Numerical performance information in presidential rhetoric Comparing Estonia and Lithuania

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Numerical performance information in presidential rhetoric - Comparing Estonia and Lithuania

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Abstract

Purpose – Presidents have constitutional powers and are incentivized to use performance information that is essential to economic leadership practices. However, presidents have not previously been studied in this context. The purpose of this paper is to examine how two sitting presidents use numerical performance information in their speeches. A speech is a formal talk given to a large number of individuals at a particular instance.

Design/methodology/approach – Empirical data were obtained from 85 presidential speeches given by the president of Estonia and 35 by the president of Lithuania. The speeches were analyzed using qualitative and quantitative content analysis. Inductive inference, descriptive statistics and statistical tests were used to propose new theoretical ideas for future research.

Findings – Studied presidents used extensively numerical performance information, primarily outcome information. Also, the presidents used performance information differently, even though both presidents operated in a similar political context and had similar individual characteristics. The differences were in part explained by speech length but not speech context. Older age, doctoral degree, and longer administrative and political career were associated with lower use.

Practical implications – The study provides preliminary results on how presidents use performance information and what type of performance information is most useful in presidential speeches that address the nation and conduct economic leadership.

Originality/value – New analytical models are presented that can be used to study the intensity of performance information use in rhetoric. Conceptual definitions of the various levels of intensity in performance information use are also introduced. In general, presidential performance information use adds a new dimension to existing research.

Keywords Outcome information, Performance information use, Performance information user, Politician, President, Public performance management

Introduction

In many nations with a presidential system of government, the president is the head of the state (see Linz, 1990). Presidents as performance information users have long been neglected by accounting and performance management scholars (e.g. ter Bogt, 2001; Askim, 2009; Haustein et al., 2019). Performance information refers to data about performance and is systematically produced, collected, stored and used to improve the performance of public organizations (e.g. Pollitt, 2006; van Thiel and Leeuw, 2002). The content of performance information reflects what performance measures are measuring. Performance measures either measure past performance, current performance or forecast future performance (Bogan and English, 1994; van Helden and Reichard, 2019), and they can be divided into input, process, output, outcome, workload and productivity measures (Pollitt and Bouckaert, 2004; Hatry, 2006).

The literature has focused on local councilors, state legislators and members of parliament or congressional representatives as performance information users (Rhee, 2014; Lu and Willoughby, 2015; Grossi et al., 2016; Johanson et al., 2019), and no studies conducted in central and eastern Europe have focused on presidents as performance information users (see Nakrošis, 2008; Raudla and Savi, 2015). In the current study, presidents as performance information users are appropriate study subjects for two reasons. First, presidents typically have considerable constitutional powers (Linz, 1990), making them powerful public sector actors who influence national matters by making decisions based on performance information. Second, presidents have incentives to use performance information in their speeches when addressing the nation.

There are two incentives for including performance information in presidential speeches. First, performance information in rhetoric can guide the public's attention toward the performance areas that the president wants to focus on (see Cohen, 1995). As Behr and Iyengar (1985) illustrated, when a president gives speeches dedicated to a single problem in the public sector performance, the public tends to become more concerned about this problem. For presidents, numbers on performance are helpful for describing and framing the focus area. Second, presidents can provide economic leadership to the nation using rhetoric (Wood, 2004), and it is difficult to discuss economics without referring to economic performance information, such as economic growth, balance of trade, employment and inflation. Therefore, turns in the economy are usually described with performance information. Economic leadership is vital to gaining public approval, and presidents' rhetoric on performance provides cues for consumers and companies and affects the tone under which these actors make spending and investment decisions in the economy (Wood et al., 2005). Moreover, economic leadership operating through rhetoric affects the behaviors of consumers and companies and indicates that the president is leading macroeconomic performance. Macroeconomic performance gives credibility to the president and is a strong determinant of the president's job approval rating, which is essential to

presidential success (e.g. MacKuen, 1983; Ostrom and Smith, 1993; Edwards, 2003). Performance information can help achieve job approval and presidential success.

To fill the research gap concerning how presidents use performance information, this study examines the performance information use habits of two presidents. Previously, researchers have inquired about how politicians in local, state or central government use performance information (e.g. Ezzamel et al., 2004; Pollitt, 2006). This study adopts the following research questions from the literature (note that the original research questions used the word politician in the research questions, not the word president):

> RQ1. Is performance information actually used by presidents (adopted from Raudla and Savi, 2015)?
>
> RQ2. To what extent are presidents using performance information (adopted from Raudla, 2012)?
>
> RQ3. What type of performance information is being used by presidents (adopted from Jorge et al., 2016)?
>
> RQ4. Do some presidents make more use of performance information than others (adopted from Askim, 2007)?
>
> RQ5. What explains differences between presidents in performance information use (adopted from Askim, 2007)?

The hypotheses related to these questions were derived from the literature and tested. As empirical data, this study analyzes the presidential speeches of two sitting presidents: Kersti Kaljulaid (Estonia) and Dalia Grybauskaitė (Lithuania). Qualitative and quantitative content analysis techniques are applied in the research, and new methods of assessing performance information use in speeches are developed. The findings show that the two presidents use performance information extensively and that this information mainly concerns outcomes. Thus, it is proposed that presidents might differ from other politicians in terms of performance information use, as they are not input oriented. Moreover, the examined presidents have significantly different performance information use habits even though similar contextual and individual attributes influenced their use. However, the presidents were not identical in terms of age, education, occupational background and length of their political career, and these differences are associated with dissimilar use. Therefore, more research is needed, as this study only examines two presidents. As a methodological contribution, this study develops methods to examine numerical performance information use and its intensity in rhetoric.

Next, the research context is explained in detail. In the third section, the relevant literature is reviewed, and the most relevant results are displayed. In the fourth section, the research method is explained. The fifth section reports the empirical analysis. The last section is devoted to discussion and conclusions.

Research context

As this is a comparative case study based on the most similar cases design, the chosen countries and presidents are as similar as possible (e.g. Gerring, 2007). The Soviet Union formerly occupied Estonia and Lithuania, which both share borders with Russia. These countries are geographically small, located in the Baltic area and have experienced similar historical development in recent decades (Auers, 2015). Estonia and Lithuania are also members of the United Nations, European Union and North Atlantic Treaty Organization, and they joined these organizations at the same time. Estonia adopted the euro currency in 2011 and Lithuania in 2015.

Similarities can also be seen between the two presidents. The political context in both countries is confrontational and volatile in terms of parties and party systems as these change constantly but are stable with regard to the political elite and central policies. Presidential powers are the same in both countries, except for powers associated with initiating legislation (Table 1). Modernization, westernization and democratization processes are similar in both countries (Auers, 2015). Finally, the overall socioeconomic and demographic developments of their countries are alike (OECD, 2016).

