The effect of performance information on citizen trust in hospitals: a survey experiment

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Abstract

New Public Management (NPM) is an international trend that introduces private sector practices in the public sector. It includes the measurement of performance indicators and the publication of this performance information, which usually has a quantitative form. However, insights into the effects of performance information on citizens remains limited. Furthermore, citizens increasingly face a new type of performance information: qualitative reviews about a public organization from other citizens, especially through the internet. Therefore this thesis focusses on those different types of performance information: stories and statistics. Additionally, a distinction between positive and negative information is made. The specific case concerns hospitals as performance measurement is increasingly used in these organizations and patients have become more active in searching for the 'best' hospital. A population-based survey experiment (N=419) measures the effect on citizen trust because trust is important for a stable country and moreover has a central role in medical settings. The results show that stories about performance have a stronger effect on citizen trust than statistical information. Especially negative stories would lead to negative levels of trust. The findings contribute to the debate of NPM practices in the public sector and imply that more focus on stories and the personal aspect should balance the impersonal effects of performance measurement and management on citizens.

Preface

I proudly present my master thesis: *the effect of performance information on citizen trust in hospitals, a survey experiment*. This thesis is the final product of the master International Public Management & Public Policy at the Erasmus University Rotterdam.

The thesis topic is in the field of public management which matches the bachelor program I did before: Public Administration and Organizational Science at Utrecht University. With specifically this topic I studied public management on an international level by focussing on the trend of New Public Management. The specific choice for the case of hospitals is because I have affinity with the healthcare sector and believe this sector has a pivotal role in society. The method I used is a survey experiment, which I already had some experience with. Nevertheless, it is a very innovative method in public administration and writing this thesis improved my skills concerning this research design.

The beginning of the thesis cycle was quite stressful as I started with some struggles finding a research topic. Therefore I would like to thank my supervisor Bert George, who kept reviewing a new proposal each week and encouraged me to choose one, Stephan Grimmelikhuijsen, who triggered me to come up with the research topic that is in front of you, and my friends and family, who supported me during this process.

After determining this research topic I was very motivated to make it a success and worked hard. I can really say I enjoyed writing this thesis and I am proud on the result. Again, I want to thank my supervisor for giving me relevant feedback and motivating me to make the best out of it.

Jeanice Boerland
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Chapter 1. Introduction

1.1. Background

"Everyone is measuring performance" (Behn, 2003, p. 586). With the introduction of the New Public Management (NPM) paradigm there is among others a focus on results, explicit standards and measures of performance in public organizations (George, Desmidt, Nielsen & Bækgaard, 2016; Hood, 1991; Modell, 2009). This international trend in public administration is particularly used in modern countries and is based on the idea that market practices lead to more efficiency and cost reduction in public organizations (de Bruijn & van Helden, 2006). New Public Management emerged at the beginning of the 1990's as a response to another way of organizing public organizations, which is called the "traditional model of public administration" (Hughes, 2012, p. 1, 4). Its main characteristics were a hierarchical system and clear separation between politics and administration: politicians made the plans and neutral professional bureaucrats carried them out using standard procedures. This old model did not seem to work very well as professional bureaucrats were mainly obeying orders and therefore were not stimulated to work efficiently, effectively and innovatively. Especially during the economic crisis and financial losses, reform was needed and NPM had to replace this slowly moving "bureaucracy" (Hughes, 2012, p. 1). Practices of the private market would be the solution to reduce the big government which resulted in privatization of several public organizations and the introduction of measurement of performance.

According to Hood (1991), there are seven main components of NPM. Firstly, public managers assign clear responsibilities to professionals and can hold them accountable for their actions. At the same time, there is discretionary for professionals to determine how to achieve certain goals. Secondly, the clear responsibilities take the form of explicit standards and measures of performance. This means that goals are clearly defined and quantitative performance indicators are used to check if the goals are attained. Thirdly, there is a greater emphasis on outputs and results, rather than on processes. Fourthly, the public organization is divided in multiple 'manageable' units. This decentralization would result in more efficiency. Fifthly, there is a shift towards more competition in the public sector. Sixthly, there is an emphasis on private-sector styles in the management of the public sector. Lastly, there is greater discipline in resource use, in other words: "do more with less" (Hood, 1991, p. 5).

Critics argue that the practices go against the traditions of public service as the private and public sector are fundamentally different (de Bruijn, 2002; van Thiel & Leeuw, 2002). Furthermore, specific performance measurement can result in unintended consequences, or so-called "perverse effects":

performance measurement can lead to strategic behaviour as the output gets more important than the process (de Bruijn, 2002; de Bruijn & van Helden, 2006; van Thiel & Leeuw, 2002). Organizations and individuals learn which aspects of performances get measured and which get not. Public servants could use this information by focussing on the aspects which do get measured as it results in seemingly increased performance. This is called strategic behaviour, because at the same time, in practice there could be no significant improvement of the service (van Thiel & Leeuw, 2002; de Bruijn & van Helden, 2006). Furthermore, it increases the internal bureaucracy as it is required to report on multiple aspects of performance. Because this costs time, it can lead to resistance with professionals. Moreover, measurement of performance blocks innovations as initiating something new creates a risk for the performance targets (de Bruijn, 2002; de Bruijn & van Helden, 2006).

Besides the effects on people working in the setting of NPM, citizens also play a role. As NPM promises greater transparency, performance information is public and thus accessible to citizens (Grosso & Van Ryzin, 2011; Hughes, 2012; Kroll, 2015; Olsen, 2016). Therefore, according to Hughes (2012), NPM also brings about a new relationship with the public. As clients are more demanding in asking for more individual attention and more responsiveness to outsider groups, the need of direct accountability between managers and the public is recognized. Public organizations have to justify their expenditures by showing the results in order to make sure the tax money is spent efficiently and effectively. However, what is important is what happens with the performance information after publication and what the effects are (Kroll, 2015). Research shows that performance information clearly has an impact on the attitude of citizens (Bækgaard 2015; Grosso & van Ryzin, 2011; James, 2011). However, the research about the effect of performance information on citizens is limited (Grosso & van Ryzin, 2011; James, 2011; Pollitt, 2006). Therefore, this thesis analyses public administration from the micro-level perspective of individual behaviour and attitudes. This type of research is called "behavioural public administration" and includes psychology aspects, which is quite innovative in the field of public administration (Grimmelikhuijsen, Jilke, Olsen & Tummers, 2016, p. 45). This new approach, of studying the impact of performance information on citizens' attitudes, will be applied on the healthcare sector: performance measurement and management have been introduced in professional organizations outside core-government but within the public sector, such as hospitals (de Bruijn & van Helden, 2006). Moreover, performance information in healthcare seems to play a significant role: in the Netherlands, for instance, one out of ten patients actively searches for the best hospital (Patiëntenfederatie Nederland, 2016a).

As aforementioned, performance measurement essentially consists of assigning numbers to the inputs, outputs, and outcomes (Hood, 1991; James, 2001; Kroll, 2015; Olsen, 2016). As a result, performance

information is mainly made up by quantitative information, like statistics, rankings and grades. However, empirical research shows that another source of information is more important for citizens: informal qualitative "human interest" stories from personal experience, either from friends or family, or from the media (Slattery and Hakanen 1994; Grosso & van Ryzin 2011 in Olsen, 2016). Especially with the increased use of the internet, it has become easier to share your own experiences and read about others'. The internet transformed the way citizens search for information and because of this "electronic word- of mouth" consumers can socially interact with each other (King, Racherla & Bush, 2014, p. 167). Moreover, Dutch patients increasingly value experiences of other visitors of the hospital (Patiëntenfederatie Nederland, 2016a). Health insurance companies and healthcare organizations recommend the use of 'ZorgkaartNederland', a website with experiences of patients (Patiëntenfederatie Nederland, 2016b). Evidence about the impact of stories challenges the agreement of scholars that statistical performance information has a dominant impact on citizens' perceptions and behaviours in relation to public services (Olsen, 2016). Additionally, negative information seems to have a larger effect on citizens' attitudes than positive information (James, 2011). Negative information would have a greater negative effect than positive information would have a positive effect. Especially government institutions seem to suffer from "negativity bias" (Baumeister, Bratslavsky, Finkenauer & Vohs, 2001; James, 2011). Is this also the case in the healthcare sector?

Trust in public institutions is considered essential for the functioning of those organizations and for a harmonious society (Grimmelikhuijsen, 2012). Applied to the healthcare sector, trust has a central role in medical settings and contributes to the effectiveness of medical care (Hall, Dugan, Zheng & Mishra, 2001; Mechanic, 1998; van der Schee, 2016). The increase of available performance information would have an effect on public trust in healthcare (van der Schee, 2016). Unfortunately, recent global events seem to have undermined trust in many public institutions (Bachmann, Gillespie & Priem, 2015). More specifically, trust in hospitals may be diminished with the rapid privatization of medical care and the growth of managed care (Mechanic, 1998). Therefore, trust is an important concept to research and citizen trust in hospitals is the dependent variable in this thesis.

This thesis focusses on the effects of different *types* of performance information on citizen trust in hospitals. More specifically, this study compares the effects of positive stories, negative stories, positive statistical information and negative statistical information. The theoretical framework includes theories of psychology of choice. These theories are the basis for hypotheses stating that stories about performance would lead to more citizen trust in hospitals than statistical information. It is also assumed that negative information has a stronger impact than positive information. In short, this thesis challenges the effects of performance information based on quantitative indicators which is a main

characteristic of NPM. The study also focusses specifically on the effect of performance information on citizens, which has got little attention until recently (Grimmelikhuijsen et al., 2016; Grosso & van Ryzin, 2011; James, 2011; Moynihan, 2015; Pollitt, 2006). Finally, this thesis includes data from three universities in two different countries. It is a cross-national study with participants from the Netherlands and Belgium. The scope of this research is an advantage for the external validity and consequently, the results are valuable on the international level.

1.2. Objective of the study

The objective of this thesis is to get better insight in the effects of performance information on citizens. Especially more insight in the difference between quantitative and qualitative performance information is the aim of this study. As trust is an important concept in medical care, the effects on citizen trust are central in this thesis. This objective is achieved by conducting a survey experiment with students which aims to reveal the effects of certain types of performance information. Furthermore, the study includes an extra international dimension as it compares two universities in the Netherlands with one university in Belgium. Finally, interviews with a healthcare manager and professional give insight in the use and effects of performance information in practice. All in all, this study aims to result in relevant recommendations about how to publish or work with performance information with optimal levels of trust as a result. These recommendations apply to the public sector as a whole, as well as to the healthcare sector in specific. This objective is consistent with the practical relevance.

1.3. Research question of the study

To address the objective, the following research question is central in this study:

What is the effect of different types of performance information on citizen trust in hospitals?

In order to answer this question, several sub questions are formulated to establish a theoretical basis. These sub questions will be answered in different chapters and are as follows:

- *What is meant by performance information according to the literature?*
- *What is meant by citizen trust according to the literature?*
- *What is the theoretical relation between different types of performance information and citizen trust?*

- *Is the theoretical relation between different types of performance information and citizen trust confirmed in the specific case of students of Public or Business Administration of Erasmus University Rotterdam, Utrecht University and Ghent University?*

The central research question of this thesis is equal to the empirical question which is the basis of this study. This question will be tested by conducting a survey experiment among Dutch students of the Erasmus University and Utrecht University and among Belgian students of Ghent University. The experiment is the main research method, which will be complemented with two interviews with a healthcare manager and professional of the Utrecht Medical Centre Utrecht (UMCU). These additional interviews include a practical and context-specific perspective and thus aim to give 'meaning' to the quantitative results of the experiment. In other words: the purpose of the interviews is thus to write relevant recommendations for the healthcare sector in specific. Moreover, it can be a basis for recommendations for the public sector as a whole.

1.4. Relevance

1.4.1. Practical relevance

Because performance measurement and the availability of the corresponding performance information is an international trend in all kinds of public organizations, it is relevant to research which type of performance information has the most positive or strongest effect on citizens. Grozzo & van Ryzin (2011) found that the two most frequently used sources for performance information about local government are the local news media and the informal channel presented by friends or neighbours. Especially the increasing use of the internet on a global scale emphasizes the ease of reading about experiences of others. This shows the relevance to research the effects of stories told by other citizens. Furthermore, research comparing the effects of statistical and "episodic" performance information is scarce (Olsen, 2016). Therefore this thesis will give a better understanding of the effect of stories and compares it with statistical performance information. The effects of the international trend of New Public Management will be challenged in this regard.

The focus on citizen trust is relevant as trust in medical institutions is fundamental for facilitating social exchange and effectiveness within hospitals (Bachmann et al., 2015; Hall et al., 2001; Mechanic, 1998). This study also includes two interviews with a healthcare manager and professional to check if their experiences concerning performance information are in line with the results of this survey experiment. This is relevant as it could lead to recommendations about how to work with performance measurement or to communicate the performance information to the public in order to gain more trust.

As the data for the survey experiment derives from Dutch and Belgian students of certain universities, the results will be valuable and relevant on an international level. This is because population-based survey experiments have significant external validity in terms of generalizing the experimental findings to the public at large. The results of this cross-national survey experiment can be a lesson for other hospitals and public organizations worldwide. Moreover, the experiment itself is general enough to make replication and extension possible in more contexts and countries.

1.4.2. Scientific relevance

A systematic literature review of Kroll (2015) about performance information only includes one particular type of information: quantitative, aggregated data on efficiency and effectiveness. It has been questioned if this is the most important feedback source and therefore the need for more research on the role of different information types is stressed (James, 2011; Kroll, 2015). While most scholars believe that quantitative performance information has a strong impact on the attitudes of citizens, there is little research about the effect of qualitative information. More specifically, research comparing statistical and episodic performance information is very limited (Olsen, 2016). The experiment of Olsen (2016) challenges the dominance of "hard data" and emphasizes the importance of "human interest" stories (p. 2). As Olsen (2015) stresses the need for future research about how performance information affects attitudes, this thesis will contribute to this uncovered field of research by linking those different types of performance information to citizen trust.

There has been a lot of research about the effects of performance information on organizational performance and employees. Additionally, a large number of studies focused on the responses of managers and public officials (Andrews & van de Walle, 2013). For instance, scholars studied how performance information can lead to passive, political and perverse behaviour of public managers (e.g. Moynihan, 2009) and how politicians respond to it (e.g. George et al., 2016). However, research about the effects of performance information on citizens remains limited (Grosso & van Ryzin, 2011; James, 2011; Moynihan, 2015; Pollitt, 2006). Pollitt (2006) even refers to it as a "missing link" in academic research (p. 39). This is surprising as empirical research shows that performance information clearly has an impact on the attitudes of citizens and political science suggests the importance of this, especially for exercising democratic control (Bækgaard 2015; Grosso & van Ryzin, 2011; James, 2011).

As a result, this research analyses public administration from the micro-level perspective of individual behaviour and attitudes. This new approach, which is called behavioural public administration (Grimmelikhuijsen et al., 2016), can complement the literature about performance information as it

links public administration with psychology. Experimental designs seem to be a promising research method because they can indicate causal relations. Therefore it is recommended to do more experimental research in this field (Kroll, 2015).

Moreover, the measurement of trust in medical care is a quite new development because of the increased attention in the past years. While most literature is about trust between the patient and the physician, literature about trust in medical institutions among citizens is scarce (Hall et al., 2001). This thesis measures trust on an institutional level and is therefore a significant contribution to the existing literature.

1.5. Thesis guide

The research questions identified in section 1.3. are leading in this thesis. The first two sub questions will be answered in chapter two, which is the literature review. Subsequently, in chapter three, the theoretical framework will be presented answering the third research question about the theoretical relation between different types of performance information and citizen trust. In this chapter the hypotheses will be formulated based on theory. Chapter four includes the research design and the methods used in this thesis. The findings of this study will be presented and analysed in chapter five. This chapter thus will answer the last research question: is the theoretical relation between different types of performance information and citizen trust confirmed in the specific case of students of Public or Business Administration of Erasmus University Rotterdam, Utrecht University and Ghent University? Chapter six discusses the findings and includes theoretical and practical implications. The conclusion of the thesis will be presented in chapter seven, followed by a reference list and the appendices.

Chapter 2. Literature review

This chapter answers the first two sub research questions and thus discusses what is meant by performance information and citizen trust according to the literature. Section 2.1 discusses performance information in general and specific types of information: stories as performance information, statistical, positive, negative and relative performance information. The next section, 2.2., elaborates on the concept of trust.

2.1. Performance information

Performance measurement is one of the developments of the NPM paradigm and those practices are widespread in the modern countries (Hood, 2007; Kroll, 2015; Nielsen & Bækgaard, 2013). Research on performance information has become highly relevant and it already has been the subject of a lot of research (e.g. George et al., 2016; Hammerschmid, van de Walle & Stimac, 2013; Kroll, 2015). This section elaborates on performance information in general and in addition it specifically includes the effects on citizens, statistical performance information, stories as performance information, and positive, negative and relative performance information.

2.1.1. General information

In the literature, performance information can be considered as systematic information about outputs and outcomes that derive from the public institutions itself. For instance, Pollitt (2006) includes in his definition of performance information that it is "generated by systems and processes intended to produce such information" (p. 39). However, citizens get performance information from other sources as well, including personal experience with services, word of mouth from other citizens, and the media (James & Moseley, 2014). Therefore, in this thesis a more broad definition of performance information is used which also includes information about performance that derives from external sources, for example the media or citizens: *Performance information is "feedback information on outputs and outcomes of the public service as well as its efficiency and its effectiveness"* (Kroll, 2015, p. 4). This makes sense because subjective indicators, like the perceptions of citizens, are also valid measures of performance (Parks, 1984).

Functions

As performance information could serve several functions, Kroll (2015) discusses "purposeful" information in his systematic literature review, especially because most studies have focused on this type of data use. Besides purposeful use of performance data, it appears that managers could use it strategically. As aforementioned, performance measurement could lead to perverse effects like strategic behaviour. In addition managers could use the information politically: when there is a lot of room for interpretation of the data, managers could use it in their own interest (Moynihan, 2009). Nevertheless, the purposeful functions of performance measurement could include efficiency, accountability, improvements, learning, steering and controlling (van Dooren, Bouckaert & Halligan, 2010; Kroll, 2015; Moynihan, 2009). According to Behn (2003), performance measures can be used to evaluate, control, budget, motivate, promote, celebrate, learn, and improve. Fostering improvement would be the "core purpose" (Behn, 2003, p. 586). The functions of performance information can also

be distinguished between internal and external ones. Internally, it can be used for monitoring, evaluating and improving activities (Hammerschmid et al., 2013). In line with this, performance data is frequently used in decision making processes (Kroll, 2015). The external functions include showcasing performance or to compare and benchmark with other organizations. Performance information can thus function as "communication tool" and not just as a measurement tool (Hammerschmid et al., 2013, p. 2). The reporting of performance information to the public would create pressure to reform organizations internally. Nevertheless, specifically the external function of performance information is the subject of this thesis.

