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Abstract:

A wide consensus in the literature reveals that organization theory and political science have a lot to learn from each other. Despite that, cross-fertilization among them has been lacking for decades. This thesis finds further support for the consensus and tries to answer why that might be. It is doing so by finding predictors of why an author is or is not referencing a paper from the other field. For this, a quantitative analysis of 80 publications is being conducted. It reveals that the best-found predictors of cross-referencing are assumptions the authors make about human behaviour and its drivers. It finds that the likelihood of a cross-reference increases when authors assume that actors are boundedly rational in their decision making and are driven by the wish to fulfil the needs of the society as well as their own need of security. If authors assume that actors are motivated by gaining prestige, the likelihood decreases.

Keywords: Organization theory, political science, cross-references, predictors, assumptions

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1. Introduction

Organization theory and political science have a paradoxical relationship. On the one hand, they are highly relevant to each other. On the other hand, the literature agrees that neither of them seems to devote their attention to the other. Fairly enough, the criticism goes both ways. Many authors believe that an organization theory is supposed to be a "one-size-fits-all" theory for organizations—both public and private. That is a seemingly unrealistic expectation.

Organization theory is often criticized to be overly economic, focusing mainly on private companies. At the same time, political science is accused of not willing to contribute to an overall theory of organization. Although political scientists also spend a great deal of time in understanding organizations, their findings have stayed within the realm of political science and public bureaucracy. They do, however, explain these findings by applying non-political concepts from organization theory (Moe, 1991).

Other authors are convinced that it is not possible to form a theory of organization, that accurately comprises the needs of all organizations. After all, each organization has to deal with different structures, environments, and stakeholders—among many other factors. Despite the existence of theories that try to grasp these differences, such as contingency theory (Lawrence & Lorsch, 1967), the two fields still stayed mostly isolated from each other.

Organization theory has its roots in political science. It was only when sociology, psychology, and economics started to address organizational topics, and when public administration evolved as a sub-field of political science, that organization theory began to divert from its roots. Eventually, this resulted in the formation of a separate discipline—namely organization science. However, even though many scientists are calling for change, the self-determination of political science and organization theory still seems to prevail.

The aim of this thesis is to contribute to the understanding of this dysfunctional relationship and identify the areas where cross-fertilization between the disciplines has taken place. This thesis, however, is not a regular citation analysis, since that would only repeat what many have done

before. Instead it is focusing on possible reasons that lead authors to either reference or ignore the other field. Since one can hardly interview all the authors personally, the best way is to analyse what they are writing in their publications[1] and compare them based on concepts they keep mentioning. To find these concepts an in-depth analysis of each publication is being conducted, put into a quantifiable context and compared with cross-references.

Results show that authors who assume actors are boundedly rational in their decision making are more likely to reference the other field than others. The same holds true for authors who assume individuals are motivated to serve the interests of society and are driven by the need for their own security. Authors seeing the pursuit or prestige as a motivational driver, are less likely to cross-reference. Furthermore, this thesis finds support for the unequal flow of cross-references. Although the amount of references is low in general, political science is cross-referencing organization theory almost double as much as the other way around. Also, the data show a positive trend in cross-references from political science to organization theory over the years.

The thesis is structured as follows: In the background section literature regarding cross-fertilization of the two fields is described, which assesses prior research and gives a summary of the differences of the two fields. The next chapter explains the research question and the proposition for its resolution. Then a detailed explanation of the data and its collection process is given, which is important for the representativeness of the sample. This is followed by an illustration of the methods used for the statistical evaluation, which also includes analyses that are not crucial for answering the research question but give additional interesting insights to the data. All outcomes are outlined in the results section, which meanings are explained in the discussion as well as the limitations of the research. A summary of the key findings and their meaning is elaborated in the conclusion.

[1] For better readability, the words *publications*, *articles*, *papers,* and *books* always resemble the whole sample.

2. Background

There is no sizeable amount of literature that is considering the integration of organization science and political science by providing a united theory of how organizations should function. On the contrary, many researchers are criticizing the everlasting independence of these two fields. Some scientists see political science as part of the interdisciplinary composition of organization theory (Peltonen, 2016), while others believe political science and public administration didn't contribute much to the creation of a theory of organization (Moe, 1991). Especially public administrators were borrowing concepts from organization theory that were mostly designed for private organizations, without worrying about suitability (Zalmanovitch, 2014).

One of the earliest papers to address this topic was written in 1964 by Kaufmann, who emphasizes how little interaction there has been among the fields, but still with remarkably similar outcomes. "*If […] two men of similar talents but rather divergent training, professing differing objectives, and displaying varied (perhaps even conflicting) concerns were to pursue studies of phenomena each believed to be quite distinct from the other's field of inquiry, it would be most astounding if their findings and inferences should turn out to be closely parallel in many important respects, particularly if there were little evidence of communication*" (Kaufman, 1964, p. 5). He explains that both fields believe they are completely distinct from each other. Especially because political science consciously deals with the intangible parts of research, since it is not easy to measure outcomes of governments, while organization theory focuses mainly on measurable results. Nonetheless, they have developed similar ideas quite independently of each other. For example, both fields explain that humans can think rationally and make the decision of whether they want to stay in an organization or leave—taking the sacrifice, that comes along with it, into account. Furthermore, they deal with the organizational structure to enhance coordination in a similar manner as well. Organization theorists believed hierarchy was the optimal solution, which political scientists called "central direction", mostly meaning the same. Also, they agree, that every organization is goal-seeking, on an individual as well as group level (Kaufman, 1964).

Similarly, James March emphasizes how the two fields have more or less been ignoring each other, which, in his eyes, leads to a dysfunctional understanding of both fields. He mainly looks at business organizations and believes they are more correctly explained if viewed as political systems. The fault lies in both fields, though. While political scientists have mainly paid attention to phenomena that occur in governmental institutions and were rather focusing on cases, the economic research resolves around analytical explanations and the creation of theories. March's main proposition is to view problem-solving in business organizations as a conflict resolution process, which is typical for political coalitions. A conflict resolution process consists of many small decisions made by the units of a system, which ultimately results in the final decision. Business firms, on the other hand, he describes, have an imposed subordinate goal, where the system decides what the units have to do in order to achieve that goal. March explains this with the example of a tree. A tree's ultimate goal is to maximize sun exposure. In a system with a subordinate goal, the tree decides which directions to grow the leaves and the leaves just execute the tree's "wish". In a conflict resolution process, however, each leave has an individual need for sun and decides on its own how to grow, which in the end results in the optimal sun distribution for the tree as a whole. March believes that by combining the two fields, a theory of politics can be formed and the theory of economics enhanced (March, 1962).

Another author, who has been regarding himself with this topic, is Terry Moe. Moe's main concerns relate to the passiveness of both fields: In political science, the passiveness in not contributing to the creation of a theory of organizations, but rather picking already existing concepts for explaining detailed cases. In organization theory, the passiveness in not willing to explore what political science has to say about organizations. He suggests using the concept of economic theory and transforming it into a political theory by keeping the following issues in mind. The first is public authority, meaning that legislature and court can act out decisions with force, which the actors haven't agreed to voluntarily and cannot avoid. The second one is political uncertainty. There exist no property rights in the way as they are known in economics. Elected parties or officials are only temporary owners of the structure that has been given to them, which

they can only change as long as they are in office. This is where public administration comes into play. It often serves to also create protective structures for the sake of efficiency, so the next "owners" have a hard time in changing it. Third, a winning party cannot simply do whatever it wants, it often has to compromise with the opposition. Additionally, the opposition can get stubborn and deliberately sabotage the efforts of the elected party, in order to put them in a worse position for the future elections. The fourth one is fear of the state. While in an economical hierarchical relationship the subordinate can decide to leave usually without great consequences, it is different in politics. Although public officials rely on social actors to get into the position they are in, once they have achieved that, they have a certain autonomy over the social actors. Even though social actors see them as their supporters, public officials might still decide to pursue their own interest, which can be to the disadvantage of the social actors. Last but not least, the primary goal of every organization usually is to reach effectiveness and competitive performance. For the reason explained above a political organization cannot be seen in the same way. Of course, for a political organization performance is important as well but only as far as they can protect the structure at the same time (Moe, 1991).

Be it as it may, attempts were made to breach this gap between the fields, notably the "Bergen approach", as Olsen (2007) explains. Knut D. Jacobsen was the initiator of this research program, which he started with his students and in close cooperation with James March at the end of 1960. The goal was to use the approach of organization theory for studying public administration and political life. This means that many concepts from organization theory, such as March and Simon's bounded rationality assumption and Weber's concept of bureaucracy, were used, which helped to understand how public administration is working. Looking back, however, Olsen explains, that this approach has been pushed into the background by emphasizing markets and individual choice. Organizations have been increasingly associated with private firms competing on the free market. This even went so far, that concepts have been applied to new public management, making the administrator the leader of a company, where the citizens are the customers (Olsen, 2007).

As a matter of fact, if looking far enough into the past, organization studies started first to emerge in political science in 1903, when the Journal American Political Science Review started publishing articles regarding organizations. Later around 1936, journals of sociology started to include articles, analysing organizations as such. Shortly, journals from psychology followed, mainly being interested in organizational behavior. However, the study of organizations as a separate discipline is relatively young. Dedicated journals emerged only recently, such as *Administrative Science Quarterly* in 1956 and *Organization Studies* in 1980 (Bozemann, 2013).

So even though the body of work of organization theory comes from political science, these journals already were detached from these "roots". A more recent study supports this notion. It analyses journals specializing on topics from organization science, as well as journals specializing in public administration. The results show that organization science journals are mainly focusing on private organizations, such as business firms, while public administration journals publish papers mainly regarding public organizations (Charbonneau, Bromberg, & Henderson, 2018). Another problem arose when public administration started to isolate itself from political science as well (Wright B. E., 2011). This means that with time political science was left out completely from the study of organizations.

For this reason, Visser and Van der Togt conducted a study in 2015 to bring public administration and organization theory together. Also, they emphasize how on the one hand organization theory has lost interest in public organizations and their problems, while on the other hand public administration continued to develop independently of organization theory. In their research, they focus on the differences in organizational learning between business and public organizations. The result of their efforts is a framework, that combines concepts of both fields in terms of learning but should serve specifically public organizations (Visser & Van der Togt, 2015). Still, this study only focused on the field of public administration and organization theory, again leaving political science as the "outsider".

3. Research question and proposition

With all that said, it is evident that former and current literature believes there is a lack of cross-fertilization among the two fields. There seems to be a consensus, however, that these two fields have a lot to learn from each other and often try to explain the same ideas without resourcing already created knowledge from the other field. Although there are a few explanations to this in the literature, there doesn't seem to be a prevailing one. It appears to be merely a wish for a joint theory of organizations along with a few suggestions of how this theory could look like. Still, according to the literature, the ignorance among the two fields prevails.

Therefore, this paper aims to contribute with new insights using an in-depth analysis of a sample constituted from both fields and evaluating it with quantitative statistical methods. Similar to other citation-analyses in this research area, such as the ones form Wright B. E. (2011) and Vogel (2014), also here cross-references are being captured. A cross-reference in this thesis is always a reference from either organization theory to political science or vice versa. The difference to Wright and Vogel is that this thesis is not comparing references to the different journals from each discipline but focuses on particular publications on a much deeper level. The goal is to find an explanation for the determinants of cross-references by looking into the content of the publications. In other words:

> *What is it, that authors from organization theory or political science have to discuss in their papers, that makes them more likely to reference a paper from the other field?*

The aim of this thesis is to find this explanation in the assumptions, that authors build their papers upon. To be precise, these assumptions are regarding how humans behave in their decision making, what motivates them and how they deal with information, all in an organizational context. Each assumption will serve as a predictor of how likely it is for authors to cross-reference if that assumption occurs in the article. Hence, the proposition of the thesis is formulated as follows:

> *There are certain behaviours and motivations of actors in organizations, which authors assume in their papers, that make them more or less likely to reference the other field.*

As a side research, this thesis will also provide an overview of the development in cross-fertilizations of the two fields from 1937 to 2019. Furthermore, it will explain this development and show that papers from organization theory are generally cited by political scientists more often than organization theorists are citing papers from political science.

4. Data

4.1. Sample construction

The proposition is tested on a dataset, which was created manually out of relevant literature. The literature has been found through filtering options in web of science as well as the library of the University of Vienna. Only journal articles and books were taken into consideration, however, approximately 87 percent of the sample consists of journal articles. To be able to identify possible trends over time, publications were picked in a way, that ensures a roughly equal distribution in publishing years, starting from 1937 to 2019.

Next, the publications were categorized into two fields, organization theory and political science, mainly based on the journal they were published in. The sample consists of 80 publications with an equal split in the fields, meaning 40 publications coming from organization theory and 40 from political science. Since the goal of the thesis is to find reasons for a general likelihood of cross-referencing among these two fields, a great emphasis lies on the representativeness of the sample. The process of how these publications were found, selected and categorized is crucial and will be described in further detail in the next sub-chapter. If done incautiously, it could create a systematic bias in the data when the sampling is conducted on the dependent variable.

To find the most relevant literature, filtering options in web of science were used. The results were compared to the number of forward-citations in Google Scholar to ensure that the most popular articles are included in the sample. However, articles that are popular but not relevant to the topic of organizations, were sorted out of the sample.

