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On the Determinants of External Networking of European Mayors

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Abstract

The subsequent Bachelor Thesis will focus on the external networking of mayors from 17 European countries and the determinants thereof. For this purpose, the following research question will be deployed: **To what extent do the leadership-style and other factors (constitutional setting, personal capabilities, municipal size) explain differences in the degree to which mayors in 17 European countries in 2003/4 engage in external networking?** A cross-sectional correlational research design using quantitative data of the European Mayors Project[1] (hereafter EMP) conducted in 2003/04 will be applied in order to answer the research question. Even though a considerable number of scientists has dealt with the consequences of managerial networking in public organizations, only few researchers have focused on the determinants thereof (Andrews, Boyne, Meier, O'Toole & Walker, 2011). As increased external mayoral networking, in turn, might increase the ability of a municipality to cope with contemporary urban challenges, this research might also entail a huge societal impact. Therefore, by making a contribution for closing the theoretical deficit, this research will also reveal whether the determinants of external networking are amenable to influence (e.g. by the mayor him/herself).

Keywords: European Mayors, External Networking, Determinants, Leadership-Style, Local Autonomy, Institutional Strength, Municipal Size, Education, Experience, Multivariate Regression Analysis

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[1] The EMP is a large-n study of more than 2700 European mayors of 17 European countries which was conducted in 2003/2004. For more detailed information see "Case Selection and Sampling"

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Introduction

Why do some mayors interact to a larger degree with political actors from outside their municipality than other mayors do? This question has been neglected in research for many years. Instead of exploring the determinants, scholars focused on the consequences of external managerial networking on organizational performance for many decades (Andrews et al., 2011). In this sense, external networking refers to interactions with individuals outside the "core organization" (Andrews et al., 2011, p. 356). Further, networking needs to be clearly distinguished from the network itself which focusses on the structure and not on the behavior of individuals who operate within the latter (Walker, O'Toole & Meier 2007). The results suggest that such an engagement seems to have a strong positive impact on the organizational performance (e.g., Andrews, Boyne, Meier, O'Toole, & Walker, 2010; Meier & O'Toole, 2001, 2003). There are two ways in which networking helps managers to do so: First, interactions with specific groups of individuals offers the opportunity for managers to "tap" new environmental resources (such as money, political support and jurisdiction). Second, external networking helps managers to protect the organization from negative environmental shocks such as "budget cuts, lawsuits, political attacks from hostile stakeholders, etc." (Andrews et al., 2011, p.356).

These findings may also be true for municipalities and their mayors who can be seen as public managers. In this sense, the external networking of the latter (such as interactions with other mayors, regional, national or European MP's) could be especially beneficial for the municipality in coping with contemporary global challenges such as climate change, peace and conflict, energy and democracy to only name a few. This is also highlighted by Benjamin Barber (2013) in his controversially discussed book "If Mayors Ruled the World – Dysfunctional Nations, Rising Cities". Barber (2013) states that there is an increasing amount of social, political and economic challenges at the global level which increasingly affect the local level. This, in turn, entails an increasing importance of cities in coping with these challenges and threats. According to Barber (2013) external networking of mayors is of key importance for urban problem-solving. As Barber (2013) states it: "In an interdependent world, cities must act together in order to assure the efficacy of what they try to do alone" (p. XVI). Networking, in that sense, is a means to an end. Based on the theoretical findings displayed above this could mean that if a mayor externally networks then it might help the mayors to cope with current socio-political challenges by allowing him to circumvent the otherwise limited abilities to do so and to enter the global stage.

However, few studies have focused on the determinants of external networking of mayors in specific or public managers in general (Andrews et al., 2011). The limited number of empirical studies conducted either focused on private sector networking or revealed no clear evidence of relationships which could be used as starting point for future research (Andrews et al., 2001, p.356). Also, previous research often focused exclusively on the organization itself in order to explain differences in varying levels of external networking of managers rather than on environmental determinants (Andrews et al.,

2011). This approach, however, falls short of explaining varying levels of external networking of mayors as these can be seen as managers of similar organizations (their municipalities).

To explain these differences in external networking is crucial, though. Given the positive effect of external networking on organizational performance (e.g. of a local government), it is necessary to fully understand the factors determining the external networking of mayors. Is the latter determined exclusively by the mayor's personal preferences for a particular leadership-style or is it also influenced by his/her constitutional setting, his/ her municipal size and personal capabilities in which the mayor operates? Knowledge of this type will shed light on factors that can be used to empower mayors for adopting a more active role in facing major socio-political challenges. If they are able to do so the subsequent thesis might entail a huge societal impact as mayors would be actually able to compensate for e.g. negative consequences of the globalization for the local level and, thus, improve the overall living standards of the population within their cities. Therefore, the following research aims at filling the theoretical gap regarding the determinants of external networking of mayors. Based on the current state of the theory, we will focus on the explanatory power of leadership-styles as determinant of varying levels of external networking. Also, environmental factors which are assumed to affect both leadership-style and external networking will be included in the research in order to compensate for the omission in previous research. These are the constitutional setting (local authority and institutional strength), the municipal size and personal capabilities of the mayor (experience and education).

Research Question

The research paper aims at answering the following research question: **To what extent do the leadership-style and other factors (constitutional setting, municipal size and personal capabilities) explain differences in the degree to which mayors in 17 European countries in 2003/4 engage in external networking?** The explanatory research question addresses the European mayor as unit of analysis. The dependent variable is degree of external networking. In the analysis we will consider how the mayor's leadership-style and other independent variables (constitutional setting, municipal size and personal capabilities) affect external networking. Leadership-style is an intervening variable as it is assumed to be affected by the independent variables and also shaping the external networking of a mayor.

Before answering the main research question we will answer two descriptive questions regarding the main variables in the analysis first:

1. **To which extent were leadership-styles applied by European mayors in 2003/2004 strategic?**

2. **To which extent did European mayors in 2003/04 externally network?**

Then we continue with two explanatory questions. First we consider:

3. **How were differences in leadership-styles of European mayors affected by differences in constitutional settings, municipal size and the mayor's personal capabilities in 2003/04?**

Subsequently, we will see how these variables affect the main dependent variable:

4. How was the level of external networking of European mayors affected by (a) their leadership-styles and b) by differences in constitutional settings, municipal size and *the mayor's personal capabilities* in 2003/04?

Theory/Concepts

Several choices regarding the theoretical foundation of this research were made:

Regarding the theory and concepts used for this research, we decided to deduce our hypotheses from both quantitative and qualitative studies which is primarily a consequence of the low number of the former being available on this topic.

With respect to our unit of analysis, we exclusively considered studies which dealt with public managers. Studies focusing on the external networking of private managers were not taken into account. As demonstrated by researchers over the last decades (see Rainey, Backoff & Levine,1976; Bower, 1977; Rainey, 1979; Wittmer, 1991; Rainey, Pandey & Bozeman, 1995; Cook, 1998) there are fundamental differences between public and private mangers respectively organizations. A recent study by Andersen (2010) further added to this body of literature by finding out that there are "significant differences between public and private managers regarding leadership-styles" (p. 137). As leadership-style is our core explanatory variable regarding the determinants of external networking of European mayors, theories of external networking of private managers were, consequently, not considered.

Another decision is based on our dependent variable external networking. As the concept of "networking" needs to be distinguished from the network itself (Walker, O'Toole & Meier 2007) we only took account of research which clearly referred to the former. If there was no clear distinction i.a. by using the names of the concepts interchangeably, the research was not taken into account.

Theory of Planned Behavior

Ajzen's "Theory of Planned Behavior" (1991) was used as a theoretical foundation for this bachelor thesis. In his research Ajzen (1991) focused on the determinants of human behavior in specific situations. He found that the actual behavior is predominantly shaped by two factors: First, it is determined by the actual ability to act and the control of an individual in a given situation which depends "e.g. on time, money, skills, cooperation of others" (Ajzen, 1991, p. 182). Secondly and presumably even more important, an individual's behavior is shaped by the perceived behavioral control which is linked to the actual control and shaping the individuals motivation towards a certain action in a specific context (Ajzen, 1991, p. 183).

Hence, the behavior examined in our research is the external networking of European mayors. While trying to explain their behavior, we will, thus, focus on factors which determine the actual control mayors have regarding their degree of external networking. Additionally, we inferred how these factors

might presumably shape their motivation to externally network. On this basis, we derived our hypotheses which were tested within the scope of this research.

Determinants of Leadership-Styles

The leadership-style a mayor adopts can be characterized as the "the product of the interaction between leaders and the leadership environment with which they are faced" (Elgie, 1995, p. 23) and is based on the decision which the mayor makes (Judd, 2000). Even though there are many aspects of leadership-styles, we will primarily focus on how the leaders perceive their office in this research which can be done in a rather strategic or reproductive manner (Getimis & Hlepas, 2006). A leadership-style will be labelled "strategic" if a mayor has "distinctive strategic policy agendas" which he/she tries to "incorporate in the authority's policy making" (Getimis & Hlepas, 2006, p. 179). On the opposite, a leadership-style will be labelled "reproductive" if a mayor does not develop such a "long-term agenda" and favors a "reproduction of the status quo" (Getimis & Hlepas, 2006, p. 179). It is, however, also possible that a mayor deploys characteristics of both strategic and reproductive leadership-styles.

Regarding the determinants of leadership-styles, Lowndes and Leach (2004) found that the combination of constitutional setting in which a municipality is located, the personal capabilities of a mayor and the municipal size determines the leadership-style of a mayor to a large degree (Lowndes & Leach, 2004). Hence, these shall serve as a basis for analyzing the determinants of leadership-style.

First, the constitutional setting pertains to the formal relationship between a municipality and upper-level governments, e.g. the state government or the federal government (Lowndes & Leach, 2004). These "institutions shape political behavior by providing a relatively systematic and stable set of opportunities" (Lowndes & Leach, 2004, p. 566). An important characteristic of this relation is the autonomy a municipality has from upper-level governments. It seems plausible to expect that mayors of municipalities with more local autonomy develop a more strategic leadership-style than mayors of municipalities with less local autonomy as the independence from central government offers the formal possibility and also the need to actually deploy an individual strategy. According to Ajzen (1991) we can also expect that a high degree of local autonomy increases the mayor's motivation to deploy a presumably more challenging strategic leadership-style. If this would be not the case and the mayor would deploy a reproductive leadership-style, he/she would not only voluntarily give up the chance to shape the socio-economic situation of his/her municipality. He/ She would rather create a self-imposed stagnation of the socio-economic situation which seems implausible. Therefore, the first hypothesis will be:

Hypothesis 1: The higher the degree of local autonomy of mayors in a given European country was in 2003/04, the more strategic the leadership-style of the mayor was.

A second aspect of the constitutional context pertains to the institutional strength of a mayor which determines "who makes decisions on what terms and with what accountabilities" (Greasley & Stoker, 2008, p. 727). Greasley and Stoker (2008) conducted a study which revealed that mayors, in contrast to council leaders, develop a more strategic leadership-style[2]. They concluded that the more powers a mayor has vis-à-vis the council, the less veto's by the latter he needs to fear and the less internal constraints there are. Hence, the mayor is freer in developing a strategic leadership-style (Greasley & Stoker, 2008, p. 724). We assume that a mayor will effectively use this chance as a higher degree of institutional strength will be associated with a higher perceived control of the situation and, thus, a higher motivation of the mayor to deploy a strategic leadership-style (Ajzen, 1991). Therefore, the hypothesis will be:

Hypothesis 2: The higher the degree of institutional strength of a mayor in a given European country was in 2003/2004, the more strategic the leadership-style of the mayor was.