Performance indicators

The use of performance measurement is increasing. Initially, indicators to measure performance were primarily financial. However, step-by-step other measures have been introduced. An example is the measurement of quality, although this seems to be quite difficult. Having too many goals could even have a detrimental effect on performance and quality. However, the number of performance indicators is proliferating (Fryer, Antony & Ogden, 2009).

Specifically health is a "high profile public service" and the measurement of performance in healthcare gets significant attention and is politically sensitive (Stevens, Stokes & O'Mahony, 2006, p. 80). An example of the publication of performance information is the 'star rating system', introduced in England in 2000: each organisation in the National Health System in England was given a single summary score from zero rating to three stars (Bevan, 2006; Stevens et al., 2006). In measuring outputs in the health sector in particular, four different concepts can be distinguished: activities, outputs, characteristics and outcomes (Stevens et al., 2006). Activities are the easiest to count and simpler to work out. Examples are operative procedures, outpatient visits and diagnostic tests. They are useful for monitoring and managing lower units of the healthcare system. Outputs are the actual goods or services provided and can include several activities, from the surgery itself till the prescription of medicines. Thus, the output is considered from a patients perspective, rather than a finished professional activity. The value of the output to individuals depends upon their characteristics, which bundled together produce an outcome. The primary outcome of the public health sector is obvious: to increase the health of the population. One widely accepted instrument to measure the impact of treatments on patients' health is the Quality-Adjusted Life Years (QALY). However, the appropriateness of performance indicators has been questioned, particularly over the long term. For example, research shows that the star rating system does not provide an indicator in terms of productiveness in providing health care for patients (Stevens et al., 2006). Most indicators are focused on waiting times and not necessarily on the services themselves.

2.1.2. Effects on citizens

Performance information that is available on the internet enables citizens to judge the quality of services of public institutions for themselves, rather than relying on the interpretation of statistical information coming from the media (Grosso & van Ryzin, 2011). As aforementioned, the research about the effects of performance information on citizens is limited. This section gives an overview of the existing literature regarding different aspects of performance information that have an effect on citizens. It is well known that the way information is presented influences the attitudes of citizens (Chong & Druckman, 2007; Moynihan, 2015). The way information is perceived depends on the specific person as well. Therefore, this section distinguishes between the way performance information is presented and the characteristics of citizens that determine the effect.

Different ways of presenting performance information

Studies of James (James, 2011; James & Moseley, 2014) show that the publication of relative performance information clearly has an impact on citizens. The relative benchmarking aspect is particularly useful because it reveals a comparison of what has been achieved by other similar organizations, rather than in abstract terms of ''good'' or ''bad'' performance (James, 2011, p. 401). Information about low absolute and relative performance lowers citizens' perceptions of performance, while information about high absolute and relative performance raises the perceived performance (James & Moseley, 2014). In the specific case of public schools, a comparison with the state average seems to have more impact than the performance relative to the previous year or relative to other local schools (Charbonneau & van Ryzin, 2015). In other words: especially benchmarking with similar organizations all over the country influences the perception of performance.

It might sound logical, but it is nevertheless a valuable finding that positive information has a positive impact on citizens' attitudes and negative information leads to negativity (James, 2011; van der Schee & Groenewegen, 2010). However, while James (2011) supports this in general, Van der Schee & Groenewegen (2010) find a difference between users and non-users. Interestingly, negative information seems to have a stronger effect on citizens' attitudes than positive information: it would lead to more emotional reactions and have longer lasting effects (Baumeister et al., 2001; Olsen, 2016). Especially government institutions seem to suffer from this negativity bias: while bad performance reduces citizens' satisfaction, good performance does not lead to a similar rise of the level of satisfaction (Grimmelikhuijsen & Klijn, 2015; James, 2011; James & Moseley, 2014). According to the performance information theory, negative performance information could also impact the behaviour of citizens. Lower perceptions of performance and lower satisfaction would "trigger citizen voice as a form of protest about the situation" (James & Moseley, 2014, p. 493). However, another research shows that

low absolute or relative performance information did not lead to behavioural response of citizens (James & Moseley, 2014). This lack of voice probably would have to do with scepticism that collective voice will change outcomes. The literature about positive, negative and relative information will be discussed further in section 2.1.3.

Furthermore, citizens would be more affected by performance information when it is about the overall performance of a bundle of services, rather than about a specific service they regularly use themselves. Regarding specific services, citizens may be influenced more by other sources of information, especially by direct personal experience (James, 2011). However, this study uses information about a specific treatment. The reasons for this method will be explained in the research design in chapter four.

Additionally, performance information would have a stronger impact on the attitudes of citizens if it includes information about the costs of the service, regardless of being a user or non-user (Bækgaard, 2015; Simonsen & Robbins, 2000). The size of the costs being mentioned does not seem to matter. It is about whether costs are mentioned at all: information about a policy proposal that includes costs would result in less support for the proposal than if the cost were not mentioned. This is because if the costs are mentioned, citizens can make a trade-off between costs and quality (Bækgaard, 2015). In practice, in the Netherlands, one health insurance company started publishing the prices of treatments in hospitals (de Zeeuw, 2016). Although it fits with the demand for more transparency, the literature points to a negative effect on the attitudes of citizens.

Finally, performance information can be presented as quantitative data or episodic information (Olsen, 2016). Although citizens say to have a strong preference for statistical data if asked to evaluate an organization, episodic information has a greater impact on citizens' evaluation. Episodic information appears to be more emotionally engaging, especially for the emotional response of compassion. Furthermore, citizens find it easier to recall individually based stories and are able to describe them more correctly than quantitative information. These human interest stories thus seem to be more effective than statistical information about performance.

To sum up, there are several ways of presenting performance information that have an effect on citizens. The effect seems to be stronger if the information is relative or negative. The scope of the services the information is about also seems to matter: when it is about a bundle of services, the effect would be greater. Furthermore, citizens appear to be more affected by information that includes costs. Finally, the difference between quantitative and episodic data tends to have important consequences for the attitudes of citizens. This information, including the main authors, is summarized in table 1.

Table 1. Overview of literature concerning different ways of presenting performance information and the effect on citizens

Different ways of presenting performance information	*Author(s)*	*Journal*	*Evidence*	*Key conclusion*
Relative information	James (2011)	Journal of Public Administration Research and Theory	Randomized field and two laboratory experiments	While information about relatively good performance raises citizens' perceived performance and satisfaction, relatively bad performance lowers them.
	Charbonneau & Van Ryzin (2015)	Public Management Review	Online survey experiment (n = 595)	Information about better school performance relative to the overall state average influenced respondents' ratings more than did performance relative to last year or similar schools.
Positive or negative information	James (2011)	Journal of Public Administration Research and Theory	Randomized field and two laboratory experiments	While information about relatively good performance raises citizens' perceived performance and satisfaction, relatively bad performance lowers them.
	Van der Schee & Groenewegen (2010)	BMC Public Health	Consumer panel of about 1.500 members which is a cross-section of the Dutch population	Public trust in complementary and alternative medicine (CAM) is for users related to positive information and for non-users to negative information from their network.
	Baumeister, Bratslavsky, Finkenauer & Vohs (2001)	Review of General Psychology	Own experience and articles	Bad is stronger than good: negative information seems to have a stronger effect on citizens' attitudes than positive information.
	James & Moseley (2014)	Public Administration	Explanation of Performance Information Theory (followed by an field experiments)	Performance Information Theory suggests that lower perceptions of performance and lower satisfaction would trigger citizen voice as a form of protest about the situation.
Scope of the services the information is about	James (2011)	Journal of Public Administration Research and Theory	Randomized field and two laboratory experiments	Citizens may be more affected by performance information when it is about the overall performance of a bundle of services, rather than about a specific service they regularly use themselves.
Information that includes costs	Bækgaard (2015)	International Public Management Journal	Use of survey of 1,866 Danish citizens for an experiment	Performance information matters more to service attitudes if allocated in conjunction with cost information.
Quantitative or episodic data	Olsen (2016)	Public Administration Review	Multiple experiments embedded in a large nationally representative sample of citizens (n=1013)	Episodic information has a greater impact on citizens' evaluation: it appears to be more emotionally engaging and easier to recall than quantitative information.

Characteristics of citizens

There are several characteristics of citizens that influence the perception of performance information. Firstly, the effect on citizens depends on the initial attitudes or expectations. A randomized survey experiment showed that participants systematically interpret the quantitative performance information in ways that conform with their prior beliefs (Bækgaard & Serritzlew, 2016). In other words: the objective information is subject to biased interpretation dependent on the extent the information is in line with the prior beliefs of the receiver of the information. Applied to the context of politics, initial attitudes like political preferences do also seem to play a role: "partisan support" would moderate the effect of performance information on citizens (James, 2011, p. 414). Moreover, initial expectations seem to relate to the levels of satisfaction. While several scholars argue that initial expectations about the service quality determine the level of satisfaction (e.g. James, 2011; van Ryzin, 2004), a research of Van Ryzin (2006) showed that, specifically in the field of public administration, "expectations play little if any substantive role in the formation of citizen satisfaction" (p. 600). Chapter 4.2.5. reflects on the option to measure initial levels of trust by means of a pre-test. Secondly, the performance information would be more important to the attitudes of citizens who use the services than to non-users (Bækgaard, 2015; James & Moseley, 2014; van der Schee, 2016). A third factor which determines the perceived performance is the effort to keep the citizens informed. A study of Heise (1985) showed that citizens who feel that a government keeps them well-informed most of the time "tend to be more supportive of the things county government is trying to do, are less cynical and more trusting" (pp. 197–198 as cited in Grosso & van Ryzin, p. 238). As this survey experiment focusses on one moment in time, this factor is not part of the research.

All in all, these findings show that the way performance information is presented and the characteristics of citizens matter to the interpretation of this information by citizens, even when the content can be exactly the same. This thesis focusses on the difference between quantitative and episodic information as studied by Olsen (2016) and the effect on citizen trust. The difference in citizens' characteristics will not be problematic because of a randomization procedure, which will be explained in section 4.2.2.

2.1.3. Statistical performance information

Performance measurement usually includes definitions of goals and targets and corresponding performance indicators, which are preferably expressed in quantitative terms (Kroll, 2015). As a result, performance information fundamentally is about the assignment of numbers to the inputs, outputs and outcomes of public institutions (Hood, 1991; James, 2001; Olsen, 2016). There has been an expansion of the use of quantitative indicators in the public sector (Bækgaard & Serritzlew, 2015). Additionally, "the statistical aspect has often been stressed as a potent driver that affects the perceptions,

evaluations, and behaviour of managers; employees; and citizens" (Olsen, 2016, p. 4). The reason that numbers affect citizens has amongst others to do with the "hidden stories" behind numbers (Stone, 2012, p. 191). For example, measurements imply that it is worth counting and measurements bring about the assumption that numbers are symbols of precision and objectivity. Because citizens are sensitive to numbers, they are presented strategically. Numbers can be *framed* in different ways and can therefore be *used* to promote or take down certain policies: every number is subject to interpretation (Chong & Druckman, 2007; Stone, 2012).

The management of numbers is a global trend and takes place in at least three different forms: target systems, ranking systems, and 'intelligence' systems (Hood, 2007). Target systems measure performance against specified standards expressed as threshold numbers. Ranking systems compare the current or past performance of an organization with performances of other comparable organizations. This is called benchmarking and can be used for 'naming and shaming'. Interestingly, international rankings have increased over the past three decades. 'Intelligence' systems measure performance for background information, for example as a by-product of administrating processes. Although they are not necessarily linked to targets or rankings, they often appear in combination with one other system. This survey experiment uses a form of ranking systems. Although the specific rank is not mentioned, the anonymized hospital in this case is positioned against other hospitals within the country.

2.1.4. Stories as performance information

Besides numbers, symbols are also tools of public policy. Symbols can tell stories, or in other words: narratives (Stone, 2012). While the NPM paradigm resulted especially in the use of internal quantitative performance information, it is now challenged by external performance information coming from outsiders, like citizens. As a result, word-of mouth behaviour can also be a source of performance information. Interestingly, traditional word-of mouth behaviour now has an electronic element. The internet has transformed the way citizens search for information and is now a common method of communication. It also allows citizens to make informed 'purchase' decisions (King et al., 2014, p. 167). Similarly, citizens are also able to make informed decisions about going to a certain hospital or not, based on the shared experiences on the internet. There is a significant increase in the publication of reviews about hospitals, specific treatments and specific doctors on the internet (Patiëntenfederatie Nederland, 2016b). Citizens value this information as it would be a helpful source of information in order to choose the most appropriate hospital. For instance, in the Netherlands, one out of ten patients actively searches for the 'best' hospital (Patiëntenfederatie Nederland, 2016a). Experiences about Dutch hospitals can be found at 'ZorgkaartNederland' and will be used for this survey experiment.

2.1.5. Positive, negative and relative performance information

This study distinguishes statistical performance information and stories about performance. In addition to these two types of performance information, there is also a difference between positive and negative information. The experience of events has emotional implications. When information is phrased negatively, it has a negative emotional response on humans (Olsen, 2016). Interestingly, bad events would lead to more emotional reactions and have longer lasting effects than good events (Baumeister, et al., 2001; Olsen, 2016). In other words, it appears that negative information has a stronger effect on the attitudes of citizens than positive information (James, 2011; Olsen, 2016; van der Schee & Groenewegen, 2010). In the specific case of performance information, this negativity bias could lead to a certain response from politicians and citizens. There appears to be a relation between performance information and decision-making by politicians: information showing low or high performance affects the preferences of politicians for spending and reform (George et al., 2016). Additionally, citizens seem to respond stronger to negative performance information of government institutions than to positive performance. Government institutions seem to suffer from this negativity bias as punishment is the result of bad performance while good performance is not rewarded (Baumeister et al., 2001; Grimmelikhuijsen & Klijn, 2015; James, 2011). These findings will be the basis for several hypotheses that will be presented in chapter three.

Moreover, relative performance information is important (Charbonneau & van Ryzin, 2015; James, 2011). Information can be presented in comparison to an overall average or to other similar organizations rather than just showing positive or negative information. For instance, research focussing on performance information of local schools showed that citizens regard it more important that a school performs better compared to the state average than compared to similar schools or performance of the previous year (Charbonneau & van Ryzin, 2015). In other words, comparisons to other schools are important and especially comparisons to larger populations seem to be more convincing than to smaller local populations. This thesis uses relative performance information in the form of a comparison with the state average. Chapter four elaborates more on the experiment itself.

2.2. Trust

Three things are needed for government: weapons, food and trust. (…) Trust should be guarded to the end: without trust we cannot stand (Confucius in O'Neill, 2002, p. 3).

This quote indicates that trust is of great importance for governments or public institutions. Trust in government, parliament or the civil service has received increased attention in relatively recent years (Bachmann et al., 2015; Grimmelikhuijsen, Porumbescu, Hong & Im, 2013). The concept of 'trust' is not easy to explain. It is frequently used to say something about the level of satisfaction regarding institutions. Especially in healthcare, trust has a central role and is inevitable in relationships between physicians and patients (Hall et al., 2001; van der Schee, 2016). The increase of available performance information would have an effect on public trust in healthcare (van der Schee, 2016). Unfortunately, trust in hospitals may be diminished with the rapid privatization of medical care and the growth of managed care (Mechanic, 1998). The reason for this could be that the public's idealization of medicine and the doctor gets "so out of touch with reality" (Malmsheimer, 1988 in Mechanic, 1998). As a result, citizens could get the impression that motives other than loyalty to patients are important. However, according to a Dutch dissertation, the level of trust of Dutch people in healthcare institutions would be stable (van der Schee, 2016). What is known about trust? This section elaborates on the concept of trust in general and applied to the healthcare sector, presents dimensions of the concept and discusses some effects of trust.

2.2.1. What is trust?

The importance of trust is widely acknowledged by scholars and practitioners and has been studied extensively (e.g. Grimmelikhuijsen, 2012; McKnight & Chervany, 1996). High levels of trust in public institutions are considered essential for the functioning of those institutions and the prosperity of society (Grimmelikhuijsen, 2012). However, there is no common definition of trust (Hall et al., 2001). Trust is related to expectations about others, which could depend on a specific role of a person or an institution. Trust lies in people and therefore trust in hospitals is about trust in the people working there (Sztompka, 1999). Especially in healthcare, trust is linked to vulnerability. As illness and invasive treatments create vulnerability, trust in physicians is very important. As a result, trust is inevitable in relationships between physicians and patients (Hall et al., 2001; van der Schee, 2016). Besides trust in physicians, trust in nurses, other care providers and in medical institutions also play a role (Hall et al., 2001).

Personal and institutional trust

One can make a distinction between personal and institutional trust. To put it simple: while personal trust is the trust in other humans, institutional trust is the trust in institutions (van den Bos, 2011; Hall et al., 2001; Kloosterman, 2010 a,b; Sztompka, 1999). Personal trust is based primarily on personal experience and individual personality. Kloosterman (2010 a) argues that social trust, which is equal to personal trust, is essential for connections between different groups within society. Social contacts increase the level of trust of citizens in general. On the contrary, institutional trust focusses on societal and political institutions, for example hospitals and politicians. In general, it considers the satisfaction about the activities public institutions are required to do (van den Bos, 2011). Institutional trust would lead to more social involvement and participation, which is very important for democracy (Kloosterman, 2010 b). Consequently, the difference between personal and institutional trust is mainly about the direct or indirect interactions and personification. While personal trust includes direct interaction and personification with people close to you, institutional trust is about indirect interaction in the absence of personification, as public institutions are on a certain distance (van den Bos, 2011). When there is personification with a public institution, for example as a result of direct contact with a physician, it is about personal trust and as a result, it changes the way citizens judge. In line with this, personal and institutional trust interact with each other in important ways: patients' trust in their personal physicians can influence the trust in the hospital in general, and the other way around (Hall et al., 2001). This study focusses on institutional trust, the trust in hospitals, as there is no direct interaction with physicians.

Definition and dimensions of trust

As aforementioned, trust can have many definitions. McKnight and Chervany (2001) point to "the challenge of conceptualizing trust" (p. 28). Although this thesis only focusses on institutional trust of citizens, this kind of trust also relates to the actions of doctors which are the basis of trust in a hospital. Therefore the following general definition from an individual perspective is appropriate for this thesis:

"Trust is the expectation that individuals and institutions will meet their responsibilities to us" (Mechanic, 1998).

