

SPATIAL SPENDING PATTERNS IN MUNICIPAL CULTURAL EXPENDITURE

SELECTED EVIDENCE FROM THE NETHERLANDS

Master Thesis

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ABSTRACT

Dutch municipalities are responsible for a significant amount of governmental support of culture. Since the average distance between Dutch municipalities is only 7.5 kilometers, it is likely to expect that inhabitants of a certain municipality are willing to travel to neighboring municipalities to visit cultural initiatives. Previous studies mainly account for local factors that impact the decisions of local jurisdictions, while the expenditures of neighboring municipalities are also likely to have an influence on the decisions. This thesis analyzes whether and how municipalities influence each other in the decision to financially support culture. The literature review provides explanations for both positive and negative spatial interdependence. Negative spatial interdependence is explained by the concepts of spillover effects and free-riding behavior, in which freeriding is considered as a rational response of municipalities since municipalities can benefit from positive externalities of neighboring jurisdictions without having to invest in culture. Contrary, positive spatial interdependence can be caused by fiscal competition to attract businesses and inhabitants, competition to increase a region's reputation, mimicking behavior as a consequence of yardstick competition and incomplete information, and acquired tastes and intellectual trends. Interestingly, the urban status of municipalities is considered as well to account for the prevalence and importance of asymmetries in competition between municipalities. For the empirical analysis, data on local government spending in 344 Dutch municipalities in 2017 is used as well as additional data necessary to control for other socio-economic, political, and financial factors. By means of the spatial research method Moran's I, which required the calculation of different 344 x 344 weights matrices that indicate whether two municipalities are neighboring or not, the existence of a spatial pattern is found. The results of multiple OLS regressions demonstrate a positive spatial interdependence between municipalities. Regarding the urban status, there is expected that large municipalities, specifically 'central places', affect their neighbors' behavior differently than small municipalities. However, the econometric analysis demonstrates a less complex interdependence than expected, since both central places and smaller municipalities have a significant and positive effect on municipal cultural expenditures. Additionally, the outcomes of the total cultural spending are compared to the subdiscipline performing arts expenditures. This kind of comparison has not been addressed before in studying spatial patterns of cultural spending. Even though in both cases a pattern of positive spatial interdependence is found, there is a slightly more complex pattern when considering jurisdictions' urban status in performing arts spending.

KEYWORDS spatial interdependence, local cultural expenditures, central places, cultural policy

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Chapter 1. Introduction

A seminal work on the differences among Australian regions in art subsidies at the end of the 1970s (Withers, 1979) marks the beginning of contributions of political economy to academic literature on cultural economics. However, academic literature on the political economy of the cultural sector is far from being greatly developed, especially considering empirical research. International comparisons are non-existent since classifications of cultural disciplines differ between national datasets as well as the role of governments on culture largely differs. This makes it difficult to use international data on public expenditure on culture. Besides, reliable data on national expenditure is also not so widespread, which additionally complicates research in this field (Dalle Nogare & Galizzi, 2011). However, studies analyzing political determinants of public cultural expenditure are becoming more apparent in the last decade.

In many countries, local governments have the authority over cultural policies (Bastida, Benito, & Vicente, 2013; Geys, Heyndels, & Werck, 2008; Hakonson & Løyland, 2016). In the Netherlands, the total public expenses on culture in 2017 was around 2.8 billion euros, in which municipalities are responsible for 61% of the budget. Municipalities have the authority to decide on how much and which cultural sectors they want to fund (Directoraat-Generaal Cultuur en Media, 2017). Often, fiscal decisions of neighboring local governments play an important role in the decision-making process regarding public good provision (Rueckner, 2003). In case of public services as education or child care, money transactions can take place between municipalities, for example, when a resident of municipality k is using these public services of municipality l , money can be transferred from municipality k to l . Contrary, in case of cultural goods, the provision of cultural services is related to externalities between local governments (Lundberg, 2007). Positive externalities of cultural expenditure in a municipality cannot be easily shielded from residents of other municipalities. For example, when subsidization of a museum reduces the ticket price in a certain municipality, visitors from other jurisdictions can also benefit from this price reduction. Price discrimination can be applied in order to be sure that only inhabitants can benefit from lower prices, however, in many cases price discrimination is not applied or cannot be applied, which results in a ‘spillover’ effect that forces municipalities to take into account neighboring jurisdictions, leading to spatial patterns in public spending on culture (Geys et al., 2008). Besides the spillover argument, which results in a negative spatial interdependence between municipalities, other factors can impact decisions of local jurisdictions regarding public expenditure leading to a positive spatial interdependence. Specifically competition between municipalities to attract inhabitants and companies,

competition to increase reputation, mimicking behavior driven by yardstick competition and imperfectly informed citizens and politicians (St'astná, 2009) as well as as acquired tastes and intellectual trends (Geys et al., 2008) can affect positive fiscal interactions among jurisdictions.

On policy level, it is relevant to get insight into these spillovers and spatial interdependencies when designing national grant programs for local governments. From these insights, programs could be adapted based on the knowledge whether municipalities adapt their funding on neighboring municipalities (Lundberg, 2007). Thus, rather than only considering the local factors that influence municipal cultural spending when designing national grant programs, it is also important to take into account interdependencies between municipalities and whether this interdependence is positive or negative.

Moreover, traditional empirical research focuses on 'local' determinants of public expenditure, in which demographic and economic factors are considered as the average income level and the age structure of the inhabitants. However, when a municipality's expenditures on culture are influenced by the neighbors' expenditures, underlying data-generating processes include a spatial element, but this spatial dimension is often omitted. From an econometric perspective, omitting variables could bias the coefficients on variables that are correlated with variables containing an omitted spatial dimension. Besides bias, it can also result in inconsistent estimates (Greene, 2003). Therefore, it is important to test whether this spatial dimension is existent and to take this element into account when performing the empirical research.

Besides, if spatial interdependence is existent at local levels of governments regarding cultural expenditure, for future research it is important to extend the understanding of economic decisions and interaction at municipal level in the Netherlands. Other types of public spending could contribute to this understanding as well as local income tax rates. An overall knowledge on fiscal interdependence of municipalities would largely benefit for the design of national policies and the decentralization of political responsibilities and cooperation.

This thesis will explore the existence of a spatial pattern in cultural expenditure across municipalities in the Netherlands. To the best of my knowledge, only Lundberg (2006), Geys et al. (2008), St'astná (2009), and Hakonson and Løyland (2016) address spatial patterns in public spending on culture. More specifically, this research aims to find out whether this spatial pattern is positive or negative, thus whether this can be explained by free-riding behavior and spillovers, or by other factors such as fiscal competition and mimicking decisions. Additionally, possible asymmetries in cultural policy interdependence will be tested as a function of the size of Dutch municipalities. Policy interdependence based on the urban status of jurisdictions has

only been addressed before by Geys et al. (2008). Regarding this urban status, a distinction will be made between municipalities neighboring ‘central places’ and municipalities neighboring smaller municipalities. It is interesting to make this distinction, since, as argued by Heilbrun (1992), cultural services are “pre-eminently central place functions” (p. 205), therefore there can be analyzed whether, for example, smaller municipalities neighboring ‘central places’ are more liable to freeride considering the innate benefits of central places in providing cultural goods. The addition of distinguishing central places from non-central places is highly relevant for a deeper understanding of the complexities of spatial interdependence. The bigger cultural institutions, such as prominent museums and theaters, are located in the central places. Also, central places have advantages over non-central places because of industrial clustering or specifically creative clustering of cultural professionals, institutions and initiatives (Chapain, Cooke, De Propriis, MacNeill, & Mateos-Garcia, 2010). Besides, central places experience benefits of economies of scale (Heilbrun, 1992) which could lead to different spatial spending patterns. These arguments indicate the relevance of exploring the interplay between central places and non-central places in researching spatial patterns in public cultural spending. Additionally, patterns will be analyzed to see if socio-economic, political and financial factors impact the allocation of cultural expenditures. Interestingly, the results of the analysis measuring patterns of the total municipal cultural spending will be compared to a benchmark of performing arts spending. Insight into spatial patterns of a specific cultural discipline has not been provided before. The following research question will guide this thesis:

To what extent is cultural expenditure of Dutch municipalities affected by the level of cultural spending in neighboring municipalities?

In order to develop expectations and to attain knowledge about spatial patterns of municipal cultural spending, the literature review provides a theoretical analysis of possible concepts that explain either positive or negative spatial interdependence. An econometric model which is based on insights of previous research will guide the empirical analysis. Firstly, a Moran’s I test will analyze whether there is a spatial pattern in the data. This analysis provides information regarding the research its main proposition of spatial interdependence and is necessary to determine how to adapt the data considering whether it is characterized by spatiality or not. Accordingly, multiple OLS regressions are ran to analyze to what extent and how cultural expenditure of Dutch municipalities are affected by the level of cultural spending in neighboring municipalities. For the analysis, data is gathered from different reliable sources:

CBS (2018), Bussemaker (2016b), CBS (2020), KVK (2020), Kiesraad (2014) and Rijksoverheid (2020).

This thesis is structured as follows: the second chapter, the theoretical framework, explains the most important concepts of the thesis. Negative spatial interdependence can be caused by spillover effects and free-riding behavior. Contrary, arguments of positive spatial interdependence are fiscal competition, competition to increase reputation, mimicking decisions, acquired tastes and intellectual trends. The third chapter, the methodology, starts with describing the institutional setting of the research, in which the political and fiscal context is explained as well as the main data source which consists of an overview of municipal cultural spending of 344 Dutch municipalities in 2017. Thereafter, the model is specified, which includes the development of the regression formula and the calculation of the independent variables. Furthermore, the validity and the reliability of the research are shortly described. The fourth chapter starts with presenting the descriptive statistics of the variables. Then, the results of the Moran's I analysis are described and analyzed. Furthermore, the results of the econometric model are presented and interpreted. These results are compared to the outcomes of the performing arts benchmark analysis. Lastly, the fifth and final chapter evaluates and discusses the conducted research, marks its limitations and suggests recommendations for future research and policy.

Chapter 2. Theoretical Framework

The theoretical framework delves into possible concepts that explain spatial interdependence within public cultural expenditure. For this, a distinction is made between academic theories that explain (2.1) negative spatial interdependence and theories that explain (2.2) positive spatial interdependence. Thereafter, (2.3) the concept of central places is explained. Based on these theoretical insights, hypotheses are formulated throughout the chapter.

Before delving into the literature review, it is important to clearly outline which concept of culture is used when speaking of municipal cultural expenditure. Klamer (2016) distinguishes three types of meanings of the notion of culture. The first one is culture in the anthropological sense. The second meaning relates culture to civilization, which are accumulated achievements as politics, sciences, arts, social customs, and technology. The last meaning refers to a subcategory of the second definition and specifically entails the arts. This definition will be applied in this thesis when, for example, speaking of the ‘cultural’ sector or ‘cultural’ policy.

Dutch municipalities subdivide their cultural expenditures into different categories: performing arts, visual arts, artistic and cultural education, film and video, museums, historical archives, cultural heritage, libraries, local press and broadcast, and other municipal costs on culture. In terms of Throsby’s (2008) concentric circles of the cultural industries (see *Figure 2-1*), the subcategories are divided across the core of the creative arts, other core cultural industries and wider cultural industries. There will be no distinction between differences regarding the

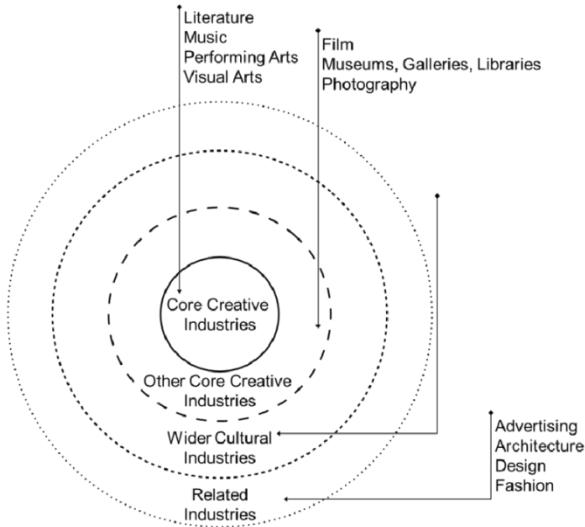


Figure 2-1: The Concentric Circles Model of the Cultural Industries (Throsby, 2008)

willingness to travel, since both reproducible and non-reproducible cultural goods are taken into account. For example, film and video is reproducible and can also be experienced across boundaries of municipalities, while cultural heritage is (mostly) non-reproducible and can only be enjoyed at a specific location. Also, since it is difficult to shield inhabitants from other municipalities from experiencing cultural goods, within this research, it does not have an additional value to distinguish these two types of cultural goods. Besides, there will be mainly focused on culture that is publicly funded, since the public expenditures will be the central

concept of analysis in this research. Even though some art disciplines might be funded by both public institutions and by market mechanisms, this research will only account for the public funding.

2.1 Negative Spatial Interdependence

The following section delves into the concepts of spillover effects and free-riding behavior as factors that explain negative spatial interdependence between municipalities.