Table 1. Comparison of presidential powers (Auers, 2015; President of Estonia, 2018; President of Lithuania, 2018)

Powers	**Estonia**	**Lithuania**
Call early elections	Yes (partial)	Yes (partial)
Nominate prime minister	Yes	Yes
Initiate legislation	No (except for amendments to the constitution)	Yes
Has suspensive veto	Yes	Yes
Appoint commander-in-chief	No	No
Nominate chief justice of the supreme court	Yes	Yes
Make foreign policy	Yes (partial)	Yes (partial)
Appoint and recall diplomats	Yes (partial)	Yes (partial)
Ratify treaties	Yes	Yes

The presidents also share similar personal characteristics (Table 2). Both presidents are women and are "middle-aged" being between the ages of 45 and 65 (e.g. Erikson, 1982). The presidents both studied finance and economics at university, and their employment backgrounds include tasks involving financial management and economics. This level of similarity is used to test whether the demonstrated similarity predicts similar performance information use. If the presidents differ in their performance

information use, the differences seen in Tables 1 and 2 can be used to assess these dissimilar performance information uses. One key difference between the presidents not presented in Table 2 is that Grybauskaitė has more political experience because she has been the president of Lithuania from 2009 to 2019, whereas Kaljulaid has served only two years as president.

Table 2. Similarities in personal attributes of the presidents

Variable	Kaljulaid	Grybauskaitė
Age	49	62
Sex	Female	Female
Education	Master's degree in Business Management	Doctoral degree in Economics
Career	- Member of the European Court of Auditors 2004–2016 - CFO and CEO of the Iru Power Plant of Eesti Energia 2002–2004 - Worked in various Estonian companies 1994–1999	- Head of the Agriculture Division at Vilnius High Party School 1983–1984; lecturer at the Department of Political Economy 1985–1990 - Secretary at the Lithuanian Institute of Economics under the Ministry of Economics of the Republic of Lithuania 1990–1991 - Program director in Prime Minister's office and Director of the European Department at the Ministry of International Economic Relations 1991 - Director of the Economic Relations Department at the Ministry of Foreign Affairs 1993 - Envoy Extraordinary and Minister Plenipotentiary at the Lithuanian Mission to the EU 1994 - Minister Plenipotentiary at the Lithuanian Embassy in the U.S. 1996–1999

Presidents as performance information users

Past studies have scrutinized whether or not politicians use performance information and if so, how and why they use it (e.g. Askim, 2007; Raudla, 2012). According to past results, politicians do use performance information but mostly in a limited fashion (see Table 3). It has also been claimed that contextual conditions and characteristics of individuals affect performance information use and provide reasons why performance information is actually used by politicians (Moynihan, 2005; Buylen and Christiaens, 2016). While research has focused more on public managers as performance information users than citizens and politicians (ter Bogt, 2004), Pollitt (2006) and van Helden (2016) have demanded more research on politicians' and citizens' performance information use.

By studying the presidential use of performance information, it is possible to contribute new knowledge to the field. In Table 3, none of the studies examining politicians' performance information focuses on

presidents. Although this study provides some insights on why presidents might be using performance information, the focus is on whether performance information is being used and how it is used by the presidents. The first research question asks whether performance information is actually used by presidents. Previous research has shown that politicians do use performance information, as every study examined in this literature review confirmed this finding (see Table 3). Thus, the following hypothesis is derived:

H1: Both the Estonian and Lithuanian presidents use performance information in their speeches.

The second research question asks to what extent presidents use performance information. Some studies have reported extensive use, while others have reported limited use among the politicians (see Table 3). Limited use has been more often cited than non-existent, moderate, high or extensive use (e.g., Chen and Smith, 2019). Thus, it is hypothesized that:

H2: Both presidents demonstrate limited performance information use in their speeches.

The third research question asks what type of performance information is being used by the presidents. Prior studies found that information regarding input, process, output, outcome, efficiency and cost-effectiveness are being used by politicians, with input information being the most used in the public sector (e.g. Moynihan, 2005). In regard to process, output, outcome, efficiency and accounting information, the intensity of use varies from non-use to extensive use depending on the information type, context and the user (e.g. Ho, 2005; Askim, 2009; Charbonneau and Bellavance, 2015; Giacomini et al., 2016). Thus, the literature justifies the following research hypothesis:

H3: Both presidents most often use input information in their speeches.

Table 3. Timeline of research focusing on politicians' performance information use

Researcher(s) and government level under study	*Is performance information actually ever used by politicians?*	*To what extent are politicians using performance information?*	*What type of performance information is being used and how intense is this use?*
ter Bogt (2001), local government	Yes	Limited use	Dutch local politicians focused relatively little on outputs
ter Bogt (2004), local government	Yes	Limited use	The output-oriented performance information is not seen as valuable by the aldermen, and they use it rarely
Ospina *et al*. (2004), central government	Yes	Limited use	The outcome and performance information is in limited use among politicians
Ezzamel (2004), central government	Yes	Limited use and high use	Accounting information is used in a limited fashion, while performance information use is widespread among politicians
Moynihan (2005), state government	Yes	Limited use and high use	Output and outcome information is used in a symbolic manner, and input information is used extensively in budgeting by politicians
Ho (2005), city (local) government	Yes	Varies from extensive use to no use	Input, output, outcome, and efficiency information use varies in different cities
Pollitt (2006), central and local government	Yes	Limited use	Information on the outputs and outcomes of public programs and organizations is seldom used by politicians
Sterck and Scheers (2006), central (federal) government	Yes	Limited use	Not much evidence that budgetary decision-making or legislative oversight functions would be based on performance information (output and outcome information)
Askim (2007), local government	Yes	High use	Surprisingly high use of performance (input, output, and outcome) information
Posner and Fantone (2007), central (federal) government	Yes	Information use varies	Use of performance information relating to program assessment rating tool (PART) varies
Nakrosis (2008), central government	Yes	Limited use	Use of output and outcome information is limited

Wang (2008), state and local government	Yes	Moderate use	Output and outcome information is incorporated into budgeting processes in moderate levels
Askim (2009), local government	Yes	Varies from high use to no use	Councilors' use of input, output, and outcome information varies depending on their individual attributes
Johansson and Siverbo (2009), local government	Yes	Varies from high use to no use	Quality, productivity, and efficiency benchmark information use varies depending on the local government
Joyce (2011), central (federal) government	Yes	Limited use	Historically, there has been little appetite in the Congress for evidence-based decision-making
Raudla (2012), central government	Yes	Limited use	Output and outcome information is used in a limited fashion
Kroll and Proeller (2013), local government	Yes	High and low use	Input, output, outcome, efficiency, quality, and effectiveness information use varies
Saliterer and Korac (2013), local government	Yes	High and extensive use	Mayors and head officials frequently use outcome and efficiency measures
Saliterer and Korac (2014), local government	Yes	High and extensive use	Mayors use outcome and efficiency measures on a regular basis
Raudla and Savi (2015), central government	Yes	Limited use	Politicians generally do not use output and outcome information
Lu and Willoughby (2015), state government	Yes	Moderate use	Budgeting for performance is not a strong or weak practice but in between
Charbonneau and Bellavance (2015), local government	Yes	Varies from high use to no use	Input, output, outcome, and efficiency information use varies depending on the local government
Guarini (2016), local government	Yes	Intensity of use was not studied	Accounting information is used in all three cases and demonstrates perverse performance information use
Grossi *et al*. (2016), local government	Yes	Limited use	The use of efficiency, effectiveness, and quality information is modest and varies