Literature shows that trust consists of several dimensions. For example, McKnight & Chervany (2001) came up with four categories of trust: benevolence, integrity, competence and predictability. In line with this, Grimmelikhuijsen (2012) identified three dimensions: competence, benevolence and honesty. Hall et al (2001) specifically focused on trust in healthcare and concluded their literature review with a five-part configuration: fidelity, competence, honesty, confidentiality, and global trust. However, most of these dimensions are about trust in a specific person. As the survey experiment of this thesis shows

performance information that does not include information about specific doctors, most dimensions of these scholars do not perfectly fit with this research. The dimension g*lobal trust* in physicians fits best. Global trust has strong connections with the other dimensions, although it does not fit exclusively in one. Furthermore, global trust has an important irreducible component which is called the "soul of trust". This more holistic aspect of trust is captured by the global dimension.

2.2.2. The effects of trust

While trust in institutions is important in itself, it would also relate to better governance. Trust could measure citizens' evaluation of the quality of governance and consequently, more trust would indicate better governance. Trust is regarded as a 'soft' indicator of good governance, as opposed to 'hard' indicators like numbers (Bouckaert & van de Walle, 2003). As a result, the levels of trust in a public institution could indicate the performance of that organization. However, trust and the functioning of institutions can also be entirely unrelated (Bouckaert & van de Walle, 2003). Therefore this thesis considers institutional trust as an important goal in itself.

Furthermore, trust can have important consequences for attitudes and behaviour of citizens. It appears that trust in physicians has a positive effect on perceived effectiveness of care and treatment recommendations and leads to fewer disputes with the physician, not seeking a second opinion and not changing physician (Hall et al., 2001). If patients do not trust the healthcare institution, they feel less involved which has consequences for the effectivity of care (van der Schee, 2016)

There is an interaction between performance information and trust. Trust also seems to have an effect on how results are perceived. Patients with high levels of trust are more likely to perceive objective performance information positively than patients with average of low levels of trust (Hall et al., 2001; James, 2011). In other words, the initial level of trust influences the perception of the performance information presented to the citizens. Moreover, trust can reach a steady state, or a "plateau", in which expectations and subjective experiences are balanced (Hall et al., 2001, p. 618). Because of this "ceiling effect", high initial levels of trust can mitigate the effect of performance information (Grimmelikhuijsen & Klijn, 2015). Nevertheless, initial levels of trust will not be taken into account in this study, which will be explained in chapter four, section 4.2.5.

Chapter 3. Theoretical framework

This chapter provides the theoretical framework for answering the central research question. More specifically, it answers the following sub question: what is the theoretical relation between different types of performance information and citizen trust? Several hypotheses will be identified based on theory. These hypotheses follow from an elaboration of theory, confirmation in empirical research and application to this thesis.

3.1. Stories

Stories of performance information can be linked to trust, using the Elaboration of Likelihood Model of persuasion (ELM) and the Narrative Paradigm Theory (NPT). The Elaboration of Likelihood Model explains different ways of processing information and the effects on attitude change (Petty & Cacioppo, 1986). This model includes two major routes that lead to persuasion: the central and the peripheral route. The central route is taken when a personal is interested in the subject and the central arguments of the issue are carefully considered. In contrast, a person with little interest in the subject and little ability to understand the arguments would take the peripheral route. This person would be more likely to rely on the affective associations and general impressions that result from the information. Both routes lead to changes in attitudes. However, one of the main assumptions of this theory is that attitude changes via the central route appear to be stronger and more difficult to change. In contrast, the peripheral route would result in short-term attitude change. In other words, prior knowledge and interest in the organization or issue are determinants of trust. The lack or shortage of both factors result in more sensitivity for affective associations which will affect citizens' attitudes. *Framing* can thus change the attitudes of citizens, especially if a person has little interest in and knowledge of the organization or issue. Moreover, if persons with high interest and prior are persuaded, they would be more likely to end up with an attitude change for the longer term.

The theory is confirmed in empirical research in healthcare. Angst & Agarwal (2009) did research concerning the electronic health records (EHR) with the following research question: "Can individuals be persuaded to change their attitudes and opt-in behavioural intentions toward EHRs, and allow their medical information to be digitized even in the presence of significant privacy concerns?" It appeared that, even for persons with a high concern of privacy, appropriate framing of the message can lead to change in attitudes.

In sum, the ELM shows that the processing of arguments derived from information can lead to change in attitudes. The theory is about persuasion and elaboration of arguments as elements of the presented information, in other words: framing. As a result, the ELM can be applied to stories as performance information in this thesis, as reviews about hospitals are written by advocates and thus include some form of subjectivity and persuasion. An example of change in attitudes can be change in the level of trust towards a hospital. To conclude, according to the ELM, it is probable that stories of performance information lead to change in the levels of trust.

In addition to the ELM, the Narrative Paradigm Theory (NPT) also links stories to trust. Theories of social exchange point to the value of stories as a way of communication: "stories are memorable, easy to

understand, and establish a common ground with others that create credibility" (Barker & Gower, 2010, p. 299). The NPT, also called the theory of storytelling, assumes an inherent ability of people to tell stories, which is combined with the assumption that listeners of stories use their rationality to assess those stories and recreate a reality based on what is presented to them. Furthermore, stories are value laden which results in quick member processing, belief and behaviour (Cragan & Shields, 1998 in Barker & Gower, 2010). Considering those effects, storytelling proves to be an effective tool for cross-cultural communication which can be meaningful within organizations and in marketing and education (Abrahamsom, 1998; Barker & Gower, 2010; Hsiao, Lu & Lan, 2013).

Studies in several fields confirm the NPT and link it to trust. Jarvenpaa & Leidner (1998) argue that digital storytelling increases the level of trust among global virtual team players who have no personal contact. This implies that stories have a positive effect on the receiver as it enlarges the credibility of the sender. Consequently, one can assume that if the sender of the story gains more trust, the objective of the story is also more credible. Applied to this study, this leads to the assumption that if the writer of stories about a hospital is considered as trustworthy, it indirectly influences the trust in the hospital itself. Furthermore, blogs provide electronic word of mouth publicity and therefore seem to be a trusted source for informing purchasing decisions, for example regarding travel decisions (Hsiao et al., 2013). Blogs are a form of storytelling and therefore one can expect that stories about hospitals also influence the decision of going or not to a certain hospital and are probably also perceived as trustworthy. Moreover, James (2011) argues that word of mouth information about performance would determine the level of satisfaction. As satisfaction and trust are related, electronic word of mouth information can influence trust (Awad & Ragowsky, 2008; King et al., 2014). For instance, in the commercial sector, online word of mouth can develop trust of consumers and consequently influence their intention to buy products online (Awad & Ragowsky, 2008). These findings lead to the expectation that online word of mouth information about hospitals has similar implications for trust. As word of mouth interaction is a form of storytelling, one can assume that stories about performance of hospitals have an impact on citizen trust.

As aforementioned, while positive information results in a positive emotional response, negative events have a negative effect on emotions (Baumeister et al., 2001; James, 2011). For example, information about relatively good performance positively influences citizens' perceived performance and satisfaction and for information about relatively bad performance the opposite is true: it negatively influences perceived performance and satisfaction. This importance of relative information is shown in research using information about local governments (James, 2011) and a study about performance of local schools (Charbonneau & van Ryzin, 2015). Regardless of the difference between stories and

statistical information, one could expect that positive and negative information have a similar effect on trust in an institution because trust can be considered as an emotion. Additionally, as satisfaction and trust are related, it is likely that the effects are similar as well. Moreover, in general, citizens often do not seem to be informed about the performance of public institutions and would not have an incentive to become so (Andrews & van de Walle, 2013; James, 2011; Pollitt, 2006). This finding increases the likelihood that positive information will result in a positive perception of the performance and more trust, just like it would be the case for negative performance information resulting in a negative attitude and less trust. Finally, the field of behavioural finance also shows that humans respond differently to positive and negative financial information. According to the price-to-price feedback theory, when speculative prices go up they may attract public attention, promote word-of-mouth enthusiasm and eventually lead to actual higher prices and expectations of further price increases. The feedback could lead to a "speculative bubble" (Shiller, 2003, p. 91). Similarly, downward price movements result in pessimism and lower prices as a consequence. Evidence from natural experiments confirm this feedback theory (Shiller, 2003). This finding is in line with the expectation that positive information leads to positive attitudes and negative information would result in negativity. The field of finance even shows that those attitudes lead to certain behaviour.

The theories about stories of performance information and the difference between positive and negative information, which both relate to citizen trust, can be combined. A dissertation of Van der Schee (2016) even shows that, although there is a difference between users and non-users, positive information from their network has a positive effect on public trust in healthcare. Similarly, negative information from other people has a negative impact on trust. All in all, it results in the following hypotheses:

H1: Positive stories of performance information result in more citizen trust in a hospital
H2: Negative stories of performance information result in less citizen trust in a hospital

3.2. Statistics

Statistical performance information has a relation to trust as well. The performance information theory is about performance information published by formal systems, for instance auditors and inspections. This theory sets out the effects of formal performance reporting systems on citizens. The performance information theory suggests that it influences citizens' perceptions of absolute and relative performance, their satisfaction with services, and their view of local responsibility for performance outcomes. Factual information would change their attitudes and policy views (James & Moseley, 2014). For this thesis, the link between performance information and the satisfaction with services is relevant.

Satisfaction and trust are closely related which results in the assumption that statistical performance information influences trust. After all, one of the objectives of performance measurement is better communication with the public in order to build more public trust (Behn, 2003). Moreover, Grimmelikhuijsen & Meijer (2012) mention specifically that some scholars argue that "showing citizens the results of government policies through clear performance targets and indicators is supposed to result in increased trust in government" (p. 1).

The performance information theory is confirmed in a study of Andrews & Van de Walle (2013) in which they test the effect of performance management on citizens' perceptions of efficiency, responsiveness, equity and effectiveness. They find that if public institutions use performance management, it positively influences citizens' perceptions of the public services. Because performance management is related to measuring output, the statistical information which derives from that would have a positive impact on citizens' attitudes. Another confirmation of the theory is shown in empirical research about the credibility of producers of performance information. The empirical findings of Van Ryzin & Lavena (2013) suggest that citizens regard performance information as credible "even when a local government is reporting on itself" (p. 87). Moreover, performance information in the public sector is often produced by independent public audit bodies. Their credible status makes their information more likely to be trusted and is perceived as "genuine" performance information of relevance to citizens' real concerns (James, 2011, p. 403). As public institutions and independent bodies mainly provide statistical information, this finding results in the assumption that statistical performance information is related to trust in public institutions.

Combining this information with the already argued assumption in section 3.1. that positive information positively influences trust and negative performance information has a negative effect on citizens' trust, the following hypotheses can be identified:

H3: Positive statistical performance information results in more citizen trust in a hospital
H4: Negative statistical performance information results in less citizen trust in a hospital

3.3. Stories vs. statistics

This section uses the theory of psychology of choice more broadly. It contrasts rational choice theory and thus specifically compares subjective and objective information. Theory about psychology of choice challenges the theory of rational choice (Tversky & Kahneman, 1981). According to the rational choice theory, humans make rational decisions and preferences for options should not be influenced by changes of frame. However, psychology theory about choice points to the imperfections of human

perceptions and decisions. This theory assumes that individuals might have a different preference in a different framing of the same problem. At the same time, they are normally unaware of alternative frames and their potential effects (Tversky & Kahneman, 1981). In other words, citizens do not necessarily base their judgement on objective information in a rational way. It is very likely that the frame of the information changes the perceptions of citizens. Accordingly, subjective information can also affect citizens' choices if it is framed in a convincing way. Moreover, also using theory of psychology of choice, citizens are more likely to choose a subjective option because the information is personalized. Information overload can be a problem to make the most rational decision. An effective approach to solve the problem of information overload is "personalisation" (Bawden & Robinson, 2009, p. 187). This will respect the fact that information is individual and contextual.

The assumption that citizens could prefer the subjective stories of others over objective information, is confirmed in empirical research. In relation to statistical data, episodic information seems to be more vivid and emotionally engaging. While episodic information is based on personalized stories, statistical information is regarded as pallid and draws upon abstract concepts. Peoples' evaluations of public services are more easily affected by this type of information and citizens appear to memorize episodic information better than statistical data (Olsen, 2016).

Furthermore, the field of marketing confirms that subjective information is very important to citizens. In marketing there is a lot of research on the factors that influence the decision to purchase a product or not. It appears that people are more likely to trust the information provided by other consumers more than provided by companies (Hsiao, Lin, Wang, Lu & Yu, 2010). Although trust in private and public organizations is probably different, this finding implies that citizens are more likely to trust the subjective experiences of others, which is in the form of a story, over the information of other sources, which could be in the form of statistics.

Additionally, it seems that, in contrast to written methods of reporting performance information, public meetings would improve citizen attitudes toward government. For example, an American study showed that after participation in project meetings, participants had more trust in the government that they would be responsive to public concerns (Grosso & van Ryzin, 2011). These public meetings are probably less objective than the written information. According to the theory about psychology of choice, citizens can be convinced by the frame used in public meetings. Although public meetings give opportunities for interaction and discussion, these findings could suggest that subjective performance information in itself, like stories, would have a stronger effect than objective statistical information.

Moreover, the objective statistical information is challenged in practice. Hood (2007) discusses unintended effects of statistical performance information and raises the following question at the end of his article: "will heavy emphasis on public service performance numbers expressed as high-stakes targets and rankings lead to a further loss of public trust in government statistics (p. 102)?" Specifically in healthcare, Mechanic (1998) argues that the rapid privatization of medical care and the growth of managed care could have diminished the trust in hospitals. Both Hood (2007) and Mechanic (1998) thus challenge the belief that the NPM practice of showing objective statistical performance information to the public has positive effects and even suggest negative effects.

These psychological theories can be applied to performance information: while statistical performance information can be regarded as objective information, the stories about experiences of other citizens are comparable to subjective, framed, and personalized information. As a result, it is probable that citizens are more likely to be affected by stories than by statistical information. Combined with the previous literature about positive and negative information, these findings lead to the following hypotheses:

H5: The effect of positive stories of performance information on citizen trust in a hospital is stronger than the effect of positive statistical information
H6: The effect of negative stories of performance information on citizen trust in a hospital is stronger than the effect of negative statistical information

3.4. Negativity bias

According to the literature, it appears that negative information has a stronger effect on humans' psychological state than positive information (Rozin & Royzman, 2001). "Bad is stronger than good" would be a general principle that has important implications for human psychology and behaviour (Baumeister et al., 2001). The term 'negativity bias' is used to refer to the theoretical tendency that, even when of equal intensity, negative things have more impact on humans than neutral or positive things. This phenomenon is well documented in social psychology research because it impacts impression-formation and cognitive processes (Lau, 1982). One explanation is based on the figure-ground hypothesis: negative information stands outs because of its relative infrequency. Positivity plays a bigger role as most people live most of the time in a positive world where they like the people around them and are satisfied with their life. As a result, negative information is more striking and would have a stronger effect (Lau, 1982). This explanation is also addressed in several studies of Peeters and his colleagues, which is referred to in the article of Rozin & Royzman (2001).

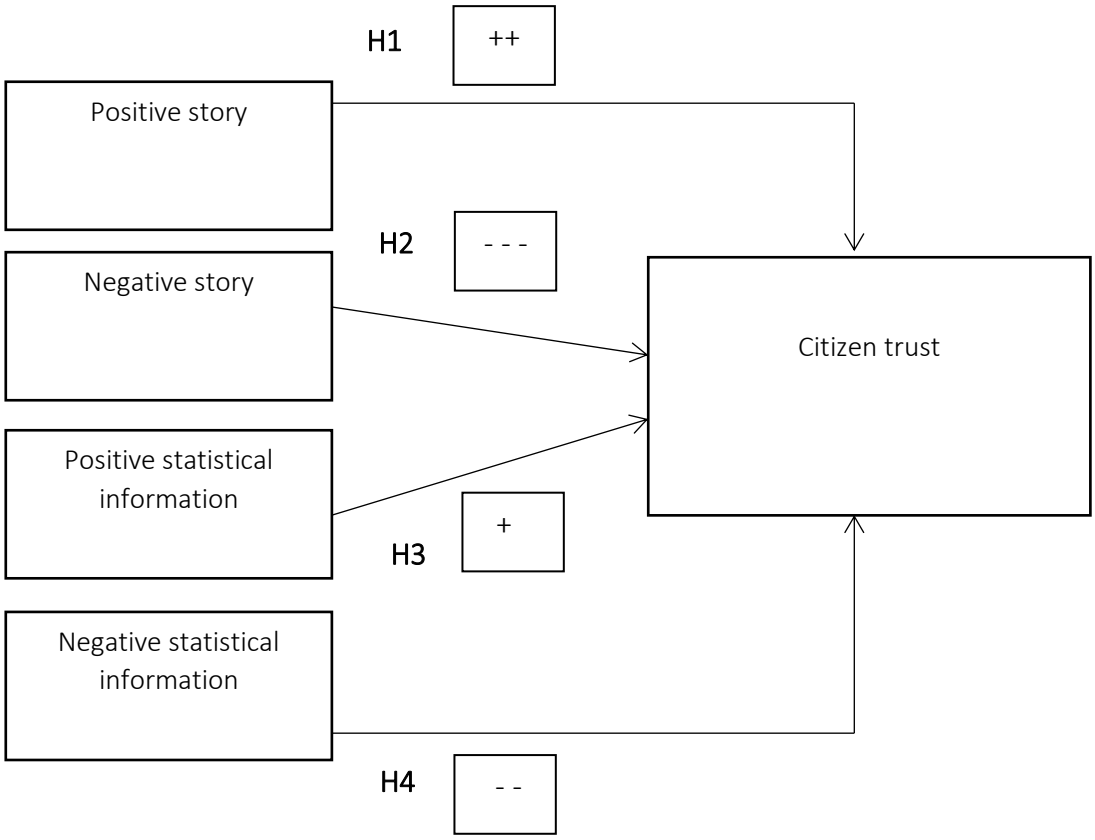
This theoretical assumption of a negativity bias is confirmed in several studies. For example, negative events would lead to more negative emotional responses than positive events (Baumeister et al., 2001). Furthermore, unpleasant or negative impressions seem to be quicker to form and more resistant to disconfirmation than good ones. Additionally, negative memories seem to be easier to recall than positive thoughts (Olsen, 2016). A similar effect also seems to be the case for humans facing information. Negative information appears to have a stronger effect on human behaviour than positive information (James, 2011). The theory of negativity bias is also confirmed in a study of Fiske (1980). It appears that participants of the research give more weight to negative information than to positive information. Furthermore, negative information seems to get more attention, which has been measured as "looking time" (p. 893). Moreover, the negativity bias is confirmed in the political context. Increases in unemployment, which can be interpreted as negative information, lead to a decrease in popularity of a president. Meanwhile, decreases in unemployment, which is positive information, appears to have no positive effect on the popularity (Mueller, 1973 in Lau, 1982). Similarly, Bloom and Price (1975) showed that incumbents are punished for worsening economic conditions, while not being rewarded for improving conditions (in Lau, 1982).