2.1.1 Spillover Effects and Free-riding Behavior

Local governments do not act as isolated actors. Commonly, decisions made by one jurisdiction impact and are affected by decisions of other jurisdictions. Within this research, there will be focused on jurisdictions that share a border instead of focusing on jurisdictions that share similarities as socio-economic or political factors (see e.g. Baicker, 2005). In the Netherlands, the average size of a municipality is 52 m² and the average distance between two municipalities is approximately 7.5 kilometers. Although the willingness of audiences to travel to a cultural event is an important factor whether to attend a cultural activity or not (Boter, Rouwendal, & Wedel, 2005; De Graaff, Boter, & Rouwendal, 2007), the limited distances between municipalities imply that this factor is determinative. In line with this assumption, Langeveld and Van Stiphout (2013) researched audiences' willingness to travel to theater, dance and music performances, and concluded that 75% of the audience is willing to travel between 15 to 145 kilometers. Even though they found a strong 'distance decay' between various genres of the performing arts, the average distance between municipalities of 7.5 kilometers can be considered as a short travel time, thus the obstacle to attend cultural activities in neighboring municipalities is small. Furthermore, municipalities cannot easily prohibit residents of neighboring jurisdictions from cultural services they provide. This is especially the case for cultural services that are characterized by public good (non-rival, non-excludable) attributes. For example, common benefits can be the result of cultural initiatives or of their externalities, such as local community benefits. These externalities are non-market benefits, meaning that free markets tend to underprovide public cultural goods partly because of free riders that do not pay for this. Often, these public good characteristics are considered as a valid reason for government subsidies, tax incentives and regulations (Van der Ploeg, 2006).

The aforementioned positive externality of local community benefits can be examined as an example of a positive spillover. Both positive and negative spillovers affecting inhabitants of other municipalities can drive fiscal interactions among local jurisdictions. The benefits of public spending in domestic regions are likely to spill over to neighboring places. This added welfare effect has an impact on decisions of municipalities regarding their public spending (Gordon, 1983). Depending on the substitutability or complementarity of public cultural spending, it is possible to expect either a positive or negative correlation among neighboring municipalities' public expenditures. Previous research on possible spillovers between Swedish municipalities in the public provision of recreational and cultural services has demonstrated a negative correlation between recreational and cultural spending by neighboring jurisdictions, entailing that this public spending is associated with spillovers (Lundberg, 2007). Moreover, St'astná (2009) notices that cultural expenditure on culture and recreation can have large spillovers due to a high degree of substitutability across municipalities, which can give rise to free-riding behavior and negative interdependence. However, the empirical analysis shows a contrary result of positive spatial interdependence of public expenditure on culture and recreation. Similarly, Geys et al. (2008) demonstrate positive spatial interdependence of Flemish municipalities' cultural expenditures. However, when distinguishing spatial interdependence between municipalities neighboring central places and municipalities neighboring smaller municipalities, this spatial pattern becomes more complex and significantly richer. Neighbors of central places show to ignore what their smaller neighboring municipalities do or that in these municipalities a free-riding effect is compensating to a higher degree despite the positive spatial interdependence. Subchapter 2.3 *Culture as a 'Central Place' Function* will further explore the concept of central places.

The public provision of cultural goods such as theaters and museums in one municipality can also increase the welfare of residents in neighboring jurisdictions, because those residents often can utilize these cultural goods and services as well. An optimal reaction of a local government to this positive welfare externality would be to freeride on neighboring jurisdictions by reducing their cultural expenditure and redistributing financial resources to other policy areas (St'astná, 2009). Positive spillovers of culture as well as the cross-border consumption it implies let municipalities adapt their decisions on how much their neighbors are investing in culture, meaning that there is an interdependence in local cultural policies. However, in most cases there is a lack of policy coordination across municipalities to internalize spillover effects. As predicted by theories concerning collective action failures (Olson, 1971),

there can be expected that local jurisdictions will show free-riding behavior regarding the provision of the other municipalities and consequently underprovide public cultural services.

Another reason to freeride on neighboring municipalities is that the provision of cultural services necessitates funding and that funding requires levying taxation, which is often considered to be disadvantageous for politicians' popularity or chances to be re-elected. It is possible to overcome these (electoral) costs of taxation by freeriding on other municipalities' cultural expenditure while keep abiding by the wishes of its own inhabitants (Geys et al., 2008). Based on this argument, there can be expected that free-riding behavior implies that high levels of cultural spending in one municipality will reduce cultural expenditure in neighboring municipalities.

These two rationales regarding free-riding behavior induce a negative spatial interdependence between municipalities (or: a negative slope of the reaction function) and therefore leads to the first hypothesis:

H1: Public cultural spending in a municipality negatively impacts cultural expenditure among neighboring municipalities.

2.2 Positive Spatial Interdependence

Besides free-riding behavior as an argument explaining negative spatial interdependence, across the literature several factors are brought forward that can positively impact cultural expenditure among neighboring jurisdictions. The following section delves into these factors: fiscal competition, competition to increase reputation, mimicking decisions, acquired tastes and intellectual trends.

2.2.1 Fiscal Competition

Much attention has been paid to the influence of fiscal competition on public expenditure. If more attractive public goods are provided in neighboring municipalities, the inflow of potential inhabitants or businesses can decrease, or it can affect an outflow of the municipality's inhabitants or mobile companies, meaning that the welfare of the residents in that municipality will decrease. This idea relates to the concept of 'voting with your feet', in which people move to the place that provides an ideal level of public goods for them, depending on the underlying resource expenses (St'astná, 2009). Although much research has been done on this field, empirical research studying the impact of fiscal competition on public cultural spending is

barely existent. To the best of my knowledge, only Buettner and Janeba (2016) have devoted a study on public subsidies to local German theaters associated with fiscal competition.

Since local governments enjoy a significant freedom regarding public expenditure on culture (Directoraat-Generaal Cultuur en Media, 2017), public support by local jurisdictions is in line with the idea that subsidizing culture could be an instrument of locational competition. This would mean that jurisdictions possibly compete through public good provisions (i.e. fiscal competition). A theoretical analysis by Buettner and Janeba (2016) supports this statement by rationalizing the subsidization of cultural activities in which municipalities aim to attract the most productive mobile creative class. Subsidizing culture makes a municipality more attractive for creative people (Florida, 2002), which could fiscally incentivize the provision of cultural goods. One prerequisite for this public provision of culture is that the efficacy needs to take place in a competitive setting, meaning that locational benefits should offset to simultaneous expenditures by neighboring municipalities (Buettner & Janeba, 2016). In the empirical research exploring the German theater case, Buettner and Janeba (2016) support the theoretical view by concluding that public expenditure on culture is effective to attract highly educated labor, which in turn benefits to local productivity. This provides an incentive for local jurisdictions to fiscally compete with other neighborhoods, which induces a positive spatial interdependence between municipalities. Important to note is that, under fiscal competition, municipalities are more likely to spend on public goods benefiting local companies, therefore municipalities are at risk to lose sight of the needs of inhabitants (Keen & Marchand, 1997).

2.2.2 Competition to Increase Reputation

“In recent years, culture has taken on a more instrumental meaning in cities. It now represents the ideas and practices, sites and symbols, of what has been called the ‘symbolic’ economy’, i.e. the process through which wealth is created from cultural activities, including art, music, dance, crafts, museums, exhibitions, sports and creative design in various fields. This new concept of culture increasingly shapes city strategies in the face of both global competition and local tensions.” (Zukin, 2004, p. 3)

While the previous argument (see: 2.2.1 *Fiscal Competition*) was mainly focused on competition by means of providing a desirable amount of public goods, this section focuses on competition between municipalities to increase reputation. Both fiscal competition and

competition to increase reputation are used by municipalities aiming to attract more inhabitants and businesses.

Due to the increased pressures of globalization and changes of economic restructuring, regions face the need to become distinctive regarding their identity and to be economically, socially and culturally prosperous (Palmer & Richards, 2010). Academia and public authorities have developed an increased interest in city branding theories in the last decades as response to the demands of competition to attract specific target groups. Reputation can be considered as a key factor in competing for and attracting investments of both the private and public sector, in which reputation refers to the attitude of people toward a certain place. Although the brand and image of a city or region have also been widely used, reputation is considered as a more coherent and reliable indicator of performance, since reputation requires a sustainable nurturing process (Shirvani Dasatgerdi & De Luca, 2019). This reputation has been proved to be influential in decisions regarding investments, tourism and residential locations (Braun, Eshuis, Klijn, & Zenker, 2018) and this consequently offers municipalities the possibility to create a customized value aiming to attract a specific target group, which mostly refers to a group of highly productive people that are important for the economic growth of geographical areas. One option to define these people is by Florida's (2002) concept of the 'creative class', which include scientists, self-employed professionals and artists among others. Soft location factors are necessary to attract this creative class, in which a vibrant cultural atmosphere is one of the factors that is important for the economic developments of cities¹. According to Shirvani Dasatgerdi and De Luca (2019), a vibrant cultural atmosphere also has an important role in creating a reputation of a place. Cultural activities have the potential to improve the identity of a city, which is fostered by the realization of differences between places, the recognition of the place its identity as well as on the regeneration of cultural heritage and the emphasis on landmarks. Secondly, cultural activities can improve the image of a place, meaning the recognition of the inhabitants' and visitors' view about a place and the involvement of citizens in the creation of this image. Another important step to develop a place its reputation is targeting planning of important cultural (or sports) events, in which events can be considered as the cultural capital of the region. In the last decades, regions compete more and more to attract

¹ Although Florida's (2002) research is mainly concerned with studying prerequisites of creative cities rather than taking into account rural areas, other research has been devoted to the place of the creative class in rural developments (see e.g. McGranahan & Wojan, 2007). Therefore, it will still be used as concept to theorize the impact of fiscal expenditure on public spending on culture.

certain highly ranked types of (economic) activities (Haindlmaier & Riedl, 2010) and the promotion of these activities such as festivals, exhibitions and championships have become an important part of urban development strategies. Cultural events, in particular, have become key elements within processes of urban development and revitalization, since cultural initiatives are proven to strongly influence the image of places and of civic life in general (Palmer & Richards, 2010). A recent example in the Netherlands that confirms to the statement that “no city believes it is too small or too complex to enter the market of planning and producing events” (Palmer & Richards, 2010, p. 2) is the competition between cities for the organization of the Songfestival (Volkskrant, 2019).

It is important to note that reputation requires a nurturing, sustainable process (Shirvani Dasatgerdi & De Luca, 2019). Therefore, hosting an event one time would not automatically increase the positive reputation of a certain area. A more sustainable way to increase the reputation of a municipality by means of hosting cultural events is to sustain public expenditures on culture. In this sense, it is possible to expect a competition between municipalities regarding the expenditures. This implies that higher expenditures on culture in a municipality will lead to higher spending in neighboring jurisdictions as well.

2.2.3 Mimicking Decisions

Municipalities could also mimic decisions regarding the provision of public goods of neighboring municipalities. There are two useful concepts to explain this behavior: yardstick competition and incomplete information.

In order to judge on the policy and performance of one’s own jurisdiction, (incomplete informed) voters are likely to use the performance of a neighboring jurisdiction as yardstick for comparisons, since it is not possible for an average voter to get insight into costs and benefits determining the quality of public service provisions (St’astná, 2009). This concept of yardstick competition is introduced by Shleifer (1985) and for the first time used in studies on horizontal competition between local jurisdictions by Salmon (1987). Originally, this concept has been used in the context of the improvement of the costs of service regulation of franchised monopolies as benchmark to evaluate the performance of a company (Revelli, 2002). In political context, Salmon (1987) demonstrates yardstick competition in relation to decentralization, stating that one of the main advantages of decentralization is that local governors are incentivized to reduce a lack of managerial efficiency when trying to perform better than local governments of other jurisdictions.

Another factor is the information asymmetry between voters and politicians regarding the costs of public provision, in which voters can use the information of neighboring jurisdictions to get informed about whether or not they should re-elect the incumbent government (Besley & Case, 1995) or as reference point to judge the policies and public good provision of their own jurisdiction. For voters, this relative performance assessment generates transaction (dis)utility (Thaler, 1985), which entails the additional utility that voters experience by evaluating the merits provided relative to a reference point, in this case of neighboring municipalities.

On governmental level, mimicking decisions can be caused by incomplete information of local governments. To avoid information costs, for example, of performing a cost-benefit analysis or by analyzing the demand of a municipality's inhabitants, a local government can mimic the policies and performances of its neighbors (St'astná, 2009).

Considering the fact that inhabitants assess the local policies relative to policies of neighboring municipalities, the lack of cultural goods provision in one's own municipality can be experienced worse when neighboring municipalities do provide cultural goods. Therefore, a higher spending on culture by neighboring jurisdictions can incentivize a municipality to increase its expenditure on culture as well. Mimicking behavior can thus be considered as a rational response to yardstick competition and incomplete information, meaning that higher expenditures on culture in a municipality leads to higher spending in neighboring jurisdictions.

2.2.4 Acquired Tastes and Intellectual Trends

Besides fiscal competition, competition to increase reputation and mimicking behavior of municipalities, the concepts of acquired tastes and intellectual trends have both been brought forward in the literature to explain a positive spatial interdependence between fiscal policies.