However, not only the (national) constitutional context matters. The local context is also relevant and needs to be included when explaining mayoral leadership-styles (Lowndes & Leach, 2004). An important aspect of the local context is the size of the municipality which refers to the population. There are no formal ways in which the municipal size determines the ability to act of a mayor. In line with Ajzen (1991), though, the size of a given municipality can be assumed to affect the leadership-style of mayors as one might e.g. expect mayors of large cities to be especially confident in the impact they can have and, therefore, to apply a rather strategic leadership-style. This is also supported by findings of Heinelt and Hlepas (2006, p. 190) which leads us to the following hypothesis:

Hypothesis 3: The larger the municipal size of a European municipality was in 2003/2004, the more strategic the leadership-style of the mayor was.

Personal Capabilities are defined as "skills and capacities drawn upon by political actors in designing and implementing rules within specific contexts that provide both constraints and opportunities" (Lowndes & Leach, 2004, p. 564). It can be expected that these capabilities directly influence the formal ability of a mayor to externally network (Ajzen, 1991). Further, it is to be expected that the more capabilities a given mayor has, the more strategic his/her leadership-style will be. The reasoning is that a strategic leadership-style is more challenging than a reproductive leadership-style which, hence, requires more skills. Also, the more capabilities a mayor has, the higher will be the perceived control of a mayor regarding his/her external networking which makes it actually more likely that he uses his

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[2] In their research Greasley and Stoker (2008) focused on the determinants of a "facilitative" (p. 722) leadership-style which, however, matches the concept of "strategic" leadership style applied in our research.

capabilities to deploy a strategic instead of a less challenging reproductive leadership-style. Therefore, the hypothesis will be:

Hypothesis 4: The higher the personal capabilities (education and experience) of a European mayor were in 2003/2004, the more strategic the leadership-style of the mayor was.

Determinants of External Networking

In this research external networking implies the interaction of a mayor with other territorial political representatives (such as local MP's, European MP's, Members of the Regional Board, other mayors etc.) who are not located in the mayor's municipality.

Regarding the constitutional context, it can be first of all stated that mayors of municipalities with low levels of autonomy usually have a high access to the central level of government as a kind of compensation for their otherwise limited power (Heinelt & Hlepas, 2006). For these mayors, this access might offer the chance to interact with several external actors. Due to the limited autonomy it can be assumed that the mayors will effectively use these opportunities to externally network as it represents one of the few chances for the mayors to take influence on issues affecting the local level and, therefore, to balance the weak political status of their municipalities. In this way, we assume that mayors of municipalities with less local autonomy have a special motivation to externally network (Ajzen, 1991). By inference this implies that mayors governing municipalities with a comparatively high level of local autonomy neither have this access to the central government nor the motivation to externally network as they are less dependent on external actors in order to pursue their policies. Therefore, we expect a lower level of external networking for these mayors. Consequently, our next hypothesis will be:

Hypothesis 5: The higher the degree of local autonomy in a given European country was in 2003/04, the lower the degree of external networking of the mayors was.

Institutional strength is supposed to directly affect the external networking of mayors for the same reasons why it influences the latter's leadership style. If a mayor has more powers vis-à-vis the council and, thus, needs to fear less vetoes by the latter, then the mayor will have more capacities for other issues than e.g. constantly negotiating with the council of his/her municipality. This might enable the mayor to address more important issues which, in turn, require external networking to e.g. mobilize ressources in order to be tackled. Again, a higher level of institutional strength will also result in a higher perceived control of the mayor regarding his external networking. As action is strongly dependent on an individual's motivation (Ajzen, 1991) this makes it more likely that the mayor will also effectively use this opportunity.

Hypothesis 6: The higher the degree of institutional strength of a European mayor was in 2003/2004, the higher the degree of external networking of the mayor was.

Municipal size is also assumed to directly affect the external networking as a municipality's resources might vary strongly depending on its population. Especially the access to contacts outside the municipality will increase with the size of the municipality. Both access to external contacts and the likelihood of being heard by other political actors is larger the larger the population of a municipality is. Due to these factors mayors of larger municipalities will also have a higher motivation to engage in external networking (Ajzen, 1991). This assumption is supported by findings of Heinelt and Hlepas (2006, p. 190).

Hypothesis 7: The higher the municipal size of a European municipality was in 2003/04, the higher the degree external networking of the mayor was.

The personal capabilities "Education" and "Experience" will also be considered. Both capabilities represent ways in which a mayor might have gained the knowledge about the beneficial implications of external networking in tackling current urban challenges or increasing the organizational performance in general. In this way, they not only determine the formal ability of a mayor to externally network, but also shape his perception regarding his own ability to do so (Ajzen, 1991). Therefore, the next hypothesis will be:

Hypothesis 8: The higher the personal capabilities of a European mayor were in 2003/2004, the higher his/her degree of external networking was.

The research of Andrews et al. (2011) focused on the relationship between leadership-styles and external networking. Their findings clearly indicate that rather reproductive leadership-styles[3], in contrast to rather strategic ones, reduce the amount of external managerial networking (Andrews et al., 2011). On the other side, the findings of Andrews et al. (2011) suggest that there is no significant relation between strategic leadership-styles and external managerial networking.

As our research focusses on the latter relation, there is no hypothesis to be deduced from theory and, hence, the relation will be tested without initial hypothesis.

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[3] Various authors have developed different conceptualizations of leadership-styles. Following Getimis and Hlepas (2006) we will distinguish between reproductive and strategic leadership-styles as these are appropriate in the light of our measures (see operationalization for a more detailed reasoning and description). Andrews et al. (2011) originally distinguished between "prospecting" and "defending" leadership-styles which describe essentially the same concepts, though.

The subsequent causal diagram summarizes the hypotheses explained above:

Figure 1: Our Causal Model
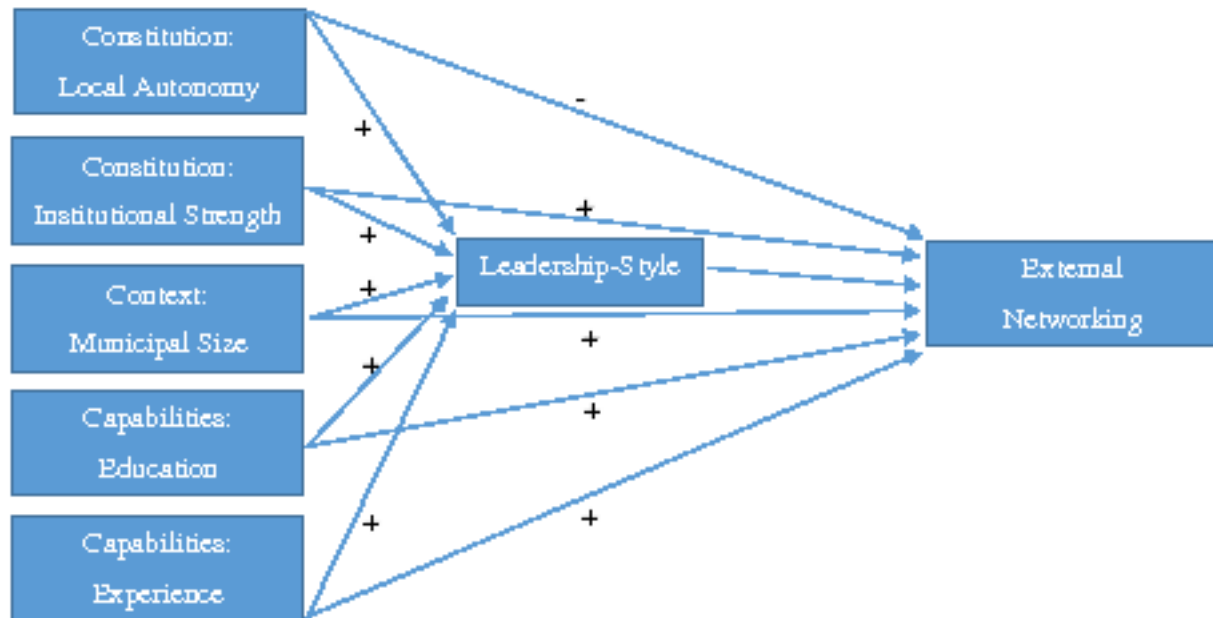
Methodology

Research Design

A large-n cross-sectional research design will be used for our study meaning that the data were collected at the same time without any manipulation. The data used are survey data collected at the individual-level with European mayors from 17 countries as unit of analysis.

Internal Validity

Although correlation between the variables can be established fairly easily, spurious causation threatens the internal validity of the results as the observed associations might also originate from third variables (Dooley, 2001). An exclusion of the latter might lead to a specification error (ibid.). In the research at hand, the threat of spurious causation will be reduced and controlled for by including the independent variables constitutional setting, municipal size and personal capabilities as these are likely to have an impact on the relation between leadership-style and the external networking according to theory and can, thus, be seen as control variables. Controlling in this sense means to either hold constant the independent variables or to remove them to see if the coefficients change (ibid.).

Reverse causation results from the fact that the data are collected at a single point of time and, hence, one cannot be absolutely sure about the causal direction (Dooley, 2001). This threat could be

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solved by gathering more information through succeeding measures in a longitudinal study (ibid.). As this study is, however, the starting point of a longitudinal study, there are no additional information available and reverse causation cannot be ruled out. Neither can it be ruled out theoretically as a mayor may have been externally networking even before he hold the office of a mayor. Likewise a mayor may have adopted a certain leadership style before coming into office which needs to be considered when interpreting the results.

External Validity

Despite several limitations, the research design implies a convenient external validity of the research. First, the selected countries within our sample represent all major types of European local government systems. Also, these are geographically distributed across Europe and there is a large variety within the sampled population of European mayors. Therefore, the results can be generalized to European countries or to subunits of the sample such as countries or European regions. However, generalizations to other populations, settings and times are not possible. Also, only mayors governing municipalities with more than 10,000 inhabitants were included in the study which clearly reduces the external validity. Another limitation is the variation in response rates which varies from 21% in France to more than 76% in Denmark (Bäck, Heinelt & Magnier, 2006, p. 14).

Still, the large number of participants which created a unique large-n dataset about European mayors is a clear advantage. The research design allows us to not only measure a broad range of variables but also to measure the interrelation between these by including them in the multivariate regression model. Even though there are certain disadvantages of the research design which, however, cannot be ruled out it can be stated that this research design is the best approach in order to answer the research question.

Case Selection and Sampling

The population for this study stems from the first European Mayor Project which is a cross-sectional study and was conducted between 2003 and 2004 (Bäck et al., 2006). Hence, the data can be classified as survey data. These were collected through a series of national surveys for which different sampling strategies were used in different countries of the survey (ibid.)[4]. The population consists of more than 2700 European mayors and top local political leaders who are governing municipalities differing in size from 10.000 to more than 499.999 inhabitants (ibid.). In total, the EMP includes mayors from 17 European countries[5] (ibid.). In order to be eligible as "top local political leader" a person needs to be in

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[4] For a more detailed account of the sampling strategies see page 10-16 of "The European Mayor. Political leaders in the Changing Context of Local Democracy" (Bäck et al., 2006).

[5] These countries are: Austria, Belgium, Czech Republic, Denmark, England, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, and Switzerland (Bäck et al., 2006)

a "political/administrative top position" (Bäck et al., 2006, p. 12). Further, he or she needs to be "publicly visible in what they do and politically accountable for their actions (…)" (Bäck et al., 2006, p. 10). These criteria lead to the fact that not only persons who are officially labelled as mayor are included in the study.