4.1.1. Process of finding and selecting literature

The process of searching for relevant literature is systematic, but the selection is made randomly. It consists mainly of the search through keywords except for a few articles found through citations. Potential biases created by the search through citations have been accounted for in the analyses and don't have a meaningful influence on the results. The process of finding and selecting the

articles for the sample is explained as follow.

The starting literature consists of nine publications and was chosen based on suitability to the topic. In order to improve the knowledge of the topic, another five articles, cited by the starting literature, were found. In the next step, the sample has been extended by further 18 publications, which were found through keywords search in the library archive of the University of Vienna as well as web of science. The results were filtered for the topics “Business, Communication, Economics, Management, and Organization Science” for articles from organization theory and the topics “Political science and Public administration” for articles from political science. The selection was made based on content relevancy and amount of forward-citations. After each filtering, the top 40 most cited references have been identified, out which 18 publications have been picked randomly. If one of the chosen publications wasn’t relevant to the topic, it has been removed, and another one was randomly picked instead. From this pool of 18 publications, the most popular ones on Google scholar have been identified and out of their backwards-citations, the nine most relevant articles were included in the sample.

The next 25 publications were found through keywords search again, but now only publications from the years 2000 to 2020 were filtered, since earlier publications were dominating in the sample. This time, the top 20 most cited references have been identified for each year, out of which 25 have been randomly selected, making sure that the sample is roughly equally spread over the years. Also, this has been done through filtering options in web of science, separately for organization theory and political science. Consequently, this method resulted in a sample of 66 publications, out of which the 14 most popular publications were identified. Through each of these 14 publications, one additional article has been found through a forward-citation and included in the sample. All in all, this method yields a final sample of 80 publications: 40 from organization theory and 40 from political science.

4.1.2. Classifying into organization theory and political science

It is clear, that organization theory is not a separate discipline, such as political science is. While one is a science the other one is just a theory, which makes it difficult to compare them as two fields. As mentioned in the background section, organization science is relatively young as a separate discipline. The first journals were published only around the 60s, while still leaving many articles about organization theory in other journals. So, if the sample would only consider organization science, it would be highly restricted. For this reason, the opposing "field" to political science will in this thesis be simply called "organization theory", which obviously excludes all publications in political science and public administration. So, in this research organization theory is seen as an accumulated body of work receiving contributions from mainly sociology, economics, and later organization science. Political science will be considered as a separate discipline, but is a very broad research area, as such. It wouldn't make sense to pick any popular publication from this field, since it might not concern itself with any of the issues relevant to this thesis. Hence, only publications regarding organization theory, group decision making, and the functioning of organizations were selected. In other words, it can be described as a comparison of political science and the other fields regarding organization theory. This classification is based on the consensus in the literature that organization theory consist mainly of contributions from sociology, psychology and economics, whilst political science is being held separate (Moe, 1991).

Hence, a distinction between the two fields is necessary for this thesis but not as easy to do accurately. The question arises: How to figure out, which fields do the authors of the papers belong to? The most straightforward way to solve this is to check in which journals the papers have been published. Depending on that, the papers would be classified accordingly. For example, papers published in *Administrative Science Quarterly* or *Academy of Management Review* are classified as organization theory, while papers in the *Annual Review of Political Science* or *Public Administration Review* are organized into the political science category. Additionally, for books and some unclear cases, the authors themselves have been researched and classified based on the journals they are most often published in or the departments they work at. A good indicator is also

to look at the recipient of the papers. If the authors address companies or managers in a business organization context, they most likely fit into organization theory. If they are addressing politicians or political parties in a governmental organization context, they often are political scientists.

Admittedly, this classification can be criticized, since the journals have the freedom to publish any publication they conceive as suitable, regardless of the discipline the authors are part of. In order to make this classification more substantial, an attempt to categorize the publications based on their content has been conducted. A detailed description of this attempt can be found in the analysis. Nonetheless, the initial categorization, as explained in this section, will be used as the foundation for all analyses, since it has proven to be more accurate.

4.2. Dependent variable

The dependent variable in this thesis is called "cross-referencing" and represents whether an article is referencing another article from the opposite field or not. The values to this variable (yes=1, no=0) have been filled out manually by looking at the backwards-citations in each article and checking whether any other article from the sample is being referenced. Of course, since the focus is on cross-references, not references in general, the variable receives the value 1 only if the cited articles are from the opposite field. Some publications do not cite any of the other articles, while some are citing multiple. However, this variable is a dummy variable and should only capture whether there is a cross-reference or not, regardless of how many. All else being equal, the assumptions of the authors should reveal their influence on the likelihood of a cross-reference.

Another way to look at cross-references is from the point of view of the article, which is being referenced, in other words, the "passive" point of view. The variable, in this case, is "cross-referenced", capturing whether an article is being cross-referenced or not. To see whether there is a difference in outcomes, both variables will be used as a dependent variable in a regression analysis and the two models will then be compared to each other. Nonetheless, the variables "cross-referencing" will be used for further analyses, due to the fact that there are more observations that are citing compared to those being cited.

4.3. Independent variables

After an in-depth analysis of each of the publications, certain elements have come to the surface that could give interesting insights for cross-referencing. These elements consist of assumptions the authors are making in their publication. These assumptions revolve around how humans behave and what drives them in an organizational context. The independent variables are formed from these assumptions. To prevent multicollinearity, the assumptions are structured into further detail by applying the "MECE problem-solving process" developed by McKinsey & Company. MECE stands for "Mutually Exclusive and Collectively Exhaustive" and helps to structure issues into the clearest and most complete way as possible (Rasiel, 1999). Lee and Chen have demonstrated in their paper "Mutually-exclusive-and-collectively-exhaustive Feature Selection Scheme" how this method can be used to identify variables that are cost-effective and give complete information. The mutually exclusive part avoids overlaps in what the variables are explaining, while the collectively exhaustive part makes sure that no relevant information is left unexplained (Lee & Chen, 2018).

With this in mind, 16 assumptions have been identified that kept reoccurring in the papers, which represent the independent variables. For a better overview, these assumptions have been structured into five superior subject areas: Goals, Decision Making, Opportunism, Motivation and Information flow. All of these independent variables are dichotomous, receiving the value 1 if they are mentioned or indicated in the paper and value 0 if they are not. Obviously, when an assumption is mentioned only implicitly one could argue that the interpretation is somewhat subjective. For this reason, indicators were introduced for each element, that not only help to make interpretations more objective but also improve the comprehensibility of the decision-making process. The independent variables and their particular indicators are explained in the following section, including examples for better understanding.

4.3.1. Goals

As the name already implies, the subject area "goals" revolves around the authors' assumptions regarding objectives within an organization. The two options that kept reoccurring were

"subordinate goal" and "individual goal". Most authors assume only one of the two, however, there are some who assume that both types of goals can occur, especially when the organizational goal and individual goal are in conflict with each other.

Subordinate goal

A subordinate goal suggests that the author assumes there exist one or more common organizational goals, which all the actors are pursuing jointly. For example, the objective of a business firm could be profit maximization or for a political party, it could be the gaining of new voters. If the authors clearly talk about one or multiple organizational goals or individuals pursuing the same goal, it is a match for this variable. To illustrate, Gulick (1937) explains that "*coordination may be achieved […] by the dominance of an idea that is, the development of intelligent singleness of purpose in the minds and wills of those, who are working together as a group so that each worker will of his own accord fit his task into the whole with skill and enthusiasm*" (p. 450). When the authors do not mention a subordinate goal explicitly, an indicator for this variable is: A clear focus on the organization being an autonomous actor with a certain purpose, that is not assigned to one individual in particular.

Individual goal

The variable "individual goal" focuses only whether the actors within an organization have their own personal objectives. In the ideal scenario, these should match with the organizational goal. A great example is the tree analogy by James March (1962), where he explains that the goal of each individual leave is to reach as much sun exposure as possible, which, if being consistent, results in the best possible allocation for maximal sun exposure for the whole tree. He calls it "the botanical invisible hand". However, he is not alone with assuming that organizations do not often work this way in reality. Individuals often have personal interests that can be conflicting with the interests of other organization members as well as the organizational goal. This can also be found in politics, where not only citizens but also congressmen and public administrators disagree on objectives

(Lindblom, 1959). Thus, if an author mentions conflicts of interests it is an indicator for individual goals.

4.3.2. Decision making

The next pair of variables is focusing on the way the authors look at the decision-makers themselves. They are highly diverging in their notion of the physical and environmental conditions of an actor. While the "rational actor" assumption seems to fit more to theoretical approaches, the "bounded rational actor" assumption tries to grasp reality. In total, both assumptions are used very often in the sample, but authors usually assume either one or the other.

Rational actor

When rational actors make decisions, it implies that the issues they are deciding about are clearly defined, they are well informed of all alternative solutions they can choose from, and they know the consequences of each. Also, they have a preference-ordering for the alternatives and are basing their decisions on that. This implies that, whichever decisions they make, they have the time and skills to execute it (March & Simon, 1958). Since organization theory is dealing with group decision problems, authors are often clear about the rationality assumption by mentioning it explicitly. In many cases, when the focus is on the analytical part of decisions, full information and a stable environments are assumed, and no emphasis is put on the decision maker's cognitive restrictions. These are indicators for the "rational actor" assumption.

Boundedly rational actor

The boundedly rational actor concept comes from behavioural theory and puts the focus on the constraints of the decision-makers and their environment. In simple terms, the view is that they are "only" humans and humans have flaws. Also, the environment is in reality most of the time quite unpredictable, chaotic, and far from being stable. On top of that, problems are often poorly defined, alternatives, as well as their consequences, are partly unknown, and preferences are in many cases not clear. Furthermore, time, skill, and resource constraints are factors that need to be considered

(March & Simon, 1958). Typically, the indicators for a boundedly rational actor are when authors consider a lack of information, time and skill and emphasize the subjectivity of decisions. A good example for a match to this variable is the following citation: "*The biological analogy is disturbing to many modern political theorists and organization theorist […] they were reminded by modern psychologists that they are something less than wholly rational creatures"* (Kaufman, 1964)

4.3.3. Opportunism

The following two variables are also somewhat opposites of each other. They address the authors assumption about opportunistic behaviour of individuals and groups. The question asked for this variable is: Do the authors assume actors are simply obedient in following rules and changes of processes or will they protest, act opportunistically, and potentially leave the organization?

Obedience

This variable assesses the first of the two options, where authors assume that actors are going to behave in an expected manner. There are multiple reasons, which make the authors assume this behaviour. One of them is due to simplification, where the focus is on production efficiency. Humans are rather seen as a resource without any individual influence and are simply going to obey orders (Taylor, 1947). This should not imply that the authors are ignorant of the fact that humans have their own will. In some situations, it makes sense to use this assumption in a ceteris paribus context in order to create valuable results for the topic in question.

Another reason is especially relevant in the political sphere, where political actors cannot "just" leave but they have to bear what has been decided upon them. Especially in democratic decisions, where the majority wins, the minority has to accept the new rules whether they like it or not (Shepsle, 1986). In addition to this, also institutional norms are "forcing" many individuals and organizations to behave in the socially accepted manner. The word forcing is put into exclamation marks, as it is more an indirect force. If individuals want to safeguard their interests, they often have to behave according to institutional norms. However, individuals can still choose not to obey the institutional norms but have to bear the consequences. Therefore, it is crucial what the authors

themselves assume about how actors can behave. Indicators, in this case, are if authors mention humans as machine-like instruments and do not address alternatives or the possibility of neglecting decisions.

Participation choice

The variable "participation choice" implies exactly the opposite. Authors assume that actors can choose whether they want to enter, stay within or leave an organization, such as in the following citation: *"[…] this study [is] […] based on the premise that the individuals in organizations can best be viewed not as passive instruments of organization, but as feeling, reasoning, and motivated beings*" (Lawrence & Lorsch, 1967)

This means actors are having an individual will and are striving to influence their surroundings to their own advantage. This is often assumed in economical papers, where employees have a free will to decide whether they want to enter and organization, stay in it or leave it. Indicators for participation choice are if the authors emphasize consequences for when the individuals do not want to obey rules, or they are describing contracts and negotiations. Further indicators are when authors are elaborating on decisions of entering an organization and on organization members' resistance for change.

4.3.4. Motivation

As the citation above already mentions, individuals are often seen as "motivated beings" which leads to this subject area. The underlying question here is: What do the authors assume are drivers for individuals and groups that navigate their behaviour? Institutional rules and norms play an important role throughout the following sets of variables, for it is often difficult to distinguish whether the actors are motivated intrinsically or by the influence of institutions. Nonetheless, even if the latter is the case, the "rewards" they want to achieve vary.

Monetary benefits

One of these rewards is monetary benefits, which resembles all monetary compensations and tangible benefits, such as salaries, revenues, health insurances, bonuses etc. For a business organization, for example, this would be the aim to maximize profit (Alchian, 1950), whereas for a political organization it would resemble the pursuit to reduce costs and increase the budgets (Brown & Potoski, 2003). The conditions for this variable are also met if the authors indicate other material gains that can be measured in numbers. Nonetheless, it is important to clarify, that it is not enough for the authors to just mention any of the described benefits, they also have to assume that it is a motivational factor for the actors.