The idea that arts and culture are acquired tastes is introduced by Marshall (1891), who stated that the enjoyment of 'good music' was an acquired taste that increases over time the more someone listens to it: "It is therefore no exception to the Law [of diminishing marginal utility] that the more good music a man hears, the stronger is his taste for it likely to become" (p. 151). This implies that past consumption of cultural goods leads to an increased future consumption, shaped by education and experience. Contrary to saturation as studied by Gossen's second law of diminishing marginal utility, "cultural goods show over time an increasing marginal utility" (Van der Ploeg, 2006, p. 1197), which means that the attendance of a visitor's 50th theater play gives this visitor more satisfaction than any of the previous ones,

since the reference frame is increased. One theoretical approach to model this concept is the theory of rational addiction, meaning that a strong addiction to a certain good depends on previous consumption, which consequently strongly effects current consumption. The demand curve of these addictive goods tends to be more elastic on the long term than the demand for non-addictive goods. The concept of rationality means a consistent plan to maximize utility over time (Becker & Murphy, 1988). This concept indicates that the acquisition of human capital characteristics related to the arts (e.g. experience and understanding) through past consumption reduces the shadow price of cultural goods, which increases future demand (Geys et al., 2008). A model that adds to the hypothesis of intertemporal separability of utility restrictive to previous consumption is the demand model with “learning by consuming”, in which the amount of demand depends on (a mostly subjective judgement of) quality, reflected by the intrinsic taste for as well as the acquired experience of the good, related to either positive or negative surprises of past experiences (Lévy-Garboua & Montmarquette, 1996). Consumers are unaware or uncertain of their own preferences, and discover these preferences in a process of learning by consuming which requires time (Pollak, 1970). The distinctive nature of cultural experiences and the great differentiation offer new possibilities for surprises which indicates a long learning process (Lévy-Garboua & Montmarquette, 1996). Besides Lévy-Garboua and Montmarquette (1996) have shown that previous theatergoing experience has a significant positive effect on current theater consumption, adding that theater consumption does not exclude consumption of other types of cultural goods. These theories imply that cross-border consumption of cultural goods leads to taste acquisition, which accordingly leads to an increased demand for future consumption. This increased demand does not only take place in the municipality that originally spent resources on culture, but also in neighboring municipalities. In other words, if municipality *j* spends relatively a lot on cultural expenses, which boosts the cultural atmosphere, inhabitants of municipality *i* can also benefit from this by consuming culture in the neighboring municipality. This in turn leads to taste acquisition and an increased demand for culture in both municipality *j* and *i*. For this, the assumption is being made that local councils consider the demand for culture of inhabitants when deciding on the cultural expenses. However, if a neighboring municipality does not act upon the increased cultural demand of inhabitants, people who are interested in culture (e.g. the creative class (Florida, 2002)) move to cultural hubs, which would therefore not lead to positive spatial interdependence.

Another explanation of positive spatial interdependence that will be addressed is that individuals in the same group are likely to behave in the same way as group members, because

they share individual characteristics (Manski, 1993). Under this theory, neighboring jurisdictions' fiscal policies patterns correspond just because the inhabitants are comparable, which motivates politicians to implement similar policies. Also, common intellectual trends can occur between politicians, for example, because they regularly meet and discuss policy issues or are influenced by an influential (theoretical) insight of a well-known economist or politician. Rather than speaking of an effective spatial interaction, following this theory it is better to speak of a common (intellectual) trend (Redoano, 2007).

The aforementioned arguments of fiscal competition, competition to increase reputation, mimicking decisions, acquired tastes and intellectual trends induce a positive slope of the reaction function and lead to the following hypothesis (which is contradictory to H1):

H2: Public cultural spending in a municipality positively impacts cultural expenditure among neighboring municipalities.

2.3 Culture as a 'Central Place' Function

In general, cultural activities are economically feasible only in areas where the possible visitors or consumers are large enough to financially support them. This basically entails sufficiently large metropolitan areas or cities. In densely populated municipalities, economies of scale can be more easily exploited, because of the concentration of cultural initiatives (Heilbrun, 1992). An increase in the size of a municipality leads to reinforcing effects because an educated working class is likely to be attracted to the existence of specialized goods and services which consequently boosts the infrastructure development. Mostly the highest-order places, typically metropolitan areas, offer these diverse and specialized goods and services (Daniels, 2007). These economies of scale exist on the basis of saving in unit costs that can occur when a large enough amount of certain types of businesses are located close to each other. These businesses are then able to share a common pool of highly specialized inputs. The exact size of these densely populated municipalities depend on factors inherent to the central place theory: the geographical density of demand for the good in question and the costs characteristics of this good (Heilbrun, 1992).

The cultural industries clearly show such economies of scale. In metropolitan areas in the United States, there is a (linear) positive relation between the amount of performing arts organizations and the population size of that region (Blau & Hall, 1986). Moreover, locational data of artists as well as on the non-profit theater sector demonstrate that cultural activities show

typical characteristics of central place functions. Based on this data, Heilbrun (1992) considers art and culture as “pre-eminently central place functions” (p. 205), meaning that larger municipalities have advantages in providing these goods and services.

Economies of scale do not only provide benefits for producers of cultural goods and services, but probably for local governments as well. As hypothesized by Geys et al. (2008), “one additional euro spent in larger municipalities to supply cultural activities might be (much) more productive than one additional euro spent by a small municipality” (p. 38). This implies that central places have an advantage in providing cultural goods over non-central places. When the government of a non-central place takes into account this relative cost disadvantage, it is likely that municipalities neighboring central places are influenced by the level of cultural spending of the central places. The local government can consider whether the (electoral) costs of the taxation of the jurisdiction’s voters when financially supporting culture will outweigh the availability of cultural services in one’s own municipality. It is likely that a local government prefers to lower the electoral costs, taking into consideration the possibility of its inhabitants to travel to a neighboring central place that sufficiently provides cultural goods. In other words, this local government will tend to freeride on the cultural good provision of the central place. This free-riding behavior can happen in various degrees, from lowering the amount of expenditure on culture to not even providing cultural services at all, which can depend on the cost disadvantages of the smaller municipality as well as on the convenience of the inhabitants to jump the border to another municipality to consume culture, and in line with Langeveld and Van Stiphout (2013)’s research, audiences are mostly willing to travel to consume culture as long as the travel distance is not too long, which holds for travel distances between Dutch municipalities. In the case of Flemish municipalities, there is demonstrated that a municipality neighboring a central place tends to freeride on the central place that has advantage in providing cultural goods and services (Geys et al., 2008). Moreover, as demonstrated by Hakonson and Løyland (2016), municipalities bordering a central place tend to free-ride on the expenditures on libraries and cinemas, however, in the analysis of the central places, the authors did not perform an econometric analysis of the central place theory. The expectation that a smaller municipality has higher incentives to freeride on neighboring central places than on neighboring smaller municipalities leads to the following hypothesis:

H3a: The reaction of public cultural spending in a smaller municipality is more negative when neighboring a central place than when neighboring other small municipalities.

From the point of view of the central places, their relative cost-advantage in the provision of cultural goods due to the economies of scale can also affect their own behavior in relation to that of neighboring jurisdictions. However, central places have less incentive or maybe not even the possibility to freeride on the cultural good provisions of their smaller neighbors. Complementary to H3b, the following hypothesis is formulated:

H3b: The reaction of public cultural spending of central places to their smaller neighboring municipalities is less negative than the general reaction to smaller municipalities' cultural spending.

In line with the argument that art and culture are central place functions, both the inhabitants and politicians of municipalities neighboring central places are likely to focus their attention on the provisions of cultural goods in the central place. As shown by Blau and Hall (1986), in the United States there are a few large metropolitan areas responsible for hosting the majority of cultural institutions, which can imply that the cultural desires of the inhabitants of municipalities neighboring central places are probably centered in the central place, rather than in other surrounding municipalities. This enables the local government to not consider decisions regarding cultural good provision and policy of smaller neighboring municipalities. In line with this argument, Geys et al. (2008) have demonstrated that small municipalities neighboring a central place tend to ignore what their smaller neighbors do. The aforementioned arguments lead to the following hypothesis:

H4: Neighboring municipalities of central places are less likely to take into account the public cultural spending of their non-central place neighboring municipalities than municipalities that do not border a central place.

Chapter 3. Methodology

The third chapter starts with (3.1) providing a description of the institutional setting in which the Dutch cultural policy and the responsibilities of the municipalities regarding cultural expenditures are explained. The section on (3.2) data provides an overview of the data sources that will be used in the empirical research. Most importantly, (3.3) the model specification explains and develops the regression models that are necessary for the regression analyses. Additionally, (3.4) the comparative benchmark analysis of performing arts expenditure is explained. The methodology chapter is ended by (3.5) describing the validity and reliability of the research.

3.1 Institutional Setting

The four biggest cities in the Netherlands, Amsterdam, Rotterdam, The Hague, and Utrecht are all located in the western part of the country: the *Randstad*. Although the *Randstad* only exists of 20% of the country, almost half of the Dutch citizens work and live in this area. Also, the most well-known dichotomy of the country is the one of the *Randstad* and the rest of the country. More than 50% of the cultural initiatives are located in this area. For example, 57% of the museum visits and around 60% of the theater visits take place here (Nijmeijer, 2018).

In the Netherlands, public funding on culture takes place on national, provincial, and municipal level. The cultural sector is supported directly through subsidies or indirectly through investments in the infrastructure and other services. All three governmental layers have an autonomous cultural policy and are responsible for their own cash flows. However, within these autonomous policies, there is a subdivision of tasks (Directoraat-Generaal Cultuur en Media, 2017). While in Belgium, for example, the government stimulates an integral cultural policy at regional level (Geys et al., 2008), the Dutch cultural policy is largely decentralized. Only cultural education as well as talent development are mentioned within the cultural policy of the period 2017-2020 to be regulated integral. Regarding talent development, mostly funds are responsible for subsidizing initiatives to ensure an integral approach (Bussemaker, 2015). Only recently, in the cultural policy of 2021-2024, the aim is expressed to strive for an integral cultural policy of urban regions, in which programs or projects that enforce regional cooperation and the finance of these initiatives should be described (Directie Erfgoed en Kunsten, 2020).

As shortly mentioned in the introduction, the total public spending on culture in 2017 was around 2.8 billion euros. Municipalities are responsible for the largest part of the public

spending (i.e. 61%). The share of the national government is around 29% and the share of the provinces 10%. The task division is based on agreements that are described in the General Framework Intergovernmental Divisions Culture (*Algemeen Kader Interbestuurlijke Verhoudingen Cultuur*) developed by the Ministry of Education, Culture and Science, the Interprovincial Consultation (*IPO*) and the Associations of Dutch Municipalities (*VNG*). As described in the framework, the national government supports institutions that have an important (inter)national meaning through the cultural basis infrastructure (*BIS*). The *BIS* exists of cultural institutions that receive subsidies every four years (Bussemaker, 2016b). Besides the *BIS*, the national government is responsible for the protection of the national collection, preservation of national heritage and monuments, cultural education, the library system, and archive possibilities. Provinces take care of the coordination of the aforementioned responsibilities on regional level as well as the funding of provincial collections. In some cases, provinces also support the cultural offer. Municipalities are responsible for the accommodations of cultural institutions and for the funding of municipal collections. On this level, local initiatives, theaters, libraries, museums and artistic schools are subsidized (Directoraat-Generaal Cultuur en Media, 2017).

When taking a closer look at the cultural spending in Dutch municipalities in 2017, the municipalities together spent 1,7 billion euros (Directoraat-Generaal Cultuur en Media, 2017). Smaller municipalities spent relatively a little on performing and visual arts, and a great deal on libraries. It is for small communities more expensive to create services for performing arts and to maintain libraries. The regulation on public library services (*Wsob*) can explain why smaller municipalities spend relatively more on libraries. Moreover, libraries are more likely to attain a social and political support base than other cultural disciplines (Van der Holst & Wilmink, 2018). *Figure 3-1* provides an overview of the cultural expenses on different cultural disciplines.