Byulen and Christiaens (2016), local government	Yes	Varies from extensive use to no use	The use varies depending on the type of financial information
Bjornholt *et al*. (2016), local government	Yes	More than half of respondents strongly agree that they use performance information, but the intensity of use is not addressed	Input, output, and outcome information is used
Van Helden (2016), local, state, and central government	Yes	Varies from extensive use to no use	Input, output, outcome, and efficiency information use varies depending on the study
Giacomini *et al*. (2016), local government	Yes	Varies from high to low use	Cost, efficiency, and effectiveness information use varies depending on the political conflict
Hijal-Mograhabi (2017), local government	Yes	Varies from high to no use	Output, outcome, and efficiency measures are often used to achieve accountability but not in budgeting
Kenk and Haldma (2019)	Yes	Varies from higher to lower use	Performance information use varies depending on the local government merger type
Ellul and Hodges (2019)	Yes	Varies from high to low use	Input information is often used whereas output, outcome and efficiency information is rarely used
Jorge, de Jesus and Nogueira (2019)	Yes	Varies from occasional use to no use	Accounting information use varies depending on the information type
Sinervo and Haapala (2019)	Yes	Varies from higher to lower use	Financial information use varies depending political experience and financial expertise

The fourth research question asks whether some presidents make more use of performance information than others do. Prior research has found that political and financial contexts (Buylen and Christiaens, 2016), educational and employment backgrounds (Askim, 2009; Ouda and Klischewski, 2019), the powers of the user (Cunningham and Harris, 2005; Bourdeaux, 2006), cohort and sex (ter Bogt, 2004) are determinants of politicians' performance information use. Because this study views the presidents as similar in terms of their political and financial context, education and employment background, powers, cohort and sex, it is assumed that the presidents use performance information similarly.

However, as the contexts in which the two presidents give their speeches are different (see Table 4); one would expect to see dissimilar performance information use according to Askim (2009) because similar people may use performance information differently when the context changes, as demonstrated by Giacomini et al. (2016). Moreover, the differences in characteristics presented in the Research context section can also anticipate different types of use. The following hypotheses were derived for the statistical tests:

> *H4:* In their speeches, both presidents do not use the same amount of performance information on average (comparison of the means).
>
> *H5:* The performance information use of the presidents varies differently between the different speeches (comparison of standard deviations).
>
> *H6:* Proportions of speeches including performance information use are not equal when Kaljulaid's speeches are compared with Grybauskaitė's speeches (comparison of proportions of speeches).
>
> *H7:* The presidents do not have the same ratio of performance information and other content in their speeches (comparison of proportions of content).
>
> *H8:* The presidents do not use the same types of performance measures equally often (comparison of proportions of measures).

In H6, the proportion of speeches including performance information is measured by dividing presidential speeches including performance information with the total number of speeches a president made. In H7, the ratio of performance information and other content is calculated by dividing the amount of words that are numbers representing performance with the total number of words used by the president in the speeches.

The hypothesis testing performed in this study adds the presidential dimension to the previous research findings and shows how the performance information use habits of different actors can be compared via speeches (see H4–H8). If the presidents are not similar in terms of their performance information use, this study attempts to determine why, thus answering the fifth research question that asks what explains the differences in presidents' performance information use.

Table 4. Speech contexts in the presidential speeches

Context	Kaljulaid (Estonia)	Grybauskaitė (Lithuania)
Ceremony (dinners, funerals, award shows, anniversaries, opening ceremonies, etc.)	33 (38.8%)	26 (74.3%)
Conference	37 (43.5%)	4 (11.4%)
Lecture (lectures in universities and institutes)	5 (5.9%)	0 (0%)
Official speech (UN assemblies, new year's speech, state visits, opening session in parliament, etc.)	10 (11.8%)	5 (14.3%)

Research method

The empirical data were derived from 120 presidential speeches given between January 1, 2016 and October 29, 2018. The president of Estonia gave 85 speeches and the president of Lithuania gave 35 speeches. All of these speeches were available online at the time of writing this paper. The context of these speeches can be seen in Table 4. The written transcripts used in this study were written in English but one can also find them in other languages (e.g. Russian or the mother language of the country).

The collected speeches were given at a wide array of forums and events. The contexts in which the president made their speeches were significantly different after the three categories of conference, lecture and official speeches were merged into one so that the $\chi 2$ test could be conducted ($p = 0.000$). This indicates that presidents made their speeches in very different forums, which could explain possible differences in performance information use. As the speeches are in English and shared on the internet, the audience for all these speeches is the part of the population who can access the internet. Therefore, the speeches can be identified as mass communication. According to Berger (1995), "mass communication refers to a process of spreading texts and messages to large audiences through the use of the media." There was no list of participants available so it was not possible to assess who were the live audience. In the speeches, the topics covered foreign and domestic policy issues as well as legal matters. Therefore, these speeches should provide information on how performance information is used in various policy contexts. As topics changed even during the speeches, it was not possible to examine within the word limits of this paper whether certain topics relate to performance information use or not. This should be done in a separate study.

For data management, all the speeches were first converted to PDF format and then converted to a Word document format to accelerate the collection and storage process. The Word files were then downloaded to Atlas.ti 8 software where the actual coding was performed. A content analysis method was adopted

for the coding and focused on quantitative performance information. In the first phase of coding, an auto-coding tool was used to find all the numerical information used in the speeches. This tool prevented the introduction of human errors in the search process, and a computer was used to locate all the numerical data in the speeches. The numerical data could be in numerical (e.g. 0–9) or written format (e.g. one, two, hundred, million, first, second, etc.). The computer searched for cardinal, ordinal and nominal forms of numbers (see Appendix 1 for the search words). Two search codes were written for the auto-coding tool so that all the numerical data would be identified by the computer. The codes considered all the inflected forms of written numbers.

The second phase of coding was reserved for cleaning up the data. A researcher manually removed all unrelated numerical data that did not include performance information. Dates and numbers presenting years were removed if they did not relate to performance information. Because performance measures report what is happening, where and when it is happening and to what extent it is happening (Hatry, 2006), coding some of the dates and years was required, as these show when the performance occurred. Other numbers were occasionally removed, including expressions such as "first and foremost," "on the one hand" and "one thing to be considered."

In the third phase, the numerical data were further categorized according to different types of performance information (see Table 5). In the statistical testing phase, the total instances of performance information use were calculated, and the following statistics describing the performance information use were produced: mean (M), median (Mdn), mode (Z), range (RNG), minimum (Min), maximum (Max) and standard deviation (SD) (e.g. Krippendorff, 2004). This study uses these descriptive statistics to test the hypothesis that both presidents use performance information in their speeches. To test the second hypothesis, which claims that both presidents demonstrate limited performance information use in their speeches, this study uses descriptive statistics and the categorization of performance information use intensity depicted in Tables 6 and 7. When considering the categorization in Table 6, it is debatable how many speeches from the total number of speeches should include performance information when performance information use is, for example, high. Future studies can define these categories differently, but for communication purposes, Table 6 describes exactly what is meant in this study by high performance information use.

