

CROWDING IN, CROWDING OUT OR NEITHER?

THE RELATIONSHIPS BETWEEN FUNDING SOURCES FOR DUTCH MUSEUMS

12th of June, 2017

Master thesis
MA Cultural Economics and Entrepreneurship
Erasmus School of History, Culture and Communication
Erasmus University Rotterdam

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Word count: 16,072

ABSTRACT

The aim of this research is to find out to what extent private support can compensate for the budget cuts in government support for Dutch museums. This is done by looking at the crowding effects between different funding sources. The question answered in this research is: How does the amount of government funding relate to corporate and private support for Dutch museums?

The empirical work is based on information from financial statements from the 405 members of the *Museum Association*. To find the relation between different funding sources, a regression analysis was performed using a sample of 78 museums. The results show no significant crowding in or out effects between government support and private support for museums. However, crowding effects are found between different sorts of government support and between different sorts of private support. These findings have a major impact on cultural policy. It shows that it is unrealistic to assume that private support will compensate for the cuts in public funding for the arts.

Keywords: Dutch museums, crowding effects, public funding, private contributions, corporate support

PREFACE

This is my master thesis “Crowding in, crowding out or neither? The relationships between funding sources for Dutch museums”. It has been written to fulfil the last graduation requirements of the master program Cultural Economics and Entrepreneurship at the Erasmus University Rotterdam. This project has started in October and is now coming to an end. It is a compilation of everything I learned in the academic field.

The goal of this thesis was to get a deeper insight into economic tendencies within the cultural sector of the Netherlands. I wanted to enhance my understanding of the dynamics between different funders of cultural organisations. At the same time I wanted to gain experience in conducting quantitative research. This thesis helped me with both.

This year has gone by so fast, yet I learnt so much. If I must describe it with one word, I would say it was intense. I gained many new insights, knowledge and skills. After finishing this master, I hope I can contribute to a vibrant and sustainable cultural sector. I am excited for this new chapter of my life.

I would like to thank my supervisor Dr. Erwin Dekker for his guidance, support and especially his patience during the process. He helped me out in the moments I got lost or stuck and motivated me to improve every time with his honest feedback.

I would also like to express my gratitude to Dr. Trilce Navarrete Hernandez for her kindness and advice during the first stages of this thesis. She helped me form a solid research proposal. Without this head start, I might not have finished this thesis on time.

Rowie Haring, Erasmus University Rotterdam, Rotterdam, June 12, 2017.

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1. INTRODUCTION

The Dutch national government is in constant struggle to determine how much the non-profit sector, particularly arts and culture, need to be subsidized. From 2013, the national government was compelled to cut subsidies for arts and culture and counted on the cultural organisations to shift their focus towards the private market to finance their activities (Rijksoverheid, 2012).

The announcement of the budget for 2017 – 2020 by the Ministry of Education, Culture and Sciences of the Netherlands exposed that they are struggling to determine the right amount of subsidies for arts and culture. They proposed to increase the yearly subsidy for arts and culture with 10 million euro's each year. 675.000 euro of this is intended for four museums which had to deal with a decrease of 11% in subsidies the years before (Bussemaker, 2016).

This uncertainty about public funding for cultural organisations, is not a new phenomenon and has given rise to a line of research which seeks to ascertain the effect of public funding on other income sources (Warr, 1982; Roberts, 1984; Kingma, 1989). These studies on non-profit organisations developed the notion of the *crowding effect*. The crowding effect revolves around the interrelation between government subsidy and other financing sources. The question at the basis of this theory is: does government support stimulate or inhibit philanthropic donations (Borgonovi, 2006)?

This interrelation is not well understood because much of the research is inconclusive or contradictory. Studies addressing the crowding effect may be grouped into two categories. The first group states that public funding crowds out private donations (Warr, 1982; Kingma, 1989; Kim & Van Ryzin, 2014), while the second group argues that this is not significant or that public funding even crowds in private donations (Heutel, 2014; Borgonovi & O'Hare, 2014, Smith, 2003).