Prestige

The variable "prestige" is looking at the intangible benefits, such as a good reputation, the status in a hierarchy or the respect from other actors in- and outside an organization. This is especially important for actors where the monetary benefits are not as relevant. Political actors, for instance, are highly reliant on their reputation, since this is usually what gets them elected for the office they are pursuing. But also, institutional forces play their part in both fields, since a good reputation is crucial for trust in business as well. Indicators for prestige occur when authors discuss reputation, institutional status or career as motivational forces. Wilson (1980), for instance, describes three types of prestige driven employees: careerist, politicians and professionals, who seek their "rewards" in- or outside the governmental agency.

Security

"Security" is, in contrast to prestige, a more passive motivation. Actors are seen as very risk-averse, focusing on securing their position in the hierarchy. If on top, this motivation is expressed by ensuring the survival of the organization. There is a higher reluctance for innovation or change since actors might see it as a threat to their position (Mohr, 1969). Especially in politics, security is an important matter. Usually, those, who design an agency structure are not going to be leading it forever. Authority changes frequently and the new "owners" can do with the structure whatever

they believe is more appropriate. That is why the group designing the structure has to account for political uncertainty. They do so, by creating preventive structures that are difficult to change when the new "winners" take over. In many cases, this involves preventing public authority overall, which unfortunately often is accompanied by inefficient operating procedures as a result. (Moe, 1991)

Self-development

Another motivational factor is the pursuit for actors to develop themselves or the organization. The concept of "organizational learning" is greatly discussed in organization theory. There are many terms authors are using to describe this matter, such as innovation, evolution, learning, improvement or development. For example, Nelson & Winter are using the concept of self-development when describing "search" as part of the evolutionary theory of the firm. "*Using the term "search" denote[s] a firm's activities aimed at improving on its current technology …*" (Nelson & Winter, 1982, p. 210)

There are many other ways authors describe the process of learning. Kaufman (1964) and Alchian (1950) describe it as the imitation of other successful organizations, while Becker et al. (2005) see it as the improvement of routines, which are a cluster of organizational abilities. Others again explain training and mentoring programs, that many organizations provide to ensure constant development (Wright, 2004). However, all of these indicators have to be mentioned in the context of motivation of the actors in an organization, otherwise ,it is not a match to this variable.

Power

Authors also assume that the pursuit of power or influence is a driver for many actors. This manifests itself in various ways, such as being able to influence the decision making within an organization, having power over the competition by influencing public policy (Hillman, Keim, & Schuler, 2004) or being able to overrule organization members by forming unions with others (Borgatti & Halgin, 2011). Another indicator is when individuals keep certain information for themselves, just to be higher valued by others, and thus be more influential (Carlile, 2004). Of

course, having influence in political science means to be elected for a position of power or having good relationships with those in such positions (Allison, 1971). One could argue that the main interest of politicians is to seek power since only then they are able to execute what they are aiming for. Be that as it may, in this thesis it only matters what the authors are assuming that motivates actors. In fact, there are many authors in political science, who do not see power as the main motivational force.

Interest in society

While all the variables mentioned so far, are dealing with more egocentric motivations of the actors, this one is considering a rather altruistic driver. The question asked for this variable is whether the authors assume that actors are motivated to serve society by fulfilling their interests. However, there are two sides to this "selfless" behaviour. One is when the actors are actually altruistic and are dedicated to change the world for the better, which is often assumed for political scientists (Hall, 1993) (Weber & Khademian, 2008). The other is institutional pressure, which means that if the actors do not act in the society's best interest, they have to expect negative consequences to their success (Meyer & Rowan, 1977) (March & Olsen, 1984). Nonetheless, both results in the same outcome, which is why the variable is a match for either of the two.

Relationships

Last but not least, authors assume, individuals are also driven by the need to form social relationships. Good relationships not only create trust to other organizational members, but they also motivate actors to behave in a supportive way that is beneficial to the organization. Furthermore, if organization members trust each other they are more likely to share individual information (Nonaka, 1994). Authors also assume that people have the need to belong to a group and develop a group identity (Ostrom, 1998). This is not only beneficial for the organization, but also for the individuals themselves. Many actors are forming networks through relationships that help them achieve their own targets. (Ahuja, Soda, & Zaheer, 2012). Indicators for this variable are the creation of networks, the formation of trust and the belongingness to a group. Even though

there are separate variables for information flow, an informal organizational structure is also an indicator of relationship creation, if mention as a motivational force.

4.3.4. Information flow

The final subject area regards itself with how information is shared in an organization. Usually, that goes hand in hand with the structure of the organization but also depends on its the culture. In this thesis there are two possible information flows identified, the formal and the informal one. Also, these two are not exclusive; authors can assume both forms and they often do so.

Informal information flow

Usually, an informal flow of information can be found in loosely structured organizations, which are more reliant on the proactivity of individuals to share information. Many authors mention professional networks and relationships to be crucial for an informal sharing of information. It is the so-called "tacit" knowledge that can only be passed on through informal knowledge transfer (Amit & Schoemaker, 1993). This is also relevant for information outside an organization, where actors can obtain valuable knowledge through competitors or other stakeholders (Dyer & Singh, 1998). Some organizations are putting great focus on this type of knowledge transfer, whereas others rather trust structure and processes. However, in this thesis, it only matters what authors assume in their publications, for that is what makes other authors decide whether they choose to reference that publication or not.

Formal information flow

In contrast to the previous, a formal information flow often emerges in structured organizations. This structure can be created through hierarchy or simply a clear distinction in responsibilities for each organization member. Usually, formal information is streaming either downward or upward a hierarchy. In some cases, also both. However, for this thesis, if an organization has an information-sharing process in place, it is also regarded as a formal flow of information. An example of a match to this variable is the following: "*The exchange of information among*

professionals helps contribute to a commonly recognized hierarchy of status, of center and periphery, that becomes a matrix for information flows […]" (DiMaggio & Powell, 1983). Further indicators for this variable are if authors mention principal-agent relationships or organizational processes and routines in the context of knowledge sharing.

4.3.5. Unit of analysis

Lastly, the unit of analysis is also treated as an independent variable. That is for the presumption that it might be a predictor for cross-referencing as well. There are only two possible units considered, individuals and groups. It might be, for instance, that one field rather writes about individuals whereas the other field writes about both. As a result, those publications describing the individual perspective would be referenced more often than the ones describing the group perspective. Even though there are a few authors that explain their notions from both perspectives, the majority rather picks one. This is why, if these two units would be used as two separate variables, they would be highly correlational. For this reason, they are combined into one binary variable, where observations with the value 0 resemble "group" and observations with the value 1 resemble "individual" as the unit of analysis. Publications that use both can be considered as irrelevant due to their small number in the sample. Therefore, they have not been incorporated into the analysis.

4.3.6. Topics

The in-depth analysis of each paper also revealed themes on a higher level, into which the publications can be structured. Accordingly, each paper has been assigned to one of six identified topic areas with the purpose of investigating whether cross-references are more likely to occur in certain areas of research than in others. At this point, it is important to mention, that the classification has been made through subjective interpretation and therefore can differ if made by another author. An overview of the papers and the corresponding topic area can be found in Appendix A. The following six topics are described as follows:

Topic 1: Efficiency and optimization

Articles, that have been put into this topic area, regard themselves mainly on how organizations can become more efficient in their undertaking. For example, they look at how communication can be easier, how production can be faster or what the costs and profits of certain undertakings are. It can also be understood as an economical point of view. Good examples, in this case, are the papers of Gulick L.H. (1937) and Urwick L. (1937), where they talk about hierarchical leadership and labour division to reach a more efficient production outcome. Also more recent papers fall into this category, such as Gereffi, Humphrey, and Sturgeon (2005), who explain how global value chains are governed by looking at transactions as a key feature.

Topic 2: Influence of society and government

This topic area contains all the papers that are analysing how the society and the environment influence actors in their motivations and decision making, as well as the organization as a whole. The main keywords for this topic area are *old* and *new institutionalism* and *organizational culture*, which are highly discussed in both fields. Organizations often act in inefficient ways due to prioritizing how outside stakeholders perceive them. Also positive political theory falls into this category, such as the paper of Weingast and Moran (1983), where they describe how the legislature influences the actions of governmental agencies.

Topic 3: Human psychology and behaviour

Papers focusing on human behaviour from a rather psychological point of view are part of this topic area. This is often discussed in organization theory as well as political science since in both fields the actors play an important role. Behavioural theory is the most prominent example of this category, which considers the way humans make decisions, such as the “boundedly rationality” assumption (March & Simon, 1958). In political science often analyses regarding the behaviour of voters but also human boundaries of political representatives are discussed.

Topic 4: Influence on society and government

As the name already suggests, this topic looks at the opposite relationship as topic 2 does. It includes papers that consider how organizations can influence society and its direct environment. This is, of course, more common for political agencies than for organizations in general, however, also business firms can have the aim to shape the government to their advantage, such as Hillman, Keim, and Schuler (2004) are illustrating. Another example would be Osborne, Radnor, Nasi (2013), which examine how public value can be created through a joint effort of policymakers and managers.

Topic 5: Relations and strategy

Papers in this category have their focus on inter-organizational relations and networks from a strategic point of view. Questions regarding the importance of relations used to achieve organizational aims are being answered. Especially papers writing about network theory fall into this classification, but so do papers, using relations as a strategy, such as Dyer and Singh (1998), who write about the advantages of coalition formation of firms.

Topic 6: Organizational development and learning

Last but not least, the sample also includes many papers discussing organizational change and learning. Papers that write about knowledge management, innovation or any other phenomenon that helps improve the organization and its actors fall into this category. Incrementalism, for example, is a term that considers a step-by-step learning process (Lindblom, 1959). Also Nelson & Winter's (1982) evolutionary theory, that explains how firms should react to economic change, fall into this category.

4.4. Control variables

Publication age

Obviously, an older article has a higher chance to be cited than a younger one, since it has more time to gain popularity. Therefore, it is not a fair competition and has to be taken into account. The variable represents the "age" of the article, which is the difference in years of 2019 and the publication year of the observed article. For example, an article published in 1978 would have the value 41 for this variable.

Popularity

"Popularity" refers to the number of forward-citations aggregated by Google scholar. The reason for using this variable as a control variable is to investigate what kind of influence the popularity of the papers has on the likelihood of cross-referencing. Logically, if a paper is very popular the likelihood of it to be referenced by other papers is higher, which implies that the same holds true for cross-referencing. Since the purpose of this thesis is to find predictors of cross-referencing in the content of the papers, it is crucial to test for potential biases such as this one. The aim of the sample construction was to pick publications as popular as possible. Yet, inasmuch as the sample is spread over the years and consists of books and articles, the values are rather sporadic. For this reason, the variable has been transformed by taking the logarithm, which smoothens the distribution.

5. Methods

5.1. Linear regression analyses

To describe a trend over the years in the number of cross-references, the following ordinary least square (OLS) model has been formulated:

$$y_{1,i,j} = \beta_0 + \beta_1 a_{ij} + u_{ij}$$

$y_{1,i,j}$ is the outcome variable (number of cross-references) for a publication i, and for field j, which is either organization theory or political science. The variable of interest a_i represents the publication year of each paper, and ranges from 1937 to 2019. The parameter of interest is β_1 and stands for the influence of year on the number of cross-references. As common, β_0 is the intercept value and u represents the residual value. The trend will be tested separately for each field, in the sample as well as in total.

By the same token, also the predictors for cross-referencing have been estimated with an OLS model formed as follows (exhaustive model incl. control variables):

$$y_{2,i} = \beta_0 + \sum \beta_{1-16} x_{i,1-16} + \sum \theta c_{i,1-2} + u_i$$

In this case the outcome variable y_{2i} can, per publication i, only take on the value 1, if a cross-reference occurs, or the value 0 if it doesn't. Even though the outcome variable is dichotomous, it still makes sense to conduct a simple regression analysis first due to easier interpretation of the marginal effects. The term $x_{i,1-16}$ resembles all 16 independent variables explained above, whereas for each of these variables the corresponding β-estimate is to be assessed. These parameters describe what influence each variable has on cross-referencing as such. Additionally, this model also includes the two control variables $c_{i,1-2}$, *publication age* and the logarithm of *probability*, which influence is described by the parameter θ. Multicollinearity is tested by calculating variance inflation factors, where each of these factors is compared to a threshold of 5.

Furthermore, this model has been tested a second time on a smaller sample excluding all publications that were found through forward-citations. As mentioned earlier, there is a risk of a sample selection bias, which needs to be accounted for. This has been done by comparing the two models with each other and conducting a chi-square tests of equality of coefficients.

Almost the same model has been applied to see whether there is a difference in outcome, when looking at publications being cross-referenced compared to publications cross-referencing.

$$y_{3,i} = \beta_0 + \sum \beta_{1-16} x_{i,1-16} + u_i$$

Therefore, the dependent variable has been exchanged by $y_{3,i}$, which takes on the value 1, if a publication is being cross-referenced, or the value 0 if it isn't. The control variables have been left out on purpose, since the previous model has shown that they are insignificant. Also, this has been tested by looking at the equality of coefficients. Of course, the two models then have been compared to each other without control variables in neither of them.

In addition to this, the model has been enriched with a classification into the topics mentioned earlier, to see whether cross-references occur more often in certain research areas than in others. The equation (exhaustive model incl. topics) looks as follows:

$$y_{2,i} = \beta_0 + \sum \beta_{1-16} x_{i,1-16} + \sum \delta t_{i,1-6} + u_i$$

The newly added variable $t_{i,1-6}$, resembles the topic allocated to each publication, meaning that per publication only one of those 6 topics has the value 1, the rest have the value 0. Publications with a matching topic 3, *human psychology and behaviour*, have been used as the reference group, since those had the highest observation number. The parameter δ explains the influence of a topic on cross-references in comparison to topic 3.