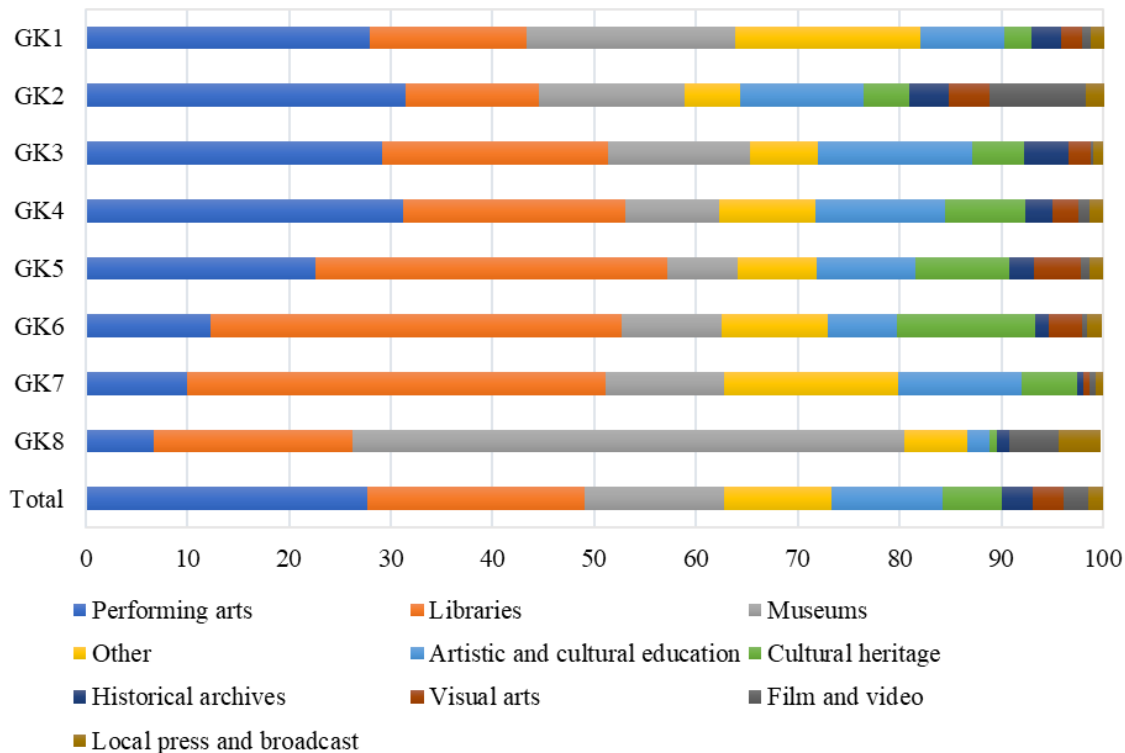


Figure 3-1: Detailed Overview of Cultural Expenses Categorized by Population Size Groups² as Percentages of the Total Cultural Expenses in 2017

3.2 Data

The following section aims to provide an overview of the data sources that will be used in the empirical research. Only cross-sectional data on municipalities will be used. Since municipalities are responsible for the cultural policy (Directoraat-Generaal Cultuur en Media, 2017), they are suitable for analyzing patterns of spatial interdependence (St’astná, 2009).

On request of the Ministry of Education, Culture and Science, the Dutch Central Office of Statistics (CBS) has conducted a research of the cultural expenses of municipalities and provinces in 2017. Of the in total 388 municipalities in 2017, 344 municipalities have provided information on their cultural spending. The Ministry aimed to have a more detailed overview of the different cultural sub-sectors which enables sufficient possibilities to analyze and evaluate the policy. In this research, municipalities are requested to provide details regarding their cultural expenses. These expenses should be subdivided into the following categories: performing arts, visual arts, artistic and cultural education, film and video, museums, historical archives, cultural heritage, libraries, local press and broadcast, and other municipal costs on

² The exact categorization of the population size groups is explained in section 3.2.

culture. However, municipalities can experience difficulties regarding booking certain expenditures under the code of culture or regarding the subdivision of cultural disciplines. For example, cultural education for children can also be considered as ‘youth care’ or cross-cultural initiatives do not fit in the aforementioned categories. This results in some degree of measurement error into the dataset. However, municipalities have to follow strict guidelines when accounting for their expenditures. Moreover, municipalities are controlled by accountants every year (Rijksoverheid, n.d.). Thus, they are being supervised strongly. This supervision indicates the reliability of the data.

Besides the subdivision of cultural categories, municipalities are also divided into eight categories depending on the amount of inhabitants: GK 1 (more than 250.000 citizens, the four biggest municipalities), GK 2 (150.000 to 250.000 citizens), GK 3 (100.000 to 150.000 citizens), GK 4 (50.000 to 100.000 citizens), GK 5 (20.000 to 50.000 citizens), GK 6 (10.000 to 20.000 citizens), GK 7 (5.000 to 10.000 citizens) and GK 8 (less than 5.000 citizens). For this research, 344 out of the 388 Dutch municipalities have provided data on their cultural expenses (Van der Holst & Wilmink, 2018). This data will be the primary source of the empirical analysis.

Secondly, it is important to complement the municipal cultural expenditure with the cultural basis infrastructure. In Rotterdam, for example, *Theater Rotterdam*, *Stichting Maas theater en dans*, *Stichting Scapino Ballet Rotterdam* and *Stichting Nederlands Fotomuseum* among others are funded through the *BIS* in the period 2017-2020 (Bussemaker, 2016c). It is likely that municipalities adapt the amount of cultural spending on the *BIS* since they are secured of these quadrennial subsidies. The national expenditures are added to the municipal cultural spending in order to provide a more complete overview of the total cultural expenditure in the municipalities.

Besides, additional data to calculate the cultural spending per capita (i.e. the amount of inhabitants) as well as most of the control variables will be gathered from data provided by the *CBS* (2020). Other sources are the official national database collecting financial data of decentral governments to acquire the financial control variables (Rijksoverheid, 2020), the *KVK*, the Dutch Chamber of Commerce, for the socio-economic variable of income (*KVK*, 2020), and lastly, the *Databank Verkiezingsuitslagen*, which provides a reliable overview of the election results throughout the time, for the political variable (Kiesraad, 2014). The third column of *Table 3-1* in the next section provides an overview of the sources of the variables.

3.3 Model Specification

The analysis will be focused on the cultural expenditures in Dutch municipalities in the budgetary year 2017. The dependent variable of this research is the per capita municipal cultural spending on culture in 2017. In this research, local cultural expenditure refers to all municipal spending on performing arts, visual arts, artistic and cultural education, film and video, museums, historical archies, cultural heritage, libraries, local press and broadcast, and other municipal costs on culture.

Before delving into the econometric model specification, *Figure 3-2* provides a conceptual overview of the methodology.

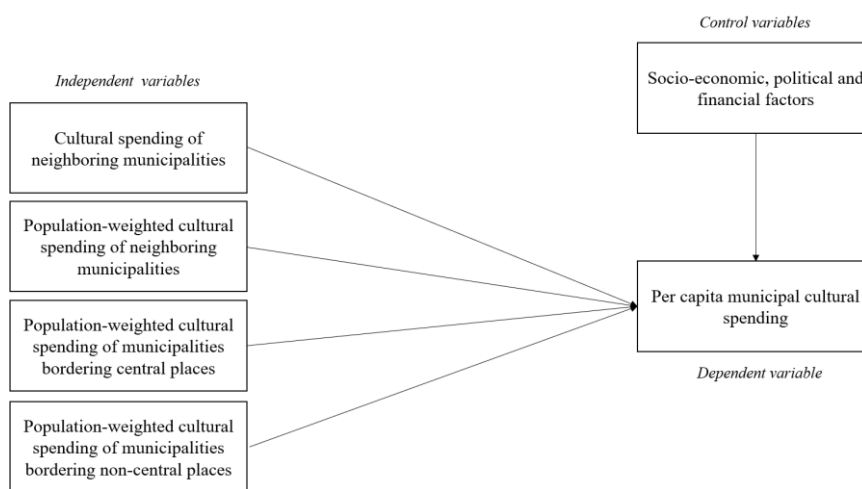


Figure 3-2: Conceptual Model

To analyze the hypotheses as raised in the second chapter, the following equation is formulated:

$$CS = \alpha + NEIGH + e$$

The dependent variable CS stands for the per capita cultural spending in a municipality. The neighborhood variable NEIGH depends on which hypothesis is tested. To test whether public cultural spending in a municipality either negatively or positively impacts cultural spending among neighboring municipalities, NEIGH is defined as a (non-weighted) average level of the cultural spending of neighboring municipalities. An important point of this research is the construction of the weighting matrix of neighboring municipalities. Since neighboring spending can introduce a potential spatial correlation, it is fundamental to establish a weighting matrix, which is based on the geographical information of municipalities (St'astná, 2009). This leads to the equation:

$$NEIGH = W \cdot CS$$

The weight of W depends on whether or not municipalities are neighbors. Specifically, the weights are formulated as:

$$W = \frac{W_{ij}}{\sum_{j \neq i} W_{ij}}$$

In this matrix, i and j stand for two municipalities. If municipalities i and j are adjacent, $W_{ij} = 1$. It is possible to use this border-sharing criterion, since the traveling distance is proved to be an important factor to decide whether to attend a cultural activity or not (Boter et al., 2005; De Graaff et al., 2007; Langeveld & Van Stiphout, 2013). The spatiality of W is expressed in a (344 x 344) row-normalized spatial weights matrix that refers to whether or not two municipalities are neighboring. To ensure this normalization, the entries in each row of the matrix W are $1/n$ in which the n are the amount of neighbors of the municipality in row i if the municipality in row i shares a border with the municipality in column j . When this is not the case, the entry is 0. It is important to mention that only neighboring municipalities are considered, thus not municipalities that border the neighbors, since the average distance between the municipalities is only 7.5 kilometers³.

The aforementioned equations are useful to measure the first two hypotheses. However, the size of a municipality may influence the reaction of neighboring municipalities as argued in H3a and H3b. In order to test this, it is important to formulate a population-weighted average level of per capita cultural expenditure in neighboring municipalities. This means that W is reformulated to the following equation:

$$W = \frac{W_{ij} \cdot \text{pop}_j}{\sum_{j \neq i} (W_{ij} \cdot \text{pop}_j)}$$

Again, $W_{ij} = 1$ if municipality i and j are neighbors. The population size of municipality j equals pop_j . This implies that there is more weight attached to expenditures of larger neighboring municipalities.

Moreover, a distinction is being made between central places and non-central places. In the Netherlands, the following municipalities are considered as central places: Amsterdam, 's-Gravenhage (The Hague), Rotterdam, Utrecht, Groningen, Almere, Enschede, Arnhem, Nijmegen, Amersfoort, Haarlem, Breda, Eindhoven, 's-Hertogenbosch, Tilburg, Maastricht, Venlo, Zwolle and Leeuwarden. The designation of central places is based on the population size, the amount of jobs, the gross municipal product, the amount of stores and shops, and

³ In case of Flemish municipalities, there is a similar distance between municipalities (i.e. 7 kilometers) and there were no observed effects from neighbors of neighbors (Geys et al., 2008).

educational facilities (Vereniging van Nederlandse Gemeenten, 2015). For the distinction of central places and non-central places, which is necessary to analyze H3a, H3b and H4, two different weights matrices are developed, which means that two neighborhood variables are applied for each municipality. The matrix that indicates the population-weighted average level of per capita cultural spending of municipalities that neighbor central places is:

$$W = \frac{W_{ij} \cdot \text{pop}_j \cdot \text{CP}_j}{\sum_{j \neq i} (W_{ij} \cdot \text{pop}_j \cdot \text{CP}_j)}$$

Similarly, $W_{ij} = 1$ if municipality i and j are neighbors, and pop_j equals the population size of municipality j . Additionally, $\text{CP}_j = 1$ if municipality j is one of the nineteen Dutch central places. Thus, this variable, denoted as ‘CP-neighbors spending’, enables to get insight into the effect of the cultural expenditure of central places on neighboring municipalities. The second weights matrix that indicates the population-weighted average level of per capita cultural spending in a municipality that is not a central place is:

$$W = \frac{W_{ij} \cdot \text{pop}_j \cdot \text{NCP}_j}{\sum_{j \neq i} (W_{ij} \cdot \text{pop}_j \cdot \text{NCP}_j)}$$

In this matrix, $\text{NCP}_j = 1$ if municipality j is not one of the Dutch central places. This variable, abbreviated as ‘NonCP-neighbors spending’ allows to analyze the effect of non-central places’ expenditure behavior on neighboring municipalities.

Some municipalities only have non-central place neighbors (in this sample, this is the case of 235 municipalities) and other municipalities have both central place and non-central place neighbors (which is the case of 109 municipalities). As argued in the fourth hypothesis, municipalities adjoining central places are less likely to consider the public spending of their non-central place neighboring municipalities than municipalities that do not border a central place. In order to test this hypothesis, it is useful to split the dataset in two subsamples: one of municipalities neighboring central places and one of municipalities that do not. If H3 is confirmed, the analysis will result in significant effects in the second subsample.

Additionally, it is interesting to consider the dichotomy between the *Randstad* and the rest of the country. Therefore, it is important to make a second split in the dataset. Although the *Randstad* officially consists of an agglomeration of 13 municipalities, within this research it is necessary to consider the municipalities surrounding these agglomerations in order to test whether spatial interdependence exists. These are all located in the most densely populated provinces Noord-Holland, Zuid-Holland and Utrecht (Van Eck, Van Oort, Raspe, Daalhuizen, & Van Brussel, 2006). This leads to two different subsamples: 110 municipalities within the

Randstad and the remaining 234 municipalities in the rest of the Netherlands. Based on this distinction, there can be analyzed whether the spatial patterns differ in this often-made dichotomy.

Besides the analysis of spatial interdependence in municipal cultural expenditure, it is important to control different variables that characterize municipalities. Following the literature (e.g. Geys et al., 2008; Hakonson & Løyland, 2016; Schulze & Rose, 1998) and theoretical models of political economy (Craig & Inman, 1986), socio-economic, political and financial variables are tested. Therefore, the initial equation also has to be changed to include the municipalities' characteristics:

$$CS = \alpha + NEIGH + SOCECO + POLI + FIN + e$$

A complete overview of the different variables is presented in *Table 3-1*.