The sample provided by the EMP is the best way to answer the research question. First, the data necessary for this thesis are all included in the EMP which makes our research financially and temporally feasible. Also, both the survey of the EMP and our research focus on the European mayor as unit of analysis. Generally, there is no other survey providing a comparable amount of representative information on European mayors as the EMP does which is why the data provided by the EMP are convenient for the purpose of our research.

Operationalization

Independent Variables

The independent variable "Local Autonomy" was operationalized by using the "Self-rule Index for Local Authorities" mandated by the European Commission which covers the years from 1990 to 2014 (Ladner, Keuffer & Baldersheim, 2015). Hence, we use a continuous variable for this purpose. Based on eleven variables, the index provides the mean value of local autonomy for each of the countries included in our research for every five years since 1990. Consequently, we calculated the local autonomy for 2003/04 which is the year when the EMP was conducted by calculating the mean of the local autonomy values of 2000 and 2005 which should approximately fit to the data of the EMP. The values range from 0 (representing the lowest possible local autonomy) to 37 (representing the highest possible local autonomy). As this is a variable measured on the country-level, the respective values were allocated to the mayors according to their nationality.

The second independent variable "Institutional Strength" was operationalized by using the "Index of mayoral strength" computed by Heinelt and Hlepas (2006, p.38). This index is compiled on the basis of nine institutional strength-related issues and summarizes the values which have been attached to these nine characteristics. The index is based on a scale ranging from 0 (representing the lowest possible institutional strength of a mayor) to 14 (representing the highest possible mayoral strength of a mayor). Again, this variable is measured on the country level which implies that the respective values were allocated to the mayors according to their nationality.

The third independent variable "Municipal size" was operationalized as the population size of a given municipality. Thus, "Municipal size" is a continuous variable in our model. It was measured by using question 07 (v283) of the EMP where mayors were asked to indicate the number of inhabitants their municipality has. For the regression analysis we used a logarithmic transformation of the data. According to Denters, Goldsmith, Ladner, Mouritzen and Rose (2014) there are both "substantive and statistical" (p. 32) reasons to do so: Substantively, there are reasons to expect that differences "between

authorities of relatively large size – for instance 250,000 and 500,000 inhabitants – may be of far less consequence (…) than the difference between 5,000 and 10,000 inhabitants or even fewer (or vice versa)" (Denters et al., 2014, p. 32). The same line of argumentation can be found at Dahl and Tufte (1973, p. 42, 62-65). From a statistical point of view using the logarithmic transformation of the data is useful as it prevents that the largest municipalities in our sample exert an extreme leverage on the coefficients computed by means of the multivariate regression analysis (Denters et al., 2014).

The independent variable "Personal Capabilities" consists of both "Experience" and "Education" which were both answered by using the questionnaire of the EMP. Experience will be operationalized by using question 22 (v213) of the questionnaire which asks the participants for the total number of years being a mayor. "Education" was operationalized by using the highest completed education of a mayor which was asked for in question 34 (v280). Mayors could choose between four different answers: 1=Elementary School, 2=Secondary school or equivalent, 3= Higher vocational training, 4=University or equivalent. Mayors with a university degree were additionally asked to specify in which state they got their university degree. The possible answers were law, political and social sciences, economy, architect-engineering, humanistic area, medicine, natural sciences area. For the purpose of our research, these answers have been grouped so that all states except the political sciences were categorized as 4 and degrees in political sciences as 5 as we assume that such a degree might be especially beneficial when being a mayor.

Intervening Variable

The main intervening variable "Leadership-style" was operationalized by using question 1 (v1-16) of the questionnaire which asks the participants to estimate the importance they attach to various tasks linked to the office of a mayor. The possible answers range from 0 (Not a task of a mayor) to 4 (Of utmost importance). The varying answers can be assigned to either a strategic or a reproductive leadership-style. A strategic leadership-style refers to being "pro-active" and "change-oriented", setting long term-term goals, mobilizing support and fostering cooperation and capacity building (Getimis & Hlepas, 2006, p. 179ff.). A reproductive leadership-style will be associated with a "re-active", "supervising" and "short-term oriented" way of working (Getimis & Hlepas, 2006, p. 179ff.). Generally, such a mayor would be interested in preserving the status-quo (ibid.). In contrast to other operationalizations of the concept "leadership-style", using the definition of Getimis and Hlepas bears the advantage that these concepts are clearly reflected in the questions of the questionnaire as both participated in the creation of the latter. For determining the leadership-style of a given mayor, we focused exclusively on the answers mayors gave on items reflecting a strategic leadership-style (v1, 2, 4, 5, 7, 9, 11, 12)[6]. The measure was operationalized based as the product of the average importance

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[6] For the exact list of items reflecting "Strategic" and "Reproductive" leadership-styles, see Appendix 2.

mayors attach to items representing a strategic leadership-style and the breadth of strategic tasks they value as being at least of little importance to them. The average importance is measured on a scale ranging from 0 (Not a task of a mayor) to 4 (Of utmost importance) whereas the breadth was measured on an 8-point scale on which each point represents an additional strategic task being at least of little importance to a mayor. The combined index ranges from 1 (representing a non-strategic leadership-style) to 32 (representing a fully strategic leadership-style).

Dependent Variable

The dependent variable "External Networking" was operationalized by using question 6 (v63-v77) of the questionnaire of the European Mayor Project where the participants were asked for the frequency of communication with regard to 15 persons and groups. For the purpose of this study, these were divided into "internal/municipal actors" and "external actors"[7] (Andrews et al. (2011) defined "external" as "agencies and individuals outside of their own core organization" (p.356). Based thereon and applied to our research, we will define external actors as "official political territorial actors outside of the municipality of a mayor" so that the municipality will be seen as the mayor's core organization. The possible answers ranged from 0 (Seldom/never) to 4 (Daily). The variable was operationalized as the product of the average frequency of contact to external actors and the breadth of actors a mayor interacts with in total. The average frequency could range from 0 (seldom/never) to 4 (Daily) whereas the average breadth was measured on a 6-point scale on which each point represents one additional external actor to which a given mayor communicates at least 1 to 3 times a month. The combined index ranges from 0 (representing zero external networking) and 24 (representing the highest possible degree of external networking).

Data analysis

The subsequent part deals with the data analysis. The structure is predetermined by both the overall-research question and the sub-questions which we seek to answer within the limits of this bachelor's thesis.

Frequencies of Leadership-Styles

For answering our first descriptive sub question "**To which extent were leadership-styles applied by European mayors in 2003/2004 strategic?**", the frequencies of leadership-styles of European mayors need to be analyzed.

Table 1 displays the frequencies for the scores of European mayors on the leadership-style index. As indicated by the mean displayed in table 1, European mayors scored on average 21.09 points

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[7] For the exact listing of items representing internal and external actors, see Appendix 1.

on the leadership-style index implying that the average European mayor deploys a predominantly strategic leadership-style. This is a comparatively high value given the fact that the index ranges from 0 to 32. What can be seen is that there is only a very little share of European mayors applying either barely strategic leadership-styles (2.7%) or moderately strategic leadership-styles (9.7%). Taken together, only 12.4% of the sample scored in that range. The by far largest share of European mayors (64.6%) scored between 16.01 and 24.00 on the leadership-style index and, thus, applies predominantly strategic leadership-styles. The second largest share of mayors,

Table 1: Frequencies Leadership-Style (Average Importance*Breadth) (N=2694)

		Valid Percent
Valid	Barely strategic (0.00-8.00)	2,7
	Moderately strategic (8.01-16.00)	9,7
	Predominantly strategic (16.01-24.00)	64,6
	Strongly strategic (24.01-31.99)	22,9
	Absolutely strategic (32.00)	,1
	Total	100,0

Mean: 21.09

22.9%, scored even higher implying that they deploy strongly strategic leadership-styles. Also noteworthy, there are even mayors who adopt absolutely strategic leadership-styles as we can see that 0.1% of European mayors scored a 32.00 on the index. As our index is composed of the average importance mayors attach to strategic tasks and the number of strategic tasks they value as being at least of little importance to them, these mayors must have scored on both measures the highest scores, as well. In order to obtain more information regarding the frequencies of European mayors with respect to their leadership-styles, these two measures are analyzed subsequently.

The mean regarding the average importance European mayors attached to strategic tasks accounts to 2.83 which is again a comparatively high value on a scale ranging from 0 to 4. It implies that the average European mayor attaches a moderate importance to strategic tasks. This is also reflected in the fact that the by far largest share (69.2%) of European mayors attaches a moderate importance to strategic tasks. Surprisingly, none of the European mayors in our sample scored under 1.00 and, thus, regards strategic mayoral tasks as being of very little importance in average to him/her. On the contrary, 1.9% of European mayors classify each of the strategic tasks as being of utmost importance to them.

The mean of the breadth accounts to 7.46 implying that European mayors classify 7 to 8 tasks in average as being at least somewhat important. This is a very high value as the maximum of the range is 8. The frequency distribution further reveals that 70% of the valid sample have a breadth of eight and, thus, scored even higher than the mean. 22.4% attach at least some importance to seven strategic tasks and only 7.6% have a lower breadth than seven.

The subsequent cross-table (Table 2) interrelates the countries of the mayors and the leadership-style index. The cells contain the relative percentage of mayors in relation to the overall numbers of countries from a specific country who scored in that range. In the last column the mean of each country is depicted. This enables us to identify in which countries which leadership-styles dominate and which

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countries deviate from the overall tendencies outlined previously. For presentation purposes, the sample we subdivided the sample into three new groups according to their score on the leadership-style scale.

Table 2: Country * Leadership-Style Crosstabulation (N=2694)
% within Country

		Leadership-Style			
		Barely/ Moderately Strategic (0.0-16.0)	Pre-dominantly Strategic (16.01-24.0)	Strongly/ Absolutely Strategic (24.01-32.0)	Mean
Country	Italy	13,4%	59,3%	27,3%	21,26
	Germany	7,2%	80,0%	12,7%	20,96
	Belgium	13,6%	72,1%	14,3%	19,97
	Switzerland	12,8%	77,7%	9,6%	20,15
	Czech Republic	14,3%	66,2%	19,5%	20,83
	Greece	15,9%	43,4%	40,7%	22,06
	Poland	17,4%	61,6%	21,0%	20,51
	Sweden	1,4%	23,9%	74,6%	24,93
	Hungary	1,3%	42,5%	56,3%	24,45
	England	13,8%	68,3%	17,9%	20,69
	Netherlands	41,0%	58,5%	0,4%	16,72
	France	6,4%	81,4%	12,2%	21,03
	Denmark	2,8%	58,3%	38,9%	23,53
	Portugal	9,8%	53,7%	36,6%	22,15
	Spain	6,6%	55,6%	37,7%	22,64
	Austria	7,7%	76,9%	15,4%	21,10
	Ireland	10,5%	73,7%	15,8%	21,43
Total		12,4%	64,6%	23,0%	21,09

What first becomes apparent is that in all countries of our sample only a small percentage of mayors deploys a barely or moderately strategic leadership-style. The only country for which this does not hold true are the Netherlands in which 41% of the mayors deploy this kind of leadership-style. Also, it can be seen that the general tendency of most mayors deploying at least a predominantly strategic leadership-style holds true for most of the European countries. In France (81.4%) and Germany (80.0%) mayors deploying predominantly strategic leadership-styles represent the highest relative share compared to all other European countries in our sample. On the contrary, only 23.9% of Swedish mayors deploy such a leadership-style which is the by far lowest value for this range. However, nearly three quarter of Swedish mayors (74.6%) deploy a strongly strategic leadership-style which might explain the low number of mayors from the same country deploying moderately strategic leadership-styles. In the Netherlands, mere 0.4% of the mayors deploy such a strongly strategic leadership-styles which is the lowest value within our sample. In only two countries, Greece and France, mayors adopt absolutely strategic leadership-styles with a national share of 2.1% respectively 0.5%. With respect to the mean values it can be seen that mayors from the Netherlands have the lowest mean with 16.72 implying that the average mayor deploys a predominantly strategic leadership-style there. On the other side, Swedish mayors have the highest mean with 24.93 implying that the average mayor deploys a strongly/absolutely strategic leadership-style there.