Applied to this thesis, negative performance information would have more of an impact on citizen trust in a hospital than positive information. The explanation deriving from the figure-ground theory makes sense in this specific context, because most people expect that doctors are professionals and that hospitals make people feel better. Their positive expectation makes negative information stand out and therefore would have a stronger effect. As a result, it is expected that for people who are facing negative information, the judgement will be negative rather than neutral or positive. Meanwhile, positive information is more likely to result in either neutral or positive attitudes. This theory of negativity bias results in the following hypothesis:

H7: The effect of negative performance information on citizen trust in a hospital is stronger than the effect of positive performance information

All hypotheses are visualised in figure 1. The two plusses and minuses indicate that stories have a stronger effect on citizens' trust than statistical performance information.

Figure 1. Visualisation of the hypotheses



The difference between + and ++ is indicated by H5

The difference between – and --- is indicated by H6

The fact that there are more minuses than pluses reflects H7

Chapter 4. Research design and methods

This chapter elaborates on the method used to answer the research question. This study is based on a positivistic scientific philosophical approach. This indicates that the research is based on theory and it assumes that a sample of the population can be generalized to the population as a whole (Deetz, 1996). The specific method of this thesis is an innovative way of doing research in the field of public administration: a population-based survey experiment. Experiments are mainly used in psychological research, however, scholars in public administration increasingly value this type of research for their own field of study: since 2010 the number of experimental researches in the field of public administration and public management has increased significantly (Anderson & Edwards, 2014). As almost all results are quantitative, the program SPSS will be used to analyse the data. While the SPSS output can be found in Appendix D, this chapter includes overviews in tables. The first section of this chapter explains the choice for an experiment. The second section extensively describes the experiment itself, followed by a section reflecting on the validity and reliability of the research method.

4.1. Choice for an experiment

The research design has to fit the research question. Therefore, the research question will be repeated: *what is the effect of different types of performance information on citizen trust in hospitals?* Clearly, this question includes an independent and a dependent variable: performance information is the independent variable which has an influence on trust, the dependent variable. This research question expects to reveal an effect, or in other words, a causal relationship. It also implies that the relationship is general and thus covers a wide population. A research design which is an "optimal tool for testing causality", is an experiment (Anderson & Edwards, 2014, p. 1519; Harris, 2002). While the independent variable can also be called a causal variable, the effect variable is equal to the dependent variable. The causal variable will appear in varying conditions and consequently the effects will be examined on the effect variable. This varying with the conditions of the causal variable is called manipulation. For instance, if the type of performance information changes, what will be the effect on citizen trust? Consequently, it will be measured to what extent the effect variable varies in the same direction as the causal variable. As a result, one can reflect on the existence of a causal relationship (Aguinis & Bradley, 2014; Bryman, 2012; Harris, 2002). The experiment of this thesis will manipulate different types of performance information and examines the difference between the effects on citizen trust.

4.2. Description of the experiment

The following section will elaborate on several aspects of the experiment: subjects, randomization procedure, balance test, independent variables, dependent variables and a manipulation check.

4.2.1. Subjects

The subjects of this experiment are students from three universities studying public or business administration. This group is considered as homogeneous which is important for an effective experiment: in order to make sure that only the effect of different types of performance information gets measured, the other variables need to be constant. The researcher has to make sure that the effect cannot be caused by another variable, like age. Therefore, the experiment needs to control for these alternative variables and therefore the group of participants needs to be as homogeneous as possible (Harris, 2002). Students are a good example of a homogeneous group, as they have a similar age and level of education. The survey of this experiment includes some background questions to check if the participants belong to the homogeneous group that is supposed to fill in the survey.

In scientific research it is common to use students as subjects for experiments, as their responses appear to be substantially similar to responses of non-students (Anderson & Edwards, 2014). More specifically, this research includes students, either bachelor or master, who study public or business administration, or something similar at Erasmus University in Rotterdam, Utrecht University in Utrecht, or Ghent University in Ghent. These students are quite similar regarding the field and level of education, and age. These features are important as they could have a relation to trust. The field of education is important as students learn a certain way of thinking. Public and business administration appear to be related because both studies mostly belong to the same or an affiliated faculty. Furthermore, specifically in the Netherlands, the level of education could have a relation to trust in public institutions (Kloosterman, 2010, a,b). Although the sample includes bachelor students as well as master students, compared to the whole national population this difference in level of education is very small. This thesis assumes the level of education of participants in this sample is comparable. The range of the age of the students is probably between 17 to 29 years, which is relatively small. Moreover, because of random sampling it is assumed that factors, like difference in bachelor or master and specific age, are equally distributed over the experimental groups (Harris, 2002). The following sections elaborate further on the randomization and include a test to check if the groups are balanced regarding those factors. Taking all previously mentioned features together, this group of students can be considered as a homogeneous group, which is one of the most important requirements of an experimental research (Harris, 2002).

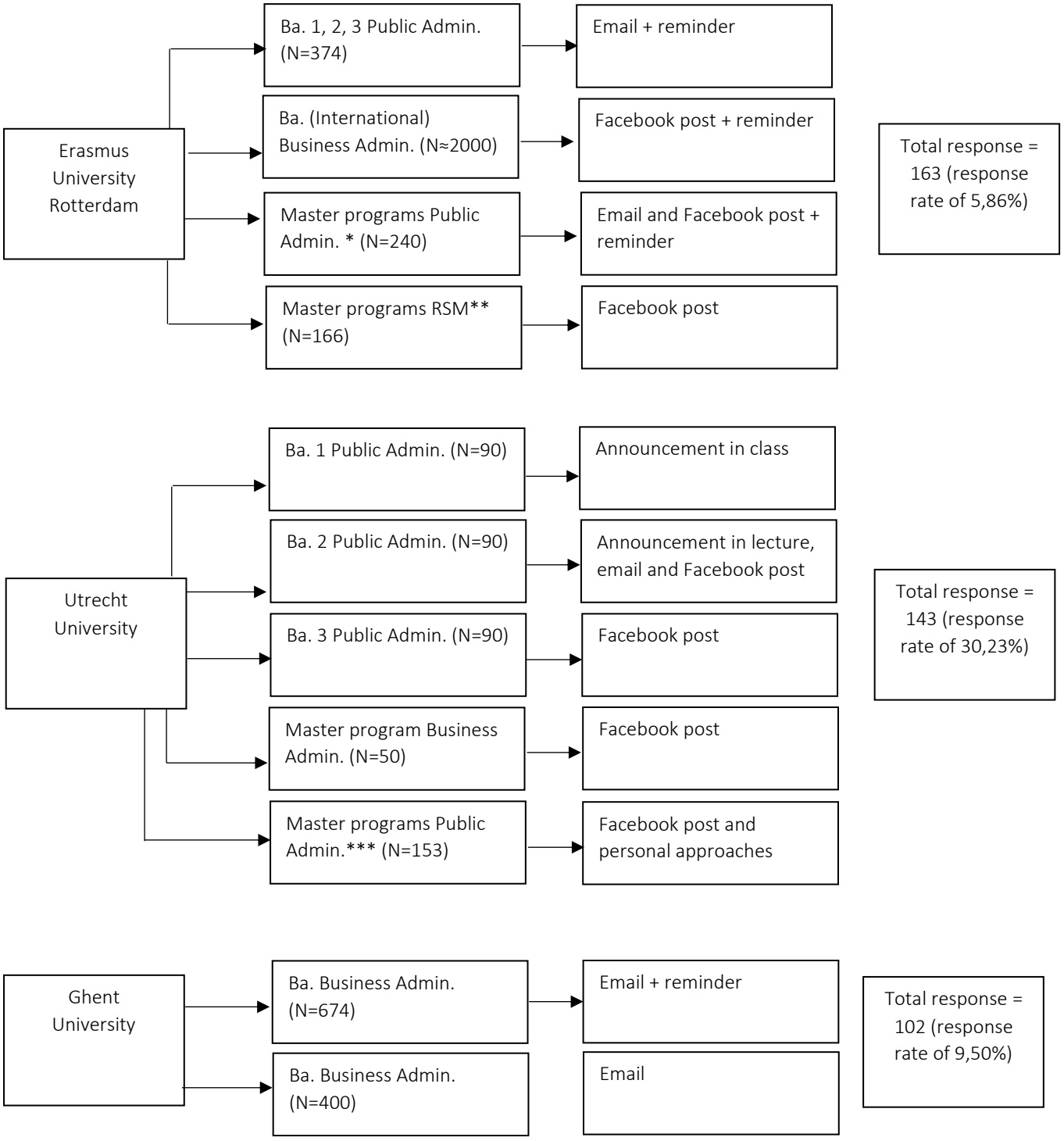
Students are frequently used as subjects of scientific research, however, there is some critique. Students would work with fictive subjects during their education, like a fictive societal problem or an organization which does not exist (Anderson & Edwards, 2014). It also appears to be difficult for students to visualize situations which are unknown or unrealistic. Therefore, using students as participants could influence the external validity. However, one can argue against this that students are, just like other citizens, humans with attitudes towards public organizations and specifically hospitals (Anderson & Edwards, 2014; Harris, 2002). Students belong to a certain group with relatively similar characteristics, which is very important for the essential requirement of homogeneity. Moreover, the information used in the experiment is real information and therefore the students do not have to visualize a certain situation.

Data collection

In order to get as many response as possible from the defined group of students, a lot of effort has been put into the data collection. Firstly, a high amount of students of all three universities has gotten an email with the link to the survey. Secondly, at specifically Utrecht University, a professor was willing to ask a group of bachelor-1 students to bring their laptop and fill out the survey. I personally went to a lecture of bachelor-2 to ask the students myself to fill out the survey. Thirdly, the link was posted in

multiple Facebook groups which belonged to the target population. However, this was only the case for Erasmus University Rotterdam and Utrecht University as students of Ghent University only received an email. Moreover, approximately a week after the first attempts all students received a reminder, either via email or via another post in the Facebook groups. The data collection started at the beginning of May with Utrecht University. Two weeks later there was access to the student numbers of all public administration students of Erasmus University Rotterdam, including bachelor and master students. These numbers were used to send a direct email, which was followed by multiple posts in Facebook groups. From Ghent University one group of business administration students received an email in mid-May and a week later another big group of students received the email. At the end of May they received a reminder. The data collection stopped on the 12th of June. The following figure shows the specified groups which have been approached and the amount of students who eventually filled out the survey. The response rates show that it is difficult to make students fill out a survey. Probably personal contact and emails followed by a reminder worked best.

Figure 2. Data collection



*= Master International Public Management & Public Policy; Master Management of Governance Networks; Master 'Management van HR en Verandering'; Master 'Publiek Management'

**= Master Global Business & Sustainability; Master of Management

***= Master 'Publiek Management'; Master 'Bestuur en Beleid'; Master 'Strategisch Human Resource Management'; Master 'Organisaties, Verandering en Management'; Master 'Communicatie, Beleid en Management'; Master 'Research in Public Administration and Organizational Science'

Eventually 419 students participated. The amount of students of Erasmus University Rotterdam is quite similar to the amount of Utrecht University which is about 150. The response of students of Ghent University is somewhat lower: 102. Despite this difference, the data collection has been successful as the total N is high, which is necessary to generate sufficient statistical power in population-based survey experiments. The following table shows the exact amounts of participants per university.

Table 2. Participation per university

University	Number of participants
Erasmus University Rotterdam	163
Utrecht University	143
Ghent University	102
Other	11
Total	419

4.2.2. Randomization procedure

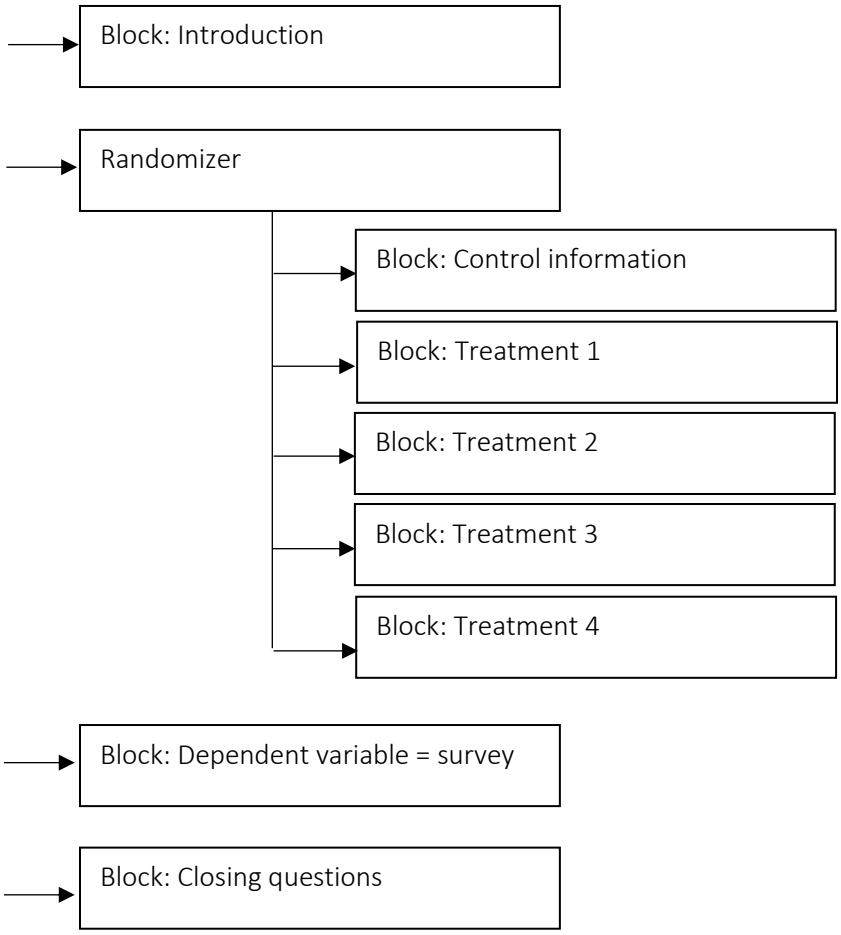
An experiment requires manipulation of the independent variable in order to test what the effect will be on the dependent variable. As a result, the whole group of participants will be split into several groups, which are called the experimental groups. Each group will read another type of performance information: either negative statistical information, positive statistical information, a negative story, a positive story, or no performance information (i.e. control group). Section 4.2.4. will elaborate on this and includes a clear table.

Random selection basically means that all participants have the same chance to end up in a certain experimental group. A randomization procedure is essential for two reasons: to equal out other variables and to make sure all experimental groups are of equal size. As aforementioned, this study uses a homogeneous group in order to reveal the effect of performance information on citizen trust. However, it is possible that other factors could influence the dependent variable, like gender, education, political preferences, culture, etc. Furthermore, as mentioned in the literature review, being a user or a non-user would also influence the citizens' attitudes. Additionally, there are always multiple factors that are irrelevant concerning trust, like what a person has been eating before participating in the experiment. In order to equal out all confounding variables, the distribution of participants over the experimental groups is based on random selection. This is because scholars assume that, if there is a significant number of participants, random selection will distribute all the other factors equally over the groups (Bryman, 2012; Harris, 2002). In this study 419 students participated, which is more than enough

to assume that the random selection has been successful. To sum up, a big sample and a randomization procedure would control for possible influences of confounding variables.

Which students are part of which experimental group will be automatically determined by the program Qualtrics using a randomization option (Qualtrics, 2017). The survey experiment will be included in this program and will be accessible to students through a link. This program is able to distribute all the participants randomly over the experimental groups, which works as follows: when programming the survey in Qualtrics, it is possible to make use of several 'blocks' which can include the different types of performance information. The whole survey itself is also one block, just as the closing questions. Qualtrics has a randomization option in which the blocks with performance information can be exchanged, while the survey and the closing questions stay the same and are visible to all participants. In other words: Qualtrics makes sure that just as many participants open the link with negative performance information, as participants facing positive information, a negative or positive story or control information. The program even takes the participants into account who did not finish the whole survey; they do not belong to an experimental group. The randomization procedure is visualized in the following figure. To conclude, due to a big sample and the randomization procedure each participant has the same chance to end up in an experimental group, resulting in balanced groups of more or less equal size. The next section includes a balance test to check whether the randomization has been successful.

Figure 3. Randomization in Qualtrics



4.2.3. Balance test

A balance test checks if the randomization was successful and variables like gender, age, city and field of study, are equally distributed over the groups. SPSS is able to compare the mean of the control group with the means of the four treatments groups. Ideally, there would be no significant difference between the means of those groups thus indicating balanced experimental groups. The following table shows the mean difference between the groups. If a certain test in this thesis is significant, it is specified at which level of significance this is the case indicated by 'p'.

Table 3. Balance test

	Mean difference between control and treatment 1	Mean difference between control and treatment 2	Mean difference between control and treatment 3	Mean difference between control and treatment 4
Gender	-0,060	0,056	0,046	0,095
Age	-0,060	0,011	-0,056	0,035
City	0,202	0,250+	0,121	0,123
Field of study	0,012	-0,041	0,147	0,064
Year of study[1]	-0,143	0,065	0,160	0,040

+ = p<0,10
*= p<0,05
**=p<0,01
***=p<0,001
Two tailed test

The balance test shows that the randomization procedure has been successful because the groups are mostly balanced. There is only one slight exception: the city of study seems to differ between the control group and treatment group 2 albeit that this difference is only marginally significant (p< .10). As a result, there are no issues with confounding variables and it is assumed that the dependent variable of citizen trust is isolated.

4.2.4. Independent variables

Performance information is the independent variable and in this thesis defined as "feedback information on outputs and outcomes of the public service as well as its efficiency and its effectiveness" (Kroll, 2015, p. 4). This is a broad definition which can include either statistical information or subjective episodic information like the perceptions of citizens. As mentioned in the literature review, there are several types of performance information which have an effect on citizens. One of them is the difference between quantitative and episodic information, which is the subject of this thesis (Olsen, 2016). These types of information are combined with the difference between positive and negative information (James, 2011). This thesis compares the effect of positive stories, negative stories, positive statistical information and negative statistical information. As a result, there will be five experimental groups: four experimental groups facing a certain type of performance information and one control, or "baseline", group (Harris, 2002). This is called a "between-persons design": each participant only reads one vignette with information and is thus part of one experimental group (Aguinis & Bradley, 2014, p. 360). For this design it is important that all participants have the same baseline information. Only the experimental groups read extra information about performance, which is the causal variable. This between-persons

[1] The answers to this question in the survey were: bachelor 1, bachelor 2, bachelor 3, master, other. As bachelor 1, 2 and 3 are comparable the answers are recoded to either bachelor, master or other. This question was included to make sure the survey will be filled out only by university students. Thirteen people filled in 'other', which probably indicates that these students have a gap year and thus belong to the target population.

design is chosen because it is important that participants do not know what the research is about, as it could influence their response. The five groups are shown in a clear overview in the following table.