Table 3-1: Overview of Variables Used

Variable	Description*	Source
CS	Per capita cultural spending. The total cultural expenditure plus the <i>BIS</i> are divided by the number of inhabitants per municipality	CBS (2018); Bussemaker (2016b)
Neighbors spending	Per capita cultural spending of neighboring municipalities $NEIGH = W \cdot CS // W = \frac{W_{ij}}{\sum_{j \neq i} W_{ij}}$	CBS (2018); Bussemaker (2016b)
Pop-weighted neighbors spending	Per capita population-weighted cultural spending of neighboring municipalities $NEIGH = W \cdot CS // W = \frac{W_{ij} \cdot pop_j}{\sum_{j \neq i} (W_{ij} \cdot pop_j)}$	CBS (2018); Bussemaker (2016b)
CP-neighbors spending	Per capita population-weighted cultural spending of municipalities neighboring central places $NEIGH = W \cdot CS // W = \frac{W_{ij} \cdot pop_j \cdot CP_j}{\sum_{j \neq i} (W_{ij} \cdot pop_j \cdot CP_j)}$	CBS (2018); Bussemaker (2016b)
NonCP-neighbors spending	Per capita population-weighted cultural spending of municipalities that do not border central places $NEIGH = W \cdot CS // W = \frac{W_{ij} \cdot pop_j \cdot NCP_j}{\sum_{j \neq i} (W_{ij} \cdot pop_j \cdot NCP_j)}$	CBS (2018); Bussemaker (2016b)
Randstad-neighbors spending	Per capita population-weighted cultural spending of municipalities that are located in the <i>Randstad</i> $NEIGH = W \cdot CS // W = \frac{W_{ij} \cdot pop_j}{\sum_{j \neq i} (W_{ij} \cdot pop_j)}$	CBS (2018); Bussemaker (2016b)
NonRandstad-neighbors spending	Per capita population-weighted cultural spending of municipalities that are located in other provinces $NEIGH = W \cdot CS // W = \frac{W_{ij} \cdot pop_j}{\sum_{j \neq i} (W_{ij} \cdot pop_j)}$	CBS (2018); Bussemaker (2016b)
Pop size	Amount of inhabitants	CBS (2020)
Pop density	Amount of inhabitants per km ²	CBS (2020)

Income	Average income of inhabitants (x €1000)	KVK (2020)
Education	Share of inhabitants that are students or graduates of higher and scientific education (<i>HBO</i> and <i>WO</i>)	CBS (2020)
% under 20	Share of inhabitants under 20 years	CBS (2020)
% over 65	Share of inhabitants above 65 years	CBS (2020)
Ideology	Share of <i>D66</i> and <i>Partij van de Arbeid</i> in the local council	Kiesraad (2014)
Grants	General municipal grants	Rijksoverheid (2020)
Debts	Adjusted net debt	Rijksoverheid (2020)

* Expressed in natural logarithms

The first socio-economic variable is the population size. According to Schulze and Rose (1998), generally, larger municipalities have a higher per capita demand for public services. More specifically, this is also the case for public funding of cultural goods. Also, Geys et al. (2008) confirm this by stating that the amount of inhabitants has a highly significant and positive effect on municipal cultural spending. Based on these elements, I expect that the population size has a positive effect on the cultural expenditure in municipalities, meaning that larger municipalities or central places have a higher per capita cultural spending. However, it could be possible that in central places, cultural initiatives experience advantages due to economies of scale (Towse, 2010). This could possibly lower their fixed costs, which are generally relatively high for cultural goods. Lower fixed costs could decrease the need for a high public spending.

Another socio-economic variable is the population density, which is often used as a measure indicating the degree of urbanization. I expect that in urbanized, densely populated areas, the average travel distance of inhabitants is lower. Since distance is an important factor to consider whether to attend a cultural event or not (Langeveld & Van Stiphout, 2013), it is likely to expect that the demand for cultural events is higher in densely populated areas, which in turn could lead to higher public expenditures.

According to Schulze and Rose (1998), the average income of inhabitants and the educational level are also important factors that influence the demand for culture. I expect these variables to have a positive effect on the public cultural expenditure, since in general the willingness to pay for cultural goods and services is higher among wealthy and higher educated people (Geys et al., 2008).

To account for the age structure of municipalities, the share of inhabitants under 20 years and the share of inhabitants over 65 is taken into consideration. Bastida et al. (2013) analyze the age pyramid of the population and its relationship to the demand of cultural goods.

For example, elderly people in general have less opportunity costs and are usually more experienced toward high culture. This would imply that the demand for cultural goods is higher in municipalities having a higher share of inhabitants above age 65. However, as argued by Borge and Rattsó (1995), a higher share of elderly people also means a higher demand for health services, which could be at the expense of cultural spending. Considering the bequest value of cultural goods, which is also acknowledged by policy makers aiming to preserve culture for future generations (Van der Ploeg, 2006), I expect a positive relation between the share of young inhabitants and public expenditure on culture.

The socio-economic variables are complemented by a political one. For this, I have looked at the share of parties represented in the local councils that are beneficial for the cultural sector. After analyzing the political programs before the local elections of 2014 as well as the political views in the pre-election year of 2017 (e.g. LKCA, 2017; Polak, 2017), the share of *D66* and *Partij van de Arbeid* in the local councils are used as indicators of beneficial ideologies for cultural expenditures. Also, both parties have had various experiences in the coalition, meaning that they are realistic regarding their investments in culture (i.e. considering budget constraints). Therefore, I expect a positive effect of a higher share of these parties on the public cultural expenditure.

The model is completed by two financial variables to control for the financial circumstances of municipalities. The general municipal grant of the *Gemeentefonds* is the main income source of municipalities. These grants can be expected to lead to a higher cultural expenditure (Geys et al., 2008). Second, the adjusted net debt is included. The net debt indicates the level of indebtedness of a municipality relative to its own means. A high net debt is not necessarily a problem since loans are not included in this quote. Therefore, it is important to use the adjusted net debt, which provides insight into loans granted (Rijksoverheid, 2020). A higher adjusted net debt could put a strain on investments in culture (Schulze & Rose, 1998), therefore, I expect that a higher adjusted net debt leads to lower cultural expenditure.

3.4 Performing Arts Benchmark

In order to delve more deeply into patterns of municipal spending, the analysis will be extended by adding an analysis of municipal performing arts expenditure. By means of this extension, it is possible to compare the total cultural spending with expenditures on specifically performing arts.

As with the total cultural spending, the municipal performing arts expenditure is also completed with the *BIS* grants for performing arts in order to derive at the dependent variable. For the independent variables of neighboring spending, the same formulas as described in the previous section are used, but then changing the total cultural spending by the performing arts expenditures.

Section 4.4 will delve into the results of the regression analyses aiming to see whether this differs from trends of the total expenditures. Therefore, the interpretation of the results will specifically focus on notable differences between spatial patterns of the total cultural spending and of performing arts.

3.5 Validity and Reliability

As the aim of the research is to analyze the extent to which cultural expenditure of Dutch municipalities is affected by the level of cultural spending in neighboring municipalities, the independent variables consist of four distinctions in the type of neighboring municipalities, considering the population size as well as the importance using the concept of central places. The formulas on which the independent variables are built on are based on previous literature of spatial econometrics. These independent variables provide an extensive understanding into how different types of municipalities influence other neighboring municipalities. In order to control for other factors, more variables are added based on insights of previous research of mostly cultural economics theories. A model specification which is based on previous research indicates a high level of validity. Besides, the *BIS* are added to the municipal expenditures on culture in order to get more complete idea of the cultural support in a municipality, which in turn increases the validity of the dependent and independent variables.

As mentioned in section 3.2, a high percentage but not the whole population will be used as sample in the empirical research. Besides, considering the fact that all information used for the independent and control variables is from 2017, an appropriate time scale for the study is selected, meaning that validity is ensured.

The reliability of the data of the municipal spending on culture is guaranteed by strict guidelines which municipalities have to follow in order to be sure of a correct categorization and by the control of accountants every year. The reliability of the research is guaranteed by calculating the multicollinearity of the variables. For this, the Variance Inflation Factor is used in order to calculate whether there is a correlation between the independent variables in the model. These outcomes will be considered when interpreting the outcomes. Besides, it is

important to mention that this model is based on data in 2017. When the study is repeated using the same data but of other years, the outcomes might be different. A time-series study analyzing data of different years could increase the study's reliability. Due to a lack of data, this was not possible to study in this thesis. Therefore, it is important to interpret the results of spatial interdependence as being inherent to trends in 2017.

Chapter 4. Results

The fourth chapter first (4.1) reviews the descriptive statistics of all variables including a comparison between the *Randstad* and the rest of the Netherlands. Secondly, (4.2) the exploratory analysis performs a Moran's I analysis in which the spatiality of the data is measured. The outcome is necessary to continue with the (4.3) econometric analysis in which the results of the multivariate regression analyses are presented and discussed. The outcomes of the analysis on total cultural spending are compared to (4.4) the results of performing arts expenditure. The last section provides (4.5) a short overview of the hypotheses tested and contextualizes the outcome in general political trends.

4.1 Descriptive Statistics

This subchapter shortly delves into the variables used in the econometric model. In *Table 4-1*, you can find an overview of the descriptive statistics of the Dutch municipalities. *Table 4-2* focuses on the differences between the *Randstad* and the rest of the Netherlands.

On average, the per capita cultural spending of municipalities is €66.56 ($SD = €48.10$). The per capita spending of neighboring municipalities, as calculated by the formula using the 344 x 344 matrix (see: chapter 3.3), is €70.71 ($SD = €84.30$). When distinguishing municipalities neighboring central places and municipalities bordering only smaller municipalities, you can see that spending of municipalities that border central places ($M = €91.97$, $SD = €65.07$) is a lot higher than the spending of municipalities that do not neighbor central places ($M = €70.31$, $SD = €52.18$). Especially in the provinces Noord-Holland and Zuid-Holland, the spending of central place neighbors is considerably higher than the spending of non-central place neighbors (see: *Appendix A*). In all numbers on municipal cultural expenditure, you can see that the standard deviations are relatively high⁴. This means that there are large differences between municipalities in their cultural spending. The large differences between municipal cultural expenditures can be explained by the fact that municipalities have the authority to decide on how much they financially want to support the cultural sector (Directoraat-Generaal Cultuur en Media, 2017). When analyzing whether there are notable differences in municipal cultural spending including and excluding the *BIS*, in general the list

⁴ Similarly, previous studies (e.g. Geys et al., 2008) demonstrate high standard deviations of (neighbors) cultural spending.

of the municipalities than spent the most is comparable (see: *Appendix B*). Out of this observation, it is possible to expect that municipalities do not freeride to a large extent on national grants. Moreover, we see that within this list mostly central place municipalities are apparent, meaning that their spending on culture is higher even though they have initial benefits due to economies of scale. Further information regarding the socio-economic, political, and financial demographics of municipalities can be found in *Table 4-1*.

Table 4-1: Overall Descriptive Statistics

Variable	Mean	Minimum	Maximum	Standard Deviation
CS	€66.56	€4.60	€273.68	€48.10
Neighbors spending	€70.71	€4.64	€951.37	€84.30
Pop-weighted neighbors spending	€66.55	€1.65	€498.80	€51.25
CP-neighbors spending	€91.97	€8.73	€498.89	€65.07
NonCP-neighbors spending	€70.31	€10.68	€273.68	€52.18
Randstad-neighbors spending	€69.81	€1.65	€498.80	€68.50
NonRandstad-neighbors spending	€65.02	€1.94	€255.17	€40.79
Pop size	45694.54	1498	844947	71857.2
Pop density	823.59	54	6347	1010.39
Income	25.78	19.70	46.70	3.64
Education	3.46%	1.34%	23.28%	2.10%
% under 20	22.58%	16.20%	37.60%	2.48%
% over 65	20.44%	9.00%	30.80%	3.21%
Ideology	20.95%	0%	46.40%	8.02%
Grants	€41,767,630	€1,903,157	€1,290,000,000	€99,249,976
Debts	46.46%	-114.00%	189.00%	44.54%

When specifically delving into the descriptive statistics of the *Randstad* and of the rest of the Netherlands, you can see that there is a small difference in the per capita cultural expenditure. The average cultural expenditure of municipalities in the *Randstad* is €67.39 ($SD = €51.50$) while the cultural spending in other municipalities is slightly lower ($M = €66.16$, $SD = €46.53$). When looking at the population-weighted cultural expenditure of neighboring municipalities, the average of municipal cultural spending in the *Randstad* ($M = €69.81$, $SD = €48.50$) is somewhat higher than in other Dutch provinces ($M = €65.02$, $SD = €40.79$). Municipalities in the *Randstad* are way more densely populated than in other areas. Considering this and the fact that there is only a small difference in municipal cultural spending between the two regions, it might be possible that economies of scale factors in densely populated areas as the *Randstad*

positively contributes to the development and vibrancy of the cultural sector. Regarding other socio-economic demographics, municipalities in the *Randstad* have a considerable higher average income, are somewhat higher educated, have a larger percentage of inhabitants under 20 years and percentual less inhabitants over 65 years. Moreover, the share of *D66* and *Partij van de Arbeid* in the local councils is higher in the *Randstad*. Furthermore, both the general municipal grants and the percentage of the adjusted net debts are higher in the *Randstad* than in other provinces. A comparative overview of the descriptive statistics of the *Randstad* and the rest of the Netherlands including the mean and standard deviation can be found in *Table 4-2*.