When looking at the exhaustive model, which includes all predicting variables, it is obvious that the high number of variables can create unnecessary noise in the model, which only has 80 observations, and so makes it hard to find significant interpretations. For this reason, "irrelevant" variables have been excluded completely with the aim of improving the explanatory power of the

model as a whole. The word “irrelevant” has to be understood with caution, since each variable in a regression model can have an influence on the model, regardless if significant or not. Despite this awareness, a reduction of variables is still meaningful, as long as it improves the model. To ensure that, the following method has been applied:

Starting off with the exhaustive model including control variables, the variable with the smallest coefficient has been identified. The smallest coefficient, in this case, is the one with the smallest number, regardless of whether it is positive or negative. In the next step, the identified variable is being removed and the regression analysis repeated with the remaining variables. Then again, the variable with the smallest coefficient is being identified and removed and the analysis repeated with the ones remaining. The same procedure is conducted 14 more times until there are only significant coefficients left. This results in 16 different models with the variables declining from model to model. Starting from the first model with 18 variables the process finishes at a model with only 3 variables. Out of these models, the one with the highest adjusted R-squared, has been picked and called “enhanced model”. Also for this model, the multicollinearity of the variables is tested through variance inflation factors.

There is one important issue, that has to be discussed regarding the method just described. It is common knowledge that if a variable is not significant its coefficient is always zero. Still, the method above considers the coefficients of the test results as a measure, even though they were insignificant. The reason for that is, that it can be assumed that the p-values are inflated due to the low power of the model, resulting from the small sample size and the high number of variables. This means that the p-values might not be the actual p-values of the variables. For the same justification, it can be argued that it is more precise to look at the coefficients rather than the p-values themselves. A detailed description of the models and the process can be found in Appendix B.

All models mentioned in this section have been assessed for heteroscedasticity by using the robust standard error.

5.2. Logistic regression

The logistic regression has been conducted for the exhaustive model as well as the enhanced model. The equation, upon which the exhaustive model is built, is described as follows:

$$P(y_i = 1|x) = G\left(\beta_0 + \sum \beta_{1-16} x_{i,1-16} + \sum \delta t_{i,1-6}\right) + u_i$$

whereas

$$G(z) = \frac{e^z}{1 + e^z}$$

For the enhanced model the equation has to be adjusted to the following:

$$P(y_i = 1|x) = G\left(\beta_0 + \sum \beta_{1-9} x_{i,1-9}\right) + u_i$$

whereas

$$G(z) = \frac{e^z}{1 + e^z}$$

Furthermore, the odds ratios have been calculated, which are used for the interpretation in the results section.

5.3. Factor analysis

As discussed above, the split of the publication into organization theory and political science has been done manually by mainly looking at the journals they have been published in. This should be a good indicator for which field an author belongs to. However, there is nothing hindering journals publishing papers from other fields. Consequently, it would be interesting to figure out whether the publications can be categorized into these two fields by solely looking at their content. In other words, would the classification be the same as the one distinguishing based on the field of the journals, if only factors deriving from the content are considered?

For this reason, a factor analysis has been conducted with the "assumptions" data, collected for each publication. This data consists of all the independent variables, except for the 6 topic variables.

The decision of how many factors to retain is following Horn's method of parallel analysis. The reason why it was picked over the Kaiser rule is that it helps to make this decision less subjective. The Kaiser rule suggests retaining eigenvalues higher than 1, which means that if an eigenvalue equals to 0.9, for example, it would not be retained. Horn argues that this is not precise enough, since the Kaiser rule doesn't account for sample biases, which could create inflations in the eigenvalues. Horn's solution to this is to randomly generate multiple datasets of uncorrelated data with the same sample and variable size as the "real" dataset and perform a factor analysis on each. From there the mean has to be taken from the results of each of the dataset and compared it to the real eigenvalues, This gives the bias-adjusted eigenvalues, which make the decision of how many factors to retain less subjective. There are also several other methods for this decision, nonetheless, the parallel analysis is in literature considered as one of the most accurate ones (Dinno, 2009).

Once the amount of retaining factors has been identified, they have been explained through the variables having the highest factor loadings. To be more precise, each factor has been interpreted to be a classifier for either organization science or political science, based on 3 variables per factor with the highest factor loadings. The field has been determined by looking at whether the factor loadings are positive or negative. Accordingly, if an observation fulfils the conditions for all three variables of a factor, it will be a match to that factor. Technically, each factor will resemble a variable on its own, receiving the value 1 if the factor is a match for the given observation. In the end, these factors will be compared to the variable "field", which represents the manual split of the papers in political science and organization theory. The comparison is conducted by creating a variable called "correct", that receives the value 1 if the field and the corresponding factor(s) are a match. Hence, the interpretation then can be made by looking at this variable.

6. Results

6.1. Descriptive statistics

All variables used in the analyses are described in this section. Table 1 shows the means, standard deviations, minimums and maximums of each variable for the whole sample of 80 publications and the same for each field separately. The dichotomous variable *field* categorizes the papers into organization theory with the value 0 and political science with the value 1. Its mean of 0.5 confirms an equal split of 40 papers each. The variable *year* stands for the year in which the article or the book has been published. The maximum and minimum show that the oldest publication in the sample is from 1937 and the youngest from 2019. It is apparent that the mean of the data 1988 lies close to the median of 1937 and 2019. In addition, the standard deviation indicates a wide spread of the data. These two metrics reveal that the publications are spread over the years roughly equally in both fields, which is intended. The following binary variable *found by forward-citations* assigns the value 1 to those publications that were found based on a forward-citation from another publication in the paper. In total, there are 14 out of 80 publications that were found in such a way, out of which 8 are from political science and 6 from organization theory. This variable will only be used to investigate a potential data selection bias.

Further down in Table 1 all variables regarding references are described. The first one, *cross-reference*, is the main dependent variable and notes whether a publication is citing another publication from the opposite field or not. The means show that 60 percent of all publications from political science are cross-referencing, while for publications from organization theory it is only 20 percent. Almost the same does the second variable *cross-referenced*, except of that it looks at it from a passive point of view. It describes whether a publication has been cited by the other field or not. One might argue that these two should be the same, but that is not the case. The data shows that overall there are more publications cross-referencing (40 percent) than there are being cross-referenced (27.5 percent). Again, mainly organization theory is being cross-referenced. 40 percent of all publications from organization theory are being cross-referenced, but only 15 percent from

political science.

The variables *nr. of times citing organization theory (sample)* and *nr. of times citing political science (sample)* are capturing how many publications from the correspondent field, that are in the sample, the observed publication is citing. The data shows that references to organization theory are exceeding references to political science regardless of who is referencing. A t-test supports with a one percent significance that organization theorists are referencing on average only 0.375 articles from political science, while political scientist are referencing on average 1.575 articles from organization theory.

Similarly, the variables *nr. of times citing organization theory (total)* and *nr. of times citing political science (total)* describe the same as the two variables explained before. They also represent the number of cross-citations each article is making. The only difference is that the first two only include citations of the 40 papers from the opposite field that are in the sample. The latter two, on the other hand, look at all backwards-citations in total, including those that are outside the sample. Also for these, the distinction between organization theory and political science has been made based on the journals. Even though the total number of backwards-citations to organization theory and political science is very similar, there is still a big difference in cross-citations. The mean for political scientists citing organization theory is 14.55, which is almost double as high as the mean for organization theory citing political science (8.85). The results of testing this relationship with a t-test show a significance level of 10 percent.

The next group of variables in the table are the control variables. As already explained before, the variable *publication age* represents the chance for a publication to be cited. Since it is calculated by subtracting the publication year from 2019, it basically reflects the variable *year.* Also, here the spread of the data is quite big, as intended.

TABLE 1 - DESCRIPTIVE STATISTICS

	Variable	Total (80 publications)				Organization Theory (40 publications)				Political Science (40 publications)			
		Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max
	Field (0 = OT, 1 = PS)	0.5	0.503	0	1								
	Year	1988	21.385	1937	2019	1984	24.256	1937	2018	1992	17.239	1957	2019
	Found by forward citations*	0.175	0.382	0	1	0.15	0.3612	0	1	0.2	0.405	0	1
References	Cross reference (DV)*	0.4	0.493	0	1	0.2	0.405	0	1	0.6	0.496	0	1
References	Cross referenced*	0.275	0.450	0	1	0.4	0.496	0	1	0.15	0.362	0	1
References	Nr. of times citing organization theory (sample)	1.913	2.430	0	11	2.25	2.383	0	10	1.575	2.459	0	11
References	Nr. of times citing political science (sample)	0.6	1.289	0	7	0.375	0.952	0	5	0.825	1.534	0	7
References	Nr. of times citing organization theory (total)	23.663	20.746	0	92	32.775	22.755	2	92	14.55	13.553	0	62
References	Nr. of times citing political science (total)	24.788	27.994	0	123	8.85	14.268	0	50	40.725	29.375	4	123
Control variables	Publication age	31	21.385	0	82	35.475	24.256	1	82	26.55	17.239	0	62
Control variables	Popularity	6745.587	11951.34	21	49336	10557.25	14951	21	49336	2933.925	5999.686	29	33139
Control variables	Logarithm of popularity	7.376	1.896	3.045	10.806	8.063	1.810	3.045	10.806	6.688	1.743	3.367	10.408

* for these variables value 1 = yes and 0 = no

Last but not least, the control variable *popularity* represents the amount of forward-citation per paper in Google scholar. It is quite obvious that this data has a high spread, ranging from only 21 citations to over 49.000. The reasons for this are first and foremost outliers in the sample, due to books and the spread of publication years. Such a distribution is very difficult to use and interpret. That is why this variable has been transformed by taking the logarithm to smoothen out the distribution and is called *logarithm of popularity*. The result shows that there is a higher mean of forward-citations for organization theory (8.063) than for political science (6.688).

Table 2 explains the descriptive statistics of the independent variables. Since these are almost all dichotomous, it includes only the means and standard deviations. (The following descriptions do not include *topic*, since this is not a dichotomous variable and will be explained separately in the subsequent paragraph.) The standard deviations are all equal to around 0.5 per variable, which confirms the binarity of the variable. Again, the whole sample of 80 publications as well as each field is displayed separately. The means can also be understood as the percentage of yes "respondents" out of the total number of observations. For example: Out of 80 papers, 77.5 percent are assuming actors have an individual goal; out of 40 organization theorists, 72.5 percent assume the same; and so on. The variable with the highest amount of yes "responders" is *individual goal*, followed by *formal information flow*. These are also the most dominant variables in organization theory, whereas in political science the individual as *unit of analysis* is more dominant than *formal information flow*.

The last variable in the table is *topic*, which is categorical and assigns one out of six topics to each publication. The mean lies in both fields closest to topic 3, however, when looking at the absolute numbers, one can see that topic 3 and 6 are equally dominating. Looking at the fields separately though, topic 3 is more dominating in political science, whereas topic 6 is more powerful in organization science. The absolute numbers to this Table 2 can be found in the Appendix C.

TABLE 2 - DESCRIPTIVE STATISTICS FOR INDEPENDENT VARIABLES

		Total (80 publications)		Organization Theory (40 publications)		Political Science (40 publications)	
	Variable	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Independent variables	Subordinate goal*	0.338	0.476	0.375	0.49	0.3	0.464
	Individual goal*	0.775	0.42	0.725	0.452	0.825	0.385
	Rational actor*	0.25	0.436	0.25	0.439	0.25	0.439
	Boundedly rational actor*	0.563	0.499	0.575	0.5	0.55	0.504
	Obedience*	0.213	0.412	0.125	0.335	0.3	0.464
	Participation choice*	0.375	0.487	0.475	0.506	0.275	0.452
	Monetary benefits*	0.463	0.502	0.625	0.49	0.3	0.464
	Prestige*	0.3	0.461	0.3	0.464	0.3	0.464
	Security*	0.3	0.461	0.275	0.452	0.325	0.474
	Self development*	0.363	0.484	0.425	0.5	0.3	0.464
	Power*	0.4	0.493	0.25	0.439	0.55	0.504
	Society interest*	0.338	0.476	0.1	0.304	0.575	0.5
	Relationships*	0.388	0.49	0.45	0.504	0.325	0.474
	Informal information flow*	0.45	0.5	0.5	0.506	0.4	0.496
	Formal information flow*	0.638	0.484	0.75	0.439	0.525	0.506
	Unit of analysis (0=group, 1=individual)	0.538	0.501	0.425	0.501	0.65	0.483
	Topic	3.363	1.843	3.425	1.973	3.3	1.728

* for these variables value 1 = yes, and 0 = no

6.1.1. Trends in cross-references over the years

For determining the trend, it is important to mention that this time all the backwards-citations each article is making are taken into account, also the ones outside the sample. This gives a better overview of the overall development of cross-references in the two fields. By only looking at the articles in the sample, one would be very restricted and biased in explaining a general trend. If the trend in the sample, however, is distributed in a similar way, it helps to improve its reliability.

Two trends have been analysed. First, the increase in backwards citation of organization theory and second, the increase in backwards citation of political science. The question is: how many times has each field been cited over the years and does it increase or decrease? It is also important to determine which field the citation is coming from. It can be a "simple" reference from one field to the same field, or it can be a cross-reference from one field to the other field. The latter is in this case the measure of interest.