Table 4. Overview of experiment

Group	Type of performance information
Experimental group 0 (baseline group)	General information about a hospital + survey including trust
Experimental group 1	General information about a hospital + *positive story* as performance information + survey including trust
Experimental group 2	General information about a hospital + *negative story* as performance information + survey including trust
Experimental group 3	General information about a hospital + *positive statistical* performance information + survey including trust
Experimental group 4	General information about a hospital + *negative statistical* performance information + survey including trust

The performance information is focused on a specific disease, because citizens go to a hospital for a specific treatment or specialization. "What patients really care about is the expertise of a hospital" (Atty van Dijk, paediatrician UMCU). However, if the treatment is acute or the patients are still on a diagnostic path, the location of the hospital would play an important role in deciding to go to a certain hospital. Nevertheless, at least in non-emergency cases, citizens can choose which hospital would be the 'best' regarding a specific field of expertise. Furthermore, the hospital choice of citizens appears to be strongly determined by physicians' characteristics (Burns & Wholey, 1992). Because physicians have a specific specialization, this implies that performance information regarding a specific treatment or disease is important in determining the hospital choice. In this study, information about breast cancer is used, as cancer is a disease that appears relative frequently and affects many people directly and indirectly. Therefore citizens could show empathy with the information used in the experiment. However, as mentioned in the literature review, citizens would be more affected by performance information when it is about the overall performance of a bundle of services, rather than about a specific service they regularly use themselves. Direct personal experience would be more influential (James, 2011). Nevertheless, as citizens have more an incentive to search information about specific treatments than about a hospital in general, focussing on a specific disease makes the experiment more realistic. Furthermore, the assumption that students could show empathy with the information used in the experiment will make it more likely that they answer the questions seriously. Moreover, as it is not

probable that several participants with an age between 17 to 29 regularly use services to treat breast cancer themselves, it would not influence the results of the survey experiment in a significant way.

Some scholars question the value of experiments as they are often not realistic, which would make the results not easily generalizable (Aguinis & Bradley, 2014). In order to respond to this critique, the information used in this study is real information about one specific hospital. The specific choice for the Albert Schweitzer hospital in Dordrecht relates to the availability of information: a positive and negative review about the same disease were available on the internet, as well as statistical information about the treatment of that specific disease. It is important to note that the statistical information for the two experimental groups is the same; the differences lies in the relative aspect indicating that the hospital is doing better or worse than the state average. This framing of the information as positive or negative is not 'real'. Therefore, the hospital is anonymized in the survey experiment. One of the following paragraphs elaborates further on the relative aspect.

The positive and negative story both derive from the website 'Zorgkaart Nederland' (Patiëntenfederatie Nederland, 2017). An experiment requires that the information should be as similar as possible, with one specific manipulation as the causal variable. This ensures that the participant responds specifically to the manipulation. The reviews used in this study are similar on the following aspects: they are written about the same disease treated in the same location of the same hospital and they are both correctly spelled without punctuation mistakes. This is relevant as it influences the credibility of the writer. It is also important to note that both stories are clearly presented as positive and negative performance information: while one person thanks the hospital, the other person said he or she filed a complaint. However, the dates of the reviews differ more or less two years and the negative story consists of more words than the positive review. Additionally, while one person already deals with the disease, the other is eventually diagnosed without breast cancer. This indicates that both reviews consider a different phase of the treatment. In spite of these differences, I do not expect significant implications for the research. The fact that the date differs will not pose a problem, as this study only focusses on the content of the information. Furthermore, considering that negative information would have a stronger impact than positive information, it is not problematic that the negative story is somewhat shorter than the positive one. Finally, the fact that both stories consider a different phase of the treatment is a seemingly negligible difference. The focus is on how a person is treated in the hospital.

The statistical information is publicly available in the 'AD Top 100' of hospitals in the Netherlands. This list is based on 36 criteria of quality, of which 32 are retrieved from the Inspection of Healthcare. The Inspection uses this information in order to keep an eye on the medical quality of hospitals. It is legally

required for hospitals to provide this information to the Inspection (AD, n.d.). The indicators are categorized and one of them considers the department of oncology. This category includes two statistics about specifically breast cancer (AD, 2016). However, the same statistical performance information cannot be positive and negative at the same time. Therefore, this study includes a relative aspect and compares the statistical information with a fictive state average of hospitals. This method is similar to experimental research of George et al (2016) and Nielsen & Bækgaard (2013), which compares information about high, low and average performance. In this thesis, the performance of the hospital is compared to a fictive state average that shows if a hospital is doing better or worse than the state average and thus makes sure the statistical performance information is perceived as either positive or negative. This is done by explicitly including that the performances are "better" or "worse" than the state average. It is not indicated by mentioning "above average" or "below average" because regarding the first statistic, a high percentage indicates a bad performance, while a high percentage in the second statistic refers to good performance.

Because the statistical information includes a comparison to the state average, the stories need a relative aspect as well. The reason for this lies in the requirement that all vignettes should be very similar; they should only differ on one specific aspect which is the manipulation. Therefore the reviews are followed by a general sentence that compares the review to other experiences about breast cancer treatments in other local hospitals and emphasizes that the prior review is thus either positive or negative. To conclude, all the information of the five vignettes is real, except for the rating "better" or "worse" than the state average included in the statistical performance information. However, it has to be mentioned that the information has been translated from Dutch to English, although this will not question the authenticity.

In all vignettes, the source of information is not mentioned. The stories derive from experiences of other citizens, however, the specific source is not mentioned in the survey. The source of the statistical information is also unclear. This is because the focus is on the type of performance information, not the source of it. The students read certain information followed by a survey. The main content of the vignettes is shown in following table. The complete format of the cases and the following survey are presented in Appendix A.

Table 5. Main content of the vignettes

<table>
<tr><td colspan="2">General description:
Hospital X is situated throughout five different locations in one province. The hospital has 83 specializations.</td></tr>
<tr><td>Positive story:
Below, a review about the treatment of breast cancer in hospital X:

“It is very stressful if you feel a swelling in your breast. Due to the outstanding service offered by the Breast Clinic I had all the tests done and obtained the results during the same meeting: thankfully everything was fine in the end. The positive approach and kindness of all employees, as well as the speed and efficiency, impressed me enormously. I would recommend everyone who has to go through this to go to this place. Thank you, Breast Clinic!”

Compared to experiences about breast cancer treatments in other local hospitals, this is a positive review.</td><td>Negative story:
Below, a review about the treatment of breast cancer in hospital X:

“Because of multiple wrong diagnoses, I was given a life expectancy of three months due to metastatic breast cancer. Meanwhile I went to another oncologist. There I got a treatment and was given a life expectancy of five years. In the meantime, I filed a complaint of the hospital. This is taken care of.”

Compared to experiences about breast cancer treatments in other local hospitals, this is a negative review.</td></tr>
<tr><td>Positive statistical information:
Below, some statistics about the treatment of breast cancer in hospital X:

<table><tr><td>Percentage of patients with tumour residues after the first operation in an early stage of breast cancer (so-called DCIS):</td><td>19,05%</td></tr><tr><td>Percentage of patients with a waiting time of less than five weeks between the diagnosis and the first operation</td><td>80,19%</td></tr></table>
Related to the state average, both percentages show better performance than the state average.</td><td>Negative statistical information:
Below, some statistics about the treatment of breast cancer in hospital X:

<table><tr><td>Percentage of patients with tumour residues after the first operation in an early stage of breast cancer (so-called DCIS):</td><td>19,05%</td></tr><tr><td>Percentage of patients with a waiting time of less than five weeks between the diagnosis and the first operation</td><td>80,19%</td></tr></table>
Related to the state average, both percentages show worse performance than the state average.</td></tr>
</table>

Descriptive statistics in SPSS show that the different types of performance information are equally distributed over the groups, because the means of the five groups are close to each other. This indicates a successful randomization concerning the independent variable. The means per experimental group are shown in the following table.

Table 6. Means experimental groups

Experimental group	Mean
Control group	0,20
Treatment group 1	0,20
Treatment group 2	0,21
Treatment group 3	0,20
Treatment group 4	0,19

4.2.5. Dependent variables

Trust is the dependent variable in this thesis and therefore the most important concept to operationalize.

As aforementioned, the concept of trust can be divided in several dimensions. Specifically for this study with a focus on healthcare, the dimension global trust is used. According to literature, the dimension global trust consists of four statements:

- You completely trust [your doctor's] decisions about which treatments are best for you
- [Your doctor] only thinks about what is best for you
- You have no worries about putting your life in [your doctor's] hands
- All in all, you have complete trust in [your doctor]

(Hall et al., 2001, p. 626)

Although these statements are about 'your doctor' in specific which is not mentioned in the information, it is assumed that participants are able to reflect on their expectations about the doctor based on the performance information. As the statements are about overall trust in a doctor and do not go into detail about the specific actions of the physician, it is probable that the performance information leads to expectations about the general actions of a doctor. After all, trust lies in people (Sztompka, 1999). The expectations about doctors indirectly influence the trust in hospitals (Hall et al., 2001). The four statements previously mentioned are part of the survey and thus measure global trust in hospitals. They are introduced with the following sentence: "for answering the following questions, imagine that you would go to a doctor in this hospital X."

Because these statements derive from the literature, it is expected that the four statements together measure the concept of global trust. Nevertheless, a reliability test in SPSS can check whether this is also the case for this dataset. A reliability test shows the Cronbach's alpha for the four statements: a

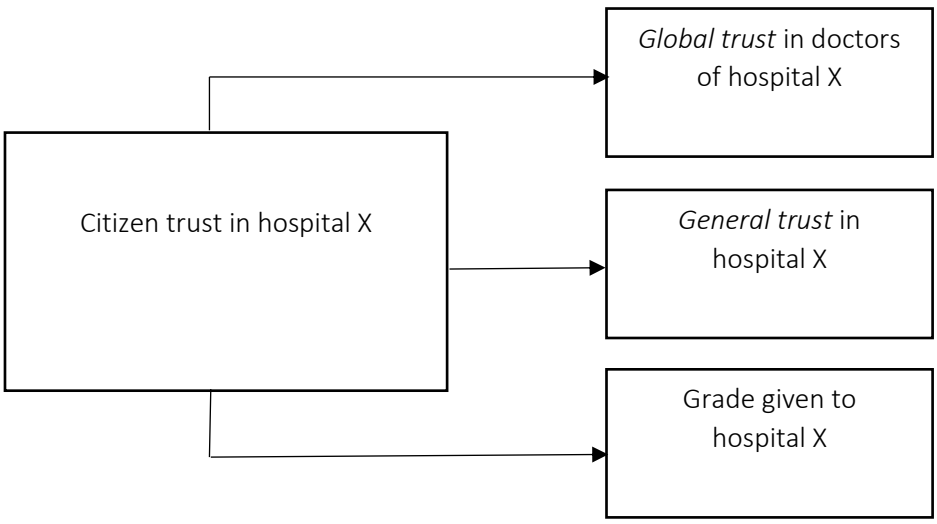
Cronbach's alpha higher than 0,7 indicates that the four statements measure the same concept and as a result, the composite scale of global trust can be considered as reliable. In this dataset the Cronbach's alpha for the four statements is 0,857 which indicates that the composite scale of global trust can be used in this thesis.

Table 7. Composite scale 'global trust'

Global trust	Cronbach's alpha
You completely trust [your doctor's] decisions about which treatments are best for you	0,857
[Your doctor] only thinks about what is best for you	
You have no worries about putting your life in [your doctor's] hands	
All in all, you have complete trust in [your doctor]	

In addition to the statements that measure global trust there is a general direct question about the extent to which the participant trusts the hospital based on the given performance information: general trust. Finally, participants are asked to give a grade about the hospital. In this thesis it is assumed that a high grade is equal to a high level of trust in the hospital. The direct question about trust and the option to give a grade are added in order to generate more variance in the level of trust. The operationalization is visualized in the following figure.

Figure 4. Operationalization of citizen trust



The statements of global trust in the survey can be answered with the following 5-point scale: 'disagree', 'slightly disagree', 'neutral', 'slightly agree', 'agree'. This 5-point scale variable is equal to the scale used in the study of Hall et al. (2001). Because this scale is already tested and appeared to be valid, it should not be changed. Furthermore, this scale allows for combining the statements as a composite scale. The direct statement 'I trust hospital X' is a single statement and can be answered with the following 7-point Likert scale: 'completely disagree', 'mostly disagree', 'slightly disagree', 'neutral', 'slightly agree', 'mostly agree', 'completely agree'. This direct statement does not derive from prior research, although Likert scales are widely used. Likert scales have proven to be valid scales and can vary from a 5- or 7-point scale (Allen & Seaman, 2007). In order to generate more variance, the 7-point scale is used for answering this single statement. Finally, the grade given to hospital X is a score variable and can vary from 1 to 10. A scale ranging from 1 to 10 has also been used in prior research (e.g. Nielsen & Bækgaard, 2013), although it did not specifically include a grade.

Descriptive statistics from SPSS show that most options of the scales are used. For the 5- and 7-point scale, the minimum answer was 1 and the maximum respectively 5 or 7. Furthermore, the grade that students gave to the hospital X, depending on the type of information they read, has a range from 2 to 10. This could indicate that students were more inclined to give a 10 when faced positive performance information, while negative information never lead to the radical response of giving a 1 as a grade. For global trust, the mean is 3,43 on a 5-point scale. The dimension general trust shows a mean of 4,73 on a 7-point scale and finally, the average grade is 6,45. These descriptive statistics are shown in the following table.

Table 8. Descriptive statistics of dimensions of trust

Citizen trust	N	Minimum	Maximum	Mean	Std. Deviation
Global trust	419	1	5	3,42	0,92
General trust	419	1	7	4,71	1,29
Grade	419	2	10	6,43	1,44

Pre-test

Experiments can include a pre-test. A pre-test measures the initial level of trust in order to compare the level of trust before and after the experiment (Bryman, 2012). The absence of such a pre-test and the ignorance of the initial level of trust has a disadvantage, because as aforementioned, the initial level of trust could influence the level of trust resulting from the survey. For instance, students who already have a lot of trust in public institutions would show a moderate effect on trust; the type of performance

information would not lead to a significant increase in their level of trust, which is called the ceiling effect (Grimmelikhuijsen & Klijn, 2015; Hall et al., 2001). An important advantage of the absence of a pre-test is that the students participate unprejudiced and open-minded in this experiment. This is important because participants should not know what the research is about (van Thiel, 2007). In order to meet this essential requirement, this research will not include a pre-test. Participants do get the information that this research is about their opinion about hospitals, however, they do not know the specifications of the study.

4.2.6. Manipulation check

A manipulation check controls if the treatment got through: did participants of the treatment groups consider the information as performance information? In order to check this, the control group as well as the experimental groups had to answer the same statement: 'the information about hospital X addresses something about its performance.' It is expected that the control group disagrees with this statement, while the experimental groups agree. Participants can answer using a 5-point Likert-scale. The following table shows a comparison between the treatment groups and the control group.

Table 9. Manipulation check

	Unstandardized coefficients		Standardized coefficients	t
	B	Standard error	Beta	
Constant	2,393	0,121	-	19,797
Treatment group 1. Positive story	1,595***	0,171	0,508	9,333
Treatment group 2. Negative story	1,562***	0,169	0,508	9,270
Treatment group 3. Positive statistical information	1,522***	0,172	0,480	8,849
Treatment group 4. Negative statistical information	1,307***	0,173	0,408	7,553

+ = p<0,10
*= p<0,05
**=p<0,01
***=p<0,001
Two tailed test

The manipulation check is done by conducting a linear regression analysis. This regression tests if the treatments groups differ significantly from the constant, which is also called b0 or the control group.

The B in the table shows that the answers of all treatment groups, compared to the control group, are higher. Since the statement can be answered on a 5-point scale and 'agree' is indicated by number 5, an increase means that the statement is more positively answered. The three stars show that all increases are significant. As a result, this manipulation check indicates that the participants of all treatment groups regarded the performance information about hospital X as performance information.

4.3. Validity and reliability of the experiment

The validity and reliability are of great importance regarding the evaluation of research and the quality of it (Bryman, 2012). The quality is very important as this thesis aims to gain factual knowledge and to generalize the results to citizens in general.

Validity

The most important criterium of research is the validity. Validity can be distinguished by internal and external validity (Bryman, 2012; Harris, 2002). Internal validity is about the relation between the independent and the dependent variable. In other words: to what extent can changes in the dependent variable be explained by the independent variable? It checks if the relation you want to measure actually gets measured (Bryman, 2012). In order to guarantee internal validity, the independent variable needs to be isolated to make sure no other variables could cause the effect. An advantage of an experiment is that it can measure the effect of one variable. Other confounding variables can be excluded and as a result, it is possible to conclude that the one isolated variable is the cause of a certain change in the dependent variable (Anderson & Edwards, 2014; Bryman, 2012; Harris, 2002). The other variables are excluded by random selection of participants over the research groups. Nevertheless, the total group of participants needs to be as homogeneous as possible (Harris, 2002). Furthermore, the independent variable needs to be clearly defined and operationalized to make sure that the specific concept gets measured. This is explained in section 4.2.5. and further validated by the manipulation check explained in the previous section. As a result, the internal validity of an experiment is very strong (Bryman, 2012). This internal validity allows for demonstration of a causal relationship, which exactly is the strength of an experiment. However, the internal validity can be questioned if participants do not truthfully fill in the survey. As other researchers experienced that students seriously participate in experiments (Anderson & Edwards, 2014), it is also expected regarding this study. A reason could be that they learn about the value of research and acknowledge the importance of a great amount of serious participants. Moreover, the introduction of the survey emphasizes that it is important that the survey will be taken seriously and needs to be filled out individually.

External validity is about the extent to which the results of the research can be generalized to a greater population (Bryman, 2012; Harris, 2002). It is difficult to examine if the results can be generalized to situations different from the research context (Bryman, 2012; Harris, 2002; Van Thiel, 2007). This external validity is important, however, subordinate to the internal validity and the objective to measure the *effect* of performance information on citizens' trust. Nevertheless, a research with high internal validity is always somewhat external valid as well (Harris, 2002). The measurement instrument, the survey based on operationalisations, is also related to external validity and therefore needs to be of good quality. The fact that the statements measuring global trust in healthcare are based on literature of Hall et al. (2001), increases the external validity. Furthermore, this study includes data from three universities of two different countries. This cross-national aspect increases the external validity. Finally, the measurement instrument is approved by my supervisor of the Erasmus University who is an expert in the execution of experiments.

Reliability

Reliability concerns the consistency of the method and indicates if a method is stable and suitable for replication or not (Bryman, 2012). In order to make replication by another researcher possible, the method of this thesis has been elaborated on extensively. Furthermore, composite scales require a reliability check, which is already discussed in section 4.2.5.