Table 4-2: Descriptive Statistics Randstad vs. Non-Randstad

Variable	Randstad		Non-Randstad	
	Mean	Standard Deviation	Mean	Standard Deviation
CS	€67.39	€51.50	€66.16	€46.53
Pop-weighted neighbors spending	€69.81	€48.50	€65.02	€40.79
Pop size	61734.80	113079.20	38154.25	37956.78
Pop density	1526.20	1395.35	493.31	499.40
Income	28.31	4.41	24.59	2.45
Education	3.75%	2.06%	3.32%	2.12%
% under 20	23.16%	2.05%	22.31%	2.61%
% over 65	19.72%	3.39%	20.77%	3.08%
Ideology	24.07%	8.59%	19.48%	7.31%
Grants	€62,268,786	€165,489,543	€32,130,334	€37,383,022
Debts	50.22%	47.93%	44.69%	42.85%

4.2 The Exploratory Analysis

This section delves into the analysis that aims to discover the existence of a spatial spending pattern in municipal cultural expenditure. This is important to gather initial evidence regarding the main research questions as well as for the different hypotheses. Moreover, the results provide a justification of using spatial models in the econometric analysis.

A leading method to study patterns of spatial dependence in data is Moran's I. For this, the 344 x 344 spatial weight matrix of all municipalities is required. Not only data with a spatial dimension is needed, but also the specific geographical location of the units of analysis, which are the Dutch municipalities in this case. The most often used determinant of weights is based on boundaries, in which the queen continuity weights indicates whether the units share a

boundary or not (Kelejian & Prucha, 2010). So, firstly, a 1 is assigned to neighboring municipalities and a 0 to non-neighboring municipalities. Consequently, the matrix is row-normalized by dividing the numbers by the amount of neighboring municipalities in municipality j ($1/n$) (Anselin, Bera, Florax, & Yoon, 2000). This results in a matrix in which each cell is a measure of the relation between municipality j and i . Moran's I is an inferential type of statistics which is based on the formulation of a null hypothesis. For this test, the null hypothesis entails that the data is randomly distributed. With a p-value of 0.000, it is possible to reject the hypothesis of no spatial effects. Therefore, the presence of a spatial pattern in municipal cultural spending in the Netherlands is highly statistically significant. Comparable to standard correlation coefficients, the value of Moran's I ranges between -1 and 1. In this data, the Moran's I value is 0.29, which indicates a slightly positive spatial autocorrelation (see: *Figure 4-1*). This means that similar values are close to each other, thus, in this study, public cultural expenditure is slightly clustered.

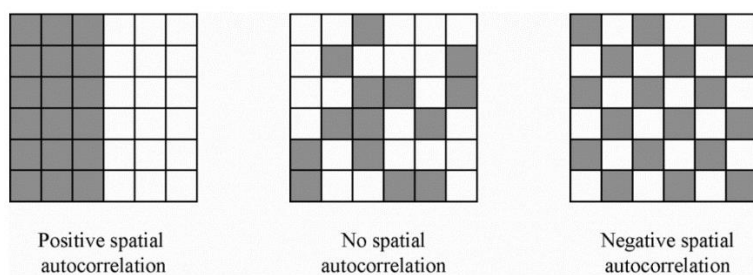


Figure 2-1: Illustrations of Spatial Correlation Patterns (Radil, 2011)

4.3 The Econometric Analysis

The Moran's I test has shown a strongly significant spatial correlation pattern in the data. The existence of a spatial pattern in the data of the Dutch municipalities was the main proposition on which the hypotheses are built on. For the econometric analysis, this spatiality has important implications.

In order to test the different hypotheses, a regression analysis is a useful tool to get insight into the spatial relationships of public cultural spending. Despite the linearity of the OLS regression, this type is also a proper starting point for spatial analyses. Traditionally, spatial autocorrelation in data is removed, since statisticians believed spatiality would lead to a violation of underlying assumptions. However, within geography and spatial econometrics, this spatial autocorrelation is an essential part of the data. When running such a spatial analysis

using OLS regression, it is necessary to include a number of control variables that characterize the spatial units (ArcGIS, n.d.). The socio-economic, financial, and political control variables are included in the model for this. As previously explained in chapter 3.3, the formulas to account for the independent variables for the cultural spending of neighboring municipalities include a spatial dimension by using the 344 x 344 spatial weight matrix in the calculation. Both the control variables and the spatial weighted independent variables enable the use of the OLS regression to explore the hypotheses.

The following section will first delve into the results of the models as developed using the theoretical insights of the literature review. Based on these results, the hypotheses will be explored. The results of the OLS regression estimates are reported in *Table 4-3*. In model 1, spending of municipalities that share a border as well as the control variables are tested. In model 2, the neighborhood variable also takes into consideration the population size, thus a population-weighted variable of cultural spending of neighboring municipalities is used here. Model 3, 4 and 5 report the results when devoting central places with a special position in the analysis. More specifically, in model 3, a different reaction of municipal cultural spending when neighboring a central place compared to neighboring only small municipalities is analyzed. In model 5, the sample is divided into municipalities that do and do not border central places in order to analyze whether the reaction to expenditures by small neighbors differs across both of these groups.

In summarizing the performed regression analyses as demonstrated in *Table 4-3*, it is important to assess the R square. This indicates how much of the total variance in the dependent variable (i.e. municipal cultural spending) is accounted for by the independent variables. The overall model F indicates whether the model in its entirety has predictive power. The null hypothesis states that the model has no predictive power and will be rejected if the F-value is lower than 0.05 (i.e. $p\text{-value} < 0.05$). Besides the alpha of 0.05, a lower alpha of 0.01 and a higher one of 0.10 will be considered in portraying the significance of the independent variables. The R square together with the overall model F determine the predictive capacity of the models (Field, 2005) and will therefore be shortly described before delving into the testing of the hypotheses.

Table 4-3: Estimation Results of the Per Capita Municipal Cultural Spending

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Neighbors spending	0.376***	-	-	-	-	-
Pop-weighted neighbors spending	-	0.337***	-	-	-	-
CP-neighbors spending	-	-	0.302***	-	0.379***	-
NonCP-neighbors spending	-	-	0.666***	0.633***	-	-
Randstad-neighbors spending	-	-	-	-	-	0.216***
NonRandstad-neighbors spending	-	-	-	-	-	0.491***
Pop size	0.000***	0.000***	0.000***	0.000***	-0.001***	0.001***
Pop density	0.011***	0.008***	0.009***	0.011***	0.004	0.013***
Income	-1.869***	-2.587***	-1.536***	-1.525**	-1.073*	-1.420***
Education	121.188	285.912***	206.879**	116.93	228.110	204.295**
% under 20	-31.237	-106.391	-77.395	-216.204*	212.249*	-97.764
% over 65	134.318	97.419	30.432	-56.915	103.818	34.326
Ideology	14.424	14.515	10.137	5.569	-8.049	18.538
Grants	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Debts	4.727	4.377	5.358*	9.708**	0.670	4.125
Intercept	43.078	76.147	51.907	101.819	-29.013	52.996
N	344	344	344	235	109	344
R2	0.741	0.671	0.741	0.767	0.740	0.708
Overall model F	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Moran's I	0.293***					

*** significant at 1% level, ** at 5% and * at 10%

The first model will be analyzed to test H1: *Public cultural spending in a municipality negatively impacts cultural expenditure among neighboring municipalities* and H2: *Public cultural spending in a municipality positively impacts cultural expenditure among neighboring municipalities*.

In the regression analysis of the first model, we find an R square of 0.741, which means that 74.1% of the found variance on municipal cultural expenditure can be explained by the independent variables. We find a significance of 0.000. Since this value is lower than an alpha of 0.05, it is possible to reject the null hypothesis meaning that the model has predictive power.

The independent variable of neighbors spending ($b^* = 0.376$) indicates a clear support for spatial interdependence in municipal cultural spending in the Netherlands, because of the positive slope of the reaction function. Cultural expenditures in neighboring municipalities have a positive effect on cultural spending in another neighboring municipality. This means that H2 will be supported rather than H1. Therefore, spillover effects and free-riding behavior do not seem to be factors that explain spatial relationships between municipalities. Contrary, the outcomes are supportive of the arguments of fiscal competition, competition to increase

reputation, mimicking decisions, acquired tastes and intellectual trends. Unfortunately, it is not possible to analyze whether and which of the aforementioned explanations drive the positive spatial interdependence. This is a common problem in the spatial econometrics literature (Brueckner, 2003; Geys et al., 2008). Because of this limitation, we can speculate about the factors that potentially drive this positive spatial pattern. The positive interdependence might be due to an easy spread of information of cultural initiatives among municipalities. Moreover, the absence of cultural activities in one municipality can be experienced negatively by its inhabitants if a neighboring municipality does provide these cultural initiatives. This could potentially lead to a high pressure on the local governments to increase the cultural expenditures.

A similar conclusion of positive spatial interdependence was reached by Geys et al. (2008) when analyzing the cultural expenditure in Flemish municipalities and by St'astná (2009) who analyzed governmental expenditures in the Czech Republic. Interestingly, this latter study has found positive spatial interdependence in case of capital expenditures on culture, sports and recreation, however, in case of, for example, industry and infrastructure, it has found a negative spatial interdependence. Contrary, in studying spillovers from locally provided public services in Sweden, Lundberg (2007) has demonstrated a negative spatial interdependence. This means that spatial interdependence in this Swedish study relies on free-riding behavior and spillover effects.

In the second model, the unweighted neighbors' spending is replaced by the population-weighted cultural spending of neighboring municipalities. The explained variance is 0.671, meaning that 67.1% of the found variance can be predicted by independent variables. The overall model F is 0.000, which is lower than the alpha. It is thus possible to assume that the model has predictive power. In this model, a larger weight is attached to expenditures of large neighbors, which would imply a smaller coefficient for the neighborhood effects compared to the results of model 1. The correlation coefficient of the population-weighted neighbors spending variable ($b^* = 0.337$) is moderate and somewhat lower than the unweighted neighbors variable as expected. Both the size and the statistical significance of the spatial parameters declined in the second model. This can be interpreted that the incentives of freeriding are larger when the neighboring municipalities increase in population size. This observation is in line with H3a: *The reaction of public cultural spending in a smaller municipality is more negative when neighboring a central place than when neighboring other small municipalities.*

H3a can further be explored by analyzing the third model, in which the effect of central places on non-central place neighbors is distinguished. In model 3, we find a R square of 0.741,

which means that 74.1% of the found variance on municipal cultural expenditure can be explained by the independent variables. We find a significance of 0.000. This F-ratio is lower than the alpha, thus the model is able to make useful predictions. For both municipalities neighboring central places ($b^* = 0.302$) and municipalities neighboring other small municipalities ($b^* = 0.666$) we find a statistical significance. Since the latter has a strong correlation coefficient, it is clear that the cultural spending of municipalities neighboring non-central places have a stronger impact. Both do have a significant effect, so both types of municipalities influence the decision-making regarding cultural spending, but interestingly, these results also provide evidence that non-central place municipalities have a stronger impact. This means that there is no free-riding behavior as expected. It could be the case that smaller municipalities that border central places also aim to increase their reputation by investing in culture or that they want to compete fiscally to increase economic growth.

Complementary to H3a is H3b: *The reaction of public cultural spending of central places to their smaller neighboring municipalities is less negative than the general reaction to smaller municipalities' cultural spending.* Since there is statistical evidence that municipalities that do not border a central place have a stronger impact, it is likely to expect that this hypothesis can be rejected as well. However, since there are only nineteen central places identified, assessing H3b is empirically difficult due to a lack of observations (Geys et al., 2008).

In the fourth and fifth model, the sample between those municipalities bordering a central place (model 5) and those that do not (model 4) are separated, aiming to test H4: *Neighboring municipalities of central places are less likely to take into account the public cultural spending of their non-central place neighboring municipalities than municipalities that do not border a central place.* The R square of the fourth model is 0.767 and of the fifth model 0.740. This means that in case of model 4, 76.7% of the explained variance can be predicted by the independent variables and for the fifth model 74%. Both models show to be significant since the overall model F is in both cases 0.000. This entails that both models are useful to make predictions. When delving into the independent neighbor variables, we find significance results for both of them, with a strong correlation coefficient for the municipalities neighboring small municipalities ($b^* = 0.633$) and a moderate correlation for municipalities neighboring central places ($b^* = 0.379$). This means that we cannot approve the hypothesis that neighbors of central places disregard their smaller neighbors, thus H4 is rejected. This outcome is contradictory to a similar study of Flemish municipalities in which neighbors of central places largely disregard their smaller neighbors (Geys et al., 2008).

Before delving into the sixth model which makes a distinction between municipalities in the *Randstad* and in the rest of the Netherlands, the following section will discuss the effects of the control variables. In analyzing these variables, all models will be considered, however, there will be a main focus on the second model which consists of the population-weighted neighbor variable and the control variables. Important to note is that the significance of the variables in model 5 is lower, which is probably because of the relatively low amount of observations ($n = 109$).