First, the trend over the years in referencing organization theory is observed. There is a clear positive trend in simple references, citations coming from organization theory, with a coefficient of 0.545 at a one percent significance level. But, as Figure 1 shows, when looking at cross-references, citations coming from political science, the trend is a much smaller with only 0.202 and a significance only at a 10 percent level. So, the trend is positive, still, it should be interpreted with caution due to the bordering significance level.

Next, the trend over the years in referencing political science is analysed. In a like manner as above, there is a positive trend in simple citations, meaning citations coming from political science. The significance level is at two percent and the coefficient is 0.65. The cross-references, in contrast, show, with a high p-value of 0.595, no significance for a trend whatsoever. Figure 2 confirms this point since the distribution looks quite random.

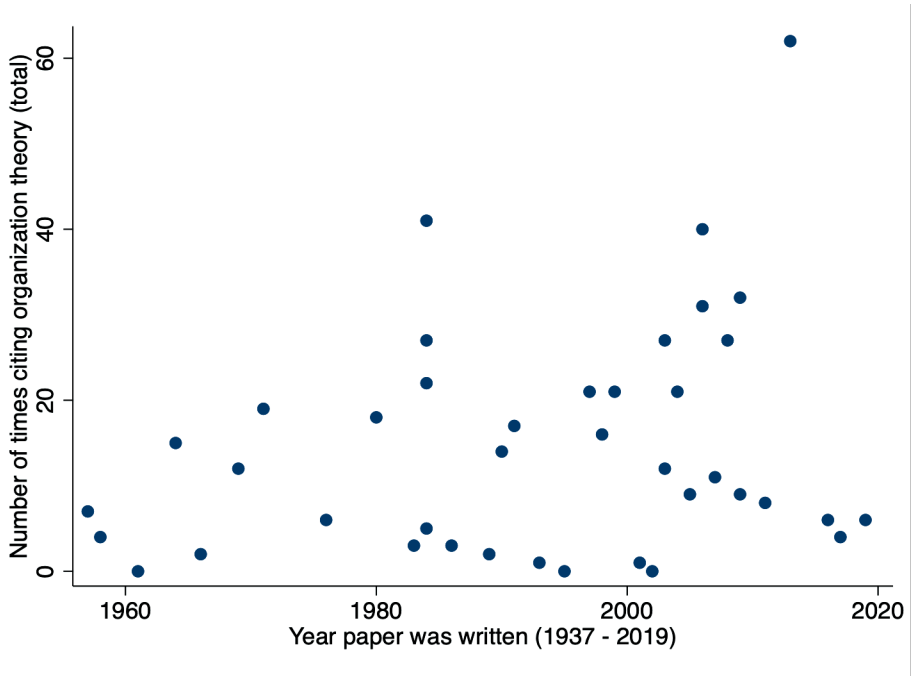

FIGURE 1 - TREND ORGANIZATION THEORY TOTAL[2]

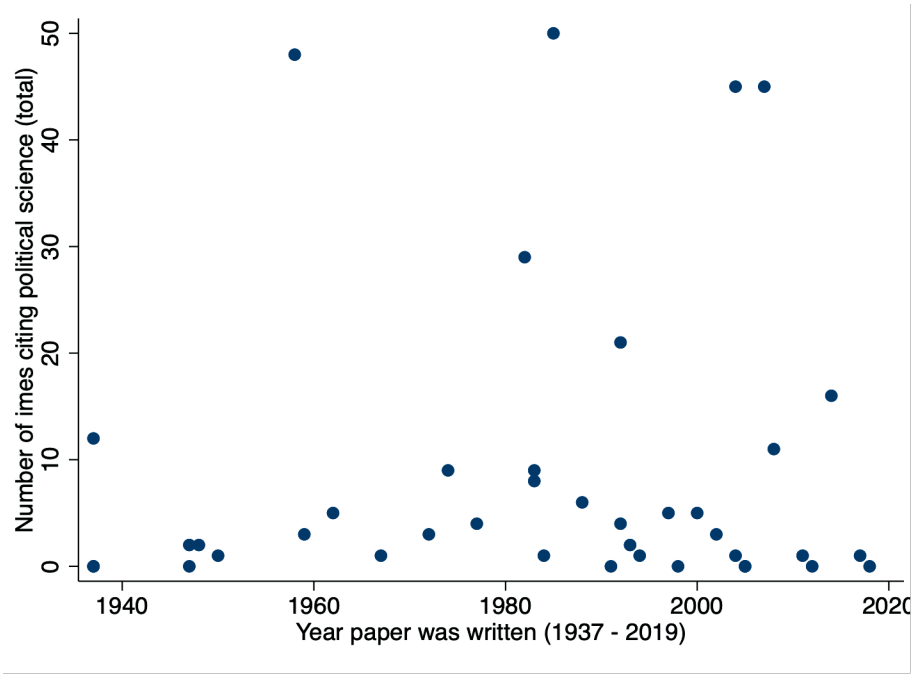

FIGURE 2 - TREND POLITICAL SCIENCE TOTAL[2]

[2] The corresponding table can be found in Appendix D.

In summary, the trends over the years show, that the number of cross-citations coming from political science has slightly increased, whereas there is no change in cross-references coming from organization theory. In other words, organization theory has been referenced by political scientists somewhat increasingly over the years, while political science has on average kept the same, relatively low level of relevance in the eyes of organization theorists.

With this information in mind, it is interesting to check whether the sample does display a similar distribution. Figure 3 shows how many times papers from organization theory, that are in the sample, are being cited by the political scientist in the sample over the years. There is no significant trend recognizable.

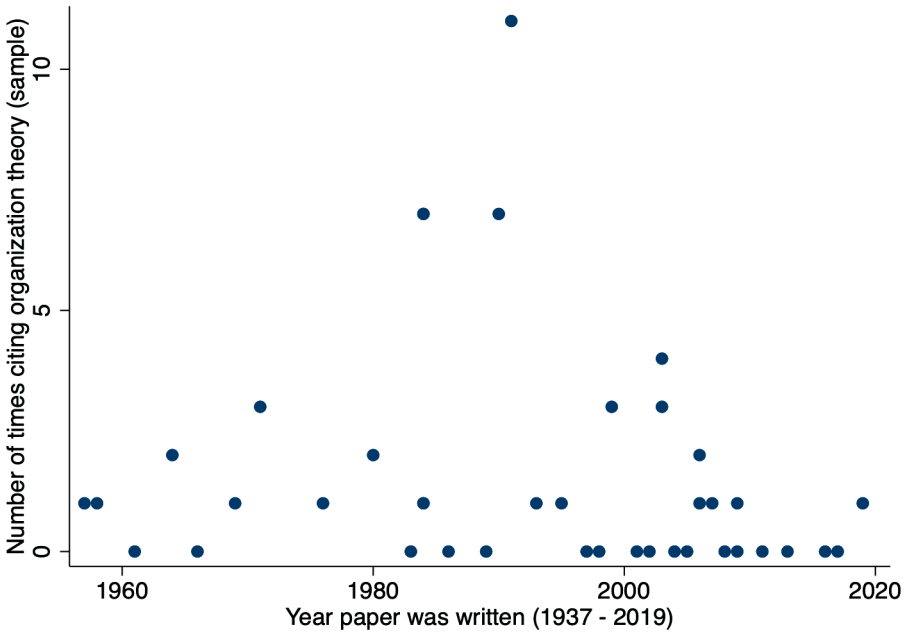

FIGURE 3 - TREND ORGANIZATION THEORY SAMPLE[3]

[3] The corresponding table can be found in Appendix D

Figure 4 shows the opposite relationship: how many times are papers from political science, that are in the sample, being cited by authors in the field of organization theory in the sample over the years? Also here the distribution seems quite random.

So overall both distributions don't give any interpretable insights about a trend over the years within the sample. This, however, can be due to the fact that the number of possible cross-references is restricted to the ones in the sample. Hence, this reduces the data entries dramatically and therefore increases the p-values. For this reason, it is more accurate to interpret the results of the trends for the cross-references in total, which only show a positive trend in cross-citations of organization theory.

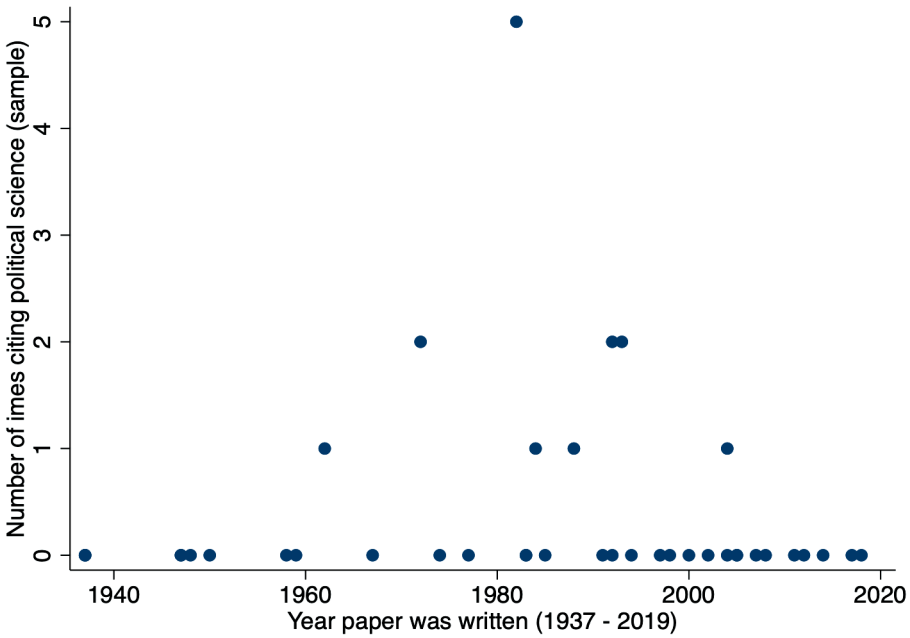

FIGURE 4 - TREND POLITICAL SCIENCE SAMPLE[4]

[4] The corresponding table can be found in Appendix D

6.2. Predictors of cross-referencing

The results of the exhaustive model 1.1 can be found in Table 3, which display the coefficient and standard error of each variable. There are three significant variables: *bounded rationality, prestige* and *society interest*. It is interesting to see that the strongest and most significant driver of them is *society interest* with a positive coefficient of 0.401 and a significance of one percent. *Bounded rationality* is following also with a positive coefficient of 0.289, which is significant at a five percent level. *Prestige,* on the other hand, has a negative coefficient of -0.182 but reaches a slightly less significance level than the other, namely only 10 percent. All other variables are not only statistically insignificant but also relatively meaningless due to their small coefficients. Still, the adjusted R-squared of 0.176 is fairly low. This low power of the model can be explained by the small sample size in comparison to the high number of variables.

Model 1.2 displays the exhaustive model including the control variables *logarithm of popularity* and *article age.* The purpose of this is to investigate whether the control variables improve the accuracy of the model. When looking at the new model it appears like they actually harm it, since the adjusted R-squared decreased to 0.166. Also, the variable *prestige* becomes insignificant, while the variable *relationship* is significant now. Nonetheless, to be able to compare coefficients reliably across models, their equality has to be tested. In this case, the chi-square test[5] shows that all significant coefficients are equal, so it can be said that the control variables do not improve the model's accuracy. In other words, even though the control variables decrease the degrees of freedom, they do not provide any additional information, so it is not worth adding them to the model.

The following tab displays model 1.3, which shows how the exhaustive model looks like when the 14 observations, that were found through forward-citations, are being excluded. So, the number of observed publications decreases from 80 to 66. In this particular case, the only interest is to see

[5] The corresponding table can be found in Appendix E

whether the coefficients remain equal, which again has been tested with a chi-square test[6] of equality of coefficients. The null hypothesis cannot be rejected in any of the coefficients, meaning that they are equal. Interestingly, the adjusted R-squared has improved, which is a sign that even though the coefficients are equal, these 14 publications bring noise into the model. However, there can be many explanations for the noise, and it cannot be ascribed to the way the publications were found. Hence, it can be said, that these 14 publications found through forward-citations do not cause a significant bias in the data and therefore the whole sample can be used as it is for further analyses.

Model 1.4 describes the enhanced model, which was found to improve the power of the model by reducing the number of variables. The variance inflation factors (VIFs)[7] have been tested for the exhaustive model and show that none of the variables exceeds the threshold of 5. In fact, the highest VIF only reaches the level of 2.81. This means that there is no collinear relationship among the variables, that needs to be considered. As a result of the method described above, seven independent variables and the two control variables have been deleted, leaving the model with nine independent variables. Out of these nine variables, four have significant coefficients, which already shows that this model is better than the exhaustive model. Again, *society interest* is the most dominant with a coefficient of 0.398 and a significance level of one percent, which is followed by *bounded rationality* having a coefficient of 0.280 and a significance level of five percent. Also, *prestige* stays relevant with a negative coefficient of -0.168 and is significant at a 10 percent level. But the most interesting change is that now there is another significant variable, namely *security,* whoes relationship to the dependent variable is positive with a coefficient of 0.178 and a significance level of 10 percent. On top of that, the adjusted R-squared has improved to 0.245, which makes it overall a better model. This model has been tested for multicollinearity as well by looking at the VIFs[8] and it shows no collinear relationship among the variables.