If crowding out is true, it would mean that government funding for non-profit organisations has a smaller effect, because it crowds out private donations and therefore also decreases total income of the institutions. However, this would also mean that private sources will step in when the government fails to support the arts. When scholars supporting crowding in are correct, it would mean that public funding attracts private contributions. Because, if crowding in does occur, subsidy cuts are likely to be very harmful, since it would also reduce private contributions to the arts.

Thus, crowding effect estimates tell us how effective government spending is in raising total expenditures, by exploring if government support and private contributions are complementary goods or substitutes. Especially in the current situation where the government cuts subsidies for the arts and assumes that the private sector will step in, it is crucial to understand this process. According to Steinberg (1991), this subject is so important that it justifies much empirical analysis even if no individual study is likely to prove persuasive.

This thesis will further explore the dynamics between public funding and private support. Previous research recommended to focus investigations to crowding effects on one particular industry in general (Kingma, 1989; Brooks, 2000a; Hughes, Luksetich & Rooney, 2014), so that is what is done in this thesis. There is chosen to discuss museums in the Netherlands for multiple reasons. First, the government in the Netherlands aims for a more privately supported cultural sector. Research is needed to see if this is possible. Second, many museums are already adopting new strategies to attract private supporters and visitors and as a result both private support and number of visitors for museums are rising in the

Netherlands. It is interesting to see, if this can make them sustainable. Third, the museums in the Netherlands are organized within the *Museumvereniging* (Museum Association) and have an ANBI¹ status, which makes it more likely that data is available.

Most of the research on the effects of and relation between government and private financing revolved around non-profit organisations or arts and culture in general in the US or the UK. Insights on the Dutch museums is limited. The Ministry of Education, Culture and Science commissioned research into economic trends in the cultural sector, however this research pays no attention towards the dynamics between different funding sources (APE, 2016).

Additionally, lots of research uses aggregate amounts of support, while many scholars recommend against this (Kingma, 1989; Hughes, Luksetich & Rooney, 2014). This advice is central to this thesis and thereby delivers an academic contribution to existing research. In line with this, this study will put an extra focus on corporate support. Corporate support for the arts is growing (Wright, 1990; CBS, 2015) and therefore increasingly important and interesting to research.

This thesis will tackle contradictory research and lacking knowledge in the Netherlands. Crowding effects, involving multiple levels of government support and multiple sources of private support will be investigated. The research question answered is: How does the amount of government funding relate to corporate and private support for Dutch museums?

To answer this question, a content analysis of annual reports and financial statements of museums was performed. Information of finances of museums was gathered for the years 2014 and 2015. Statistical analyses were run to estimate the effect of government support on other sources of income. Additionally, an analysis of the proportions of government support, public income, sponsorship and private contributions of the total income of museums was conducted. Lastly, a small longitudinal research between 2010 and 2015 was done to see if there were any general trends in museum finances during this period.

The next section of this thesis will discuss previous research on crowding theory, museum finances and motivations for support. It will frame this research topic within the established field and give an illustration of the Dutch museum sector and cultural policy. Then, the methodology is further discussed, followed by the results. The conclusion will discuss the results and lastly, the implications for cultural policy are discussed.

¹ An ANBI status is a charitable status which provides tax benefits for private donors to that organization. It also obliges organisations to publish annual reports with financial information.

2. LITERATURE REVIEW

In this section the established research will be reviewed and this thesis will be framed within earlier research. I will first discuss the research done on crowding effects in general and then focus on crowding effects in arts and culture. Next, the focus will be on a theory not often included in these kind of studies: superstar theory. Thereafter, I will discuss the differences between all sorts of income sources to museums and the different spheres in which they operate. Additionally, the motivations of these funders will be elaborated on. Lastly, an illustration of the situation of Dutch museums and Dutch cultural policy will be given.

2.1 Literature on crowding in or crowding out

When the government decides to increase or decrease their support for certain non-profit organisations, it is likely that this has an effect on both the other institutions that are supporting the non-profit organisations and the non-profit organisations themselves. This means that the relationship between different income sources of a public good is dynamic. Lots of studies have been done to these relationships and attempted to find out to what extent government support and other income sources are substitutable (crowding out) or complementary (crowding in) to one another (Heutel, 2014).