In a next step, we carried out an ANOVA-analysis in order to compare the means among the countries in our sample and to make firmer distinctions[8]. On the basis of this we can conclude that there is a large group of countries in which mayors deploy a leadership-style similarly strategic compared to the one applied by Swedish mayors (who scored the highest mean). These countries are: Italy, Czech Republic, Greece, Poland, France, Denmark, Portugal and Austria. Also, the analysis revealed that mayors from the Netherlands, Belgium and Switzerland deploy a leadership-style which is significantly less strategic than the one deployed by mayors in the other countries of our sample. In between these two groups there are mayors from Germany, Hungary, England, Spain and Ireland[9]. These mayors deploy a leadership-style which is less strategic than the one of mayors in the group led by Swedish mayors but also more strategic than mayors in the group led by Netherlandish mayors (in a negative sense).

Regarding our first descriptive sub-question **"To which extent were leadership-styles applied by European mayors in 2003/2004 strategic?"** we can draw the following conclusions: First, most of the European mayors adopt a leadership-style which is at least moderately strategic. Only few European mayors adopt less strategic leadership-styles. Further, most of the European mayors in our sample attach either a moderate or a great importance to strategic mayoral tasks and also regard more than seven out of eight strategic tasks as being at least of some importance to them.

Subsuming, the sample can be subdivided in three groups when looking at the country level. First, there is a large group of countries led by Sweden where the mayors have a leadership-style that is in average significantly more strategic than in the remaining countries of our sample. On the other side there is a group led by the Netherlands (in a negative sense) where mayors deploy a leadership-style which is significantly less strategic than in the other countries. In between these groups, there are the mayors from Germany, Hungary, England, Spain and Ireland which deploy a leadership-style not as strategic as mayors from the former group but also more strategic than mayors from the latter group.

Frequencies of External Networking

For answering our second sub-question **"To which extent did European mayors in 2003/04 externally network?"**, the frequencies of the external networking of European mayors need to be analyzed. Table 4 contains the frequencies for the external networking of European mayors. According to the mean European mayors scored in average 2.63 on the external networking index which is a very low number given that the index ranges from 0 to 24. What can be deduced from the frequencies

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[8] Before doing so, we carried out a homogeneity of variance test. As the test showed that there are significant differences with regard to the means of leadership-style in the European countries of our sample (sig.: .000), we decided to use Tamhane's T2 for the ANOVA analysis as this measure does not assume equal variances between the subunits.

[9] The mean of Ireland showed no significant differences to the mean of mayors from both Sweden (highest mean) and the Netherlands (lowest mean) which is why we assigned Ireland to the in-between group.

Table 3: External Networking (N=2659)

		Valid Percent
Valid	Not at all (0.00)	3,4
	Very limited degree (0.01-4.00)	75,9
	Rather limited degree (4.01-8.00)	17,5
	Moderate degree (8.01-16.00)	3,1
	High degree (16.01-20.00)	,0
	Total	100,0

Mean: 2.63

is that corresponding to the mean three-quarter (75.9%) and, hence, the by far largest share of mayors within our valid sample only externally networks to a very limited degree. Mere 17.5% externally network to a degree which we would still call rather limited. Only 3.1% of our valid sample scored higher than 8.01 and can be, thus, classified as moderately externally networking. On the other side, 3.1% of European mayors do not externally network at all. In order to obtain more information regarding the frequencies of European mayors regarding their external networking, the two measures of which the preceding index is a product are analyzed subsequently.

The mean of the average communication of European mayors with external actors accounts to 0.81 which is, again, a very low amount as the scale ranges from 0 to 4. It implies that the average European mayor has less than 1-3 times a month contact to external actors which is extremely seldom. This is also underpinned by the fact that 72.7% of European mayors scored between 0.01 and 1.00 implying that they communicate less than 1 to 3 times a month with external actors. Only 1.7% of European mayors communicate at least once a week with external actors and none of the mayors in our sample communicates on average 2-4 times a week with external actors.

Regarding the breadth, which is the number of external actors with whom they communicate in this context, the mean accounts to 2.62 indicating that in average European mayors communicate with 2 to 3 external actors.

The subsequent cross-table cross table interrelates the countries of the mayors and the external networking as variables. The cells contain the relative percentage of mayors in relation to the overall numbers of mayors from a specific country who scored in that range. For presentation purposes, the variable external networking was dichotomized in order to subdivide the sample into mayors with a relatively low degree (score of 0 to 4) and a relatively high degree of external networking (score of 4 to 24). The last column indicates the mean value mayors scored in a given country.

What can be seen is that there are large differences between the different countries in the varying ranges. In nearly each of the European countries of our sample the relative amount of mayors with a relatively low amount of external networking is by far higher than the relative share of mayors with a relatively high degree of external networking. The highest differences between these two groups can be observed for mayors from the Netherlands (97.2% / 2.8%) and Germany (92.3% / 7.7%). In Greece, the difference between both groups is smallest (59.7% / 40.3%). The only country in which mayors with a relatively high degree of external networking represent the larger share is Hungary. 61.7% of the

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Hungarian mayors actually belong to the group of mayors with a relatively high degree of external networking.

As for leadership-style, we also carried out an ANOVA-analysis in order to compare the means among the countries in our sample[10]. The analysis revealed that Hungarian and Austrian mayors have an average degree of external networking which is significantly higher than for the rest of European mayors. On the other side there is a second group of mayors from Belgium, Switzerland, Ireland and the Netherlands which have a significantly lower level of external networking than in the remaining countries.

Table 4: Country * External Networking Crosstabulation (N=2659)
% within Country

| | | External Networking | | |
		Relatively Low (0.0-4.0)	Relatively High (4.01-24)	Mean
Country	Italy	75,5%	24,5%	2,75
	Germany	92,3%	7,7%	1,76
	Belgium	87,1%	12,9%	1,84
	Switzerland	86,0%	14,0%	2,06
	Czech Republic	69,7%	30,3%	3,03
	Greece	59,7%	40,3%	3,98
	Poland	62,8%	37,2%	3,91
	Sweden	69,5%	30,5%	3,48
	Hungary	38,3%	61,7%	5,53
	England	85,1%	14,9%	2,22
	Netherlands	97,2%	2,8%	1,34
	France	73,4%	26,6%	3,14
	Denmark	78,1%	21,9%	2,87
	Portugal	70,7%	29,3%	3,21
	Spain	83,8%	16,2%	2,24
	Austria	65,0%	35,0%	3,88
	Ireland	72,2%	27,8%	2,42
Total		79,3%	20,7%	2,63

the remaining countries. The remaining countries form a group in which mayors have a significantly lower average level of external networking than mayors from Hungary (who scored highest on average) but a higher degree than mayors from the Netherlands (who scored lowest on average).

With regard to our second descriptive question **"Which frequencies regarding the external networking of European mayors can be observed?"** we can, thus, state that most of the European mayors only externally network to a very limited degree. In average they communicate with 2 to 3 actors less than 1 to 3 times a month. In Hungary and Austria mayors have a significantly higher degree of external networking than in other European countries whereas mayors from Belgium, Switzerland, Ireland and the Netherlands have a significantly lower degree than other European countries. In between these two groups there is a large group of the remaining countries of our sample. In these countries mayors have a higher degree of external networking than in the latter group but a lower degree than mayors from Hungary and Austria.

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[10] Again, we carried out a homogeneity of variance test in advance of the ANOVA analysis. The test showed that there are significant differences with regard to the means of external networking in the European countries of our sample (sig.: .000). Hence, we decided again to use Tamhane's T2 for the ANOVA analysis.

Regression Analysis

Preliminary Remarks

Before analyzing the results of our regression we carried out a sensitivity analysis by excluding influential cases from our model in order to see if the coefficients change. The rule for excluding the cases was that the Cook's distance of a given case must not be higher than 4: n where n represents the number of valid cases before excluding the influential cases. In the regression analysis, only the tables which exclude the influential cases will be displayed. Further, we checked the regression models for multicollinearity. In none of the regressions there were any indications for the existence of multi-collinearity[11]. Also, we checked the linear regression assumptions which need to be met in order to carry out a linear regression analysis. As not all of the assumptions tested are met, several limitations regarding the results of our analysis need to be considered when interpreting the results[12].

Additionally, we carried out a robustness-analysis. In this analysis we tested in how far using the individual components of the indices used as operationalization for leadership-style and external networking lead to different levels of significance of our regression models[13]. According to the results our models are not sensitive to the different operationalizations. Hence, we decided upon the overall index of both variables as operationalization (average importance*breadth respectively average frequency*breadth) as these are the most comprehensive approaches. As the analysis of the frequencies of both leadership-style and external networking revealed differences between mayors from different countries, we carried out a stepwise approach in order to see if the countries of mayors also have an effect on both leadership-style and external networking. First, we included country-dummies in order to see if the coefficients change. As they did change in both models, we included both local autonomy and institutional strength in our regression analysis in order to which type of variable (country-level or individual level) explains levels of our dependent variables best.

Determinants of Leadership-Style

In order to answer our first explanatory sub question "**How are differences in leadership-styles affected by differences in constitutional settings, municipal size and the mayor's personal capabilities?**" the subsequent part will answer hypothesis 1 to 4. In order to do so, we carried out a multivariate regression including leadership-style as a dependent variable and local autonomy, institutional strength, municipal size, education and experience as independent variables. Table 7 summarizes the results.

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[11] For more detailed information, see Appendix 4
[12] For a more detailed account of the linear regression assumptions, see Appendix 5.
[13] See "Operationalization" for a more detailed account of the components of the indices used for the operationalization of leadership-style and external networking.

Table 5: Model Summary Leadership-Style[a,b,c,d] (N=2460)

	Unstandardized Coefficient B	Standardized Coefficient Beta	Sig.
(Constant)	15,331		.000**
Local Autonomy	.172	.154	.000**
Institutional Strength	.126	.084	.000**
Municipal Size	.486	.102	.000**
Education	-.006	-.019	.326
Experience	-.080	-.136	.000**

a. Dependent Variable: Leadership-Style
b. Selecting only cases for which Cook's Distance < .00153
c. Cases excluded=145
d. Adjusted R^2=.05

Hypothesis 1

The results of our analysis support our first hypothesis ("The higher the degree of local autonomy of mayors in a given European country was in 2003/04, the more strategic the leadership-style of the mayor was"). As expected there was a statistically significant positive effect (unstandardized coefficient B: +.17). Even more precisely, the unstandardized coefficient indicates that for each unit that a country increases on the local autonomy index, the leadership-style of a European mayor becomes .17 points more strategic on the leadership-style scale (holding constant every other variable included in the model). Even though these values need to be interpreted carefully, we can state that in order to make a mayor's leadership-style more strategic by one unit, the local autonomy of municipalities in the given country needs to increase by approximately six points on the local autonomy index. The only countries of our sample which increased the local autonomy to such a degree between 1990 and 2014 were Italy and Poland. The other countries scored lower than this and there are also countries within our sample such as Denmark, Hungary and Spain where the local autonomy decreased in the same period.