[6] The corresponding table can be found in Appendix E

[7] The corresponding table to this Variance Inflation factors can be found in the Appendix F.

[8] The corresponding table to this Variance Inflation factors can be found in the Appendix F.

TABLE 3 - OLS REGRESSION MODEL

Variables	1.1 Exhaustive model	1.2 Exhaustive model incl. control variables	1.3 Exhaustive model excl. publications found through forward citations	1.4 Enhanced model
Unit of analysis	-0.014 (0.126)	-0.031 (0.131)	-0.057 (0.124)	
Subordinate goal	-0.061 (0.150)	-0.037 (0.160)	-0.119 (0.155)	
Individual goal	-0.007 (0.168)	-0.013 (0.180)	-0.010 (0.158)	
Rational actor	0.062 (0.134)	0.110 (0.144)	0.070 (0.119)	
Boundedly rational actor	**0.289** (0.117)	**0.324** (0.123)	**0.386** (0.110)	**0.280** (0.110)
Obedience	0.161 (0.126)	0.170 (0.133)	0.117 (0.124)	0.157 (0.104)
Participation choice	0.158 (0.125)	0.213 (0.135)	0.131 (0.126)	0.150 (0.108)
Monetary benefits	0.068 (0.116)	0.075 (0.121)	0.098 (0.113)	
Prestige	**-0.182** (0.106)	-0.167 (0.109)	**-0.181** (0.107)	**-0.168** (0.097)
Security	0.154 (0.118)	0.134 (0.125)	0.181 (0.115)	**0.178** (0.104)
Self development	0.139 (0.137)	0.127 (0.139)	-0.014 (0.144)	0.119 (0.115)
Power	0.017 (0.114)	0.007 (0.115)	0.012 (0.116)	
Society interest	**0.401** (0.117)	**0.379** (0.123)	**0.320** (0.119)	**0.398** (0.105)
Relationships	-0.214 (0.129)	**-0.242** (0.134)	**-0.215** (0.124)	-0.198 (0.122)
Informal information flow	0.158 (0.131)	0.151 (0.134)	0.011 (0.129)	0.136 (0.116)
Formal information flow	-0.065 (0.128)	-0.084 (0.133)	-0.074 (0.133)	
Logarithm of popularity		-0.020 (0.034)		
Article age		-0.002 (0.003)		
Number of observations	80	80	66	80
Adjusted R-squared	0.176	0.166	0.294	0.245

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01

Table 4 displays the logistic regression of the exhaustive model and the enhanced model. The linear regression model explained above already gives some understanding of the relationships between the dependent variable and the independent variables. Nonetheless, since the dependent variable is dichotomous, the logistic regression is the correct method to explain the model. Table 4, however, shows the odds ratios of each variable, since these are more meaningful to interpret.[9] When looking at model 1.1, it is clear that there are five significant variables. These include the same significant variables as from the linear regression model, which are *bounded rationality, prestige* and *society interest* with the same significance levels as before. Additionally, *obedience* and *relationships* are here significant as well, even if only at a 10 percent level.

Model 1.2 shows the same for the enhanced model with the difference, that instead of *relationships security* becomes significant. Since the enhanced model has proven in the linear regression to be more powerful, the odd ratios of the enhanced model will be interpreted as the results for predicting cross-references with the logistic regression model.

These results show, that the odds of authors referencing the other field are:

- 5.970 times higher when authors assume actors to be boundedly rational (significant at a five percent level)
- 3.455 times higher when authors assume actors are obedient (sign. at 10 percent)
- 3.367 times lower (0.297 times higher) when authors assume actors are motivated by prestige (sign. at five percent)
- 3.331 times higher when authors assume actors are driven by security (sign. at 10 percent)
- 10.864 times higher when authors assume actors are pursuing the interest of the society. (sign. at one percent)

[9] The initial logistic regression models can be found in Appendix G.

TABLE 4 - LOGISTIC REGRESSION MODELS ODDS RATIO

	1.1	**1.2**
Variables	**Exhaustive model**	**Enhanced model**
Unit of analysis	1.253	
	(0.906)	
Subordinate goal	0.643	
	(0.614)	
Individual goal	0.974	
	(0.925)	
Rational actor	1.740	
	(1.634)	
Boundedly rational actor	**7.532****	**5.970****
	(6.277)	(4.162)
Obedience	**3.802***	**3.455***
	(2.983)	(2.399)
Participation choice	2.804	2.562
	(2.331)	(1.867)
Monetary benefits	1.704	
	(1.200)	
Prestige	**0.247***	**0.297****
	(0.186)	(0.175)
Security	3.212	**3.331***
	(2.434)	2.136
Self development	2.461	(2.050)
	(2.102)	1.287
Power	0.920	
	(0.670)	
Society interest	**12.812*****	**10.864*****
	(11.596)	(8.016)
Relationships	**0.302***	0.345
	(0.214)	(0.241)
Informal information flow	2.862	2.292
	(2.070)	(1.624)
Formal information flow	0.747	
	(0.614)	
Number of observations	80	80

Odds ratios are displayed; Standard errors in parentheses; * p<0.1, ** p<0.05, *** p<0.01

Even though the analyses described above already give results to the research question, still two more analyses have been conducted in order to gain further insights and reveal further research areas. One of them, as also explained in the methods section, is whether the model looks different if the dependent variable is *cross-referenced* instead of *cross-referencing.*

Table 5 shows the results of comparing the exhaustive model with this new OLS model, having *cross-referenced* as its dependent variable. The tab on the right side displays the outcomes of the chi-square test of equality of coefficients and it shows indeed a difference. The coefficients in *society interest* are different at a one percent significance level. This means that if the same analysis were to be conducted with *cross-referenced* as the dependent variable, the outcomes would be different.

TABLE 5 - CROSS-REFERENCED AS DEPENDENT VARIABLE

Variables	**1.1** Exhaustive model with cross-reference as DV	**1.5.** Exhaustive model with cross-referenced as DV	**Comparing coeff. of model 1.1 with model 1.5**
Unit of analysis	-0.014	-0.158	
	(0.126)	(0.102)	
Subordinate goal	-0.061	0.269	
	(0.150)	(0.179)	
Individual goal	-0.007	0.082	
	(0.168)	(0.219)	
Rational actor	0.062	0.068	
	(0.134)	(0.144)	
Boundedly rational actor	**0.289****	**0.237*****	0.15
	(0.117)	(0.085)	[0.702]
Obedience	0.161	0.084	
	(0.126)	(0.144)	
Participation choice	0.158	0.075	
	(0.125)	(0.123)	
Monetary benefits	0.068	0.001	
	(0.116)	(0.105)	
Prestige	**-0.182***	0.043	2.04
	(0.106)	(0.117)	[0.153]
Security	0.154	0.088	
	(0.118)	(0.119)	
Self development	0.139	-0.084	
	(0.137)	(0.114)	
Power	0.017	-0.095	
	(0.114)	(0.099)	
Society interest	**0.401*****	-0.021	8.58
	(0.117)	(0.104)	[0,003]
Relationships	-0.214	-0.075	
	(0.129)	(0.101)	
Informal information flow	0.158	-0.153	
	(0.131)	(0.112)	
Formal information flow	-0.065	-0.016	
	(0.128)	(0.118)	
Number of observations	80	80	
Adjusted R-squared	0.176	0.104	

Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01

The other additional analysis is whether the topic area makes a difference in the number of cross-references. The data shows that topic 3 is not only the topic that occurs the most, but it is also the one with the highest amount of cross-citations. To further explore the relationships among the topics, they have been added to the linear regression of the exhaustive model with taking topic 3 as the reference group. The results show that papers categorized to topic 1 are by 36.7 percent and to topic 5 by 41.5 percent less likely to cross-reference than authors in topic 3. That is at a significance level of 10 percent.[10]

6.3. Classifying into fields based on the content

In this section, the results of the factor analysis are described, which has the purpose to figure out whether the split of the sample into organization theory and political science is the same when only looking at the content of the publications. Horn's parallel analysis suggests, in this case, to retain three factors. Table 6 shows the factor loadings for each factor per variable and its corresponding uniqueness. Each factor has been given a meaning based on whether its three highest loadings are positive or negative. The only two possibilities of a meaning are whether the factor is indicating political science or rather organization theory. Factor 1 is interpreted to predict political science, since the factor loading of the variable *subordinate goal* is negative, the variable *individual goal* is positive, and the variable *self-development* is negative. Notably, these interpretations are inevitably subjective and therefore should be understood with caution. With the same logic Factor 2 has been interpreted to predict organization theory. Its factor loadings are negative for *rational actor,* and positive for *boundedly rational actor* and *participation choice.* Factor 3 again is interpreted to predict political science by having a negative factor loading for *subordinate goal,* and positive loadings for *relationships* and *informal information flow.*

As explained in the methods section, the results can be interpreted by looking at the variable *correct.* This variable classifies each publication if it is a match to each of these factors. Of course, factor 1 and factor 3 or both result in the match for political science, while only factor 2 results in

[10] The corresponding OLS model can be found in Appendix H

a match for organization theory. The result is that 37.5 percent of the sample have been classified in the same way as the manual classification in the sample construction. 20 percent have been classified the exact opposite way, seven percent fit to both fields, and 33.5 percent do not fit to any field whatsoever.

TABLE 6 - FACTOR LOADINGS

Variable	Factor 1	Factor 2	Factor 3	Uniqueness
Unit of analysis	0.2123	-0.2454	-0.0581	0.8913
Subordinate goal	**-0.5320**	-0.4082	**-0.3418**	0.4335
Individual goal	**0.6662**	0.4038	0.2875	0.3104
Rational actor	0.1823	**-0.4862**	0.0382	0.7289
Boundedly rational actor	0.0400	**0.4780**	-0.2615	0.7015
Obedience	0.3099	-0.4002	-0.1791	0.7117
Participation choice	-0.1542	**0.4786**	-0.0480	0.7448
Monetary benefits	-0.1869	0.1550	-0.0620	0.9372
Prestige	0.1190	0.3038	-0.1409	0.8737
Security	0.2160	0.1543	-0.2879	0.8466
Self development	**-0.4191**	0.3183	-0.0328	0.7220
Power	0.3518	-0.1227	0.2165	0.8143
Society interest	0.3239	-0.1641	0.0294	0.8673
Relationships	-0.2913	-0.0345	**0.5529**	0.6082
Informal information flow	-0.1942	-0.0186	**0.6040**	0.5972
Formal information flow	-0.3027	-0.0289	0.2084	0.8641

7. Discussion and limitations

Overall the data shows that publications from political science are referencing publications from organization theory a lot more often, than the other way around. This holds true for both, cross-citations to the papers that are in the sample, but also all cross-citation that are beyond the sample. It can be argued that this is because only publications relevant to the topic of this thesis have been selected in the sample, which in essence are all the topics organization theory deals with as such. Political science regards itself with other topics on top of that, but those were not included in the sample. So, it does make sense that political science is referencing organization theory because it is the discipline most relevant to their content. What is questionable, however, is why they are referenced by organization theorists so rarely in comparison After all, they are discussing similar topics as organization theory does. This gives support to the mechanism of previous literature, which portrays political scientists as borrowers, who are applying existing concepts from other fields to the issues they are analysing. Hence, authors from organization theory most likely didn't reference political science for the reason being that they already knew the concepts that political scientists were using and therefore rather stayed within the discipline.

Another interesting result that supports this claim is the trend in the data. Since the publication dates of the articles are spread over the years, it could be expected that it took a little longer for organization theory to recognize that political scientists have important contributions to make to the field. Therefore, while political science kept cross-referencing as they did before, organization theory might only be starting to catch up. Unfortunately, the data doesn't confirm this expected mechanism. It does show a yearly increase by 20 percent in the number of political scientists referencing organization theory. Nonetheless, there is no noticeable increase whatsoever for cross-references coming from organization theory. Consequently, this indicates the same notion as before. Political science was and still is separated from the joint body of work of organization theory. Although political scientists are closely following and using what organization theory has to say, they themselves are not followed back.

With all that said, it is now even more relevant to find out what the predictors are for an author to

make a reference to the other field. These predictors were found in assumptions about human behaviour and its drivers that authors are making in their papers, which, when they are mentioned, increase or decrease the likelihood for referencing the other field. To examine that as exhaustively as possible, the model consists of 16 independent variables, each describing an isolated assumption. Biases in the model have been controlled by checking if the amount of forward-citations in Google Scholar or the age of the articles influences the model in any significant way. It has been found that they don't. Therefore, they have been excluded, since they make the model less powerful. For the same reason, some of the variables have been reduced as well, which leaves nine independent variables in the model, out of which four have been found significant.

The four significant variables are represented by the following statements. Each statement portrays the likelihood of a cross-reference occurring when the authors assume that actors are:

1. Boundedly rational in their decision making. 28 percent increase.
2. Motivated to fulfil the interest of the society. 39.8 percent increase.
3. Driven by the need for security. 17.8 percent increase.
4. Pursuing to gain prestige. 16.8 percent decrease.

When looking at the means of these variables, it is clear that the amount of times they are mentioned in each field is almost the same, except *society interest.* The latter has been mentioned by political scientists notably more often than by organizational theorists. Despite that, none of the organizational theorists mentioning *society interest* has referenced a paper from political science. Political scientists are more likely to source from organization theory in general, but especially when they assume that actors are driven by the need of security, are boundedly rational in their decision making, and are trying to serve the interest of the society. Except for *society interest* the same holds true for organizational theorists sourcing from political science, but to a smaller degree.