The true measure of crowding effect is the extent to which government funds for a particular public good reduce or increase private contributions to that good (Kingma, 1989). According to Kingma (1989) this can accurately be researched by the level of individual contributions to a given charity and observations of the level of funds received. It is important to focus on one specific kind of good or charity and not to include aggregated levels of donations and funding of different goods (Kingma, 1989; Brooks, 2000a; Hughes et al, 2014). Some scholars take this advice into account: Hughes and Luksetich (1999) focussed their studies on art and history museums and Borgonovi (2006) focussed on theatres. Nonetheless, the majority of the research done in this field focuses on multiple goods or sectors. For example, researchers have examined the entire non-profit or charity sector (Brooks, 2003; Andreoni and Payne, 2011).

There are two lines of reasoning behind crowding effects: crowding out and crowding in. Crowding out means that government support to public goods reduces private support for that good. This happens because donors see their support as substitutes for government support (Warr, 1982).

Earliest research done to crowding effects of government subsidies, looked at public transfers and private charity in general. They predicted that complete crowding out would occur (Warr, 1982; Roberts, 1984). This means that one dollar of government subsidies will displace one dollar of philanthropy. Other research predicted partial crowding out, which means that one dollar of government subsidies would crowd out less than one dollar of private donations (Bergstrom, Blume, and Varian 1986; Andreoni 1990; Duncan 1999; Kim & Van Ryzin, 2014). Lindsey and Steinberg (1990), for example, found that one dollar of federal support crowded out 4.6 cents of private donations and Kingma (1989) found that an increase of one dollar at all levels of government support crowded out private donations by 14 cents.

The second line of reasoning predicts crowding in. Crowding in means that the amount of government support is positively related to the amount of private support: They are complementary goods.

In this theory, it is assumed that government support is an indicator or signal for the quality of the supported organisation and therefore stimulates private contributions to this good (Heutel, 2014). Some studies have predicted crowding in effects. Schiff (1985) for example, found that a one dollar increase in state funding crowded in 34 cents of private donations, while one dollar in local funding crowded out 66 cents in giving. Other examples of research that found crowding in results are Payne (2001), Heutel (2014), Khanna and Sandler (2000), Schiff (1990) and Smith (2003; 2007).

However, as much research has been conducted on this effect, no conclusive answer has been found. It is still unclear whether government support attracts private contributions or crowds out private contributions.

The relations between government support and other support for non-profit organisations are illustrated in figure 1. It illustrates how the government supports the cultural organisations with monetary support and sends thereby a signal to the philanthropists, firms and government agencies that distribute incidental subsidies. In their turn, they also support the cultural organisations with monetary support, influenced by the support of the government. Non-profit organisations react to this support by enhancing or reducing their fundraising efforts (Andreoni and Payne, 2003; Hughes et al, 2014), which then influences support again.

A summary of previous research is found in table 1.