Table 5. What is being observed from the presidential speeches (the analytical framework)

What was coded?	*Conceptual definition*	*Coding example*
Use of numerical input information	Inputs are human, physical, and time resources consumed in the organizational activities (Cheema, 2006). Physical resources are assets, such as land, buildings, equipment, and raw materials (Bernolak, 1997)	"Public spending for 1999 had to be reduced by 5% annually." (speech 32)
Use of numerical process information	Process information shows how activities are reduced, connected and merged, and how they work in tandem when the actual service process occurs (Rice, 2006)	"Some services more or less happen totally automatically, because people were refusing to push buttons … when a baby is born and the doctor enters the data of the birth … into the e-health system and in the background, without the doctor pushing one button, the digital identity is created for this baby … originally we wanted the doctors to push one button and say: this way I will create the registry for this baby. But they refused … We accepted. And therefore we created a system which automatically does it, in the background … doctors even do not know that they are the civil registry managers." (speech 8)
Use of numerical output information	Output information reports the quality and/or quantity of the goods and services produced by the public sector (Morley et al., 2001)	"There is one country, Japan, which can already manage to run trains not even one minute late." (speech 20)
Use of numerical workload information	Workload information describes the workload coming into the organization. Measuring customer queues is typical for workload indicators, as they describe how many customers will be served by the organization in the near future (Hatry, 2006)	"So our people got really angry with the government, you know for what? Because … some of them had to go to an office to update the certificates. Most of them could still do it online, but it did not function in the first two minutes; sometimes you had to do it nine times, because everyone was trying to update at the same time. No one could have such a wide channel open all the time so that 700,000 citizens could update at the same time." (speech 2)
Use of numerical outcome information	Outcome information describes how conditions, events, attitudes, and behavior in society changed after the output was delivered (Morley et al., 2001)	"Since 1991, our GDP per capita has grown 20 times." (speech 37)
Use of numerical productivity information	Productivity describes the relationship between inputs and outputs (Sumanth, 1994)	"Looking narrowly at tax collection, … in 2004 we spent one euro to collect 100 euros and in 2013 0.4 to collect 100." (speech 69)
Use of numerical cost-effectiveness information	Cost-effectiveness measures portray the outcomes achieved from the given inputs (Levin and McEwan, 2001)	"We have been able to offer more efficient public services, and the efficiency gains from digital signature are estimated to be as much as 2% of GDP per year. This 2% benefits mostly simple people and SMEs [small to medium enterprises], as neither has the capacity to handle big bureaucracy." (speech 13)

Table 6. Categorization of performance information use intensity

Performance information use is:	*Values in terms of percentages of presidential speeches*
Non-existent	0%
Limited	0.1–25%
Moderate	25.1–50%
High	50.1–75%
Extensive	75.1–100%

Table 7. Second categorization of performance information use intensity

The category created from the Likert five-point scale	*The values in percentages (the relative proportion of numbers representing performance information from the whole word content in speeches)*
President *never* utilizes performance information in speeches	0%
President *seldom* utilizes performance information in speeches	0.1–0.18%
President *sometimes* utilizes performance information in speeches	0.19–0.37%
President *frequently* utilizes performance information in speeches	0.38–0.55%
President *very frequently* utilizes performance information in speeches	0.56–0.74%

This study develops a second method to compare the intensity of performance information use in Kaljulaid's and Grybauskaitė's speeches. The second method is based on estimates showing how frequently numbers are used in the English language. To create this estimate, the total number of English words was taken from the Oxford Dictionary, and a list of the most common words in English was downloaded. It was found that there are more than 1,000,000 words in the English language. A list of the 4,340 most common words (Russell, 2016) was used as a sample to estimate the ratio of numbers and other words in the population of 1,000,000 words. There were 32 numbers in the list, indicating that 0.74 percent of words (about seven out of every 1,000) are numbers. Unfortunately, the list did not include any frequency counts for the words, so a more accurate estimate could not be calculated. Based

on this estimation, a five-point Likert scale was constructed to assess the level of performance information use (see Table 7). The figure 0.74 was divided into four parts, each representing one category of the Likert scale. Because "never" means that there are no numbers presenting performance information in the speech, 0.74 was only divided by 4, as there are four categories left after excluding "never": seldom, sometimes, frequently and very frequently. This method (Table 7) was developed so that one knows exactly what is meant when, for example, performance information is used "sometimes" in presidential speeches.

Presidents typically use less complex language (Hart, 1984) and presidential speeches are spoken in a way that seems familiar and banal to the listener (e.g. Edelman, 2013). Indeed, many public speaking guidebooks instruct speakers to use the language of their audience (Lundgren and McMakin, 2018). Therefore, it is expected that only 32 words out of 1,000 words are numbers in presidential speeches, reflecting typical English language use. Because numbers can raise distrust among citizens and numbers are often abstract by nature in presidential speeches (Stec, 2014), it is not realistic to assume that "more quality statistics simply and directly imply more persuasion" (Baele et al., 2018). Presidents knowing this would not try to maximize their performance information use for the sake of maximization.

To test the third hypothesis, which claims that both presidents most often use input information in their speeches, this study uses descriptive statistics illustrating used performance information. When the similarity of the presidents as performance information users is tested with the five hypotheses, the research setting utilizes comparisons of proportions and comparisons between groups. Two groups were generated – one for each president's speeches. As differences were found between the presidents, correlations were used to show how the speech length was associated with performance information use. Based on these correlation tests, another set of group comparisons was conducted. In these group comparisons, the length of the speeches was controlled. As a second control, context was controlled and all the hypotheses were once again retested. Overall, the research process consisted of seven steps. These steps are summarized in Figure 1.