Hypothesis 2

Our second hypothesis ("The higher the degree of institutional strength of a mayor in a given European country was in 2003/2004, the more strategic the leadership-style of the mayor was") is also supported by the results of the analysis as there is a significant positive effect (unstandardized coefficient B: +.13). Furthermore, the unstandardized coefficient B indicates that if a country increases the institutional strength of its mayors by one point on the index created Heinelt and Hlepas (2006), the leadership-style would become more strategic by .13 on the leadership-style scale (holding constant all the other variables included in our model). Consequently, an increase of 7.7 points regarding the institutional strength is necessary in order to increase the leadership-style of a mayor by one point towards a fully strategic leadership style. As the institutional strength index ranges from 0 to 14, though, this would mean that a given country would need to climb more than half of the scale.

Hypothesis 3

The results of the regression analysis support our third hypothesis ("The larger the municipal size of a European municipality was in 2003/2004, the more strategic the leadership-style of the mayor was") as there is a significant positive effect (unstandardized coefficient B: .49). As we used the logarithmic transformation of municipal size for the regression, the fact of B amounting to .49 implies that an increase of the population of a given municipality by one percent increases the mayor's score on the leadership-style scale by .0049 (holding constant all the other variables included in our model) (Benoit, 2011). This, in turn, implies that a municipality would need to grow by more than 204% in order to increase the "strategicness" of a mayor's leadership-style by one unit.

Hypothesis 4

For our fourth hypothesis ("The higher the personal capabilities (education and experience) of a European mayor were in 2003/2004, the more strategic the leadership-style of the mayor was"), both the coefficients for education and experience were analyzed. With respect to education the results of the regression analysis do not support our hypothesis as there is no statistically significant positive relation as expected (unstandardized coefficient B: -.01). This also holds true for experience as there is a statistically significant negative relation instead of an expected positive relation (unstandardized coefficient B: -.08).

To conclusively answer our first explanatory sub-question **"How are differences in leadership-styles affected by differences in constitutional settings, municipal size and the mayor's personal capabilities?"** the effect sizes of the variables will be compared by using the standardized coefficient Beta as displayed in table 7. First, we can state that local autonomy has the strongest effect on leadership-style in our model as the standardized coefficient Beta of this accounts to .15 whereas the effect of experience is only slightly weaker with a standardized coefficient B of -.14. As the standardized coefficient Beta ranges from -1 to 1 where 0 indicates no relationship we can also deduce that each of the variables included in our model only exerts a comparatively weak effect on the leadership-style of a mayor. Furthermore, only 5.0% of the variance in the leadership-style of European mayors in 2003/04 are explained by the variables included in our model.

Determinants of External Networking

For answering our second explanatory sub-question, we carried out a multivariate regression including external networking as a dependent variable and local autonomy, institutional strength, municipal size, leadership-style, education and experience as independent variables. The subsequent table summarizes the results.

Table 6: Model Summary External Networking[a,b,c,d] (N=2428)

	Unstandardized Coefficient B	Standardized Coefficient Beta	Sig.
(Constant)	-1.748		.000**
Local Autonomy	.035	.062	.003**
Institutional Strength	-.009	-.012	.559
Municipal Size	.388	.153	.000**
Leadership-Style	.101	.230	.000**
Education	-.002	-.015	.443
Experience	-.008	-.025	.119

a. Dependent Variable: External Networking
b. Selecting only cases for which Cook's Distance < .00156
c. Excluded cases=133
d. Adjusted R^2=.08

Hypothesis 5

The results of the regression analysis do not support our fifth hypothesis ("The higher the degree of local autonomy in a given European country was in 2003/04, the lower the degree of external networking of the mayors was") as there is a statistically significant positive relation instead of an expected negative relation (unstandardized coefficient B: .04). Further, the value of .04 indicates that for an increase of one unit in the level of local autonomy in a given country, the degree of external networking will increase by .04 (holding constant all the other variables included in our model). Hence, a country would need to increase the local autonomy of its municipalities by 25 points on the local autonomy index in order to increase the external networking of its mayors by one unit. None of the countries included in our sample reached this value for the period between 1990 and 2014.

Hypothesis 6

Our sixth hypothesis ("The higher the degree of institutional strength of a European mayor was in 2003/2004, the higher the degree of external networking of the mayor was") is not supported by the results of the regression analysis as there is no statistically significant positive relation as expected.

Hypothesis 7

The results of the regression analysis support our seventh hypothesis ("The higher the municipal size of a European municipality was in 2003/04, the higher the degree external networking of the mayor was"). As expected, there is a statistically significant positive effect (unstandardized coefficient B: .39). An unstandardized coefficient B of .39 implies that an increase of 1% regarding the inhabitants of a municipality would increase the external networking by.0039 on the external networking scale (Benoit, 2011). This implies that the municipal size needs to be increased by more than 256% in order to increase the degree of external networking of a given mayor by one point on the external networking scale.

Hypothesis 8

For our eighth hypothesis ("The higher the personal capabilities of a European mayor were in 2003/2004, the higher his/her degree of external networking was") both education and experience were analyzed. With regard to education, there is against expectations no statistically significant positive relation. Thus, the results of our regression analysis do not support our hypothesis for education. The same holds true for experience as there is no statistically significant positive relation as expected.

Hypothesis 9

The main relationship we aimed at analyzing within the scope of this thesis is the one between the leadership-styles of European mayors and the external networking of the latter. Our findings indicate that there is a statistically significant positive relation between these two variables (unstandardized coefficient B: .10). More precisely, the findings suggest that an increase in strategic leadership style by one unit would increase the degree of external networking of a mayor by .10. As, however, leadership-style is measured on a 4-point scale the maximum increase in external networking that can be caused by the leadership-style accounts to approximately 0.4.

In order to subsuming answer our sub-question "**How is the level of external networking of European mayors affected by (a) their leadership-styles and b) by differences in constitutional settings, *municipal size and the mayor's personal capabilities*?**" by using the standardized coefficients Beta as displayed in table 6, we can state that the level of external networking is most strongly affected by the leadership-style of European mayors. This finding highlights the importance of leadership-styles when trying to explain the external networking of European mayors even though the actual coefficient of .23 is still comparatively low.

With respect to b) we can state that among the remaining variables the municipal size exerts the strongest influence on our dependent variable external networking with a standardized coefficient Beta accounting to .15. Local autonomy (.06) exerts considerably less influence on the degree to which European mayors network. There is no significant effect of institutional strength, education and experience on external networking. Thus, we can state generally that the only individual level variables which have a significant impact on external networking are municipal size and leadership-style. The only country-level variable for which this holds true is local autonomy. When interpreting these results, though, one needs to consider that only 8% of the variance in the external networking of European mayors is explained by the preceding regression model.

Answering Our Research Question: The Overall Model

The subsequent diagram displays the results of our regression analysis. The coefficients included are the standardized coefficients Beta for Significant relations.

Figure 2: Final Causal Model
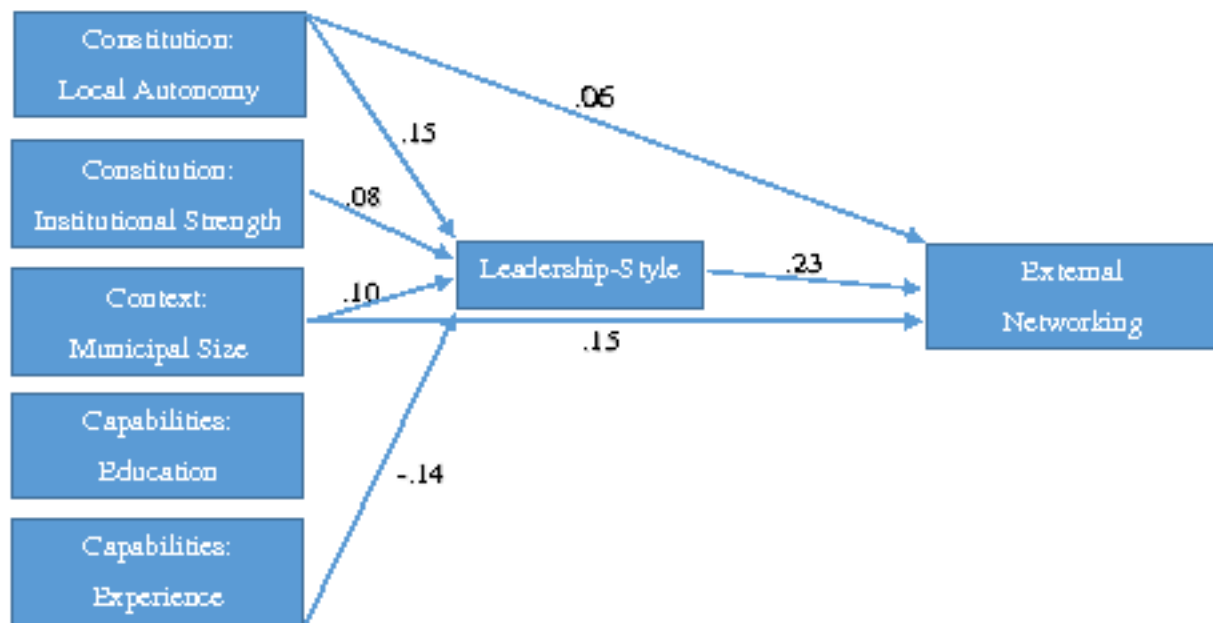
In order to answer our overall research question "**To what extent do the leadership-style and other factors (constitutional setting, municipal size and personal capabilities) explain differences in the degree to which mayors in 17 European countries in 2003/4 engage in external networking?**" we will subsequently analyze the overall effects of each variable on our dependent variable. First, we computed the indirect effect each variable exerts on external networking by using the product rule and multiplying the effect each variable exerts on the mediating variable leadership-style with the effect the latter exerts on external networking. The results are displayed in table 7.

For the independent variables leadership-style and education we could not compute an indirect effect as for the former no indirect effect is possible according to our model and for the latter no significant effect existed. Hence, the direct effect of leadership-style on the degree of external networking of European mayors resembles its total effect on the latter. For education there was no significant direct effect, either, so that this is the only instance in our model where no total effect exists.

Except for institutional strength for each of the independent variables the direct effect on external networking is stronger than the indirect effect. Also, for all variables included in the model the total effect is at least equally strong or stronger than indirect effect and direct effect separately. That some of the effects are equally strong is primarily due to the fact that only in the case of local autonomy and municipal size the computation of the total effect included both an indirect and a direct effect. Hence, in the cases to which this does not pertain only one coefficient was included in the computation of the total effect.

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Table 7: Computation of Total Effect-Sizes

Variable	Computation Indirect Effect	Indirect Effect (A)	Direct Effect (B)	Total Effect-Size C=A+B
Local Autonomy	.15*.23	.03	.06	.09
Institutional Strength	.08*.23	.02	.0	.02
Municipal Size	.10*.23	.02	.15	.17
Leadership-Style		.0	.23	.23
Education		.0	.0	.0
Experience	-.14*.23	-.03	.0	-.03

There are several conclusions to be drawn from these results. First, the variable with the strongest influence on external networking (leadership-style) is a variable that is amenable to influence by the mayor him-/herself. Also, the variable with the second strongest effect municipal size can be seen at least to a certain degree amenable to influence by the mayor[14]. Within the group of individual level variables, though, we can see that education and experience, the variables which are most easily influenced by the mayor himself compared to leadership-style and municipal size, exert the weakest effects or even no effect at all on external networking.