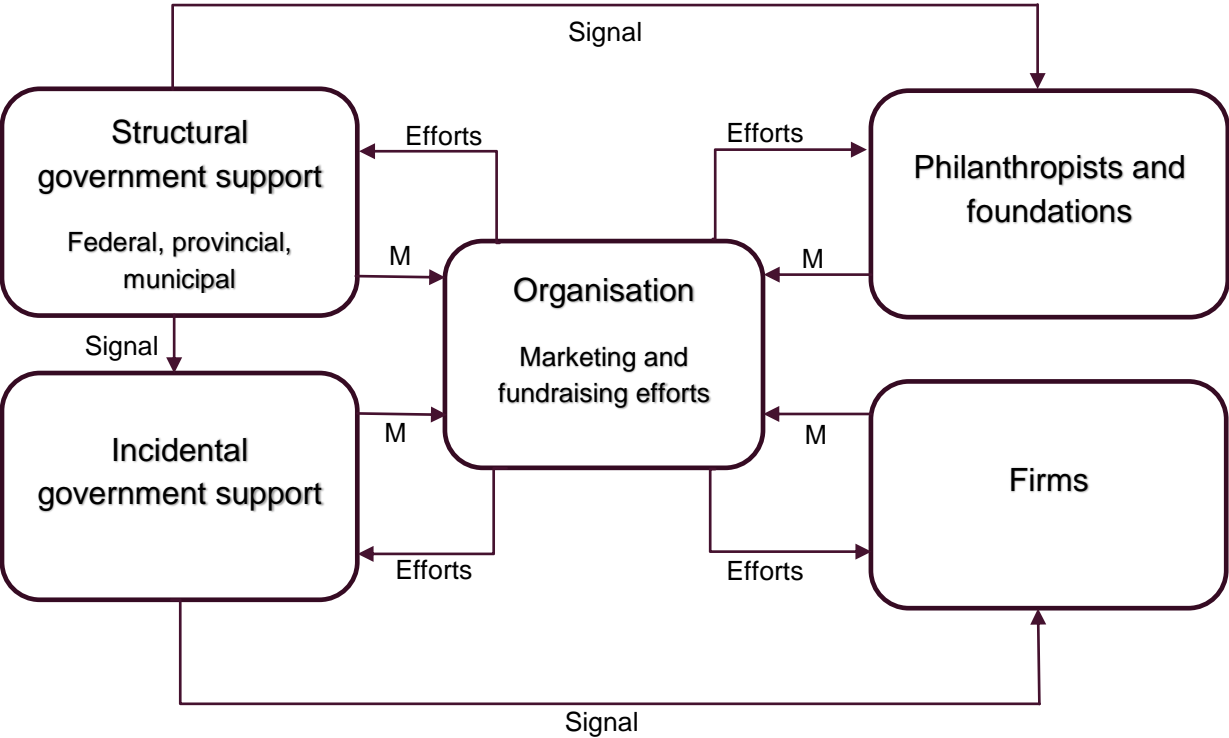


Figure 1 Illustration of crowding effects, monetary streams (M), efforts (E) and signals (Signal).

2.2 Crowding effects in arts and culture

Many scholars did investigations into crowding effects specifically for the arts and culture sector. Because they focussed on a specific sector, they came up with more nuanced conclusions. Most research focusses on the arts and culture sector of the United States.

Hodsoll (1984) and Wyszomirski and Mulcahy (1995) studied the introduction of the National Endowment for the Arts (NEA), which is the introduction of federal involvement for the arts in the United States. This gave the arts the national recognition, which showed the people that arts were vital for the nation. Hodsoll (1984) and Wyszomirski and Mulcahy (1995) saw the NEA as a signal for quality and expected this to increase private donations. In line with crowding in theory, they expected the NEA grants to attract private donations to that same good. However, later conducted empirical research shows mixed results. Borgonovi and O'Hare (2004) studied the effect of the NEA on private giving to the arts between 1997 and 2000. They found that giving to the arts seems independent from NEA support; it cannot be confirmed that the NEA grants have a positive effect on private giving. In contrast, Smith (2003) studied dance companies between 1998 and 1999 and found that NEA grants significantly crowd in private donations and other non-NEA public funding. Hughes and Luksetich (1999) came to the same conclusion as Smith (2003) for museums in 1989. Private funding is positively related to federal support, until a certain point of crowding out. They found that this effect is more severe on art museums than on history museums. This suggests that donors see federal support as complements for their contributions. This contrast between Borgonovi and O'Hare (2004), who found no relation, and Hughes and Luksetich (1999) and Smith (2003), who found a crowding in effect, is probably caused by the sector that they studied, because the time frame is the same for all three studies. It might still be true that NEA support is not significant to private donations for the entire cultural sector, but is significant in crowding in private donations for dance companies and museums. The conclusion that can be drawn from these studies is that a grant of the NEA is not seen as a signal of quality by private donators in the cultural sector, but is seen as a signal of quality for dance and museums specifically, possibly because quality is harder to assess by donators in dance and museums than in other arts.

In further research to the whole performing arts sector, Smith (2007) found that government grants crowd in private donations between \$0.14 and \$1.15, the exact amount depends on the art form. Additionally, Borgonovi (2006) examined theatres specifically and found that crowding in or out depends on the size of the government support, whether this is an increase or decrease and from what level of government this support is coming from.