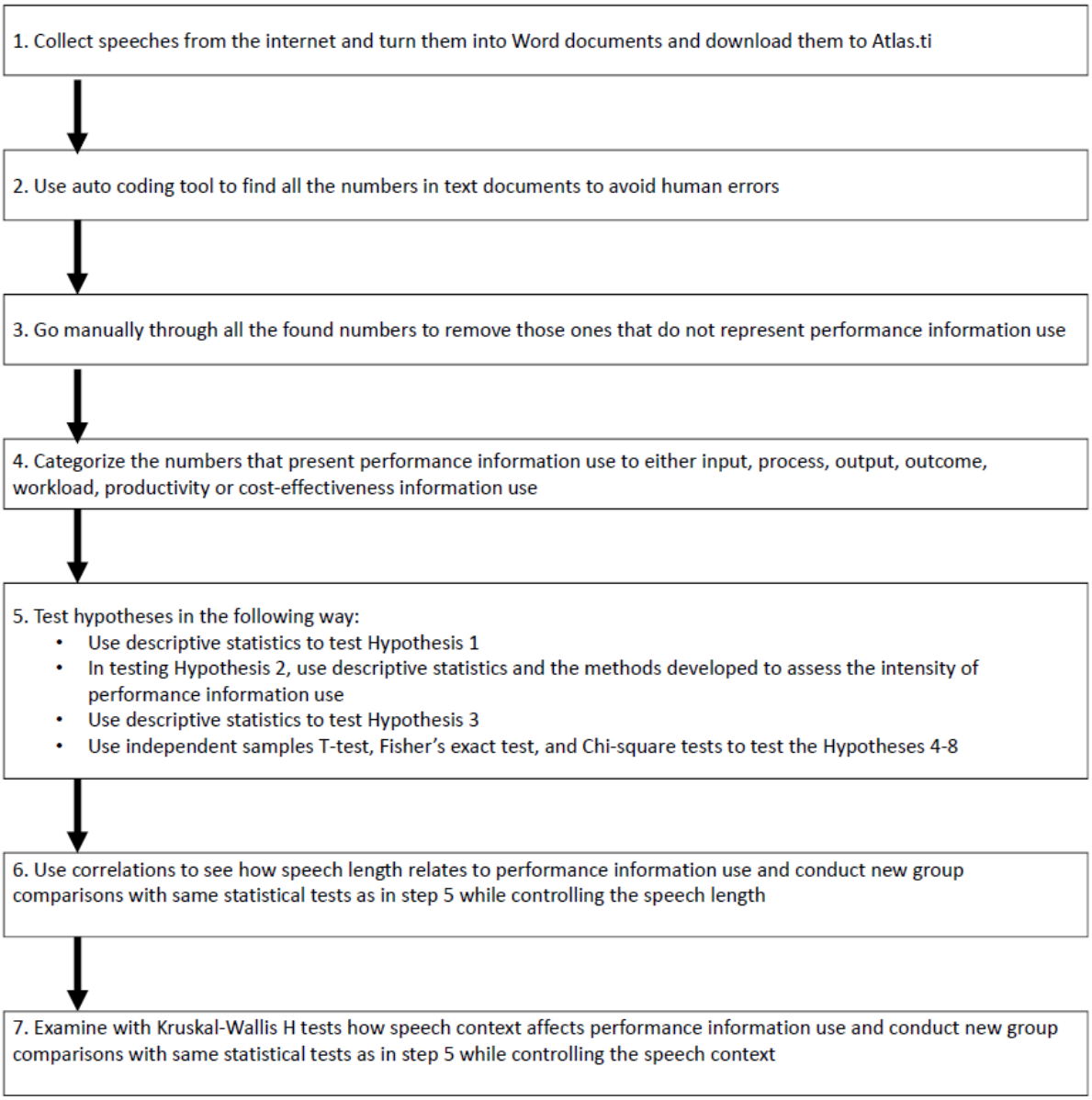

Figure 1. The research process

Describing performance information use in presidential speeches

The examined presidents did not use terms such as input, process, output, outcome, workload, productivity or cost-efficiency. They instead used performance measures in a less technocratic way. Quantitative performance information is often embedded in a story that describes the triumphs or failures of the government or foreign governments. The names of performance measures were not typically mentioned, and presidents did not state their sources of information, which is understandable as this would make the rhetoric appear clumsy. As an example of this type of performance information use, Lithuania's President Grybauskaitė stated in one of her speeches that "Women fill just 17 percent of the EU's IT [information technology] jobs. We must stop losing the world's brightest young minds"

(Speech 99). Grybauskaitė's quote was coded as outcome information according to our coding framework.

On some occasions, the presidents did use performance measures by name. Consider the following quotation from Estonia's President Kaljulaid, which was coded as cost-effectiveness information because it describes savings arising from outputs created with digital signing and benefits gained with lowered costs:

> One visit which people had to undertake and sometimes wait for maybe one hour in the offices […] Estonian people cannot tolerate this kind of relaxed attitude by the public sector that forces them to come to the office and queue at the office. […] This actually means that this effect is measurable–it is 2% of the GDP just by signing digitally. We pay for our defense budget just from the savings we get from the digital environment. (Speech 2)

Table 8 provides the descriptive statistics of the quantitative content analysis. According to H1, both presidents use performance information. This hypothesis was confirmed as shown in Table 8. H2 claimed that both presidents demonstrate limited performance information in their speeches. However, the percentage of presidential speeches, including performance information and the relative proportion of numbers representing performance information from the whole word content in speeches in Table 8, shows extensive use, according to the interpretive framework shown in Table 6 and very frequent performance information use based on the scale presented in Table 7. For this reason, H2 is rejected.

H3 stated that both presidents most often use input information in their speeches. Table 9 summarizes how often a specific information type was used. The table demonstrates that outcome information is the most used performance measure in presidential speeches, as both presidents mainly applied this type of information. Thus, H3 is rejected, as the presidents' arguments seem to be outcome oriented. In fact, the presidents often talked about past and future achievements in terms of outcomes. The following quotations demonstrate the outcome orientation of the presidents:

> In the 21st century, women must have equal legal status, equal pay, and equal political opportunities. And it is not only a matter of justice. Equal economic participation alone can add 28 trillion dollars to the global economy by 2025. (Grybauskaitė, Speech 99)

> We exited the Soviet Union with an average salary of 30 dollars per month. It has now grown to almost 1,300 in 26 years. With the 30 dollars per month, we were very poor. (Kaljulaid, Speech 33)

Table 8. Key figures from the quantitative content analysis

Statistic	Kaljulaid (Estonia)	Grybauskaitė (Lithuania)
Total number of performance information uses in all speeches	1,164 (n = 85 speeches)	111 (n = 35 speeches)
Mean	14	3
Median	10	2
Mode	3	0
Min	0 (5 speeches i.e. 5.8% of all speeches)	0 (7 speeches i.e. 20% of all speeches)
Max	60	11
Range	60	11
Standard deviation	13	3
Percentage of presidential speeches including performance information	94%	80%
The relative proportion of numbers representing performance information from the whole word content in speeches	0.8%	0.7%

The outcome orientation is understandable because the presidents conduct economic leadership by addressing broad societal issues relating to their nations' well-being, and these issues are usually best described with outcome measures. Outcome measures typically capture different aspects of a nation's well-being better than input, process, output or workload information. Of course, cost-effectiveness measures could also be used, but there are currently more outcome measures available than cost-effectiveness measures. In addition, cost-effectiveness might also be more challenging to convey to ordinary people, and the presidents generally used language that is understandable by all.

Do the presidents use performance information similarly?

H4 argued that both presidents use different amounts of performance information in their speeches. Table 8 shows the total instances of performance information use in all speeches. Based on this information, Kaljulaid used more performance information during the examined time interval. However, Kaljulaid also had more speeches (n = 85) than Grybauskaitė (n = 35), which could explain

the difference between the two presidents. By looking at the average number of performance information uses per speech (i.e. the mean), it becomes evident that Kaljulaid used more performance information on average in her speeches (14 times per speech) compared to Grybauskaitė (3 times per speech).