Within the country-level variables it is remarkable that the institutional strength is the variable in our model with the weakest effect on our dependent variable external networking.

When comparing both individual level-variables and country-level variables we can see that the overall level of effects is comparatively higher in the group of individual level variables compared to variables measured on a country-level. This especially pertains to the effects of municipal size and leadership-style.

Conclusion

The subsequent conclusion will discuss the main implications of this research. For this purpose, this section will consist of two parts: The first part will include the theoretical conclusions whereas the second part will discuss practical implications that can be deduced from this research.

Theoretical Conclusions

The dearth of previous research available on the determinants of external networking of not only mayors but also public managers in general constituted a fundamental challenge for our research. Existing theories primarily focus on public managers and not explicitly on mayors. In the case of (European) mayors this is especially problematic as these are not solely managers of a public organization but rather

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[14] Ways in which a mayor might change the municipal size are discussed in the subsequent conclusion.

a hybrid form of public manager and political leaders as they are also part of the political sphere. Theories are, consequently, only applicable to a limited degree.

Further, the restrictions of this research to our sample and setting need to be considered when interpreting the results of this study. Especially the newest dataset from the EMP to be published in the upcoming months represents an ideal possibility to replicate this study and to become more confident in our findings.

With regard to the results of our study there were several relations without significance in our regression model even though an effect would make sense theoretically. As we tested several operationalizations of both our main explanatory and dependent variable, this might be linked to operationalizations of the other variables. Also, the linear regression assumptions were not met for each of the relations which might lead to underestimations of the effect-sizes (Osborne & Waters, 2002).[15].

Lowndes' and Leach's (2004) theory cannot be confirmed as our results clearly indicate that leadership-style is not predominantly explained by context, constitution and capabilities of mayors. This may be linked to the research design as Lowndes and Leach (2004) concluded on the basis of qualitative research. It might imply that the qualitative results based on small-n research did not prove to be generalizable to a larger population which might imply that either Lowndes' & Leach's (2004) inferences were wrong all together or are only pertinent for some but not for all types of public managers. For future research, a combination of both qualitative and quantitative research designs might be the best way to get both ideas of other determinants of external networking neglected so far (qualitative research) and testing these variables in a reliable and valid way (quantitative research). This becomes especially important when considering that the overall explanatory power of our model accounts to 8% which is comparatively low.

The findings of Greasley and Stoker can be confirmed even though the effect found between institutional strength and leadership-style is effect is extremely weak. The rationale of Greasley and Stoker (2008) that a mayor can only externally network if he does not need to fear constant conflict with the council, though, seems to suggest that the effect should be stronger. A reason might be that we focused exclusively on institutional aspects of the strength a mayor has towards a council. There may be, however, also specific other local factors that affect the relation between the mayor and the council which we did not take into account in this study.

The findings of Andrews et al. (2011) regarding the non-existent effect of strategic leadership-styles on external networking cannot be confirmed within this study as there is a significant positive effect. Even though they carried out a quantitative study, our finding may imply that their findings are not applicable to different samples. As to the unit of analysis, our findings might imply that the findings of Andrews et al. (2011) are only pertinent to public managers in general and not to mayors.

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[15] See Appendix 5 for a more detailed account of the linear regression assumptions.

Regarding Ajzen's "Theory of Planned Behavior" future researchers should focus on measures of both actual control and perceived control. As we did only infer from the former to the latter, it is needed to replicate our findings to gain more confidence in the applicability of the theory to this context.

For all of the above mentioned issues future research is needed to gain more confidence in the results of our study. In doing so, future researchers should be aware of the issues discussed previously in order to create a more valid and reliable body of literature on this topic.

Practical Implications

Our analysis revealed that European mayors externally network to a very limited degree. The only countries where mayors externally network to a significantly higher degree than in the other European countries of our sample are Hungary and Austria. The degree to which European mayors externally network is most strongly affected by the leadership-style a mayor deploys and the size of the municipality in which the mayor governs.

A crucial question that needs to be asked now is: Given the fact that the overall level of external networking of European mayors is low and a higher level desirable (as depicted in the theory section), what can both mayors on the one side and those who select mayors or national/regional governments actually do in order to increase a mayor's external networking?

Our findings indicate that most importantly a mayor should change his leadership-style towards a more strategic one. According to Getimis and Hlepas (2006) this implies to "believe in the ability of local government to promote transformations of the local level" (p. 179). Mayors should not simply "rely on markets and national policies" (ibid.) but instead create their own policy agendas which they should try to implement during their term in office. The reason why a strategic leadership-style increases the external networking might be that these mayors are especially dependent on external actors and even more on their resources in order to pursue the vision they got for their city. Critics may argue that it is difficult to change the leadership-style of a person as you either believe that "municipal action is possible and desirable" (ibid.) or you do not. However, our research revealed that the leadership-style is also affected by factors which are amenable to influence by a mayor:

In this regard experience exerts the strongest effect on leadership-style among those variables amenable to influence by a mayor. Unexpectedly, this effect is negative. A possible explanation for this pattern might be that the longer a mayor is in office, the more disillusioned he/she will become with regard to what he/she can achieve leading to a less strategic leadership-style. With an increasing time in office, mayors seem to become somewhat tired with regard to projects in order to tackle current challenges in their cities. Hence, if a mayor tries to deploy a more strategic leadership-style, he/she should try to do this in the first years of his term in office.

However, also actors such as electorates of municipal councils that vote for / select mayors are crucial as one could argue that these might use the strategic capacities of mayors as a selection criterion

in order to increase the degree to which a mayor's leadership-style is strategic. Secondly, once a mayor is appointed, courses and trainings might be offered for mayors. Our findings additionally underpinned that it is not all up to the mayor with regard to his/her leadership-style. This pertains especially to the local autonomy which positively affects the leadership-style of a mayor. Thus, if mayors have the chance and the authority to implement their vision and to shape the socio-economic situation of their municipality they will most likely do so. This, in turn, might indicate that mayors understand the necessity of deploying a strategic leadership-style in order to tackle contemporary urban challenges. As this variable is primarily amenable to influence by regional or national governments, these should consequently increase the local autonomy within their region/country. As shown by the local autonomy index used for this study this is also what most of the national governments of countries included in our sample actually did over the past 26 years. Therefore, our study encourages them to bring forth further reforms in future.

Similarly, the institutional strength of a mayor matters for his/her leadership-style and, therefore, also for a mayor's degree of external networking. This might indicate that a higher level of institutional strength of a mayor indeed reduces the possible veto's a mayor needs to fear from the council which, in turn, creates the capacities for a mayor to develop a vision for his/her city. As institutional strength primarily depends on regional or national governments (depending on the jurisdiction in a given country) these should strengthen the power of mayors vis-à-vis the council in order to make their leadership-styles more strategic and, thus, increase their degree of external networking.

Reverting to the direct determinants of external networking, our findings indicate that a larger municipal size increases the external networking of mayors. Hence, mayors of large municipalities seem to have a higher probability of being heard and also a higher expected effectiveness of external networking as expected. However, a mayor would need to attract thousands of inhabitants during his term in office in order to increase his own external networking which seems unrealistic. A key instrument for using the potential effect of municipal size, though, could be amalgamations. One could recommend mayors to push amalgamations with neighboring municipalities as this could increase a municipality's size to a considerable degree. By doing so, the long-term development of attracting new inhabitants could be circumvented and the de-facto municipal size increased in a short period of time, which underpins the potential effect of municipal size on the external networking of mayors.

On the other side, amalgamations can also be decided by regional or national governments depending on the jurisdiction in a given country. Consequently, regional or national policy-makers also play an important role as they could initiate important reforms in this regard.

The last important determinant of external mayoral networking is local autonomy. Contrary to expectations, a higher level of local autonomy leads to a higher level of external networking. This also implies a weak political status associated with a high access of mayors to central government authorities does not explain high levels of external networking. One possible explanation for this pattern might be that mayors do not only externally network because low levels of local autonomy urge them to do so.

Rather, this might indicate that mayors externally network in order to safeguard the level of local autonomy they already got. The higher the level of local autonomy would be, the higher would also be the degree of external networking of the mayors as they need to spend more effort to ensure this comparatively higher level of local autonomy. Further, mayors might exploit their potential to protect the interests of their city and further the locality's causes.

As outlined above, the level of local autonomy in a given country is primarily amenable to influence by regional or national governments which is why we encourage these governments to bring forth further reforms in future. Mayors, though, should not rely on these reforms and actively try to lobby for higher levels of local autonomy which seems a promising advice due to the tendencies of increasing local autonomy across Europe.

Within the group of the remaining variables it is remarkable that the institutional strength has one of the weakest total effects on external networking. This is particularly interesting as in many countries across Europe there has been a rhetoric that strengthening the position of the mayor would enable him to become the main figure in external governance networks. Our findings, however, contradict this assumption.

Also interestingly, our research revealed that certain things which are easily amenable to influence by a mayor have no effect on the latter's degree of external networking. This holds true for both education and experience. The reason might be that higher levels of education, as initially assumed, do not increase the understanding of mayors regarding the advantages of external networking for the municipality's socio-economic situation. Nor seem mayors to gain this kind of knowledge during their years in office as both experience and external networking are not significantly related either.

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Appendix

Appendix 1: Classification of survey items regarding the dependent variable external networking

External Networking	Internal Networking
V64: President of the Regional Executive Board	V63: The Prefect
V65: President of the Province Executive Board	V68: Journalists
V66: Local MPs	V70: Union representatives
V67: Local MEPs	V71: Leading actors from voluntary organizations
V69: Officials of the National Association of Local Authorities	V72: Representatives of single issue local movements
V73: Representatives of other cities	V74: Representatives of public agencies at the local level
	V75: Ordinary Citizens
	V76: Private Business representatives
	V77: Leaders of my own party

Appendix 2: Classification of survey items regarding the intervening variable Leadership Style

Strategic Leadership Style	Reproductive Leadership Style
V1: To represent the city to the outside world	V3: To ensure the good quality of local services
V2: To implement the program of his/her political party/movement	V6: To generate cohesion in the political majority
V4: To foster co-operation with the neighboring municipalities	V8: To manage the implementation of his/her personal policy choices
V5: To encourage new projects in the community	V10: To ensure the correctness of the political-administrative process
V7: To set goals for transforming the administrative structure	V14: To help citizens resolve complaints with the municipal government
V9: To attract resources from external sources	V15: To contribute through local experience to the general consolidation of his/her party action
V11: To defend and promote the influence of local authorities in the political system	V16: TO guide the staff in the day to day activity
V12: To create a vision for his/her city	
V13: To publicize municipal's activities	

Appendix 3: Stepwise Introduction of Country-Dummies

In order to answer the explanatory research questions, we applied a step-wise introduction of the respective variables. First, the individual-level variables municipal size, experience and education were included in the regression model. Secondly, we created a dummy variable for the countries included in this study by using Italy as a reference group. The purpose of this step-wise approach was to determine whether countries matter at all. As it can be seen in the subsequent tables for both our regression-models, countries seemed to have an impact as in both cases the Adjusted R^2 increased and thus also the explanatory power of our model. Hence, we decided to include both country-level variables local autonomy and institutional strength in our regression analysis in order to find out which has the stronger impact on the respective dependent variable.