While previously discussed research looked at secondary data, Kim & Van Ryzin (2014) performed an online survey experiment to indicate crowding effects for arts organisations. They concluded that government grants have a partial crowding out effect. However, this effect was much weaker for art patrons. They also found that respondents were not sensitive to the amount of government funding and to labelling this as prestigious. This indicates that private support and government support are not complementary goods, but imperfect substitutes. Kim and Van Ryzin (2014) did not distinguish between different kinds or levels of government support. Hughes and Luksetich (1999) show that this is a relevant distinction and making this distinction could have altered the results. With all this information on crowding effects, the following hypotheses were conducted:

H1 Total government support has a positive relation to private contributions (H1a), sponsorship (H1b) and all private contributions (H1c).

H2 Federal support has a negative relation to private contributions (H2a), sponsorship (H2b) and all private contributions (H2c).

H3 Municipality support has a positive relation to private contributions (H3a), sponsorship (H3b) and all private contributions (H3c).

Different levels of government support also have a crowding effect on each other (Hughes and Luksetich, 1999). When looking at support for museums, Hughes and Luksetich (1999) found that local government support has a small negative effect on federal and state support. State support has a negative impact on local support. This demonstrates the substitution of state support and local funding for museums. Therefore the following hypotheses were formed:

H4 Federal support is negatively related to support from municipalities (H4a) and the state (H4b)

H5 Municipal support is negatively related to federal (H5a) and state support (H5b)

H6 State support is negatively related to federal (H6a) and municipal support (H6b)

Besides a straight relation between government support and private contributions, researchers also looked for other relations that might have an effect on this. They distinguished between the direct and indirect impact of government support (Hughes et al, 2014). The indirect effect is the result from the response of the organisation on the changes in financial sources.

Andreoni and Payne (2003) first questioned this indirect impact in crowding effects. They argued that in arts and social service organisations, government grants to private charities cause significant reduction in fundraising investment within these organisations. This would result in something that shows as a crowd-out effect, because a reduction of fundraising effort would result in a decrease of private support. When Dokko (2009) studied the indirect effect of government funding on private support, she found that a dollar of reduction in government grants meant an increase of fundraising efforts by roughly 25 cents. She concludes that the increase in fundraising was responsible for roughly 25 cents of the increase in private giving, leaving crowding out net-of-fund-raising at about 80 cents.

In 2014, Hughes et al studied this effect for orchestras. They concluded that the impact of government support on fundraising efforts is negative and significant, hereby agreeing with Andreoni and Payne (2003) and Dokko (2009). Although, in this study, the size of indirect impact on private donations

is relatively small compared to direct impact. The impact on corporate support was not significant. They also found that crowding effect depends on the size of the orchestra, source of philanthropic support and type of government funding.

While some studies look at the indirect effect of fundraising efforts, none focus on the indirect impact of marketing efforts. Since many corporations sponsor the arts to reach their visitors (Useem, 1991; Alexander, 1996), it would be logical to include marketing efforts in the model.

H7. Fundraising efforts of museums have a positive relation to income from private sources (H7a) and a negative relation to income from the government (H7b).

H8. Fundraising efforts and government support are positively related to income from private sources (H8a), sponsoring (H8b) or all private institutions (H8c).

Research more focussed on museums, in the United Kingdom, by Maddison (2004) focussed on causality. He argues that increases in non-grant incomes (for example admission fee) cause a reduction of the future level of government grants. In other words, an increase in public income may reduce government support.

All studies show indeterminate results to the crowding effect of government support to private funding. Most of the studies focussed on philanthropic giving or on private funding as an aggregated variable of foundation, corporate and philanthropic support. The only study making the distinction between corporate support and other private support was conducted by Hughes et al (2014). Many studies concluded that for measuring crowding effects it is important to narrow down the variables and sample (Kingma, 1989; Brooks, 2000a; Hughes et al, 2014). Therefore, this thesis will segregate income sources as far as the available data allows for.

A summary of previous research is found in table 1.

