRT scale	1-5 Likert scale for 4 items / index 0-1	Own survey
Organisational RT	"ORT" /"indexORT"	Own scale, inspired by Bonny (2016) Three-item RT scale	1-5 Likert scale for 3 items / index 0-1	Own survey
Tender RT	"TRT" /"indexTRT"	Own scale, inspired by Scott and Pandey (2005)	1-5 Likert scale for 3 measures / index 0-1	Own survey
Contracting RT	"CRT" /"indexCRT"	Own scale, inspired by Bonny (2016) and Feeney & Bozeman (2009)	1-5 Likert scale for 3 measures / index 0-1	Own survey
Sector	"sector"	Dummy variable	0: private sector 1: public sector	Own survey
Sector org type	"newsector"	Categorical variable	1(ministry), 2(province), 3(municipality), 4(consultancy)	Own survey
Size	"size"	3 categories by e.g. Urbancova (2014)	1: <50 2: 51-249 3: 250 or more I don't know	Own survey & online information
Functional level	"funclevel"	Own scale based on data	1 (lowest level) 4 (highest level).	Own survey
PSM	"PSMss" & "PSMaps"	Kim et al. (2013) constructs of APS and SS	1-5 Likert scale for 8 measures	Own survey
Time in current position	"working_function"	Pandey and Kingsley (2000) scale	Continuous scale	Own survey
Tenure	"working_org"	Pandey and Kingsly (2000) scale	Continuous scale	Own survey
Education	"education"	Educational attainment scale	1:Complementary school / basisschool 2:High school / middelbare school 3:Intermediate vocational education 4:University of applied science / HBO 5:University / WO Other, namely	Own survey
Gender	"gender"	Dummy variable	0: Female 1: Male	Own survey
Age	"age"	Continuous variable	Continuous variable	Own survey

Codebook	definitions	indicators	measurement	data sources
COUCDOOK.	uenniuons,	mulcators,	measurement,	uata sources.

# APPENDIX 7: BREUSCH-PAGAN TEST

## 1. Regression the original equation

 $RTpercept_{i} = \beta_{0} + \beta_{1}sector_{i} + \beta_{2}PSMaps_{i} + \beta_{3}PSMss_{i} + \beta_{4}time in position_{i} + \beta_{5}tenure_{i} + \beta_{6}functional level_{i} + \varepsilon_{i}$ 

## 2. Create the variable e, create e-squared.

The size of the residual have to be found for every datapoint. However, the error term can be positive (above regression line) and negative (under regression line). The e is therefore squared to have an appropriate measure of residual size. If e is not squared, the mean is always zero.

## 3. Regress e-squared on the dependent variables

The following model and hypotheses are tested.  $e^{2}_{i} = \beta_{0} + \beta_{1}sector_{i} + \beta_{2}PSMaps_{i} + \beta_{3}PSMss_{i} + \beta_{4}time in position_{i} + \beta_{5}tenure_{i} + \beta_{6}functional level_{i} + \varepsilon_{i}$ 

$$H_o: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$
$$H_a: \beta_1 \neq 0$$

The hypotheses are tested with a F-test. If the null hypothesis cannot be rejected, the error term is assumed to be constant and thus homoscedastic. Reason: this implies that the error term does not go up or go down significantly when the independent variables change. Hence, the error terms are assumed to have a constant variation.

F-score 0.81 1.54 0.61 2.68***		PRTindex	ORTindex	TRTindex	CRTindex	
	F-score	0.81	1.54	0.61	2.68***	

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.



**Table 11**. Multivariate regression, including robust SE's.

		CRT						indexCRT
Variables	β	β	β	β	β	β	β	β
Sector	0.01	0.00	-0.01	0.09	0.05		-0.03	0.013
	(.14)	(.14)	(.14)	(.16)	(.17)		(.22)	(.04)
PSMaps		0.01	0.04	0.06	0.06	0.07	0.16	0.014
		(.15)	(.16)	(.16)	(.16)	(.15)	(.18)	(.04)
PSMss			-0.07	-0.08	-0.09	-0.09	-0.18	-0.022
			(.14)	(.14)	(.13)	(.13)	(.15)	(.03)
Time in				-0.03*	-0.03*	-0.03	-0.03	-0.008
position				(.02)	(.02)	(.02)	(.02)	(.00)
Tenure					0.00	0.01	-0.01	0.001
					(.01)	(.01)	(.01)	(.00)
funclevel							0.12	
							(.09)	
R-squared	0.00	0.00	0.00	0.04	0.04	0.04	0.10	0.04
Ν	99	98	98	98	98	99	72	98

Note: \* p<.10, \*\* p<.05, p<0.01\*\*\*.