An independent sample t-test was conducted to determine whether the mean values of the performance information are the same in the two groups (Kaljulaid in Group 1, Grybauskaitė in Group 2). As shown in Table 10, there was a statistically significant difference between Kaljulaid's and Grybauskaitė's performance information use, $t(104{,}06) = 7.003$, $p = 0.000$. Levene's test did not hold, and therefore equal variances were not assumed. The independent sample t-test revealed that Kaljulaid's speeches were significantly different from Grybauskaitė's speeches in terms of the average performance information per speech. Thus, H4, which claims that performance information use is different on average in Kaljulaid's and Grybauskaitė's speeches, is accepted.

Table 9. Types of performance measures used in speeches and their usage (see also Appendix 2)

	Kaljulaid		*Grybauskaitė*		*Totals*
Measures	Number of uses	%	Number of uses	%	Total number of uses
Cost-efficiency	13	1%	0	0%	13
Input	64	5%	4	4%	68
Outcome	843	72%	106	95%	949
Output	218	19%	1	1%	219
Process	8	1%	0	0%	8
Productivity	17	2%	0	0%	17
Workload	1	0%	0	0%	1
Totals	1,164	100%	111	100%	1,275

H5 proposed that the performance information use of the presidents varies differently between speeches. An examination of the minimum and maximum values revealed that the presidential performance information use fluctuates significantly between speeches. The minimum and maximum values in Table 8 demonstrate that Kaljulaid used performance information 60 times in one of her speeches, while five speeches did not include any performance information. Therefore, the range was 60. The fluctuation in performance information use was not so drastic in the speeches of Grybauskaitė, who used performance information 11 times in one of her speeches, while seven of her speeches did not include any performance information. The range here is therefore 11. Looking at the standard deviation confirms the findings of the stronger fluctuation in Kaljulaid's speeches compared to Grybauskaitė's. This fluctuation is significantly different, as shown by Levene's test for the equality of variances in Table 10. Therefore, H5 is accepted.

Table 10. Independent sample t-test

		Levene's test for the equality of variances		t-test for the equality of means						
									95% confidence interval of the difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	Lower	Upper
# Information use	Equal variances assumed	26.607	.000	4.730	118	.000	10.523	2.225	6.117	14.928
	Equal variances not assumed			7.003	104,1	.000	10.523	1.503	7.543	13.502

H6 suggested that the proportion of speeches including performance information is not equal when Kaljulaid's speeches are compared to Grybauskaitė's speeches. The ratio of speeches incorporating performance information and those that do not was significantly higher in Kaljulaid's speeches compared to the similar ratio number calculated from Grybauskaitė's speeches ($p < 0.05$, Fisher's exact test). Thus, H6 is accepted. The Fisher's exact test is used here because there is one cell that has an expected count of less than 5, and the data form a 2x2 nominal table.

According to H7, both presidents do not have the same ratio of performance information and other content in their speeches. The empirical data indicate that the presidents are not significantly different in their performance information use if one compares the relative proportions of numbers representing performance information from the whole word content in speeches. As shown in Table 8, we found 1,164 numbers (or words, as word processing tools see numbers) that described performance information in Kaljulaid's speeches, and 111 such numbers were present in Grybauskaitė's speeches.

In Table 8, the relative proportion of numbers representing performance information from the whole word content in speeches can be used to conduct comparisons between the presidents. Because the relative proportion of numbers representing performance information from the whole word content in speeches is 0.8 percent in Kaljulaid's speeches and 0.7 percent in Grybauskaitė's speeches, it seems that the balance between performance information and other information within the speeches is similar, although Kaljulaid used more performance information per speech on average. Kaljulaid used more

words in her speeches, so the balance between performance information and other information is the same when compared to Grybauskaitė, who used performance information fewer times per speech but whose speeches were also much shorter on average. The average length of Kaljulaid's speeches was 1,698 (measured by mean) or 1,456 (measured by median) words, and the average length of Grybauskaitė's speeches was 453 (mean) or 391 (median). A $\chi 2$ test confirmed that Kaljulaid's and Grybauskaitė's performance information use habits are similar when the ratio of performance information and other content is examined ($p = 0.796$, $\chi 2$ test). H7 is therefore rejected.

H8 projected that both presidents do not use the same types of performance measures equally often. According to Table 8, the types of measures used by Kaljulaid differed significantly from the performance measures used by Grybauskaitė ($p < 0.01$, $\chi 2$ test). Thus, H8 is accepted. Table 8 describes the types of performance measures used and what measures were used more than other measures. The percentages in Columns 3 and 5 describe the relative proportions of the used measures.

Would the performance information use habits be similar if the presidents gave equally long speeches? Both Grybauskaitė's (Spearman $r = 0.436$, $p < 0.01$) and Kaljulaid's (Spearman $r = 0.648$, $p < 0.01$) performance information use correlated positively with speech length. By using 35 of Kaljulaid's speeches that were similar in length to Grybauskaitė's speeches, this study retested H4–H8. The means were significantly different ($p < 0.05$), and therefore, H4 was again accepted. However, an equality of variances was found ($p = 0.31$), and H5 was rejected. Moreover, the proportions of speeches including performance information use were equal ($p = 0.526$, $\chi 2$ test), and the ratios of performance information and other content in the speeches were similar ($p = 0.781$, $\chi 2$ test). Thus, H6 and H7 were rejected. After controlling for speech length, the types of measures used by Kaljulaid differed significantly from the performance measures used by Grybauskaitė ($p < 0.01$, $\chi 2$ test) and H8 was accepted.

While controlling the speech length, H1–H3 were also retested. H1 was accepted as performance information was used by Kaljulaid 175 times and by Grybauskaitė 111 times. H2 was rejected as the presidents used performance information extensively and frequently (see Tables 6 and 7). From all the words, 0.7 percent were numerical performance information in Kaljulaid's and Grybauskaitė's speeches. In total, 85 percent of Kaljulaid's speeches and 80 percent of Grybauskaitė's speeches incorporated performance information. H3 was rejected because performance information was mostly outcome information (78.8 percent of performance information concerned outcomes in Kaljulaid's speeches and 95 percent in Grybauskaitė's speeches).

A Kruskal–Wallis H test was run to determine if there were differences in four different speech contexts in terms of distributions of speech lengths. These contexts were the ceremonial ($n = 59$), conference ($n = 41$), lecture ($n = 5$) and official speech ($n = 15$) speech groups (see Table 4). Both Kaljulaid's and Grybauskaitė's speeches were divided into these categories. Distributions of speech lengths were not similar for all contexts, as assessed by visual inspection of a boxplot. The mean ranks of speech lengths

were statistically significantly different between contexts, $\chi^2(3) = 47.935$, $p < 0.001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. This post hoc analysis revealed statistically significant differences between the contexts as demonstrated in Table 11. Moreover, conference (mean = 1672) and lecture speeches (mean = 3582) involved more words than ceremonial speeches (mean = 697) and official speeches (mean = 872) on average.