The final result model includes five more assumptions that authors are making, but these have shown not to be significant enough and therefore haven't been interpreted. Considering the fact, that the sample only consists of 80 observations, they still might be relevant. Although in this

thesis, 14 publications have been found through forward-citations, the chi-square test of equality of coefficients shows that they do not bias the results.

It can be argued, that these assumptions are too detailed to predict a cross-reference. For this reason, the model has also been examined on a higher level. Six different topic areas have been identified based on the content of the publications. Each paper has been assigned to the according topic area and the same model has been repeated including the topic areas. At this point, it is important to mention that this classification has been made by subjective interpretation of the papers and therefore has to be understood with caution. Nonetheless, the data shows that the topic *human and psychology* is the one with the most cross-citations. The results of exploring their relationship reveal that if the topic is *efficiency and optimization* authors are 36.7 percent less likely to cross-reference than if it is *human and psychology*. The same holds true for *networks and strategy*, except that there the likelihood is 41.5 percent.

To give additional insights, another analysis has been conducted to see whether there is a difference when looking at it if from the perspective of "being cited" rather than "citing". This means that the research question changes to the following: "What assumptions do the authors have to make in their paper to get referenced by the other field?" When comparing this model to the main OLS model of this thesis, it shows that they are indeed different. The explanation for this is that the relationship between *cross-referencing* and *cross-referenced* is not 1:1, but rather 1:n, meaning that it is most often only a few influential publications that are being cited more frequently.

This research is different from previous literature since it tries to give an understanding of what the predictors of cross-references are. Previous research has only pointed out that there is a dysfunctioning relationship between the two fields and suggest strategies where cross-fertilization can be promoted (Bozemann, 2013; Vogel, 2014; Michael & Popov, 2016). Also, some of these researches explain the lack of cross-fertilization by looking only at which articles the corresponding journals are publishing. (Charbonneau, Bromberg, & Henderson, 2018; Vogel, 2014). Fortunately, some are not only stating the problem in cross-fertilization of the fields, but also provide a framework or theory that combines the two fields (Cohen, March, & Olsen, 1972;

March,1962; Visser & Van der Togt 2015) or give critical suggestions how such a theory could look like (Moe, 1984) (Kaufman, 1964). However, also they don't explain the reasons why, despite many warnings, cross-fertilization is still not established. For this reason, this thesis is contributing to the understanding of the topic by giving insights into the correlational relationship between cross-references among the two fields and the contents the authors are writing about.

The research is, however, not without limitations. One limitation is the relatively small sample size compared to the high number of independent variables. This makes the models less powerful and can cause relevant variables to be interpreted as insignificant. Another limitation is the degree of subjectivity in creating the data. Since the independent variables have been found by an in-depth analysis of each paper and portray assumptions of the author, the interpretation of if the author means the same as the variables explains, is subjective. To counter that, indicators for every variable are outlined including examples to help create transparency in the decision making.

Subjectivity, however, creates a further limitation of this research when classifying the publications into organization theory and political science. It can be criticized, that classifying them mainly based on the journal they are published in, is sufficiently reliable. To counter this, a factor analysis has been conducted. It aims to find factors from the content of the publication, which can serve to classify them into one of the two fields. Nonetheless, what often goes hand in hand with a factor analysis is, that the factors have to be interpreted by the executor of the analysis, which also can create a bias. To prevent subjectivity in the decision of how many factors to retain, Horn's parallel analysis has been deployed, which is considered more accurate than the Kaiser rule (Dinno, 2009). The bias adjusted eigenvalues suggest retaining three factors. Factor 1 and 3 have been interpreted to predict papers belonging to political science, while factor 2 predicts papers belonging to organization theory. Consequently, a new classification of the papers has been created and compared to the initial one. The results show that 37.5 percent of the papers are overlapping in the fields, while 20 percent are the exact opposites. This number is not overwhelming, though. The consideration, if it makes sense to build the whole analysis based on the new categorization, has been neglected. The reason being that 42.5 percent of the sample is left unexplained.

Last but not least, another limitation is that only a correlating relationship of the variables can be explained, and not a causal one. This is due to the fact, that it is very speculative to suggest what causes the authors to cross-reference. There could be many plausible reasons for this, which are difficult to write down in numbers—let alone get access to. It could be, for example, that the authors are simply interested in certain topics, or they are in a network, which gives them access to only a certain type of information. Even more difficult to grasp is whether they have certain intrinsic motivations or relationships, which only the authors themselves can know, that lead them to cross-reference or not.

8. Conclusion and further research

The goal of this thesis was to extend the understanding of why political science has been kept separate from the joint body of work of organization theory and still to this day hasn't succeeded in becoming relevant for organization science. Although, a few publications were attempting to give wake-up calls to both disciplines, not much has changed.

This thesis did not only quantitatively confirm this notion, it also gave answers to the question of why that might be. It did so by explaining the predictors of an author referencing a paper from the other field. For this, an in-depth analysis of 80 publications has been conducted, 40 from organization theory and 40 from political science. The analysis of this study revealed that the best-found predictors of cross-referencing are the assumptions made by the authors in their papers. These assumptions are regarding human behaviour and its drivers in an organizational context. It has been found that the strongest predictors are when authors assume that actors are 1) boundedly rational in their decision making, 2) are driven by the wish to fulfil the needs of the society and 3) are driven to fulfil their own need of security. While these predictors increase the likelihood of cross-references, one predictor has found to be decreasing it. That is if authors assume that actors are motivated to achieve a high status or just gain prestige within an organization.

Further research can benefit from many opportunities arising from this thesis, which are worth looking into. They mainly emerge from the imperfections of the model designs. First of all, it is highly suggestible to expand this research to a larger sample size. This can be done by simply adding further publications to the sample—found solely through keyword-search. A search through forward or backwards-citations should be avoided completely. The selection of the articles should be made as randomly as possible. This might already give a stronger model and improve the significance of the variables explained in this thesis.

To additionally improve the explanatory power of the study, it is desirable to find causal relationships for cross-references. In this thesis, it was only possible to cover correlational relationships, since it was a quantitative study and there is no logical association for the predictors

to cause a cross-reference. However, in a larger study, this can be done through a qualitative research. In this case, it would mean that every author of each publication has to be interviewed, through which causal effects can be found. To do this, the interviewers should ask about the interests and motivations of the authors, and especially about their network. Interviews would also improve the objectivity of the independent variables that have been found in this study since they explain assumptions that the authors make in their papers. The interpretation of these assumptions is only correct if confirmed by the authors themselves. This can improve the reliability of the collected data tremendously.

Another aspect, further research should focus on, is to bring reliability into the classification of the two fields—organization theory and political science. Even in this case, interviews would be useful. However, it might also show to be a better distinction to further split the disciplines into sociology, economics, psychology, organization science, political science, and public administration. As previous research has done, it is a recommended approach to use already accepted identifiers, such as journals, for these distinctions.

As many authors have criticized before (Moe, 1991; Zalmanovitch, 2014, Kaufman, 1964) this thesis also finds substantial support for the fact that political scientists are resourcing concepts heavily from organization theory when writing papers in an organizational context. When looking at trends, it is clear that organization theory has been cross-referenced more frequently over the years. The work of political scientists, on the other hand, doesn't seem to be of high relevance for organization theory. Even though it might not seem so at first glance, this is a problem. Since organization theorists don't find political science to be important in the discipline, they usually create concepts that are suitable only for private organizations but portraying it is a general theory of organizations. Political scientists then copy these concepts, without keeping the divergent nature of public organizations in mind. By doing so they create inaccurate evaluations in many aspects of the governmental organizations—harming their efficiency. The question is, who has to change? Is it organization theory, which should be more cautious about indirectly suggesting unsuitable concepts to public organizations, or is it the political scientists, who should improve their critical

judgements when applying these concepts? The answer should be both. If both research fields realign their attention to each other, it will help public organizations to find more efficient concepts for their set-ups. In addition to that, it will improve the generic applicability that organization theory wants to achieve. If public officials then look into scientific recommendations on how an organization should function, they will find suggestions fitting to their situation. But also entrepreneurs will find substantially more suitable theories than before. After all, there is much organizations can learn from politics as well. Frequent cross-fertilization is likely to produce more efficient scientific concepts of organization theory. If the two fields manage to make better use of each other, they will save resources spent on reinventing the wheel, as well as reach higher by standing on each other's shoulders.

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[a] Publication is part of the sample and classified as organization theory

[b] Publication is part of the sample and classified as political science

Appendix A

Classification of papers into six topic areas.

TABLE 7: SAMPLE CLASSIFIED INTO SIX TOPIC AREAS

Topic 1: Efficiency and optimization	Topic 2: Influence of society and government	Topic 3: Human psychology and behaviour
Gulick L.H.(1937)	Selznick, P. (1948)	Simon, Herbert A. (1947)
Urwick L. (1937)	Lawrence, P., & Lorsch, J. (1967)	March, James G. & Herbert A. Simon (1958)
Coase, Ronald. (1937)	Meyer, John W., and Brian Rowan. (1977)	Simon Herbert A. (1959)
Taylor F.W. (1947)	DiMaggio, Paul J., & Walter W. Powell. (1983)	James G. March (1962)
Alchian, A. (1950)	Campbell, J. (2007)	Cyert, R., & March, J. (1963)
Jensen, M.C. (1983)	Delmas, M., & Toffel, M. (2008)	Cohen, M. D., March, J. G., & Olsen, J. P. (1972)
Williamson, Oliver E. (1985)	Fuenfschilling, L., & Truffer, B. (2014)	Pfeffer J. and Salancik G.R. (1974)
Amit, R., & Schoemaker, P. (1993)	Weingast Barry R. & Moran Mark (1983)	Cobb, A.T. (1991)
Davis, J., Schoorman, F., & Donaldson, L. (1997)	March, James G. & Johan P. Olsen (1984)	Downs, A. (1957)
Kaufman, H. (1964)	Shepsle, K. (1986)	Allison, Graham T. (1971)
Moe, Terry M. (1984)	Baron, D., & Ferejohn, J. (1989)	Dahl, R. (1961)
Moe Terry M. (1990)	Crawford, S., & Ostrom, E. (1995)	Jones, B. (1999)
Moe Terry M. (1991)	Newton, K. (2001)	Ostrom, E. (1998)
Levy, J. (1997)	Marks, Gary, Wilson, Carole J., & Ray, Leonard. (2002)	Wright, B. (2004)
Brown, T., & Potoski, M. (2003)		Yang B. (2003)
Gereffi, G., Humphrey, J., & Sturgeon, T. (2005)		Yang, K., & Pandey, S. (2011)
		Moynihan, D., & Pandey, S. (2007)
		Battaglio, R., Belardinelli, P., Bellé, N., & Cantarelli, P. (2019)
		McCourt, D. M. (2016)

TABLE 7: SAMPLE CLASSIFIED INTO SIX TOPIC AREAS / CONTINUED

Topic 4: Influence on society and government	Topic 5: Relations and strategy	Topic 6: Organizational development and learning
Hillman, A., Keim, G., & Schuler, D. (2004)	Law, J. (1992)	Nelson, R., & Winter, S. (1982)
Wilson, James Q. (1980)	Dyer, J., & Singh, H. (1998)	Daft, R., & Weick, K. (1984)
Rainey Hal G. (1984)	Borgatti, S. P., & Halgin, D. S. (2011)	Levitt, B., & March, J. (1988)
Hall, P. (1993)	Ahuja, G., Soda, G., & Zaheer, A. (2012)	Nonaka I. (1994)
Osborne, S., Radnor, Z., & Nasi, G. (2013)	Weber, E., & Khademian, A. (2008)	Osterloh M. & Frey Bruno S. (2000)
Bryson, J., Sancino, Benington, & Sørensen. (2017)	Kenis, P., & Provan, K. (2009)	Tsoukas H. & Chia R. (2002)
		Carlile, P. (2004)
		Zmud, R., Young-Gul, K., & Jae-Nam, L. (2005)
		Becker, M., Lazaric, N., Nelson, R., & Winter, S. (2005)
		Evans, S., Vladimirova, D., Holgado, M., Van Fossen, K., Yang, M., Silva, E., & Barlow, C. (2017)
		Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018)
		Lindblom, Charles. (1959)
		Davis, O., Dempster, M., & Wildavsky, A. (1966)
		Mohr, Lawrence B.(1969)
		Forester , J. (1984)
		Kim, S., & Lee, H. (2006)
		Fernandez, S., & Rainey, H. (2006)
		Mintrom, M., & Norman, P. (2009)
		Frederickson, H. (1976)