Model Summary[c,d,e](N=2393)

Model	R Cook's Distance < ,00153 (Selected)	Cook's Distance >= ,00153 (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,145[a]		,021	,020	3,72834
2	,517[b]	,203	,268	,262	3,23487

a. Predictors: (Constant), Municipal Size, Experience, Education
b. Predictors: (Constant), Municipal Size, Experience, Education, Spain, Portugal, Greece, Austria, Ireland, Hungary, Sweden, Belgium, Netherlands, Poland, France, England, Germany
c. Unless noted otherwise, statistics are based only on cases for which Cook's Distance <.00153.

d. Dependent Variable: Leadership-Style
e. Excluded: 135

Model Summary[c,d,f](N=2393)

Model	R Cook's Distance < ,00156 (Selected)	Cook's Distance >= ,00156 (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,175[a]		,031	,029	1,87829
2	,277[b]		,077	,075	1,83352
3	,508[c]		,258	,252	1,64849

a. Predictors: (Constant), Municipal Size, Experience, Education
b. Predictors: (Constant), Municipal Size, Experience, Education, Leadership-Style

c. Predictors: (Constant), Municipal Size, Experience, Education, Leadership-Style, Portugal, Ireland, Austria, Greece, Belgium, Poland, France, Spain, Hungary, Sweden, England, Netherlands, Germany
d. Unless noted otherwise, statistics are based only on cases for which Cook's Distance <.00194.

e. Dependent Variable: External Networking
f. Excluded: 168

Appendix 4: Multicollinearity-Test

The subsequent table includes the variance-inflation-factors for our multiple regression analysis. As it can be deduced from the values, there is no multicollinearity to be expected as all variance-inflation-factors are close to 1.

Coefficients[a,b]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15,331	,796		19,249	,000		
	Education	-,006	,006	-,019	-,983	,326	,996	1,004
	Experience	-,080	,012	-,136	-6,863	,000	,987	1,013
	Municipal Size	,486	,099	,102	4,910	,000	,900	1,111
	Local Autonomy	,172	,023	,154	7,508	,000	,918	1,089
	Institutional Strength	,126	,030	,084	4,167	,000	,965	1,036

a. Dependent Variable: Leadership-Style
b. Selecting only cases for which Cook's Distance < ,00153

Coefficients[a,b]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1,748	,424		-4,124	,000		
	Education	-,002	,003	-,015	-,767	,443	,992	1,008
	Experience	-,008	,006	-,025	-1,284	,199	,973	1,028
	Municipal Size	,388	,052	,153	7,477	,000	,899	1,112
	Leadership-Style	,101	,009	,230	11,580	,000	,957	1,045
	Local Autonomy	,035	,012	,061	2,958	,003	,894	1,118
	Institutional Strength	-,009	,015	-,012	-,584	,559	,965	1,037

a. Dependent Variable: External Networking
b. Selecting only cases for which Cook's Distance < ,00156

Appendix 5: Linear Regression Assumptions

The subsequent part deals with the linear regression assumptions which need to be met in order to obtain trustworthy results from our linear regression analysis (Osborne & Waters, 2002). Four assumptions will be checked:

    1. Linear Relationship between X & Y

    2. Independence of Errors

    3. Constant Error Variance

    4. Normally distributed errors

Appendix 5.1: Assumption 1: Linear Relationship between the Independent and the Dependent Variable

The first assumption is that there is a linear relationship between the independent variable(s) and the dependent variable in our model (Gemenis, 2015). Ideally, a relation would be either perfectly positive, indicated by a distribution within a scatterplot going from bottom left corner to the top right corner or perfectly negative indicated by a distribution going from the top left corner to the bottom right corner. Such a linear relationship is important as "standard multiple regression can only accurately estimate the relationship between dependent and independent variables if the relationships are linear in nature" (Osborne & Waters, 2002, p. 1). A non-linear relationship would show no such patterns. Instead, one could see that the values of the dependent variable do not depend on the values of the independent variable and, thus, do not in- or decrease in a constant manner with increasing values of the independent variable. From a statistical point of view this would have the consequence that in our regression the estimates of the coefficient b could be misleading which, thus, would need to be considered when interpreting the results of our study. Also, our regression might under-estimate the relationships within our model if there is no linear relationship (Osborne & Waters, 2002).

Dependent Variable: Leadership-Style
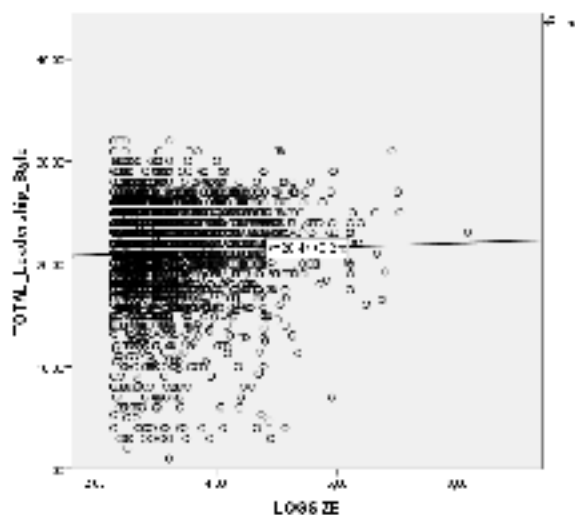
For our model including leadership-style as a dependent variable there are clearly linear relationships for the independent variables local autonomy and experience. In the other cases, there are only very weak linear relationships which can be deduced from the graphs as the fit lines only have very small slopes. One example for this weak linear relationship can be seen in the graph which shows the relation between the municipal size and the leadership-style of mayors. By looking at the fit line we can deduce

that there is only a marginal increase in the "strategicness" of the leadership-styles of European mayors with an increasing number of municipal size. Hence, this undermines the assumption of a linear relationship between the independent and the dependent variable. Similar patterns can be observed for the independent variables institutional strength and education. As mentioned earlier, the problem for these variables is that our estimates of the coefficient B will be most likely misleading in these cases. One reason for this pattern might be that the fit line is distorted by influential cases. However, if we look at the graph, there are no such cases that might be possibly influential. Also, as we use a sample with more than 2700 mayors, it seems unlikely that a single case might have such a huge impact. One way to solve this problem might be to use the logarithmic transformation variable and see whether there is a linear relationship afterwards. Due to statistical reasons, though, we did use the logarithmic transformation of the municipal size anyway as it can be seen in the graph. Even after carrying out the logarithmic transformation for both institutional strength and Education there are no clear differences to be observed in the linearity of the relationships with the dependent variable leadership-style. Also, we additionally tried the relationships with both independent and dependent transformed which, however, did not change the linearity, either. Hence, the B-coefficients need to be carefully interpreted.

Dependent Variable: External Networking

For the model including external networking as a dependent variable we observed that there are no clearly linear relationships for the models including local autonomy, institutional strength, experience, or education as independent variables. The example of experience (v213) is displayed subsequently.
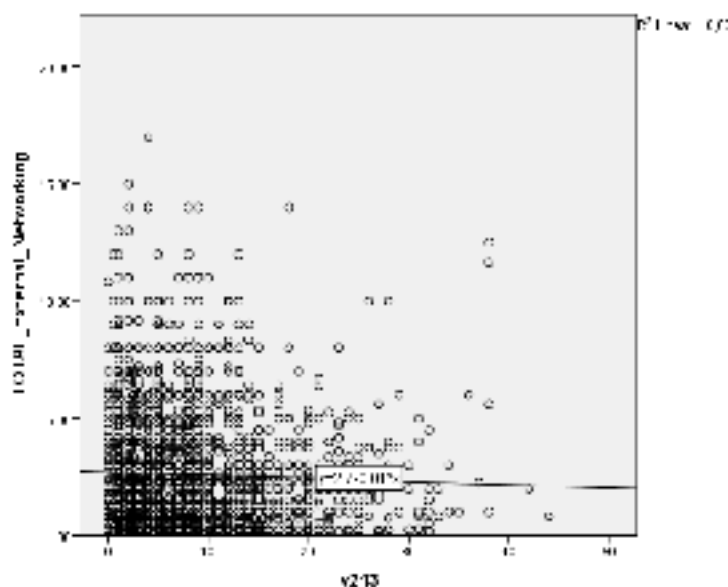
What can be seen is that there is no clear pattern as described previously. The fit line indicates that there only is a very weak decrease in external networking of mayors for each additional year of experience as a mayor. Again, we carried out a logarithmic transformation of the independent variables for which the scatter-plots did not indicate a clear linear relationship. However, there were no changes in the linearity of the relationships to be observed in the new scatter-plots. Neither could any changes be observed for these relationships if logarithmic transformations of both independent and dependend were included. Hence, for these relations the coefficient B might be misleading which needs to be considered in the interpretation of our results.

Appendix 5.2: Assumption 2: Independence of errors

The second Assumption refers to the fact that the errors should be independent from each other (Gemenis, 2015). This means that there are two types of relationships to be found in linear regression: The one type where the errors are independent from each other and the other where, hence, the errors are dependent from each other. Dependence in this case implies that the observations of our regression correlate with each other. This would typically result in invalid results of our statistical significance estimates (Gemenis, 2015).

The independence of errors can be best interpreted when looking at a scatterplot which includes the standardized predicted value of a variable on the x-axis and the standardized residual on the y-axis of a scatterplot. Independence of errors would be given of the errors are spread regularly all across the scatterplot randomly (Hair et al., 1987).

Dependent Variable: Leadership-Style

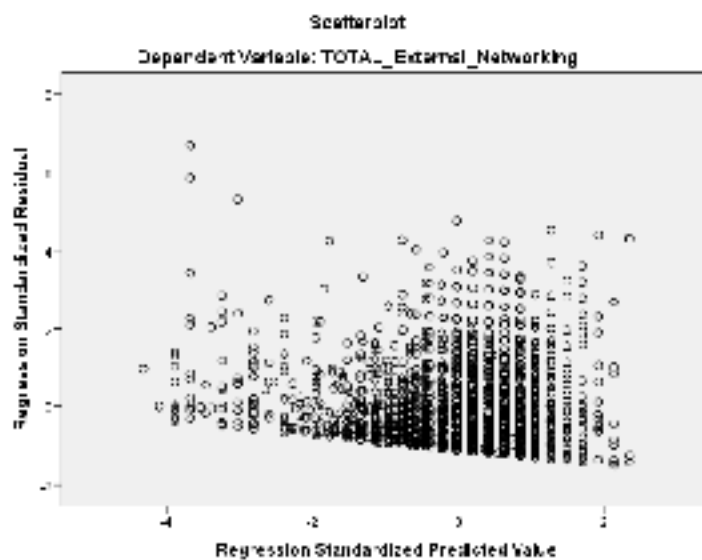Scatterplot
Dependent Variable: TOTAL _Leadership_Style
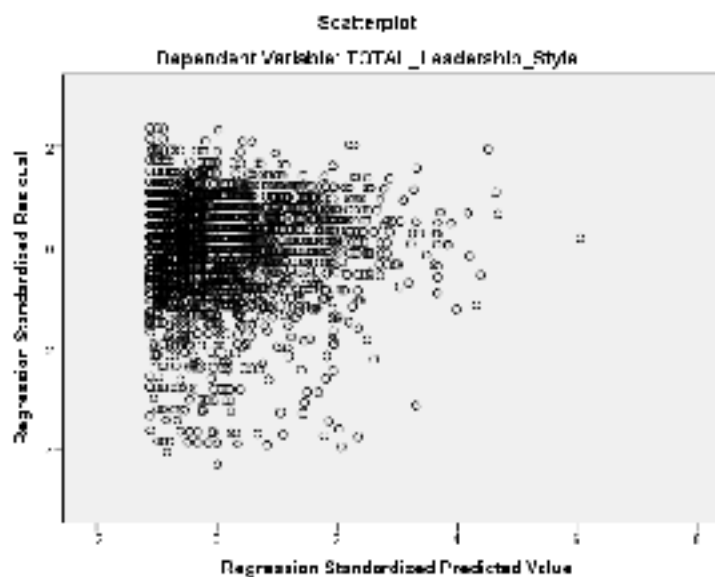
For our model including leadership-style as a dependent variable there is a correlation of the errors to be found in the case of both municipal size and experience. In the other cases there seems to be an independence of errors. As it can be seen on the scatterplot which included municipal size as independent variable, the errors clearly concentrate around the range from -1 to 2 on the x-axis and -2 to +2 on the y-axis. Comparatively few residuals are located outside this corridor. Therefore, we can conclude that the assumption of independence of errors is not met in this case. As indicated, the same holds true for the independent variable experience. For municipal size we, again, already used the logarithmic transformation in our analysis which is why we can state that a transformation does not change the independence of errors. When applying a logarithmic transformation of education we can see that there is no significant improvement as the concentration of errors only seems to shift within the scatterplot. The same holds true for a scatterplot including transformations of both leadership-style and education respectively

municipal size. As we, thus, cannot correct the correlation between errors in these cases, we need to take into account that our estimates of the significance might be invalid in these cases.