Table 11. Pairwise comparisons between the different contexts and distributions of speech length within this context

Sample 1 – Sample 2	*Test statistic*	*Adj. Sig.*
Ceremonial – official speech	-13.9	1.000
Ceremonial – conference	-42.0	0.000
Ceremonial – lecture	-73.0	0.000
Conference – official speech	28.1	0.044
Lecture – official speech	59.1	0.066
Conference – lecture	-31.0	0.358

The first Kruskal–Wallis H test was replicated by using only Kaljulaid's speeches, and the results were similar to those in Table 11. Distributions of speech lengths in conference and lecture speeches differed from the distributions of speech lengths in ceremonial and official speeches. On average, Kaljulaid's lectures (mean = 3,582) were longer than conference speeches (mean = 1,802), which in turn were longer than official speeches (mean = 1,005). Official speeches were marginally lengthier than ceremonial speeches (mean = 1,004), according to mean values. Grybauskaitė's speech lengths were on average: ceremonial (mean = 309), conference (mean = 467), lecture (no lectures given) and official speech (mean = 607).

Another Kruskal–Wallis H test was run to determine if there were differences in four different speech contexts in terms of distributions of performance information use. Both Kaljulaid's and Grybauskaitė's speeches were divided into the four speech categories once again. Distributions of performance information use were not similar for all contexts, as assessed by visual inspection of a boxplot. The mean ranks of performance information use were statistically significantly different between contexts, $\chi2(3) = 47.016$, $p < 0.001$. The pairwise comparison in Table 12 demonstrates that lectures and conference speeches are statistically significantly different from ceremonial and official speeches when speeches of both presidents are divided into categories based on different contexts. Similar results arise when the Kruskal–Wallis H test is run with the speeches of Kaljulaid. When the Kruskal–Wallis H test was used to assess Grybauskaitė's speeches in terms of performance information use, conference

speeches are statistically significantly different only from ceremonial speeches, not from official speeches.

Table 12. Pairwise comparisons between the different contexts and distributions of performance information use within the context

Sample 1 – Sample 2	*Test statistic*	*Adj. Sig.*
Ceremonial – official speech	-8.0	1.000
Ceremonial – conference	-42.2	0.000
Ceremonial – lecture	-67.1	0.000
Conference – official speech	34.2	0.007
Lecture – official speech	59.1	0.006
Conference – lecture	-24.9	0.777

To control the speech context, all the hypotheses were retested by using only the ceremonial speeches of the presidents. H1 was accepted as it predicted performance information use, as demonstrated in Kaljulaid using performance information 219 times and Grybauskaitė 65 times. H2 predicting limited use was rejected as both presidents demonstrated either extensive or high use and very frequent utilizations of performance information (see Tables 6 and 7). From Kaljulaid's ceremonial speeches, 87.7 percent included performance information and 0.66 percent of all words were numerical performance information, whereas for Grybauskaitė, the findings were 73 and 0.8 percent, respectively. As both presidents used outcome information most frequently in their ceremonial speeches, H3 claiming that input information is used the most was rejected. From the performance information used, 80.8 percent was outcome information in Kaljulaid's speeches and 93.8 percent in Grybauskaitė's speeches.

There was a statistically significant difference between Kaljulaid's and Grybauskaitė's performance information use in ceremonial speeches, $t(51.5) = 7.003$, $p = 0.000$. Thus, H4 was accepted. The Levene's test did not hold ($F = 9.7$, $p = 0.003$), and therefore, equal variances were not assumed. The Levene's test indicates that the performance information use of the presidents varies differently between the different speeches, meaning that that H5 was accepted. H6 was accepted as the ratio of speeches incorporating performance information and those that do not were significantly higher in Kaljulaid's speeches compared to the similar ratio number calculated from Grybauskaitė's speeches ($p < 0.01$, $\chi 2$ test). A $\chi 2$ test confirmed that Kaljulaid's and Grybauskaitė's performance information use habits are similar when the ratio of performance information and other content is examined in the context of ceremonial speeches ($p = 0.199$, $\chi 2$ test). As a result, H7 was rejected. H8 was accepted because the

types of measures used by Kaljulaid differed significantly from the performance measures used by Grybauskaitė ($p < 0.01$, $\chi 2$ test). Overall, Table 13 summarizes the statistical tests and their results.

Table 13. Summary of the research results

Research question	*Hypothesis*	*Test*	*Retest with speech length controlled*	*Retest with context controlled*
Is performance information actually used by presidents?	1. Both presidents use performance information in their speeches.	Hypothesis accepted	Hypothesis accepted	Hypothesis accepted
To what extent are presidents using performance information?	2. Both presidents demonstrate limited performance information use in their speeches.	Hypothesis rejected (extensive and frequent use was found)	Hypothesis rejected (extensive and frequent use was found)	Hypothesis rejected (extensive, high and frequent use was found)
What type of performance information is being used by the presidents?	3. Both presidents most often use input information in their speeches.	Hypothesis rejected (outcome information was most used)	Hypothesis rejected (outcome information was most used)	Hypothesis rejected (outcome information was most used)
Do some presidents make more use of performance information than others?	4. In their speeches, both presidents do not use the same amount of performance information on average.	Hypothesis accepted	Hypothesis accepted	Hypothesis accepted
	5. The performance information use of the presidents varies differently between the different speeches.	Hypothesis accepted	Hypothesis rejected	Hypothesis accepted
	6. Proportions of speeches including performance information use are not equal when Kaljulaid's speeches are compared to Grybauskaitė's.	Hypothesis accepted	Hypothesis rejected	Hypothesis accepted
	7. Presidents do not have the same ratio of performance information and other content in their speeches.	Hypothesis rejected	Hypothesis rejected	Hypothesis rejected
	8. Presidents do not use the same types of performance measures equally often.	Hypothesis accepted	Hypothesis accepted	Hypothesis accepted

Discussion and conclusion

This study examined the numerical performance information use in presidential speeches and found extensive and frequent performance information use, with a prevalence of outcome information. This supports the results of scholars who have argued that politicians use performance information (e.g. Askim, 2007; Kroll and Proeller, 2013; Giacomini et al., 2016). The intensive use found also supports researchers who have reported politicians as active performance information users (Ezzamel et al., 2004; Saliterer and Korac, 2013; Charbonneau and Bellavance, 2015). The outcome orientation found in this study contradicts prior results stating that the public sector is oriented more toward input and output than outcome, as the measures mostly focus on inputs and outputs even though outcomes are seen as important (e.g. Ferlie et al., 2005; Moynihan, 2005; Sterck and Scheers, 2006; Ozturk and Swiss, 2008). However, a high use of outcome information has also been reported (e.g. Saliterer and Korac, 2014; Hijal-Moghrabi, 2017). In this study, the use of outcome information is not perhaps so surprising as outcome information describing the state of the nation in terms of well-being and economic growth is very useful when presidents conduct economic leadership to guide the behaviors of consumers and companies. Indeed, leading the macroeconomic performance often requires information about macroeconomic outcomes as these may be more relevant compared to outputs or inputs associated with certain programs and services. This topic requires further investigation.