Population size is a highly significant determinant of municipal cultural expenditure ($p < 0.01$), however, in all models the correlation coefficient is very weak, meaning that it barely influences the municipal spending. That can be explained by the fact that the municipal spending is calculated per capita. The Variance Inflation Factor of 31 highly confirms this expectation and is likely to be highly correlated with the per capita neighboring municipalities cultural spending. This appears to generate a multicollinearity problem. When leaving out this variable, the Variance Inflation Factor of other variables is correctly signed. In five out of six models, population density is an important determinant considering its significance ($p < 0.01$). A higher demand for cultural initiatives in densely populated areas was expected and this is confirmed by a positive correlation coefficient in all models. However, this coefficient is very small, so the effect of population density on municipal cultural expenditure is minor. Surprisingly, income has a statistically significant ($p < 0.01$) and negative effect on per capita municipal cultural spending, while previous studies consider income as an important factor that influences the demand for culture. The outcome of this regression does not necessarily mean that the inhabitants' demand for culture is not influenced by the income, but it could also mean that the local councils do not sufficiently take into account the demand of the local inhabitants. Similarly, also education is expected to have a positive impact. This variable is, in case of the second model, highly significant ($p < 0.01$) and has a very positive impact on the municipal cultural spending. With an average of 24.07% highly educated inhabitants in a municipality, one additional percentage leads to an increase of €285.91 per capita cultural spending. Both the age variables are insignificant ($p > 0.10$) in most of the cases. However, the share of inhabitants under 20 years is in case of the separated samples of model 4 and 5 significant at 10% level ($p < 0.10$). As expected, in case of municipalities that neighbor central places, there is a positive relation between the share of young inhabitants and public expenditure on culture. Contrary, in municipalities that do not border central places, the share of young inhabitants and public cultural expenditure is negatively related.

The political variable is expected to have a positive effect on public cultural expenditure. A similar effect for this political variable is found by a research of Austrian federal-level cultural spending over the period 1967-1998 (Getzner, 2002). In five out of six models this is the case, however, all models are insignificant ($p > 0.10$). Nevertheless, there should be stated that a more thorough analysis of the political characteristics is required in order to draw reliable conclusions.

Lastly, the two financial variables (i.e. grants and debts) are included to control for municipalities' financial circumstances. The grants of the *Gemeentefonds* are highly significant in five out of six models ($p < 0.01$), however, the effect is minor ($b^* = 0.000$). A higher adjusted net debt could put a strain on investment in culture, however, from these results you can see a surprisingly positive effect. Notably, in four models this effect is insignificant ($p > 0.10$). In model 3, meant to compare differences in reaction of municipal cultural spending when neighboring a central place and when neighboring only small municipalities, the effect is significant at 10% level ($b^* = 5.358$). The effect of debts in model 4, which only includes municipalities that neighbor other small municipalities, is more significant ($p < 0.05$) and the coefficient estimate ($b^* = 9.708$) is almost double as high.

The sixth model makes a distinction between municipalities in the *Randstad* and in the rest of the country. All municipalities in the three provinces Noord-Holland, Zuid-Holland and Utrecht are considered as being part of the *Randstad*⁵. Descriptive statistics in chapter 4.1 already provide a comparison. In the regression analysis, we find an R square of 0.708, which means that 70.8% of the found variance on municipal cultural expenditure can be explained by the independent variables. We find a significance of 0.000. Since this is lower than an alpha of 0.05, the null hypothesis will be rejected, thus the model has predictive power. When specifically looking at the variables of cultural spending of neighboring municipalities, we see that the *Randstad* and non-*Randstad* municipalities variables are highly significant ($p < 0.01$). The correlation estimate of neighboring municipalities outside the *Randstad* is much higher ($b^* = 0.491$) than of municipalities within the *Randstad* ($b^* = 0.216$). This means that the effect of

⁵ As robustness check to test for the quality of this categorization, a more precise definition of the *Randstad* is defined. This entails that the amount of municipalities in the *Randstad* has lowered from 110 to 85. *Appendix C* illustrates the region which is used for this definition. However, only small differences within the correlation coefficients and the significance are observed, which approves the usefulness of using the three provinces to account for the *Randstad*. The exact results of this regression analysis are demonstrated in model 7 in *Appendix D*.

cultural spending of neighboring municipalities on cultural spending in a municipality is larger outside the *Randstad* than within the *Randstad*, thus spatial interdependence is the most apparent among municipalities that are located in the rest of the Netherlands. Despite, in both cases there is a positive effect.

4.4 Performing Arts Benchmark

Besides the analysis of the total cultural spending of municipalities, this section specifically delves into municipal spending of performing arts aiming to see if there are notable differences in the spatial patterns. In order to see if the performing arts benchmark leads to different decisions regarding the support or rejection of the hypotheses, model 2, 3, 4 and 5 of *Table 4-3* will be re-analyzed using the performing arts data. The results of the OLS regressions are demonstrated in *Table 4-4*⁶.

Table 4-4: Estimation Results of the Per Capita Municipal Performing Arts Spending

Variable	Model A	Model B	Model C	Model D
Pop-weighted P.A. neighbors spending	0.660***	-	-	-
P.A. CP-neighbors spending	-	0.746***	-	0.830***
P.A. NonCP-neighbors spending	-	0.643***	0.609***	-
Pop size	0.000	0.000	0.000	0.000**
Pop density	0.003***	0.003***	0.004***	0.002
Income	-0.496***	-0.530**	-0.807***	-1.073*
Education	-44.898	-36.831	-59.647	12.936
% under 20	-32.141	-36.904	-73.364	212.249*
% over 65	2.963	1.181	-18.577	17.173
Ideology	10.392	10.446	8.240	7.013
Grants	0.000	0.000	0.000	0.000**
Debts	10.392	1.393	1.568	2.224
Intercept	21.338	23.485	43.323	-2.456
N	344	344	235	109
R2	0.790	0.793	0.799	0.805
Overall model F	0.000***	0.000***	0.000***	0.000***

*** significant at 1% level, ** at 5% and * at 10%

When comparing the results, we see that the R square of all models are higher, meaning that a higher percentage of the found variance can be predicted by the independent variables. Similarly, to the models in *Table 4-3*, all models are significant.

⁶ Model A demonstrates the same type of analysis as model 2 of *Table 4-3*, model B as model 3, model C as the fourth model and, lastly, model D as model 5.

As with the total cultural spending, the independent neighbor variables are all significant at 1% level and have positive correlation coefficients. This entails that similar to the total cultural expenditures, H1 can be rejected and H2 supported. Interestingly, in model A we find a correlation coefficient for the population-weighted performing arts neighbors spending variable ($b^* = 0.660$) which is almost double as strong as the total cultural spending variable of model 2 ($b^* = 0.337$). This means that in case of performing arts spending, the spending in neighboring municipalities impacts the spending in a municipality much stronger. Also, we find considerably stronger correlation coefficients for the variable of municipalities neighboring central places in both model B ($b^* = 0.746$) and model D ($b^* = 0.830$). Even though in both the total cultural expenditure and the performing arts spending analyses the independent variables have significant and positive values, we see that in case of performing arts central place neighbors have a stronger impact than municipalities neighboring small municipalities. This is contrary to the results of the total municipal cultural expenditures. The results provide evidence that central place municipalities have a stronger impact. This means that in case of performing arts expenditure, H4: *Neighboring municipalities of central places are less likely to take into account the public cultural spending of their non-central place neighboring municipalities than municipalities that do not border a central place*, can be supported. However, since both effects are positive, the two types of municipalities influence the decision-making regarding cultural spending. Therefore, it is not possible to draw conclusions regarding the extend of free-riding behavior toward municipal spending on performing arts.

4.5 Concluding Notes

An overview of the hypotheses tested can be found in *Table 4-5*. In this table, you can see which models are used to test for the hypotheses as well as the decisions that are made. More specifically, the correlation coefficients and the significance of the independent variables are depicted in *Figure 4-2*. This figure summarizes the effects of the independent variables on the dependent variable of the per capita municipal cultural spending, in which the population-weighted cultural spending of municipalities bordering non-central places has the strongest influence on cultural spending in local jurisdictions.

Table 4-5: Results of the Hypotheses Tested

	Hypothesis	Test	Decision
H1	Public cultural spending in a municipality negatively impacts cultural expenditure among neighboring municipalities.	Model 1 + 2	Rejected
H2	Public cultural spending in a municipality positively impacts cultural expenditure among neighboring municipalities.	Model 1 + 2	Supported
H3a	The reaction of public cultural spending in a smaller municipality is more negative when neighboring a central place than when neighboring other small municipalities.	Model 5	Rejected
H3b	The reaction of public cultural spending of central places to their smaller neighboring municipalities is less negative than the general reaction to smaller municipalities' cultural spending.	Model 5	Rejected*
H4	Neighboring municipalities of central places are less likely to take into account the public cultural spending of their non-central place neighboring municipalities than municipalities that do not border a central place.	Model 3 + 4	Rejected

* Lack of empirical support

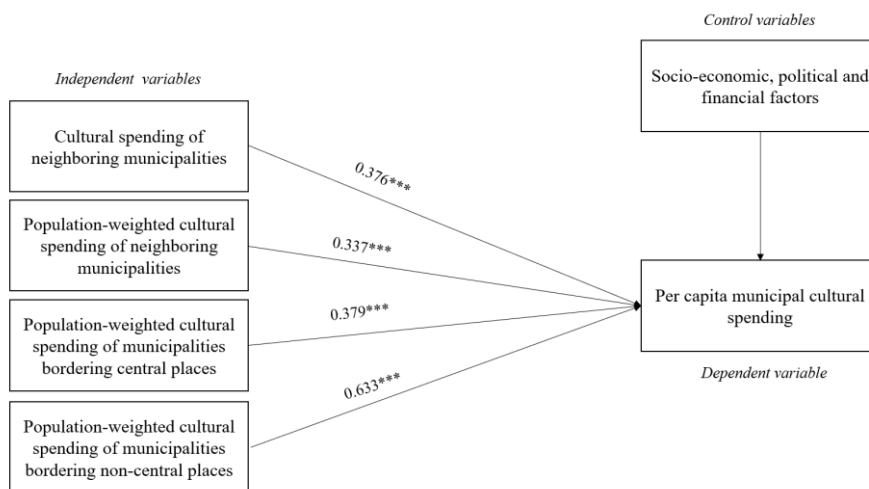


Figure 4-2: Results Conceptual Model

The existence of a spatial pattern can be interpreted by the extent of decentralization of the Dutch system. Lundberg (2007), Geys et al. (2008) and St'astná (2009) have demonstrated a similar positive spatial interdependence in municipal cultural expenditure in Sweden, Belgium, and the Czech Republic, respectively. Among European countries, the organization of the administrations responsible for culture differs widely, varying from highly centralized to decentralized structures. Most countries, such as France and the United Kingdom, are characterized by a centralized structure, however, in countries as Belgium, the Czech Republic, Germany, the Netherlands and Sweden lower levels of government have to authority (Klamer, Mignosa, & Petrova, 2006). According to Balaguer-Coll, Prior and Tortosa-Ausina (2010)

decentralization leads to an enhanced efficiency over time. In cultural policy, three types of decentralization can be distinguished: cultural, fiscal and political (Kawashima, 2004). Fiscally, Dutch municipalities are responsible for 61% of the budget and have a relative freedom to decide how much and on what they prioritize to spend money. However, the national cultural policy framework should be used as reference (Directoraat-Generaal Cultuur en Media, 2017). Nevertheless, regarding culture, municipalities experience a high level of political and fiscal decentralization. Cultural decentralization is concerned with fighting against unequal opportunities. While most of the national cultural budget is spent in the three *Randstad* provinces (Bussemaker, 2016a), we see a current development that acknowledges the importance of regionalization of cultural initiatives (Raad voor Cultuur, 2020) which positively contributes to cultural decentralization. This trend is important to ensure a more efficient decentralized cultural policy system in the Netherlands.

Chapter 5. Conclusion and Discussion

In the Netherlands, municipalities have the authority over cultural policies. In 2017, the total budget on culture was 2.8 billion euros. With 61%, municipalities are responsible for the largest part of this budget. Considering the authority and relative freedom of municipalities to decide upon the cultural policy and the expenditure on culture, this research aimed to delve into these expenditures. More specifically, this thesis addressed the question to what extent cultural expenditure of Dutch municipalities is affected by the level of cultural spending in neighboring municipalities.

For this, the main proposition of the research is a spatial interdependence between municipalities. Distance is considered as an important factor for people to decide whether to attend a cultural event or not. However, with an average distance of 7.5 kilometers between municipalities, we can assume that this short distance will not negatively affect people's choice regarding visiting a cultural event in a neighboring municipality. Besides, cultural goods are often characterized by positive externalities, but it is not easy to shield inhabitants of other municipalities from these benefits. Price discrimination can often not be applied; therefore, it is expected that municipalities take into consideration the cultural spending in neighboring jurisdictions. This leads to spatial patterns in public cultural expenditure. The results of the Moran's I test indicates that there is a spatial pattern in Dutch municipal cultural spending in 2017. This pattern is highly statistically significant and is featured by a slightly positive spatial autocorrelation. This means that public cultural expenditure is somewhat clustered.

This spatial interdependence can be both positive and negative. Negative spatial interdependence can be explained by externalities due to non-market benefits. The non-rival and/or non-excludable properties of public goods lead to a market failing to deliver public goods at a socially optimal level. The spillovers of cultural goods result in an added welfare effect. However, due to a high degree of substitutability across jurisdictions, free-riding behavior can take place in which a municipality benefits from the spillovers without having to invest in it. This freeriding is an optimal reaction of a municipality to positive welfare externalities of cultural goods. Municipalities can reduce their cultural spending, which enables a redistribution of financial resources in other areas. This results in a negative spatial interdependence.