Pilot and the following improvements

In order to test if the survey is comprehensible, doable in about five minutes and measures what it should measure, a pilot has been taken. A pilot tests if the survey in general as well as the specific questions function properly (Bryman, 2012). This is important for the internal validity. The participants of the pilot were ten friends who also go to university. An overview of the comments and the resulting improvements are presented in Appendix B.

Chapter 5. Analysis

The effects of the New Public Management trend are of international importance. As research about the effect of performance measurement on citizens remains limited, the empirical question of this thesis is as follows:

Is the theoretical relation between different types of performance information and citizen trust confirmed in the specific case of students of Public or Business Administration of Erasmus University Rotterdam, Utrecht University and Ghent University?

This empirical question will be answered by using an experiment as research design. Additionally, two interviews have been conducted with a healthcare manager and a healthcare professional of the University Medical Centre in Utrecht (UMCU) in order to know more about the context and the policy as well as management implications. In other words: these qualitative results will not answer the research question, however, they give meaning to the quantitative results in the specific context of hospitals.

5.1 Quantitative results of the experiment

This thesis tests theoretical assumptions based on a specific sample. The survey experiment specifically aims to test whether the levels of trust differ significantly between the five experimental groups. Citizen trust is the dependent variable which has been isolated because the other variables appear to be equally distributed over the experimental groups. Citizen trust is measured by global trust, general trust and a grade. Global trust is a concept that derives from literature and consists of four statements (Hall et al, 2001). General trust is indicated by a direct statement: I trust hospital X. Finally, a high grade would refer to a high level of trust. A linear regression in SPSS will show if there is a significant increase or decrease of the level of trust between the control and treatment groups.

Global trust

The results in the following table show that, compared to the constant, only the negative story has a significant negative effect on global trust ($p<0,01$). This means that only negative information from a review of another citizen significantly changes the attitude towards the doctors in the hospital in a negative way. Furthermore, the positive and negative numbers show the direction of the effect, either significant or insignificant: positive information leads to positivity and negative information to negativity regarding trust.

Table 10. Linear regression on dependent variable global trust

	Unstandardized coefficients		Standardized coefficients	t
	B	Standard error	Beta	
Constant	3,500	0,098	-	35,553
Treatment group 1. Positive story	0,092	0,139	0,040	0,663
Treatment group 2. Negative story	-0,480**	0,137	-0,213	-3,500
Treatment group 3. Positive statistical information	0,073	0,140	0,031	0,522
Treatment group 4. Negative statistical information	-0,044	0,141	-0,019	-0,310

+ = p<0,10
*= p<0,05
**=p<0,01
***=p<0,001
Two tailed test

General trust

Another linear regression analysis comparing the treatment groups with the constant show that a positive story, negative story and positive statistics have a significant effect on the general trust in the hospital (respectively p<0,01, p<0,001, p<0,10). This means that a single piece of information could influence the attitude towards a hospital. While the positive information positively influences trust, negative information has a negative impact. As general trust is measured by a direct statement 'I trust hospital X', these results are valuable considering the research question.

Table 11. Linear regression on dependent variable general trust

	Unstandardized coefficients		Standardized coefficients	t
	B	Standard error	Beta	
Constant	4,810	0,128	-	37,523
Treatment group 1. Positive story	0,488 **	0,181	0,152	2,693

Treatment group 2. Negative story	-1,012***	0,179	-0,322	-5,662
Treatment group 3. Positive statistical information	0,312 +	0,182	0,097	1,713
Treatment group 4. Negative statistical information	-0,247	0,184	-0,076	-1,346

+ = p<0,10
*= p<0,05
**=p<0,01
***=p<0,001
Two tailed test

Grade

In this thesis it is assumed that giving a grade is linked to trust in a hospital. A high grade would indicate a high level of trust. However, this assumption is not based on literature and therefore it is only used as an addition to global and general trust. The linear regression analysis, shown in the following table, shows that there is a significant effect between all treatment groups and the constant. This means that positive information, either in the form of a story or statistics, positively influences the grade given to the hospital. Similarly, both a negative story and negative statistical information appear to have a negative effect. These findings strengthen the results of the previous dimensions of citizen trust.

Table 12. Linear regression on dependent variable grade

	Unstandardized coefficients		Standardized coefficients	t
	B	Standard error	Beta	
Constant	6,452	0,133	-	48,619
Treatment group 1. Positive story	0,917***	0,188	0,255	4,884
Treatment group 2. Negative story	-1,261***	0,185	-0,359	-6,817
Treatment group 3. Positive statistical information	0,633**	0,189	0,175	3,352
Treatment group 4. Negative statistical information	-0,340 +	0,190	-0,093	-1,789

+ = p<0,10
*= p<0,05
**=p<0,01
***=p<0,001
Two tailed test

Hypotheses

The chapter about the theoretical relations between the independent and the dependent variable resulted in seven hypotheses. The empirical results of this thesis mentioned in the previous sections will lead to either acceptation, partial acceptation or rejection of the hypotheses. This is based on both the dimensions global and general trust, which are complemented by the grade given.

The first two hypotheses concerning stories about performance were as follows:
H1: Positive stories of performance information result in more citizen trust in a hospital
H2: Negative stories of performance information result in less citizen trust in a hospital

The first hypothesis is partially accepted: while a positive story does not have a significant effect on global trust, it does significantly affect general trust. Moreover, a positive story also had a significant positive effect on the grade given to the hospital – which further confirms H1. Furthermore, as general trust is a direct question about the level of trust, this result is valuable for answering the research question. The second hypothesis is accepted because a negative story appears to have a negative effect on both global and general trust, as well as the grade given. Clearly a negative story results in a significant decrease in the level of trust. These findings indicate that people tend to believe the information in reviews of other citizens, which again significantly influences their attitude towards the hospital.

The next two hypotheses concern statistical performance information and are as follows:
H3: Positive statistical performance information results in more citizen trust in a hospital
H4: Negative statistical performance information results in less citizen trust in a hospital

The third hypothesis is partially accepted as a significant effect has been revealed concerning general trust and the grade given. As aforementioned, general trust measures trust directly and therefore this finding is valuable for this research. Thus, if statistical information is positive, people probably tend to regard this information as true and therefore it appears to be an influential factor regarding their level of trust. Considering the fourth hypothesis, it turns out that negative statistical information does not necessarily have a negative effect on citizen trust; neither on global nor general trust. It does affect the grade given. However, this effect is relatively weak compared to the effects of the other treatments. As the grade was an additional question as well, H4 is rejected. This could indicate that people do not take negative statistical information that seriously and therefore it is not significantly influencing their levels of trust.

The next two hypotheses compare the stories with the statistical information:
H5: The effect of positive stories of performance information on citizen trust in a hospital is stronger than the effect of positive statistical information
H6: The effect of negative stories of performance information on citizen trust in a hospital is stronger than the effect of negative statistical information

The fifth hypothesis is partially accepted. Concerning global trust, neither a positive story nor positive statistical information appears to have a significant effect on trust. In contrast, the dimension of general trust does show that both types of positive information affect the level of trust. Interestingly, the effect of a positive story appears to be stronger than the effect of positive statistics when taking the standardized coefficient into account. The b closest to 0 indicates the strongest effect. Moreover, this effect is stronger concerning both general trust and the grave given. As a result, H5 is partially accepted. This means that the positive aspect of the information stimulates a stronger reaction when it is shown in a qualitative review than in a statistical form. The sixth hypothesis is accepted: both dimensions of global and general trust show that while a negative story does lead to significant decrease in the level of trust, there is no effect found concerning negative statistical information. Taking the partial acceptation of H5 and the full acceptation of H6 together, it is assumed that stories about performance in itself have more of an impact on citizen trust than statistical performance information. This finding implies that experiences of other citizens are very important and might be regarded as more trustworthy than statistical information.

The last hypothesis is based on theory about negativity bias and is as follows:
H7: The effect of negative performance information on citizen trust in a hospital is stronger than the effect of positive performance information

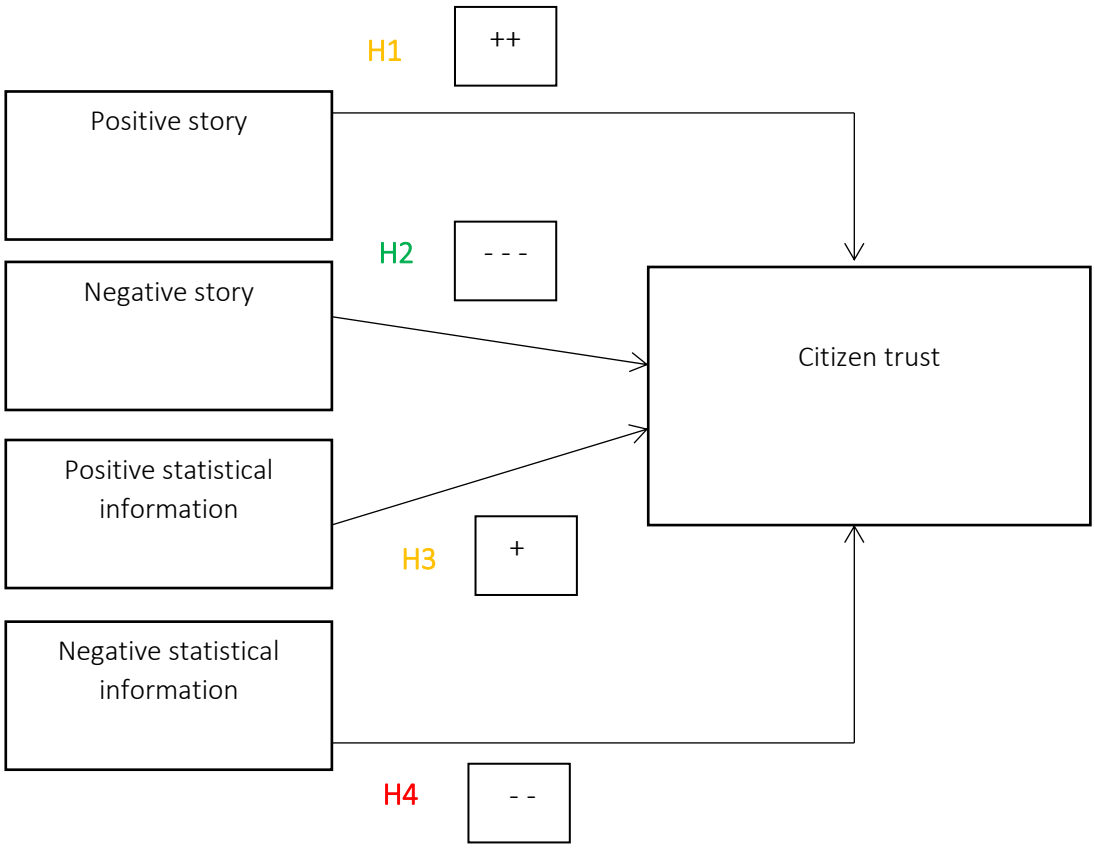
Concerning solely performance information presented as a story, the hypothesis is accepted. On the dimension of global trust, a negative story has a significant effect while a positive story has not. For general trust, both a positive and negative story have a significant effect. However, the negative effect of a negative story appears to be stronger than the positive effect of the positive story, which is in line with the hypothesis. This is the result of a comparison of the standardized coefficients. In contrast, concerning statistical performance information, both positive and negative information do not significantly affect global trust. Even on general trust, positive statistics do have an effect while negative statistics are not influential at all. As a result, the hypothesis can only be partially accepted – thus not when it concerns statistical information. Taking these findings together, only performance information as a story confirms the hypothesis. This is in line with H5 and H6, which showed that stories have more

impact on trust than statistical information. Nevertheless, H7 takes both types of performance information into account and therefore this hypothesis is partially accepted. However, it should be kept in mind that this acceptation is only the case concerning stories as performance information.

Conclusion

All in all, regarding positive information, either a positive story about performance or positive statistical information appears to have a partial effect on citizen trust. Focussing on negative information, there is a clear difference between the effect of a story or statistics: while a negative story about performance has a significant effect on citizen trust, negative statistical performance information has no effect on trust at all. Comparing stories and statistics as performance information, stories about performance appear to have a stronger effect on citizen trust than statistical performance information. This is especially the case concerning negative information: negative stories have a significantly stronger effect than negative statistical information. Interestingly, if only general trust would have been taken into account, all hypotheses would have been confirmed, except for H4. As the dimension of general trust directly asks for the level of trust in the hospital, this finding is very important for answering the research question. The following figure visualizes the results concerning the hypotheses. These results concern both global and general trust and thus include the partially accepted hypotheses.

Figure 5. Results per hypotheses



The difference between + and ++ is indicated by H5

The difference between – and --- is indicated by H6

The fact that there are more minuses than pluses reflects H7

= acceptation of hypothesis

= partial acceptation of hypothesis

= rejection of hypothesis

5.2. Qualitative results of interviews

In order to give meaning to the results in the specific context of hospitals, two interviews are conducted: one with a business manager and one with a healthcare professional, both working at the UMC in Utrecht. Mr. Erwin van Geenen is business manager in the Julius centre which focusses on research and education. However, this centre is in close contact with the healthcare professionals of the hospital and therefore Van Geenen knows what is going on there. Ms. Atty van Dijk is a paediatrician at the Wilhelmina Child Hospital, which is part of the University Medical Centre Utrecht. She has this profession since 1991 and has also experience as supervisor in this hospital. The following sections reflect the most important information deriving from both interviews. Separate, more extensive reports of the interviews can be found in Appendix C.

Both interviews indicate that the measurement and management of performance is a daily practice in hospitals and that publication of performance information is a result. Although professionals are critical regarding the extent to which certain indicators measure the delivered care, the performance measurement is overall considered as positive because it would be a tool for improving the organization and discovering certain trends. However, according to the healthcare manager, reporting on indicators would result in an increased workload and at the same time, less attention for patients. There should be more focus on a culture wherein the delivered care, mistakes and doubts can be discussed and wherein there is room for reflection.

Both the manager and the professional have acknowledged that citizens have become more active in searching information on the internet; either medical information or about performance. They both are not surprised about the finding of this thesis that stories appear to have a stronger effect on citizen trust than statistical information as stories would be less complex and more personal. The paediatrician even mentions that, in her experience, patients never refer to statistical information, while they do read reviews on the internet.

The specific recommendations based on these results differ per interviewed person as they interpret the findings differently. Because the healthcare manager interprets the results as a call for more personalization in healthcare, he comes up with internal recommendations, especially concerning policy and management. There should be more focus on patient involvement, both in the consultation room and in the decision making processes. Additionally, managers should include the personal aspect in the "system" of performance management, for instance in the "plan, do, check, act cycle". Managers should systematically have conversations with healthcare professionals with a focus on personal communication with the patient. In addition there should be room for feedback and reflection.

Meanwhile, the professional believes that doctors already do the best they can regarding personalized care and points to the need for improvement regarding the healthcare processes in general. Not only doctors, but also assistants, nurses and telephone staff are important in this. Three aspects appear to be very important concerning satisfaction of a patient: continuity of care, expertise within teams and cooperation between them. The professionals interprets the findings of this thesis more directly and thus mentions that more patients should share their views on the internet. Although it is not in the nature of doctors, the paediatrician would be willing to systematically ask all patients to write an online review. This could be obliged by including it in the internal policy. Furthermore, managers should think about how to stimulate patients to share their experiences on the internet. In contrast, concerning external communication, the healthcare manager believes that hospitals should cooperate in order to create social dialogue and show good intentions regarding personalized care to the public.

Chapter 6. Discussion of findings

The most interesting result is that stories about performance have a stronger impact on citizen trust in hospitals than statistical information about performance. The results of this thesis have theoretical and practical implications. This chapter elaborates on both of them.

6.1. Theoretical implications

The findings of this study show that most hypotheses are confirmed in the empirical case. The following sections will reflect on the specific theories that underlie these hypotheses and present the theoretical implications that result from this thesis.

Stories as performance information

According to the Elaboration of Likelihood Model of persuasion, positive framing of information would positively influence the attitude of citizens. Prior knowledge and interest in the organization or issue would determine the impact of this framing (Petty & Cacioppo, 1986). As stories are subjective, they are considered as information with a certain frame. The findings of this study confirm that stories have an impact on the processing of information and thus the attitude of citizens. More specifically, positive stories have a positive effect on citizen trust, while negative stories lead to a decrease in the level of trust. In addition to the ELM, the Narrative Paradigm Theory includes the same assumption that stories affect citizens' attitudes. Stories appear to be "memorable, easy to understand, and establish a common ground with others that create credibility" (Barker & Gower, 2010, p. 299). This is confirmed in the results of the survey experiment, as well as in the interviews with a healthcare manager and professional. Confirmation of these general theories in a specific context strengthens their general application and implies that stories would have a similar effect regarding other public organizations.

Statistical performance information

The assumption that statistical information would have a positive impact on trust derives from the performance information theory. Performance information would influence the level of satisfaction of citizens with the services of the public organization and transparency through publishing quantitative indicators would lead to a higher level of trust (Behn, 2003; Grimmelikhuijsen & Meijer, 2012; James & Moseley, 2014). The theory is about performance information in general and does not make a distinction between positive and negative information. However, the results of this thesis show that only positive statistical performance information leads to more citizen trust. Interestingly, negative statistics about performance do not seem to influence the level of trust at all. Although this was assumed in H4, it appears to be the only hypothesis which is not (partially) accepted. As aforementioned, this

could indicate that people do not take negative statistical information that seriously. This implies that if hospitals do bad on quantitative indicators, it does not significantly affect citizen trust. A reason could be that citizens are not familiar with quantitative performance indicators or that they regard them as complicated. As a result, they tend not to let it influence their level of trust in a significant way. However, positive statistics do appear to influence citizen trust. This finding shows that citizens only intend to believe positive statistical information. In line with this, there probably is a positivity bias instead of a negativity bias regarding statistical performance information about hospitals. A reason for this can be found in the specific context of hospitals. Positivity bias regarding a public organization could be combined with loyalty towards the institution (Gibson & Caldeira, 2009). Legitimizing symbols could activate or reinforce this loyalty. It is probable that hospitals possess these symbols in the form of healthcare professionals with a long-term academic background. This professionality is probably combined with the aspect of vulnerability within healthcare: when it is about the health of citizens it is expected that the services are of good quality. These symbols and expectations could lead to loyalty towards hospitals. To conclude, only positive statistical information about performance has a significant effect on citizen trust in hospitals. A positivity bias in the form of loyalty towards hospitals could explain this finding. Because this explanation concerns a specific context, this assumption is not generalizable to the public sector as a whole.