In the other cases there are also certain concentrations observable. However, these are not as strong as in the former two cases which is why we expect no impact on the results of the regression analysis.

Dependent Variable: External Networking

Scatterplot
Dependent Variable: TOTA_External_Networking

For the model including external networking as dependent variable none of the relations seemed to meet the assumption of independence of errors. The scatterplot of the relation between external networking and leadership-style is displayed in order to show how these patterns look like. What we can see is that there is a strong concentration of residuals in the bottom right corner of the scatterplot whereas there are nearly no residuals located in the top left corner of the scatterplot. This indicates that the residuals are not independent from each other but strongly correlate. Again, we checked the scatterplots again for the relations using the logarithmic transformations of only the independent variable and subsequently of both independent and dependent variable in order to see if this leads to independence of errors. In the vast majority of cases, the concentration did not change but rather shift within the scatterplot after including one or both transformed variables. In only a few cases a slightly less strong concentration could be observed which still showed a pattern of concentration, though. Therefore, we can conclude that in none of the cases for the models with external networking as dependent variable the second assumption is met. This needs to be taken into account when interpreting the significance values for these models in our analysis.

Appendix 5.3: Assumption 3: Constant Error Variance

The third assumption we tested refers to constant error variance (Gemenis, 2015). For this assumption "we assume that at each level of the predictor variable the values of the criterion variable all have the same variance (homoscedasticity)" (Hair et al., 1987, p.26). On the contrary, we refer to heteroscedasticity if the variance of the residuals varies across the values of the independent variable.

This assumption can be tested by using a visual inspection of the scatterplot including the standardized residuals and the standardized predicted values (Osborne & Waters, 2002). Further, we need to consider that heteroscedasticity "can lead to a serious distortion of findings and seriously weaken the analysis" and, hence, increase the likelihood of an under-estimation of the relationships (Osborne & Waters, 2002, p.4). We can observe heteroscedasticity if the "residuals are not evenly scattered around the line" (Osborn & Waters, 2002, p.4) If this would be the case, the quality of our predictions will differ according to the level of the independent variable (Hair et al., 1987, p. 27).

Dependent Variable: Leadership-Style

Scatterplot
Dependent Variable: TOTAL Leadership-Style
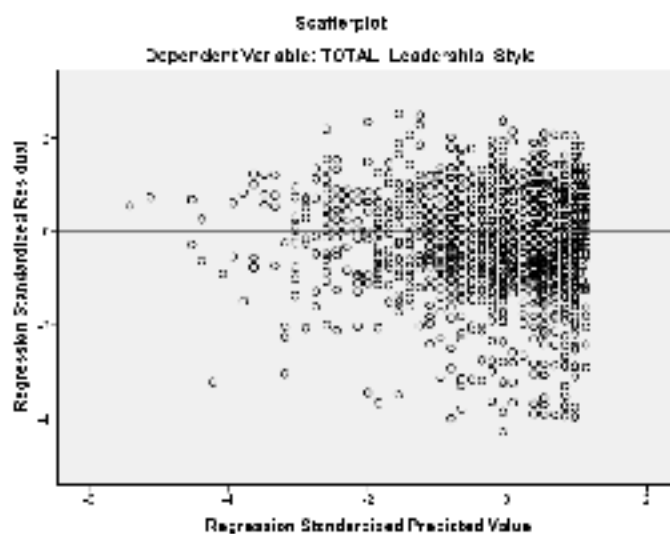
With regard to the model including leadership-style as a dependent variable, none of the relationships shows a constant error variance. A good example for how such a distribution looks like can be seen at the displayed scatterplot which includes the residual distribution for the independent variable experience. What we can see is that, starting at the left end of the distribution there is a relatively small error variance which ranges from approximately 0.5 to -0.5. However, the farther we move on the x-axis towards the right end of the scatterplot, we can see that the error variance increases more and more so that we have a maximum variance approximately ranging from 2 to -4 and the right end of the distribution. Hence, the third assumption of constant error variance seems not fulfilled which is also the case for the remaining relationships. Again, we included the logarithmic transformations only the independent variable and both independent and dependent variable in order to see if that creates constant error variance. However, this did not change the error variance of the relationships as to that extent that we could say there would be a constant error variance. This might entail inefficient estimates of the standard error of b which needs to be considered when interpreting the results in our analysis.

Dependent Variable: External Networking

The same holds true for all of our relationships including external networking as a dependent variable. As it can be seen in the graph which displays the relation between experience and external networking, there is a much lower error variance at the left end of the distribution compared to the right end of the distribution. More precisely, on the left end the error variance ranges from 0 to approximately -0.5 on

the y-axis whereas we can see that it ranges from 6 to -1 on the right end. Again we analyzed in how far different combinations of logarithmic transformed variables change the results of the scatterplots. None of the relationships had a constant error variance after transforming only the independent variable.
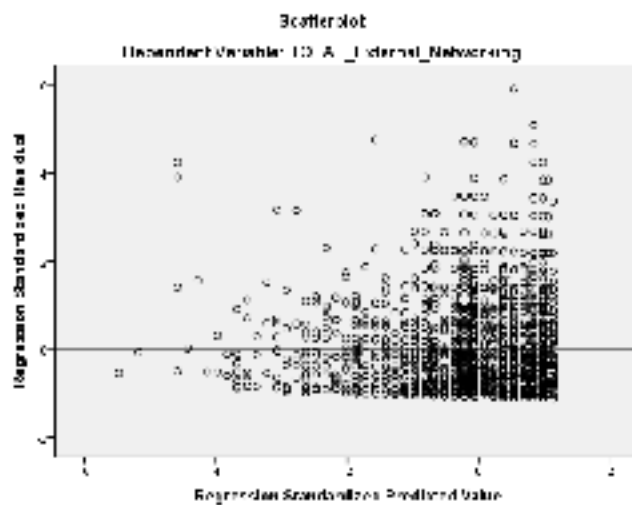
However, after including the transformed variable of external networking in the model we saw that for the relationships including local autonomy, institutional strength, education and experience there was a constant error variance. Under this conditions, we can confirm the hypothesis for the aforementioned relationships. This needs to be considered when interpreting the results of our analysis as we did not include the logarithmic transformations of the variables there (except for municipal size). Future research should, thus, include the transformed variables in order to replicate our research under these conditions. Still, we cannot confirm the assumption for the relationship of external networking with both municipal size and leadership-style which might lead to inefficient estimates of the standard error of b.

Appendix 5.4: Assumption 4: Normally distributed errors

The last assumption tested is the assumption of normally distributed errors (Gemenis, 2015). The best way to check this assumption is a visual inspection of the normal p-p plots of the cumulative standardized residuals (Hair et al., 1987). We speak of a normal distribution of errors of the points are distributed along the diagonal stretching from the bottom left to the top right corner of the plot "without extensive deviations" (Hair et al., 1987, p.36). Other possible distributions are e.g. skewness or kurtosis (Osborne & Waters, 2002) .If these are the case, the least squares estimations of our model might be inefficient.

Dependent Variable: Leadership-Style

Starting with our model including leadership-style as the dependent variable, we can state that there the errors of our relationships are approximately normally distributed. However, as it can be seen exemplary in the p-p plot to the left which includes local autonomy as independent variable, we can see that there is a slight negative kurtosis of errors. This pattern can be observed for all of the relationships including leadership-style as dependent variable. Even though the kurtosis is comparatively weak, we carried out logarithmic transformations in order to see if this would make the errors even more normally distributed.

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: TOTAL_Leadership_Style
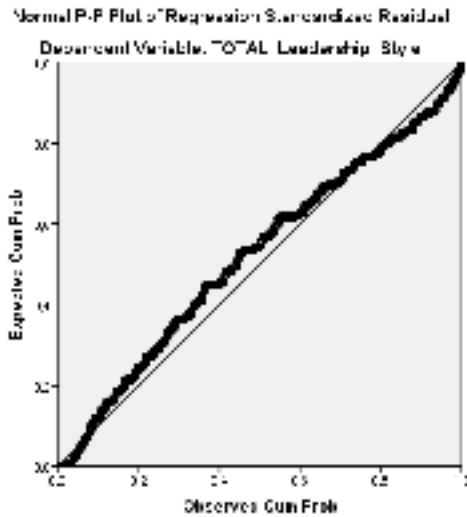
However, this did only worsen the kurtosis. Still, as the kurtosis is only very weak we do not have to expect any consequences for the least-squares estimates of our model.

Dependent Variable: External Networking

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: TOTAL_External_Networking
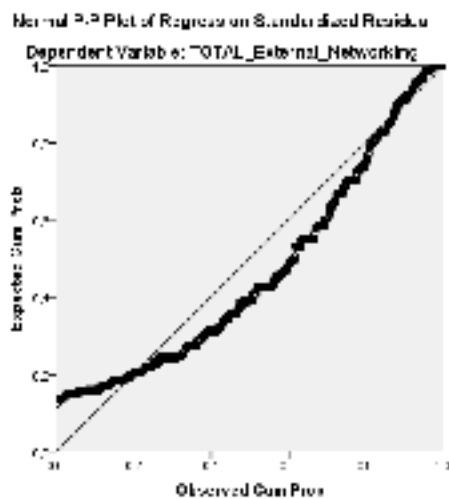
For the model including external networking as dependent variable the p-p plot of the relationship between the latter and education can be seen as example to the right. Again, there is no perfect distribution of errors. We can rather speak of a positive kurtosis which holds true for all the other relationships with external networking as dependent variable, as well. As this might lead to inefficient estimates of the least squares estimates of our model, we checked whether the logarithmic transformations of the variables would result in different patterns. This change revealed that the kurtosis seems to be caused by the dependent variable external networking as only after including the transformed variable of external networking the kurtosis became less distinct than before for most of our relationships. Again, this needs to be considered when interpreting the results. This additionally underpins that future researchers should consider including the transformed variables we used for our model in order to see if this would significantly change the results of our study.

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Appendix 6: Declaration of Academic Integrity

I hereby confirm that the present bachelor thesis "On the Determinants of External Networking of European Mayors" is solely my own work and that if any text passages or diagrams from books, papers, the internet or other sources or in any other way used, all references - including those found in electronic media - have been acknowledged and fully cited.

P. Brück

Enschede, June 29th, 2016