The extensive and frequent use of performance information was associated with presidents who are middle-aged females and who had financial management and economics backgrounds. Both presidents also had similar powers and operated in political contexts that were very alike. These associations between performance information use and contextual and individual characteristics both support and contradict some of the findings of Askim (2009). Askim (2009) claimed that political conflict increases performance information use, which was supported by the findings of this study, as both Estonia and Lithuania have political tensions with Russia. There is also some tension between Russians and Lithuanians in Lithuania and Russians and Estonians in Estonia (see also Giacomini et al., 2016). Conflicts also arise in these countries because the style of national and local politics is also often confrontational in Estonia, while the three governing parties in Lithuania have very different interests.

Askim (2009) also found that higher education and age are associated with low use, and this finding was not supported by the results of this study showing that frequent and extensive use was associated to high age and education levels. One finding arising from the empirical analysis showed that presidents with employment backgrounds in financial management and economics frequently used performance information. However, this finding does not prove causality as there is no control group of presidents with different employment backgrounds. It only shows that in the studied cases, there were associations between performance information use and backgrounds in financial management and economics. The reader should take this result relating to backgrounds in financial management and economics as a description of how things were in the two countries, not as a proof of causality. Proving causality would

require another type of research setting and the results of this study only offer hypotheses to studies aiming to capture the causality. The ways different backgrounds contribute to performance information use is currently an underexamined topic that should be studied more based upon the preliminary findings shown here.

The two presidents also differed from each other in terms of performance information use, although they had many similarities in their individual backgrounds and operating contexts. This suggests that the level of similarity was not adequate, as the presidents were also different in many ways as described in the research context. These differences in individual characteristics can relate to the dissimilarities found in performance information use, as age, education, occupational background and political experience can all explain different use patterns (ter Bogt, 2004; Askim, 2007; Saliterer and Korac, 2014). Older age and higher education, different career paths and longer political career were associated with lower use in this study. Also, differences in socio-demographic factors, political situation and economic development can explain the different performance information use habits of the presidents (e.g. OECD, 2016).

This study also found that there can be significant differences within seemingly similar performance information use that is labeled as extensive use. Some of these differences vanished when the length of speech was controlled, but some differences remained. The study found correlations between speech length and performance information use in both presidents' speeches. This is natural, as the ratio between numbers and other words in the English language is fairly constant as this study demonstrated by sampling the most common words used in the English language and calculating this ratio between numbers and other words. As presidents try to speak the language of the ordinary people, it was here assumed that they also use numbers in a manner similar to the way other people generally do. The literature has not previously examined how speech length is associated with performance information use intensity (e.g. Buylen and Christiaens, 2016) and this requires further investigation.

Performance information use varied to some extent between different information users and speeches made in dissimilar contexts and provided more evidence for the already established notion that performance information use can fluctuate significantly depending on the use context and users (e.g. Johansson and Siverbo, 2009; Charbonneau and Bellavance, 2015). The study found that some speech contexts stimulated more use than others when presidents were examined individually, but the differences in performance information use between the presidents did not relate to differences in speech contexts as there were differences in use, although the speech context was controlled. Overall, this study indicates that theoretical models of performance information use should consider speech length and contexts as important variables that affect use.

The findings of this research expand upon current theories of performance information users by identifying a new political user group: presidents (e.g., van Helden and Reichard, 2019). Past studies

have focused on local councilors, state legislators and members of parliament or congressional representatives (Rhee, 2014; Lu and Willoughby, 2015; Grossi et al., 2016). Future research should study more on how presidents use performance information and compare their results to this study.

The research methods developed in this study may benefit future research by providing conceptual frameworks (see Tables 6 and 7) that can be used to assess the intensity of performance information use in rhetoric. The readers should keep in mind that the offered interpretation frameworks for performance information use intensity are not meant to be normative and they are very much debatable, but they should be thought of as conversation starters on how to define intensity of use. Indeed, the proposed methods invite scholars to discuss how high and low information use should be defined and measured, as the current research provides very few clues as to how high or low performance information use manifests itself in rhetoric (see e.g. Sterck and Scheers, 2006; Askim, 2007; Raudla, 2012; Buylen and Christiaens, 2016; Giacomini et al., 2016). Moreover, terms such as limited use or high use are vaguely defined in the literature (e.g. Ospina et al., 2004; Buylen and Christiaens, 2016). The proposed frameworks contribute conceptually by defining what is intensive performance information use, while they also provide a critique to the vaguely defined concepts of intensity used in the past literature. Currently, it is not clear whether Raudla's (2012) use of the term limited use means the same thing as in ter Bogt (2004). As interpretation depends on concepts that ensure their communicability, this is a problem in the current research.

Although the conceptual frameworks proposed here for intensity of use are debatable, this study has provided measurement techniques that make various usage levels of performance information more concrete and transparent. With these methods, future research can examine different aspects of performance information use in rhetoric, including what information is being used in speeches and why and how it is being used.

The second analytical model developed in this study used H4–H8 to create a comparative model that can be used to compare two speakers and their performance information use. The comparisons can be done with t-tests, Fisher's exact tests, $\chi 2$ tests and Kruskal–Wallis H tests. As a theoretical contribution, the developed analytical models suggest that the intensity of performance information can be assessed from several dimensions. One can analyze how many speeches include performance information to determine intensity (see Table 6). One can also examine how much of the content of a speech is performance information (see Table 7). It is also possible to examine whether some types of performance information are used more intensely than others, as was the case in this study. Although one would not agree on the conceptual framework proposed in this study defining what high use is, the analytical model is still useful. For example, dividing the amount of words that are numbers representing performance with the total number of words used by the presidents in their speeches can be done in future studies, and the numbers can be compared to the ones seen in this study even if one does not

agree how frequent use was defined in this research. The numbers are comparable even if we disagree about the labels, such as frequent use or seldom used, given to these numbers.

The main limitations of this study are that it only focused on numerical information. This means that the actual use observed was underestimated. Future studies could use grounded theory and other qualitative settings to examine the performance information use of presidents. Another limitation was the small sample of just two presidents. Because of the sample size, only preliminary findings and suggestions for future research topics could be offered. The third limitation relates to the interpretative framework used in this study, which can be debatable as the previous studies have not established what high use means in practice. Therefore, the reader should look at the numbers and consider their interpretation.

The analysis of performance information in rhetoric is an underused research method. By studying presidential performance information use and its intensity in speeches with new methods, this study has added a new dimension to the existing research (e.g. Saliterer and Korac, 2014; Lu and Willoughby, 2015; Grossi et al., 2016). The findings of this study implicate that there is a lot of interesting theoretical and empirical work to be done on topics addressing performance information in rhetoric.

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Appendix 1

Words searched from the speeches were: 0–9, one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, hundred, thousand, million, billion, trillion, dozen, couple, gross, quantity, half, double, first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth, eighteenth, nineteenth and twentieth.

Appendix 2.

In how many speeches was the measure used

Measure	*Kaljulaid*	*Grybauskaitė*
cost-efficiency	9	0
input	22	4
outcome	80	27
output	56	1
process	5	0
productivity	10	0
workload	1	0