Stories vs. statistics

The theory of psychology is the basis for the hypothesis that stories would have more impact on citizens than statistics (Tversky & Kahneman, 1981). This theory specifically compares subjective and objective information. While rational choice theory assumes that humans make rational decisions and thus prefer objective information, the psychology theory acknowledges that human are imperfect and are sensitive to subjective information if it is framed in a convincing way. Especially personalized information is likely to cause a change in attitudes of citizens (Bawden & Robinson, 2009). Research of Olsen (2016) specifically compared quantitative and episodic information. Episodic information would be more "emotionally engaging" and thus have a stronger impact on citizens' actual evaluations of events or information than quantitative information (p. 1). This thesis focusses on another dependent variable and links these different types of information to citizen trust. As the results of this study show that stories have more impact on citizen trust than statistical information, the theory of psychology is confirmed, just as they confirm and complement the research of Olsen (2016).

Negativity bias

The theory of negativity bias is based on the general principle "bad is stronger than good" and refers to the tendency that, even when of equal intensity, negative things have more impact on humans than

neutral or positive things (Baumeister et al., 2001, p. 1; Rozin & Royzman, 2001). An explanation could be that because usually people live in a positive world, negativity stands out and therefore has a stronger effect (Lau, 1982). Applied to this thesis, this theory holds water regarding stories as performance information. While a negative story negatively affects general trust, a positive story shows no effect at all. However, the theory is not confirmed concerning statistical information. Both positive and negative information do not significantly affect global trust. Regarding general trust, it even appeared to be the other way around: while positive statistics positively influence trust, negative statistical information has no effect at all. The finding that the negativity bias is only confirmed concerning one type of performance information indicates that the theory is not generally applicable. As citizens are probably not familiar with statistical information or find it complex, they could take the information less seriously. As a result, it might be the case that the theory of negativity bias only holds water concerning issues that are close to citizens. Furthermore, as aforementioned in the section about theory of statistics, theory of positivity bias combined with loyalty towards an organization could explain the findings in this specific context of hospitals. In line with this, it seems plausible that the theory of negativity bias also depends on the issue or public organization in question.

All in all, this thesis confirms the Elaboration of Likelihood Model, the Narrative Paradigm Theory and the psychology theory. The results of this thesis add a distinction between positive and negative information to the performance information theory. Moreover, the theory concerning negativity bias does not seem to be as generally applicable as expected.

6.2. Practical implications

Besides implications concerning theory, this thesis has practical implications. These include implications for the public sector as a whole, as well as for specifically hospitals. Both implications result in internal and external recommendations.

6.2.1. Implications for public sector as a whole

This study focusses on the effect of a New Public Management practice on citizens, which is of international importance. This population-based survey experiment consisting of 419 participants reveals an effect that challenges the dominant impact of NPM. This paradigm assumes that performance should be measured and that the quantitative results should be transparent to the public. Citizens would rely on this information when taking a stance on a public organization. After all, the quantitative information would be objective and therefore influential. However, this study shows that an upcoming type of performance information, qualitative reviews, has a stronger impact than statistical information. Especially with the increased use of the internet worldwide, electronic word- of mouth is becoming

more and more influential. Therefore this thesis contributes to the debate about the use of NPM practices.

The finding of the significant effect of stories on citizen trust has implications for policies of public organizations on an international level. As the NPM practices probably will remain an important aspect of public organizations, it is essential to create trust among citizens. In this regard, public organizations should make use of the finding of this thesis that reviews of other citizens can help significantly in creating more trust. For instance, in the Netherlands the use of 'Zorgkaart Nederland' is already recommended by patient platforms. Additionally, healthcare insurers also create opportunities on their websites to post reviews about hospitals and doctors. However, this development is in its infancy as the number of reviews is relatively low. Furthermore, not all countries provide websites on the internet such as 'Zorgkaart Nederland'. Therefore it is recommended to create such platforms in each country, not only concerning healthcare, but also for other public organizations, e.g. municipalities, public schools or housing corporations. The management team of these public organizations should think about ways to increase the number of citizens that writes a review on the internet. For example, managers could motivate professionals to ask citizens to share their experiences, or managers could set up an external communication strategy to directly stimulate citizens.

Moreover, the strong impact of subjective experiences of other citizens could indicate that the personal aspect is important. This makes sense regarding the unintended effects of heavy emphasis on statistical performance information (Hood, 2007). Additionally, the interviews show that reporting on indicators increases the workload and as a consequence there is less time for patients. As a result, it is likely that in general the focus on numbers as performance indicators could have led to more distance and thus less citizen trust. In this regard, the public sector as a whole should pay more attention to a personal approach. A recommendation could be to hire more employees that are available to citizens. Furthermore, a suggestion could be to create IT systems in which information of citizens can be documented in a simple, clear way, which is the same for everyone. As a result, all employees could easily find the specific information which ensures a personal treatment.

6.2.2. Implications for hospitals

In order to examine the effect of different types of performance information, this thesis uses a specific case which concerns hospitals as part of the healthcare sector. Interviews with a healthcare manager and professional have resulted in specific recommendations. The findings of this thesis can be interpreted indirectly as a call for more personalization in healthcare, which leads to internal recommendations. As the reporting of performance plays a big role and there is less personal attention

as a consequence, there should be more focus on patient involvement and the organizational processes in hospitals. Patient involvement should be a point of attention in either the consulting room or in decision-making processes. Managers could play a role in this: they could systematically have conversations with all healthcare workers, give them feedback and help them reflecting. Managers could also take the lead in including more representatives of patients in the board or committees of the hospital. Furthermore, organizational processes are important as care is not only delivered by doctors: telephone operators, assistants and nurses are just as important in making the care personal. There should be focus on continuity of care, expertise within teams and cooperation between all healthcare workers. Improvement on these central aspects would lead to more tailored and personal care and thus satisfaction among patients.

Besides internal recommendations, it is suggested to focus on the external environment: society. Hospitals could cooperate and create social dialogue about patient centred care. Additionally, the finding of this thesis that stories have more impact on citizen trust than statistical information calls for stimulation of citizens to share their experiences online. Because it is not in the nature of doctors to ask patients to write an online review, it should be included in policy. Managers should explain the relevance and motivate doctors to systematically ask all patients to share their experience. Furthermore, managers should think about options to directly stimulate patients to write reviews.

From an international perspective, the introduction of an international platform of reviews would be relevant. Especially with the increase use of cross-border healthcare within the European Union, an European platform to share experiences of hospitals would be valuable for European citizens. Although the organization of healthcare is a responsibility of member states, the free movement principles and the decisions of the European Court of Justice resulted in some form of Europeanization of health care systems. More specifically, in 2013 the EU Patient Mobility Directive was put into place, extending the rights of European citizens (European Commission, 2015). For example, it clarifies the rights of patients to seek reimbursement for healthcare received in another member state and establishes national contact points which gives information to 'incoming' and 'outcoming' patients. Although the patient flows for healthcare abroad are relatively low, this directive could lead to an increase in the future.

Chapter 7. Conclusion

| *"Well, I will ask my patients to write an online review then!"* – Atty van Dijk, paediatrician UMCU |

This thesis academically confirms what is suggested in the literature: stories about performance have more impact than statistical information. This finding has relevant implications for the public sector as a whole, as well for hospitals in specific. It challenges the dominant position of quantitative, 'objective' information. As the measurement and management of performance is a NPM practice that is internationally used, it is surprising that research about the impact on citizens is limited. This thesis contributes to filling this information gap and links it to an essential aspect in creating a harmonious society and stable democracy: citizen trust. The research question concerns the specific case of the healthcare sector: *what is the effect of different types of performance information on citizen trust in hospitals?* According to theory, one can make a distinction between stories and quantitative information, either positive or negative. It is assumed that because stories are more emotionally engaging, they have a stronger impact on citizen trust. This study confirms this theoretical assumption: citizen trust in hospitals depends more on experiences of other citizens in the form of stories than on statistical information based on performance indicators. Moreover, negative stories have a stronger impact than positive ones. These findings indicate that public organizations should do their best to perform in accordance with the wishes of citizens in order to generate more positive reviews and more trust. The impact of stories implies that a personal approach towards citizens is important. More focus on stories and the personal aspect should balance the impersonal effects of performance measurement and management on citizens. Managers could play an essential role in organizing the processes around it. Additionally, each country should create online platforms that give opportunities to citizens to share their experiences concerning all public organizations and citizens should be encouraged to make use of them.

The findings of this thesis result in future research avenues. As this study focusses on one specific public organization, future research could use another case in order to check if stories have a similar influence in other public organizations. Interviews within other contexts could give meaning to the results and will lead to specific recommendations. Furthermore, future research could focus on a different aspect on performance information. For instance, Bækgaard (2015) also researches performance information and the effect on citizens. His study shows that performance information matters more to service attitudes if presented in conjunction with cost information. As citizen trust appears to be a relevant concept and important for a stable country, a future experiment could test the effect of the presence or absence of cost information on citizen trust. Furthermore, future research could include other types of

performance information and link it to citizen trust. For instance, would there be a difference between official and non-official sources that present the performance information? Another future research could concern the probable positivity bias in healthcare, which is linked to loyalty. As the theory of negativity bias does not hold for statistical performance information about a hospital, the positive attitude seems to be dominant. Future research could find out if there is a positivity bias in the context of healthcare. Finally, although this study compares two countries, future research could do a similar experiment in more countries in order to increase the international generalizability.

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Appendix A. Surveys

Introduction

Dear student,

Thank you for participating in this research! This survey is part of our master theses at Erasmus University Rotterdam and consists of two separate sections. The first section concerns your opinion about hospitals; the second section concerns your stance about animal agriculture.

Participation in this research is voluntary and anonymous and we would appreciate it very much if you would fill in this survey individually and seriously. It only takes about 5 minutes. The survey includes the following elements:

1. You will read information about a specific hospital (please read in detail).
This will be followed by a short survey.

2. You will read information about animal agriculture (please read in detail).
This will be followed by a short survey.

The questionnaire concludes with some closing questions.

Again, thank you for your time and for helping us complete our master theses.

Sincerely,

Jeanice Boerland and Sharon Zervaas
MSc students in International Public Management and Policy
Erasmus University Rotterdam

Control Jeanice

Section 1: Hospitals

Hospital X is situated throughout five different locations in one province. The hospital has 83 specializations.

Treatment 1 Jeanice

Section 1: Hospitals

Hospital X is situated throughout five different locations in one province. The hospital has 83 specializations.

Below, a review about the treatment of breast cancer in hospital X:

"It is very stressful if you feel a swelling in your breast. Due to the outstanding service offered by the Breast Clinic I had all the tests done and obtained the results during the same meeting: thankfully everything was fine in the end. The positive approach and kindness of all employees, as well as the speed and efficiency, impressed me enormously. I would recommend everyone who has to go through this to go to this place. Thank you, Breast Clinic!"

Compared to experiences about breast cancer treatments in other local hospitals, this is a positive review.

Treatment 2 Jeanice

Section 1: Hospitals

Hospital X is situated throughout five different locations in one province. The hospital has 83 specializations.

Below, a review about the treatment of breast cancer in hospital X:

"Because of multiple wrong diagnoses, I was given a life expectancy of three months due to metastatic breast cancer. Meanwhile I went to another oncologist. There I got a treatment and was given a life expectancy of five years. In the meantime, I filed a complaint of the hospital. This is taken care of."

Compared to experiences about breast cancer treatments in other local hospitals, this is a ***negative*** review.

Treatment 3 Jeanice

Section 1: Hospitals

Hospital X is situated throughout five different locations in one province. The hospital has 83 specializations.

Below, some statistics about the treatment of breast cancer in hospital X:

Percentage of patients with tumour residues after the first operation in an early stage of breast cancer (so-called DCIS):	19,05%
Percentage of patients with a waiting time of less than five weeks between the diagnosis and the first operation	80,19%

Related to the state average, both percentages show **better** performance than the state average.

Treatment 4 Jeanice

Section 1: Hospitals

Hospital X is situated throughout five different locations in one province. The hospital has 83 specializations.

Below, some statistics about the treatment of breast cancer in hospital X:

Percentage of patients with tumour residues after the first operation in an early stage of breast cancer (so-called DCIS):	19,05%
Percentage of patients with a waiting time of less than five weeks between the diagnosis and the first operation	80,19%

Related to the state average, both percentages show **worse** performance than the state average.

DV Jeanice

Survey

Questions about hospital X

Mark the option which is the most appropriate for you.

	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
The information about hospital X addresses something about its performance.	○	○			

(!) For answering the following questions, imagine that you would go to a doctor in this hospital X. Try to base your answers on the information that you just read.

	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
You completely trust [your doctor's] decisions about which treatments are best for you.	○	○	○	○	○
[Your doctor] only thinks about what is best for you.	○	○	○	○	○
You have no worries about putting your life in [your doctor's] hands.	○	○	○	○	○
All in all, you have complete trust in [your doctor].	○	○	○	○	○

To what extent do you (dis)agree with the following statement?

	Completely disagree	Mostly disagree	Slightly disagree	Neutral	Slightly agree	Mostly agree	Completely agree
I trust hospital X							

If you had to give a grade to this hospital X, based on the information you just read, what would that be? Mark you answer.

	1	2	3	4	5	6	7	8	9	10
Grade	○	○	○	○	○	○	○	○	○	○

Closing questions

Closing questions

What is your gender?

- Male
- Female
- Other

What is your age?

- Between 17-20
- Between 21-24
- Between 25-28
- Above 29

In which city do you study?

- Rotterdam
- Utrecht
- Ghent
- Other

Please indicate your field of study:

- Public Administration (includes Public Administration and Organizational Sciences)
- Business Administration
- Other

In which year of your study are you in?

- Bachelor 1
- Bachelor 2
- Bachelor 3

- Master
- Other

Thank you very much for participating in this research!

If you have any questions, you can send an email either to jeanice_boerland@hotmail.com or sharon.zervaas@gmail.com

Appendix B. Pilot and following improvements

Comments	Results
The survey takes 5-6 minutes	In the introduction I mention that the survey will take about 5 minutes
'Section 1' and 'section 2' are in a separate block, which seems to be confusing. It would look like the information or questions are missing	I include 'section 1' and 'section 2' at the top of the page with information. I also changed this for the Closing questions.
Students who have a gap year cannot choose this option	I include the option 'other' with a text entry
The question 'in which city do you study' has only three specific options. If someone studies anywhere else, they cannot answer the question.	I include the option 'other' with a text entry.
The first statement 'The information about hospital X discusses its performance' is confusing. The term 'discusses' would imply something negative. Furthermore, there would be too little information for answering such a question.	The manipulation check will be replaced by the following statement: 'The information about hospital X addresses something about its performance.'
The question about hospitals in general is interpreted as a hospital in the neighbourhood which they visited before. So it does not measure what I want to measure. Furthermore, this appears to be difficult for persons who never had a hospital treatment.	I delete the question about hospitals in general. It was an additional question anyway.

Appendix C. Reports of the interviews

Interview healthcare manager Erwin van Geenen

June 6th 2017

E. van Geenen is business manager in the University Medical Centre in Utrecht. He specifically works for the Julius centre which focusses on research and education. However, this centre is in close contact with the healthcare professionals of the hospital and therefore Van Geenen knows what is going on there.

The first topic which was discussed is the trend of New Public Management and the related performance indicators. He told something about the history and that the trend started around the year 2000. The inspection of healthcare introduced performance indicators and the results were published on the internet. The UMC itself also published the quantitative results on their website. Even the newspaper AD promoted a ranking list of hospitals based on these performance indicators. According to Van Geenen, healthcare professionals responded anxious and ambivalent to this ranking list. On the one hand, they were sceptical about the performance information: was it possible to have the right information on time?; do the indicators measure quality of healthcare?; what happens with the information after publication? As a result, the healthcare professionals were sceptical towards the AD. On the other hand, they were very curious: how did our hospital do on the ranking list?

One of the main goals of the performance indicators would have been related to "system thinking". The whole healthcare process should be a system with patterns of interaction and an ICT system which generates data in order to steer the organization and improve healthcare. Since 2005 this system thinking increased significantly and hospitals have been professionalized in using these systems. Additionally, hospitals could get accreditations if they reached a certain level of quality. Mr. van Geenen believes this is a good development and encourages the use of the PDCA cycle: plan, do, check, act. In his opinion, performance can be measured, performance indicators reflect quality and working with those indicators could improve healthcare. "Yes, I believe in that! However, there is a but…" He mentions that there should be more focus on the culture around this system thinking. He agrees with a report of the Inspection that concluded "just a system is not enough; hospitals also need a culture." He mentions that "it is very important that there is a culture in hospitals in which there is dialogue and reflection about the delivered healthcare; in which it is possible to discuss the mistakes that you made and the doubts you have. The performance indicators are not the holy grail. They are an instrument to have discussions. The culture of security and openness is just as important as the technocratic system."

Focussing on citizens, Van Geenen thinks that citizens are interested in performance information, especially when it is translated to 'common' language or promoted through the media, like the ranking list of the AD. It becomes easier for citizens to compare hospitals with the increased use of the internet and in line with this, the patient has become more active. Before 2000 most citizens believe that "every hospital is good" and therefore the hospitality aspect was of main importance. Since 2000 there is more scepticism about the healthcare itself and therefore the medical aspect plays a bigger role these days.

In line with this development, Van Geenen believes the results of this thesis are "plausible". He understands that a review of another citizen would have more impact on citizens than statistical information. He emphasizes two aspects of reviews in comparison to statistics: "they are less complex and more personal". He interprets the findings of this study like a call for more personalization in healthcare. He recognizes that the focus on performance indicators results in an increased workload for professionals combined with less personal attention for patients. He mentions that *patient involvement* is very essential and more focus on this is the first policy recommendation the mentions. He believes there should be an equivalent conversation between the doctor and the patient in the consulting room. The doctor should discuss all the treatment options and the "quality of life" of the patient should be central, in which the patient has a directing role. The finding about the importance of stories confirms that doctors should be more aware of the fact that "a human" is sitting in front of them and that the personal aspect should get more emphasis. As a second policy recommendation, patients should get the opportunity to think along with research and medical treatments and contribute to decision making on certain topics. Van Geenen mentions that the board of the UMC already includes a student representative and a representative of the patient federation. However, the believes this citizen involvement should be expanded.

Besides policy recommendations, Van Geenen mentions research and management implications. He points to a research about PPI (?). He refers to this research because he wants to show that if a topic is regarded as important, it can be a research topic which could get a lot of attention and money. In other words: personalized care should be on the research agenda. Additionally, patients should have a say in which topics will be the subject of research. And what role could managers play in this regard? According to Van Geenen, managers should talk about it and find a balance between system and culture. There should be conversations on a regular basis between managers and healthcare professionals about the goals they set for themselves, how they communicate with patients on a personal level, etc. These conversations should be linked to the PDCA cycle in which planning, monitoring, feedback and

improvement are essential aspects. In other words: the aspects of personalization should be included in the system.

Moreover, Van Geenen mentioned that stories of other citizens are already used in the communication to citizens: posters hanging in the hospital include a quote of another patient. This empathic appeals on citizens is used as a marketing tool. He does not necessarily recommend to use stories for marketing. His recommendation concerning external communication to citizens is based on intrinsic motivation of hospitals to show that their care is personalized. Van Geenen argues that there should be more social dialogue and therefore hospitals should cooperate in communicating to the public.