Appendix B

Process of reducing variables from the exhaustive model

TABLE 8: REGRESSION MODELS WITH DECREASING AMOUNT OF INDEPENDENT VARIABLES

	All 18 variables		17 variables retained		16 variables retained	
Variable name	**Coefficient**	**P-values**	**Coefficient**	**P-values**	**Coefficient**	**P-values**
Unit of analysis	-0.0312	0.813	-0.015	0.904	**-0.016**	0.898
Subordinate goal	-0.037	0.818	-0.048	0.755	-0.05	0.676
Individual goal	-0.013	0.943	**0.002**	0.990		
Rational actor	0.11	0.449	0.057	0.672	0.058	0.667
Boundedly rational actor	0.324	**0.010**	0.3	**0.014**	0.3	**0.012**
Obedience	0.17	0.207	0.159	0.224	0.16	0.221
Participation choice	0.213	0.118	0.186	0.166	0.186	0.156
Monetary benefits	0.075	0.537	0.062	0.594	0.062	0.594
Prestige	-0.167	0.132	-0.161	0.149	-0.161	0.142
Security	0.134	0.287	0.162	0.194	0.163	0.183
Self development	0.127	0.363	0.135	0.336	0.135	0.337
Power	0.007	0.949	0.017	0.883	0.017	0.881
Society interest	0.379	**0.003**	0.383	**0.002**	0.384	**0.002**
Relationships	-0.242	**0.075**	-0.223	**0.088**	-0.224	**0.079**
Informal information flow	0.151	0.263	0.171	0.203	0.171	0.197
Formal information flow	-0.084	0.530	-0.063	0.630	-0.063	0.609
Logarithm of popularity	-0.0205	0.548	-0.027	0.392	-0.027	0.387
Article age	**-0.002**	0.436				
Adjusted R-squared	0.1662		0.1729		0.1860	

TABLE 8: REGRESSION MODELS WITH DECREASING AMOUNT OF INDEPENDENT VARIABLES / CONTINUED 1

	15 variables retained		14 variables retained		13 variables retained	
Variable name	**Coefficient**	**P-values**	**Coefficient**	**P-values**	**Coefficient**	**P-values**
Subordinate goal	-0.051	0.663	-0.055	0.615	**-0.061**	0.575
Rational actor	0.06	0.630	0.063	0.616	0.066	0.598
Boundedly rational actor	0.301	**0.011**	0.306	**0.009**	0.294	**0.012**
Obedience	0.158	0.212	0.163	0.190	0.165	0.171
Participation choice	0.187	0.154	0.185	0.156	0.156	0.202
Monetary benefits	0.0615	0.592	0.06	0.593	0.067	0.554
Prestige	-0.162	0.136	-0.163	0.133	-0.184	**0.078**
Security	0.164	0.184	0.162	0.187	0.154	0.190
Self development	0.141	0.263	0.141	0.261	0.143	0.243
Power	**0.016**	0.889				
Society interest	0.381	**0.001**	0.383	**0.001**	0.398	**0.001**
Relationships	-0.222	**0.080**	-0.221	**0.079**	-0.211	**0.091**
Informal information flow	0.17	0.194	0.174	0.187	0.161	0.218
Formal information flow	-0.062	0.613	-0.066	0.588	-0.066	0.578
Logarithm of popularity	-0.026	0.383	**-0.027**	0.381		
Adjusted R-squared	0.1985		0.2106		0.2133	

TABLE 8: REGRESSION MODELS WITH DECREASING AMOUNT OF INDEPENDENT VARIABLES / CONTINUED 2

	12 variables retained		11 variables retained		10 variables retained	
Variable name	**Coefficient**	**P-values**	**Coefficient**	**P-values**	**Coefficient**	**P-values**
Rational actor	**0.054**	0.656				
Boundedly rational actor	0.3	**0.011**	0.286	**0.013**	0.278	**0.013**
Obedience	0.166	0.171	0.179	0.111	0.171	0.113
Participation choice	0.151	0.200	0.143	0.209	0.138	0.228
Monetary benefits	0.065	0.561	0.07	0.517	**0.065**	0.535
Prestige	-0.180	**0.083**	-0.177	**0.083**	-0.174	**0.084**
Security	0.156	0.185	0.167	0.141	0.186	**0.085**
Self development	0.131	0.281	0.123	0.299	0.124	0.294
Society interest	0.392	**0.001**	0.394	**0.000**	0.402	**0.000**
Relationships	-0.212	**0.086**	-0.215	**0.085**	-0.207	**0.095**
Informal information flow	0.165	0.201	0.171	0.183	0.15	0.213
Formal information flow	-0.065	0.584	**-0.058**	0.616		
Adjusted R-squared	0.2212		0.2309		0.2391	

TABLE 8: REGRESSION MODELS WITH DECREASING AMOUNT OF INDEPENDENT VARIABLES / CONTINUED 3

	9 variables retained*		8 variables retained		7 variables retained	
Variable name	**Coefficient**	**P-values**	**Coefficient**	**P-values**	**Coefficient**	**P-values**
Boundedly rational actor	0.28	**0.013**	0.292	**0.008**	0.27	**0.013**
Obedience	0.157	0.133	**0.125**	0.235		
Participation choice	0.15	0.171	0.156	0.141	0.147	0.170
Prestige	-0.168	**0.089**	-0.168	**0.084**	-0.171	**0.080**
Security	0.178	**0.090**	0.1695676	0.105	0.176	0.111
Self development	**0.119**	0.303				
Society interest	0.398	**0.000**	0.374	**0.001**	0.375	**0.001**
Relationships	-0.198	0.108	-0.187	0.125	-0.206	**0.084**
Informal information flow	0.136	0.245	0.126	0.274	**0.109**	0.346
Adjusted R-squared	**0.2455**		0.2431		0.2432	

* this model has been chosen due to highest R-squared

	6 variables retained		5 variables retained		4 variables retained	
Variable name	**Coefficient**	**P-values**	**Coefficient**	**P-values**	**Coefficient**	**P-values**
Boundedly rational actor	0.252	**0.018**	0.295	**0.004**	0.321	**0.002**
Participation choice	0.168	0.105	**0.137**	0.189		
Prestige	-0.168	**0.085**	-0.174	**0.077**	**-0.16**	0.114
Security	0.182	0.101	0.235	**0.036**	0.281	**0.009**
Society interest	0.378	**0.001**	0.362	**0.001**	0.326	**0.003**
Relationships	**-0.157**	0.151				
Adjusted R-squared	0.2440		0.2319		0.2273	

	3 variables retained	
Variable name	**Coefficient**	**P-values**
Boundedly rational actor	0.285	**0.005**
Security	0.236	**0.027**
Society interest	0.322	**0.003**
Adjusted R-squared	0.2175	

Appendix C

Additional overview of raw data

TABLE 9– ABSOLUTE NUMBERS TO INDEPENDENT VARIABLES AND TOPICS

Variable	Total (80 publications)	Organization Theory (40 publications)	Political Science (40 publications)
Subordinate goal	27	15	12
Individual goal	62	29	33
Rational actor	20	10	10
Boundedly rational actor	45	23	22
Obedience	17	5	12
Participation choice	30	19	11
Monetary benefits	37	25	12
Prestige	24	12	12
Security	24	11	13
Self development	29	17	12
Power	32	10	22
Society interest	27	4	23
Relationships	31	18	13
Informal information flow	36	20	16
Formal information flow	51	30	21
Unit of analysis (0=group, 1=individual)	43	17	26
Topic 1	16	9	7
Topic 2	14	7	7
Topic 3	19	8	11
Topic 4	6	1	5
Topic 5	6	4	2
Topic 6	19	11	8

Appendix D

Corresponding regression tables to figures in the text

TABLE 10 – TRENDS IN CROSS-CITATIONS OVER THE YEARS

Variable	Total (80 publications)	Organization Theory (40 publications)	Political Science (40 publications)
Nr. of times citing Organizational theory (total)	0,321***	0,545***	0,202*
	(0,104)	(0,112)	(0,119)
Nr. of times citing Political Science (total)	0,394***	0,044	0,650**
	(0,141)	(0,082)	(0,257)
Nr. of times citing Organizational theory (sample)	0,003	0,020*	-0,020
	(0,013)	(0,011)	(0,014)
Nr. of times citing Political Science (sample)	0,000	0,000	-0,006
	(0,007)	(0,003)	(0,010)

Coefficient estimates with *significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. Standard errors in parentheses below

Appendix E

Chi-square tests of equality of coefficients

TABLE 11 – CHI-SQUARE TESTS OF EQUALITY OF COEFFICIENTS

Variables	Comparing coeff. of model 1.1 with model 1.2	Comparing coeff. of model 1.1 with model 1.3	Comparing coeff. of model 1.1 with model 1.4
Boundedly rational actor	1.38 [0.24]	1.08 [0.298]	0.05 [0.827]
Prestige	0.26 [0.612]	0.00 [0.986]	0.45 [0.5]
Security			0.22 [0.64]
Society interest	0.75 [0.386]	1.04 [0.309]	0.00 [0.952]
Relationships	1.08 [0.3]	0.00 [0.992]	

Chi-squared values are displayed; Prob > chi2 between square brackets

Appendix F

Variance Inflation Factors for exhaustive and enhanced model

TABLE 11 – VARIANCE INFLATION FACTORS

Exhaustive model		**Enhanced model**	
Variable	**VIF**	**Variable**	**VIF**
Individual goal	2.81	Relationships	1.48
Subordinate goal	2.51	Informal information flow	1.42
Informal information flow	1.81	Participation choice	1.40
Participation choice	1.67	Security	1.35
Security	1.66	Boundedly rational actor	1.31
Rational actor	1.63	Obedience	1.21
Boundedly rational actor	1.60	Prestige	1.18
Relationships	1.57	Self development	1.16
Formal information flow	1.53	Society interest	1.15
Obedience	1.44	Mean VIF	1.30
Society interest	1.42		
Self development	1.40		
Power	1.35		
Unit of analysis	1.30		
Prestige	1.22		
Monetary benefits	1.18		
Mean VIF	1.63		

Appendix G

Logistic Regression for exhaustive and enhanced model

TABLE 12 – LOGISTIC REGRESSION MODELS

	1.1	**1.2**
Variables	**Exhaustive model**	**Enhanced model**
Unit of analysis	0.225	
	(0.723)	
Subordinate goal	-0.441	
	(0.955)	
Individual goal	-0.027	
	(0.950)	
Rational actor	0.554	
	(0.939)	**1.787****
Boundedly rational actor	**2.019****	(0.697)
	(0.833)	**1.240***
Obedience	**1.335***	(0.694)
	(0.785)	0.941
Participation choice	1.031	(0.729)
	(0.831)	
Monetary benefits	0.533	
	(0.704)	**-1.215****
Prestige	**-1.399***	(0.589)
	(0.752)	**1.203***
Security	1.167	(0.641)
	(0.758)	0.718
Self development	0.901	(0.628)
	(0.854)	
Power	-0.084	
	(0.728)	**2.385*****
Society interest	**2.550*****	(0.738)
	(0.905)	-1.063
Relationships	**-1.197***	(0.698)
	(0.709)	0.830
Informal information flow	1.052	(0.708)
	(0.723)	
Formal information flow	-0.292	
	(0.822)	
Number of observations	80	80
Standard errors in parentheses	* p<0.1, ** p<0.05, *** p<0.01	

Appendix H

Logistic Regression for exhaustive model including topics

Variables	Exhaustive model incl. Topics	Variables (continued)	Exhaustive model incl. topics (continued)
Unit of analysis	-0.017	Power	-0.012
	(0.137)		(0.117)
Subordinate goal	-0.028	Society interest	0.257*
	(0.180)		(0.150)
Individual goal	-0.032	Relationships	-0.369**
	(0.209)		(0.151)
Rational actor	0.126	Informal information flow	0.311*
	(0.168)		(0.157)
Boundedly rational actor	0.268**	Formal information flow	-0.164
	(0.120)		(0.143)
Obedience	0.139	Topic 1	-0.367*
	(0.167)		(0.203)
Participation choice	0.208	Topic 2	-0.321
	(0.147)		(0.213)
Monetary benefits	0.097	Topic 3	0.000
	(0.121)		(.)
Prestige	-0.191*	Topic 4	0.237
	(0.097)		(0.208)
Security	0.129	Topic 5	-0.415*
	(0.141)		(0.233)
Self development	-0.009	Topic 6	-0.029
	(0.150)		(0.188)
Number of observations	80		
Adjusted R-squared	0.231		
Standard errors in parentheses	* p<0.1, ** p<0.05, *** p<0.01		

Appendix I

Abstract in German

Abstract:

In der Literatur herrscht Konsens darüber, dass Organisationstheorie und Politikwissenschaft viel voneinander lernen können, es ihnen jedoch schon seit Jahrzehnten an gegenseitigem Interesse mangelt. Diese Masterarbeit findet weitere Unterstützung für diese Auffassung und versucht zu beantworten, was die Gründe dafür sind. Dies geschieht, indem Anzeichen dafür gefunden werden, warum ein Autor auf ein Werk aus dem anderen Wissenschaftsfeld verweist oder nicht. Hierzu wird eine quantitative Analyse von 80 Publikationen durchgeführt. Es zeigt sich, dass die am besten zu findenden Anzeichen für Querverweise Annahmen sind, die die Autoren über menschliches Verhalten und seine Treiber treffen. Es wird festgestellt, dass die Wahrscheinlichkeit eines Querverweises zunimmt, wenn die Autoren davon ausgehen, dass die Akteure bei ihrer Entscheidungsfindung begrenzt rational sind und von dem Wunsch getrieben werden, die Bedürfnisse der Gesellschaft sowie ihr eigenes Sicherheitsbedürfnis zu erfüllen. Wenn Autoren davon ausgehen, dass Akteure durch Prestige motiviert sind, sinkt jene Wahrscheinlichkeit.

Stichwörter: Organisationstheorie, Politikwissenschaft, Querverweise, Prädikatoren, Annahmen