However, contrary to this expectation, support of the second hypothesis indicates that there is positive spatial interdependence of municipal cultural spending in the Netherlands. Fiscal competition is one factor which leads to this positive spatiality. A more attractive public good provision can increase the inflow of potential inhabitants or businesses in a municipality.

This reflects the concept of ‘voting with your feet’, meaning that people move to the area that provides a perfect level of public goods for them. A municipality aims to foster the inflow of inhabitants, since especially highly productive people are important for economic growth. For example, the creative class is attracted by soft location factors. Public expenditure on culture is therefore effective to attract highly educated labor which in turn benefits local productivity and fosters economic growth. Secondly, competition between municipalities to increase reputation is becoming a more apparent phenomena due to pressures of globalization and changes of economic restructuring. Because of this, regions experience the need to establish a distinctive identity. Cultural initiatives are important to establish this identity and to create a beneficial reputation of a region. To compete with other neighboring areas, a municipality can increase the public expenditure on culture to enhance its reputation, resulting in a positive spatiality. Thirdly, mimicking decisions can explain positive spatial interdependence as a response to yardstick competition and incomplete information. Both inhabitants and local governors of a municipality use the performance of neighboring municipalities as a yardstick for comparisons. Moreover, both parties can be informed incompletely, which leads to mimicking behavior. Lastly, the concepts of acquired tastes and intellectual trends can explain positive spatial interdependence. Contrary to other types of goods, cultural goods show over time a growing marginal utility. Experience and understanding through past consumption reduce the shadow price of cultural goods. Consequently, this leads to an increased future demand. Besides, the demand and appreciation of cultural goods are characterized by learning by consuming which requires time. Moreover, similarities, or common intellectual trends, between inhabitants and politicians of neighboring municipalities can explain the positive spatial interdependence.

Interestingly, this analysis is one of the first attempts to analyze the prevalence and importance of asymmetries in competition between municipalities based on their urban status. In densely populated areas, economies of scales can be more easily exploited. Cultural talents are more concentrated which provides possibilities for both cultural producers and the local government. Since large municipalities have advantages in providing cultural goods and services, arts and culture can be considered as central place functions. One additional euro that is spent in a larger municipality might be more productive than one spent in a smaller municipality. Based on these arguments, there is expected that local governments tend to freeride on expenditures of neighboring central places, since inhabitants of municipalities neighboring central places can enjoy cultural goods in the central place. However, the empirical analysis has shown a contrary result. Spatial interdependence is both important among municipalities that are central places and among smaller municipalities, however the reaction

of public cultural spending is stronger among smaller municipalities. This means that these municipalities do not freeride on expenditures of neighboring central places but might want to increase their reputation or to compete fiscally with the central place to attract other businesses and inhabitants to consequently foster economic growth. Based on the literature review, there is also expected that central places have less incentives to freeride on smaller neighbors. While it is likely to believe the opposite, it is not possible to empirically study this, since only nineteen municipalities are awarded as central places. Lastly, as opposed to the expectation built in the literature review that neighboring municipalities of central places might disregard their smaller neighbors' behavior, we find that spatial interdependence is positive for both municipalities neighboring small municipalities and municipalities neighboring central places. Concludingly, this means that all hypotheses on central places are different than expected since only significant correlation coefficients are found. Therefore, the spatial pattern does not become as complex as expected when taking into account the urban status of jurisdictions. Although central places have inherent benefits in providing cultural goods, this apparently does not preclude its smaller neighbors to consider their actions when deciding on their own cultural expenditures.

Interestingly, in the benchmark analysis of performing arts expenditure, we see a slightly more complex pattern when considering the urban status. In this case, neighboring municipalities of central places are less likely to take into account the spending of their non-central place neighboring municipalities than municipalities that do not border a central place. This finding differs from the results of the total cultural spending, which means that different cultural disciplines are characterized by specific spatial patterns. A stronger positive spatial interdependence in case of performing arts can, for example, indicate that theater is more often being used to increase the reputation of a municipality than other cultural disciplines.

5.1 Limitations

The first limitation of this research regards the detailed interpretation of the positive spatial interdependence among municipalities. As mentioned before, it is a shortcoming of spatial econometrics to be not able to delve into the specific reason of a spatial pattern. Therefore, it is not possible to decide whether the spatial pattern is determined by, for example, fiscal competition or by mimicking behavior. This could also differ between municipalities. Secondly, this study only focuses on municipalities neighboring other Dutch municipalities, meaning neighboring jurisdictions in Germany and Belgium are not taken into account, while they might influence the spending behavior. Another limitation regards the calculation of the

dependent variable and of the independent neighbor variables. The *BIS* is added to the municipal funding of culture, however, there are also other types of public funding, such as by funds as the *Prins Bernhard Cultuurfonds* and *Fonds Podiumkunsten*. Due to time restrictions, it was not possible to add the subsidies of all different funds to the variables. Lastly, time restrictions also made it impossible to do a more extensive analysis and categorization of the political variable. There is a focus on *D66* and *Partij van de Arbeid* since they are in general favorable for the cultural climate, however, in municipal councils there are also often local parties that are in favor of strongly supporting the cultural sector, but these are not taken into consideration in the analysis.

5.2 Further Research

To respond to the first limitation, qualitative research is recommended for further research in order to get insight into the different arguments of positive spatial interdependence. For this, interviews could be held with aldermen of culture of different municipalities. It is also possible to do an extended quantitative research to delve into the reasons by means of surveys. Additionally, it would also be interesting to focus on specific disciplines and compare these to see if the spatiality differs. In this research, the total cultural expenditure is compared to the spatiality of performing arts spending. It would be interesting to extend this by analyzing and comparing other cultural disciplines. Besides, it is also possible to shed light on other governmental expenditures to see what kind of spatial patterns are existent among various types of public support. Finally, further research could focus on international comparisons in spatial patterns of public cultural expenditure. Considering different international classifications and a lack of reliable national data, it is important to be sure of a coherent and comparable classification of cultural spending.

5.3 Policy Implications

Firstly, it is important to repeat that these results are inherent to trends in 2017. In order to do future predictions using the econometric model, it is recommended to do a time-series analysis first. For this, data on several years of public cultural spending as well as on the control variables are required. Considering the high Variance Inflation Factor of the population variable, this variable should be left out in order to be sure of a model that does not have multicollinearity problems. An insight into spatial interdependence, whether this is positive or negative, is

important when designing national grants programs for local governments. Cultural goods often cause positive spillovers, however, due to a lack of policy coordination across jurisdictions, municipalities fail to internalize these spillovers. Therefore, it is strongly recommended to increase the dialogue between local jurisdictions as well as to support co-creation of cultural initiatives. Another reason to cooperate and share knowledge with other municipalities is the risk of mimicking invaluable decisions. The results of this research indicate that mimicking behavior might be a factor which drives local councils in deciding on the cultural budget. A municipality can mimic the behavior of neighboring municipalities while it does not know the quality or the effect of public spending in another jurisdiction. Therefore, knowledge-sharing between municipalities could benefit both parties and can increase the efficiency of the Dutch decentralized policy programs.

One possible way to increase knowledge-sharing and joint cultural initiatives is by merging the support of the three spheres (i.e. government, market and non-profit) which is found to be the best strategy to stimulate collaboration (Klamer et al., 2006). This means that the task of the government mainly lies in incentivizing the market and the third sphere to financially support culture. This could be stimulated by fiscal incentives, the use of matching grants and the cooperation between private businesses and cultural institutions (Klamer, 2012). Besides, local governments can raise public awareness by means of stimulating communication between stakeholders and by providing information on, for example, financing possibilities. If national grant programs focus on the provision of shared initiatives and the stimulation of financial support by the three spheres, the cultural sector will benefit from the bundling of knowledge, creativity and financial means, rather than possibly suffering from competition between municipalities that strive for their own objectives.

Under fiscal competition, as another argument of positive spatial interdependence, municipalities are likely to spend on public goods benefiting local companies aiming to foster economic growth. However, this causes a risk of losing sight of the needs of inhabitants. For local councils, it is important to be concerned of this risk. When funding culture, it is recommended to be aware of the economic benefits of supporting culture but also of the intrinsic values of culture for the inhabitants.

Lastly, if regions aim to increase their reputation, it should be a well-thought process. This means that nurturing and sustainable funding of culture is required to increase the reputation of a municipality. Therefore, I recommend municipalities that strive to increase their reputation to focus on the support of long-term initiatives.

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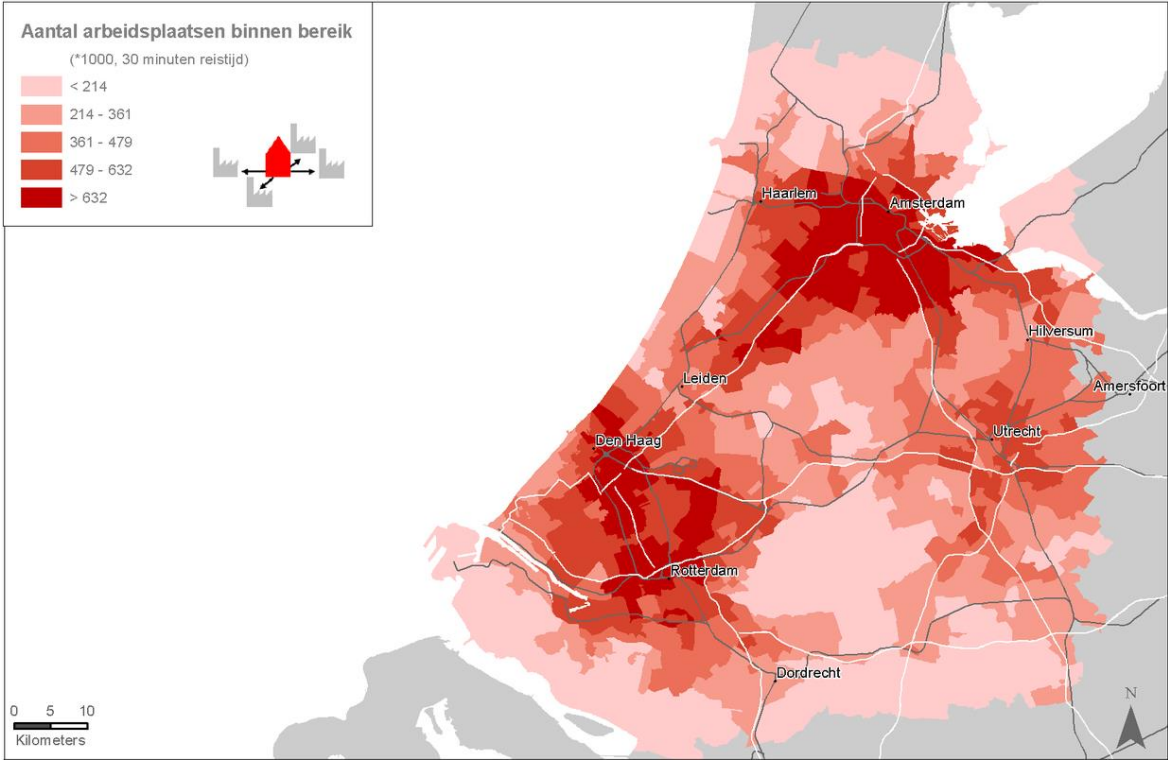
Appendix A: Provincial Overview of the Means

	CS	CP-neighbors spending	NonCP-neighbors spending
Drenthe	€66.64	€109.57	€56.95
Flevoland	€96.67	€113.35	€82.63
Friesland	€70.53	€86.85	€55.95
Gelderland	€60.52	€56.21	€52.52
Groningen	€73.76	€85.27	€68.76
Limburg	€69.75	€83.65	€64.11
Noord-Brabant	€60.27	€83.72	€51.74
Noord-Holland	€73.85	€137.31	€46.91
Overijssel	€71.67	€85.90	€64.01
Utrecht	€60.14	€80.86	€47.84
Zeeland	€71.79	-	€65.78
Zuid-Holland	€66.13	€113.29	€45.59

Appendix B: Top-10 List of Highest Municipal Cultural Spending

CS incl. BIS		CS excl. BIS	
Municipality	Budget	Municipality	Budget
Arnhem	€273.68	Rotterdam	€251.06
Rotterdam	€264.27	Heerlen	€225.18
Amsterdam	€262.50	Amsterdam	€220.92
Groningen	€252.52	Utrecht	€217.70
Utrecht	€226.08	Arnhem	€211.44
Heerlen	€225.18	Assen	€207.32
Maastricht	€223.44	Groningen	€205.64
The Hague	€217.21	Maastricht	€200.13
Eindhoven	€207.32	The Hague	€198.10
Assen	€187.98	Tiel	€187.02

Appendix C: Map of the Randstad



(Goudappel Coffeng, 2009)

Appendix D: Estimation Results of the More Precise Randstad Definition

Variable	Model 7
Neighbors spending	0.376***
Pop-weighted neighbors spending	-
CP-neighbors spending	-
NonCP-neighbors spending	-
Randstad-neighbors spending	0.206***
NonRandstad-neighbors spending	0.517***
Pop size	0.000***
Pop density	0.013***
Income	-1.260***
Education	207.322**
% under 20	-120.008
% over 65	18.819
Ideology	17.558
Grants	0.000***
Debts	4.445
Intercept	55.406
N	344
R2	0.707
Overall model F	0.000***

*** significant at 1% level, ** at 5% and * at 10%