Interview Atty van Dijk

June 8th 2017

Atty van Dijk is a paediatrician at the Wilhelmina Child Hospital, which is part of the University Medical Centre Utrecht. She has this profession since 1991 and has also experience as supervisor in this hospital.

According to Ms. Van Dijk, the measurement of performance indicators is very old. Since she started working, hospitals measure the number of deaths, complications, etc. However, these days this measurement is more structured, there are requirements of the Inspection of Healthcare and hospitals could get special accreditations which show that they can deliver a certain level of quality. She believes the quantitative indicators can be used to steer the organization in the right direction and thus improves the quality. However, she acknowledges the frequent complaint it costs time for professionals to report on the indicators, which could lead to less time for the patient. Focussing on her work specifically, she has to report on who is the 'director' of the patient, if there is malnutrition, what is the 'weight' of the care, etc. How she experiences this reporting depends on the indicators and treatment. Some ways of registering would not be a right representation of the healthcare. The ones who make up the indicators would not always know how it works in detail and how complex some processes are. A partial explanation for an adequate reflection could be the fact that the indicators are quantitative. Moreover, she mentions that, in her view, there is an increased attention concerning patient satisfaction; soft indicators.

The quantitative indicators of the Inspection are published on the website of the UMCU as a whole. There are also more indicators which are published on an internal, local, national, or international level. To illustrate, some indicators are used to compare different divisions in the hospital and others are used to compare the UMCU to other hospitals.

Ms. Van Dijk has never experienced that patients refer to the statistical information regarding the indicators found on the internet. Patients seem not to refer to the AD ranking list either. She mentions that it is possible that it is the case in adult care. Nevertheless, what patients really care about is the expertise of a hospital. If the treatment is acute or the patients are still on a diagnostic path, the location of the hospital would play an important role in deciding to go to a certain hospital.

When referring to reviews on the internet, Ms. Van Dijk directly mentions that she experienced that patient do read these stories. As a result, some patients specifically ask for a certain doctor. Her reaction to the finding of my thesis was: "I am not surprised". In line with this, she mentions that hospitals should

pay more attention to stories in order to create a positive image. However, this does not mean that there should be less focus on the quantitative indicators, because she believes that they are important for steering the organization itself in the right direction and to discover certain trends. Nevertheless, “we do should be critical if we measure the right things”.

Considering the use of stories in order to gain more citizen trust, Ms. Van Dijk says: “we are a little outdated in the hospital.” She means that healthcare professionals just do their job and do not necessarily celebrate the successes. It is certainly not common to communicate these successes actively to the public. “We do the best we can to deliver good care”. Although this is expected from society, she believes that the hospital should do more in celebrating the successes. “Think about more investment in communication.” I asked her what she thinks about asking patients to post a review on the internet. She responded that this is not in the nature of doctors and for her personally, it would be in conflict with her feelings. “But actually we should do it.” I asked her what her response would be if it would be obligatory to ask this to the patients, as another “indicator” on which they have to report. Her first answer was that it would cause resistance. However, “after thinking while talking”, she acknowledges that they already increasingly ask for feedback, so the only thing they have to ask is if the patients would be willing to share it on the internet. Therefore she would be willing to ask it if she has to ask it to all patients. This is because she believes that asking satisfied patients only would give a distorted image.

When I asked if she believed that the care in the consultation room should be more personalized, she responded that one to one, doctors do the maximum they can to deliver good care. However, she emphasized that there is more than just the communication between the doctor and the patient; the healthcare process around it is just as important. For example, the accessibility per phone, the waiting lists, the behaviour of assistants and nurses, etc. A manager is needed to make sure these processes go smoothly, in other words: they are responsible for the healthcare process. Additionally, managers should think about how to stimulate satisfied patients to share their experiences on the internet. Ms. Van Dijk has an idea about which aspects are important in organization the processes. She mentions three aspects of the healthcare process which are very important for a successful personal treatment: continuity of care, expertise of teams and cooperation between all the employees and levels. Continuity of care is important as patients prefer to speak to the same doctor concerning a certain treatment, because he or she know the background and personal information. It is also important that nurses know what is going on and that they know the preferences of the patient. However, it is very difficult to deliver continuity of care and therefore there should be more focus on this. Expertise concerns medical quality and cooperation in a hospital should lead to optimal communication which would again improve the

continuity of care. At the end of the interview Ms. Van Dijk refers to the findings of the thesis and says: "Well, I will ask my patients to write an online review then!"

Appendix D. Output SPSS

```
RECODE Control Treatment1 Treatment2 Treatment3 Treatment4 (1=1) (ELSE=0).
EXECUTE.
RELIABILITY
  /VARIABLES=Glob_T_1 Glob_T_2 Glob_T_3 Glob_T_4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Case Processing Summary

		N	%
Cases	Valid	419	100,0
	Excluded[a]	0	,0
	Total	419	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,857	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
(!) For answering the following questions, imagine that you would go to a doctor in this hospital X. Try to base your answers on the information that you just read. - You completely trust [your doctor's] decisions about which treatments are best for you.	10,18	7,921	,714	,812

(!) For answering the following questions, imagine that you would go to a doctor in this hospital X. Try to base your answers on the information that you just read. - [Your doctor] only thinks about what is best for you.	10,03	9,104	,568	,868
(!) For answering the following questions, imagine that you would go to a doctor in this hospital X. Try to base your answers on the information that you just read. - You have no worries about putting your life in [your doctor's] hands.	10,49	7,700	,716	,811
(!) For answering the following questions, imagine that you would go to a doctor in this hospital X. Try to base your answers on the information that you just read. - All in all, you have complete trust in [your doctor].	10,36	7,432	,811	,769

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FL_5 - Block Randomizer - Display Order ControlJeanice	419	0	1	,20	,401
FL_5 - Block Randomizer - Display Order Treatment1Jeanice	419	0	1	,20	,401
FL_5 - Block Randomizer - Display Order Treatment2Jeanice	419	0	1	,21	,410

FL_5 - Block Randomizer - Display Order Treatment3Jeanice	419	0	1	,20	,397
FL_5 - Block Randomizer - Display Order Treatment4Jeanice	419	0	1	,19	,394
Valid N (listwise)	419				

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GlobalTrust	419	1,00	5,00	3,4224	,92332
To what extent do you (dis)agree with the following statement? - I trust hospital X	419	1	7	4,71	1,286
If you had to give a grade to this hospital X, based on the information you just read, what would that be? Mark you answer. - Grade	419	2	10	6,43	1,440
Valid N (listwise)	419				

```
RECODE Year (1=1) (2=1) (3=1) (4=2) (6=3) INTO Recod_year.
VARIABLE LABELS  Recod_year 'Recod_year'.
EXECUTE.
COMPUTE
Balance_test=Control+(2*Treatment1)+(3*Treatment2)+(4*Treatment3)+(5*Treatm
ent4).
EXECUTE.
T-TEST GROUPS=Balance_test(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=Gender Age City Study Year
  /CRITERIA=CI(.95).
```

T-Test

Group Statistics

	Balance_test	N	Mean	Std. Deviation	Std. Error Mean
Closing questions	1,00	84	1,60	,494	,054
What is your gender?	2,00	84	1,65	,503	,055

What is your age?	1,00	84	1,80	,690	,075
	2,00	84	1,86	,730	,080
In which city do you study? - Selected Choice	1,00	84	2,05	,890	,097
	2,00	84	1,85	,843	,092
Please indicate your field of study: - Selected Choice	1,00	84	1,48	,752	,082
	2,00	84	1,46	,768	,084
In which year of your study are you in? - Selected Choice	1,00	84	2,95	1,161	,127
	2,00	84	3,10	1,314	,143

		Levene's Test for Equality of Variances								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Closing questions What is your gender?	Equal variances assumed	,418	,519	-,774	166	,440	-,060	,077	-,211	0,092
	Equal variances not assumed			-,774	165,945	,440	-,060	,077	-,211	0,092
What is your age?	Equal variances assumed	,314	,576	-,543	166	,588	-,060	,110	-,276	0,157
	Equal variances not assumed			-,543	165,474	,588	-,060	,110	-,276	0,157
In which city do you study? - Selected Choice	Equal variances assumed	,087	,769	1,513	166	,132	,202	,134	-,062	0,467
	Equal variances not assumed			1,513	165,506	,132	,202	,134	-,062	0,467
Please indicate your field of study: - Selected Choice	Equal variances assumed	,010	,921	,102	166	,919	,012	,117	-,220	0,243
	Equal variances not assumed			,102	165,932	,919	,012	,117	-,220	0,243
In which year of your study are you in? - Selected Choice	Equal variances assumed	1,227	,270	-,747	166	,456	-,143	,191	-,520	0,235
	Equal variances not assumed			-,747	163,517	,456	-,143	,191	-,521	0,235

T-Test

Group Statistics

	Balance_test	N	Mean	Std. Deviation	Std. Error Mean
Closing questions	1,00	84	1,60	,494	,054
What is your gender?	3,00	89	1,54	,501	,053
What is your age?	1,00	84	1,80	,690	,075
	3,00	89	1,79	,682	,072
In which city do you study? - Selected Choice	1,00	84	2,05	,890	,097
	3,00	89	1,80	,842	,089
Please indicate your field of study: - Selected Choice	1,00	84	1,48	,752	,082
	3,00	89	1,52	,770	,082
In which year of your study are you in? - Selected Choice	1,00	84	2,95	1,161	,127
	3,00	89	2,89	1,360	,144

		Levene's Test for Equality of Variances								
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Closing questions What is your gender?	Equal variances assumed	1,921	,168	,739	171	,461	,056	0,076	-,094	,205
	Equal variances not assumed			,739	170,682	,461	,056	0,076	-,093	,205
What is your age?	Equal variances assumed	,104	,748	,106	171	,915	,011	0,104	-,195	,217
	Equal variances not assumed			,106	170,161	,915	,011	0,104	-,195	,217
In which city do you study? - Selected Choice	Equal variances assumed	,147	,702	1,897	171	,059	,250	0,132	-,010	,510
	Equal variances not assumed			1,894	168,800	,060	,250	0,132	-,011	,510
Please indicate your field of study: - Selected Choice	Equal variances assumed	,234	,629	-,351	171	,726	-,041	0,116	-,269	,188
	Equal variances not assumed			-,351	170,800	,726	-,041	0,116	-,269	,188
In which year of your study are you in? - Selected Choice	Equal variances assumed	3,397	,067	,336	171	,737	,065	0,193	-,316	,445
	Equal variances not assumed			,337	169,306	,736	,065	0,193	-,314	,444

T-Test

Group Statistics

	Balance_test	N	Mean	Std. Deviation	Std. Error Mean
Closing questions What is your gender?	1,00	84	1,60	,494	,054
	4,00	82	1,55	,501	,055
What is your age?	1,00	84	1,80	,690	,075
	4,00	82	1,85	,944	,104
In which city do you study? - Selected Choice	1,00	84	2,05	,890	,097
	4,00	82	1,93	,900	,099
Please indicate your field of study: - Selected Choice	1,00	84	1,48	,752	,082
	4,00	82	1,33	,568	,063
In which year of your study are you in? - Selected Choice	1,00	84	2,95	1,161	,127
	4,00	82	2,79	1,293	,143

		Levene's Test for Equality of Variances								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Closing questions What is your gender?	Equal variances assumed	1,314	,253	,602	164	,548	,046	,077	-0,106	,199
	Equal variances not assumed			,602	163,762	,548	,046	,077	-0,106	,199
What is your age?	Equal variances assumed	5,040	,026	-,437	164	,663	-,056	,128	-0,309	,197
	Equal variances not assumed			-,436	148,195	,664	-,056	,129	-0,310	,198
In which city do you study? - Selected Choice	Equal variances assumed	,231	,632	,869	164	,386	,121	,139	-0,154	,395
	Equal variances not assumed			,869	163,805	,386	,121	,139	-0,154	,395

Please indicate your field of study: - Selected Choice	Equal variances assumed	10,339	,002	1,418	164	,158	,147	,104	-0,058	,352
	Equal variances not assumed			1,423	154,304	,157	,147	,103	-0,057	,351
In which year of your study are you in? - Selected Choice	Equal variances assumed	2,473	,118	,838	164	,403	,160	,191	-0,217	,536
	Equal variances not assumed			,837	161,197	,404	,160	,191	-0,217	,537

T-Test

Group Statistics

	Balance_test	N	Mean	Std. Deviation	Std. Error Mean
Closing questions What is your gender?	1,00	84	1,60	,494	,054
	5,00	80	1,50	,503	,056
What is your age?	1,00	84	1,80	,690	,075
	5,00	80	1,76	,767	,086
In which city do you study? - Selected Choice	1,00	84	2,05	,890	,097
	5,00	80	1,93	,792	,089
Please indicate your field of study: - Selected Choice	1,00	84	1,48	,752	,082
	5,00	80	1,41	,706	,079
In which year of your study are you in? - Selected Choice	1,00	84	2,95	1,161	,127
	5,00	80	2,91	1,477	,165

		Levene's Test for Equality of Variances								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Closing questions What is your gender?	Equal variances assumed	2,975	,086	1,223	162	,223	,095	,078	-0,059	,249
	Equal variances not assumed			1,223	161,257	,223	,095	,078	-0,059	,249
What is your age?	Equal variances assumed	,329	,567	,308	162	,758	,035	,114	-0,190	,260
	Equal variances not assumed			,308	158,257	,759	,035	,114	-0,190	,261
In which city do you study? - Selected Choice	Equal variances assumed	,600	,440	,930	162	,354	,123	,132	-0,138	,383
	Equal variances not assumed			,933	161,257	,352	,123	,131	-0,137	,382

Please indicate your field of study: - Selected Choice	Equal variances assumed	,960	,329	,558	162	,577	,064	,114	-0,162	,289
	Equal variances not assumed			,559	161,968	,577	,064	,114	-0,161	,289
In which year of your study are you in? - Selected Choice	Equal variances assumed	5,231	,023	,193	162	,847	,040	,207	-0,369	,448
	Equal variances not assumed			,192	149,888	,848	,040	,208	-0,371	,451

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice[b]	.	Enter

a. Dependent Variable: Survey

Questions about hospital X

Mark the option which is the most appropriate for you. - The information about hospital X addresses something about its performance.

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,484[a]	,234	,227	1,108

a. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	155,166	4	38,791	31,611	,000[b]
	Residual	508,046	414	1,227		
	Total	663,212	418			

a. Dependent Variable: Survey

Questions about hospital X

Mark the option which is the most appropriate for you. - The information about hospital X addresses something about its performance.

b. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2,393	,121		19,797	,000
	FL_5 - Block Randomizer - Display Order Treatment1Jeanice	1,595	,171	,508	9,333	,000
	FL_5 - Block Randomizer - Display Order Treatment2Jeanice	1,562	,169	,508	9,270	,000
	FL_5 - Block Randomizer - Display Order Treatment3Jeanice	1,522	,172	,480	8,849	,000
	FL_5 - Block Randomizer - Display Order Treatment4Jeanice	1,307	,173	,408	7,553	,000

a. Dependent Variable: Survey

Questions about hospital X

Mark the option which is the most appropriate for you. - The information about hospital X addresses something about its performance.

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method

1	FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice[b]	.	Enter

a. Dependent Variable: GlobalTrust

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,233[a]	,054	,045	,90227

a. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19,321	4	4,830	5,933	,000[b]
	Residual	337,033	414	,814		
	Total	356,354	418			

a. Dependent Variable: GlobalTrust

b. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3,500	,098		35,553	,000
	FL_5 - Block Randomizer - Display Order Treatment1Jeanice	,092	,139	,040	,663	,508
	FL_5 - Block Randomizer - Display Order Treatment2Jeanice	-,480	,137	-,213	-3,500	,001
	FL_5 - Block Randomizer - Display Order Treatment3Jeanice	,073	,140	,031	,522	,602
	FL_5 - Block Randomizer - Display Order Treatment4Jeanice	-,044	,141	-,019	-,310	,756

a. Dependent Variable: GlobalTrust

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice[b]	.	Enter

a. Dependent Variable: To what extent do you (dis)agree with the following statement? - I trust hospital X

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,416[a]	,173	,165	1,175

a. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119,553	4	29,888	21,657	,000[b]
	Residual	571,339	414	1,380		
	Total	690,893	418			

a. Dependent Variable: To what extent do you (dis)agree with the following statement? - I trust hospital X

b. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4,810	,128		37,523	,000
	FL_5 - Block Randomizer - Display Order Treatment1Jeanice	,488	,181	,152	2,693	,007
	FL_5 - Block Randomizer - Display Order Treatment2Jeanice	-1,012	,179	-,322	-5,662	,000
	FL_5 - Block Randomizer - Display Order Treatment3Jeanice	,312	,182	,097	1,713	,087

	FL_5 - Block Randomizer - Display Order Treatment4Jeanice	-,247	,184	-,076	-1,346	,179

a. Dependent Variable: To what extent do you (dis)agree with the following statement? - I trust hospital X

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice[b]	.	Enter

a. Dependent Variable: If you had to give a grade to this hospital X, based on the information you just read, what would that be? Mark you answer. - Grade

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,541[a]	,293	,286	1,216

a. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	254,018	4	63,505	42,923	,000[b]
	Residual	612,512	414	1,479		
	Total	866,530	418			

a. Dependent Variable: If you had to give a grade to this hospital X, based on the information you just read, what would that be? Mark you answer. - Grade

b. Predictors: (Constant), FL_5 - Block Randomizer - Display Order Treatment4Jeanice, FL_5 - Block Randomizer - Display Order Treatment3Jeanice, FL_5 - Block Randomizer - Display Order Treatment1Jeanice, FL_5 - Block Randomizer - Display Order Treatment2Jeanice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	6,452	,133		48,619	,000
	FL_5 - Block Randomizer - Display Order Treatment1Jeanice	,917	,188	,255	4,884	,000
	FL_5 - Block Randomizer - Display Order Treatment2Jeanice	-1,261	,185	-,359	-6,817	,000
	FL_5 - Block Randomizer - Display Order Treatment3Jeanice	,633	,189	,175	3,352	,001
	FL_5 - Block Randomizer - Display Order Treatment4Jeanice	-,340	,190	-,093	-1,789	,074

a. Dependent Variable: If you had to give a grade to this hospital X, based on the information you just read, what would that be? Mark you answer. - Grade

Frequencies

Statistics

In which city do you study? - Selected Choice

N	Valid	419
	Missing	0

In which city do you study? - Selected Choice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rotterdam	163	38,9	38,9	38,9
	Utrecht	143	34,1	34,1	73,0
	Ghent	102	24,3	24,3	97,4
	Other	11	2,6	2,6	100,0
	Total	419	100,0	100,0	