The model that follows from the theoretical background of crowding effects and the scheme in figure 1, within or outside the cultural sector, is the following:

$$(1) P = \beta_0 + \beta_1SGFi + \beta_2SGPi + \beta_3SGMi + \beta_4SGOi + \beta_5IGi + \beta_6PI + \beta_7FEi + \beta_8MEi + \alpha$$

And, a shorter model was created which only takes total structural subsidies into account, instead of the segregated levels:

$$(2) P = \beta_0 + \beta_1SGi + \beta_5IGi + \beta_6PI + \beta_7FEi + \beta_8MEi + \alpha$$

P = all private income (private contributions + sponsoring)

SG = total structural government support

SGF = structural support from the federal government
SGP = structural support from provinces
SGM = structural support from municipalities
SGO = structural support from other government levels
IG = incidental government support
PI = public income
FE = fundraising efforts
ME = marketing efforts

2.3 Superstar theory

The empirical and theoretical studies discussed before, failed to mention a theory that is worth looking at: superstar theory, which revolves around the relation between stardom and talent (Adler, 2006). Superstardom exists when the difference in income (between artists) far exceeds the difference in their talent. By their nature, consumers prefer popular artists who other people also like and easily switch from one artist to a more popular one. In this way, an initial advantage by one artist can cause a snowball effect and transform into superstardom (Adler, 2006). By this, a winner-take-all market is created (Frank & Cook, 1995). In these markets, the few people at the top earn almost all the money and the many people at the bottom only earn little. According to this theory, money also attracts money. In other words, inequalities increase: the richer get richer. This could indicate that when a museum has achieved the first steps in receiving subsidies, sponsoring and private contributions, more money will eventually follow. Which would be seen as crowding in effect. Important to notice is that this theory suggests that crowding in never stops, because people always encourage superstardom.

Hughes and Luksetich (1999) indirectly argue that this does not exist for museums. They argue that crowding in happens at first, until income reaches a certain point where crowding out starts to occur. It is also obvious that the superstardom is not perfect, since small museums do still exist.

Useem (1991) touches upon superstardom theory for museums when studying which museums and exhibitions corporations prefer to sponsor. He finds that firms wish to sponsor the most prestigious institutions, preferably more prestigious than other firms are sponsoring.

Frey (1998) develops the notion of superstardom for museums. Frey (1998) finds five characteristics which indicate a superstar museum: world fame and prominence among tourists, large numbers of visitors, a collection with known paintings, exceptional architecture and a large role for commercialization. Museums with this superstar status are for example the Louvre in Paris, the Prado in Madrid and the Rijksmuseum in Amsterdam. Frey (1998) points out that formerly, museum only competed with museums in the city or region over visitors and sponsors, but now superstar museums have global competitions and have to compete with each other over these things. Therefore, it is important to take this theory into account when looking at crowding effects.

Table 1

Previously conducted research

Author	Country	Sector	Time	Support forms	Result
Abrams and Schmitz (1987)	United States	Health, education, welfare.	1948 - 1972	Federal-, state-, local-support, private donations.	One dollar in governmental support crowds out private contributions by approximately 28 cents.
Andreoni and Payne (2003)	United States	Social service, art organisations	1982 - 1998	Private donations, government support, fundraising expenditures.	Government grants reduce fundraising efforts, which shows as a crowding out effect
Andreoni and Payne (2011)	United States	Religious, charitable, educational, scientific, or related to public safety testing	1985 - 2002	Private donations, government grants, and fundraising expenditures.	Crowding out is around 75%, which is almost exclusively the result of reduced fundraising investments. Their study reveals that the actions of the charities themselves are responsible for essentially all of the crowding out.
Borgonovi (2006)	United States	Theatre	the 1997-20	Federal-, state-, local support; private donations.	Crowding in or out depends on the size of government support and whether this is an increase or decrease and from what level of government.
Borgonovi and O'Hare (2004)	United States	Art organisations	1955 - 2000	NEA grants and private donations.	NEA grants do not result in higher income from donations: art giving seems independent from NEA support.
Brooks (1999)	United States	Symphony orchestras	1983 - 1995	Private donations, public funding, fundraising expenditures.	The two funding sources (public and private) are independent.
Brooks (2000a)	United States	Arts and culture sector	1955 - 1995	Private donations, federal-, State-, local support.	Finds no significant result for crowding out.
Brooks (2000b)	United States	Symphony orchestras	1984 - 1991	Private donations, government support, fundraising expenditures, earned income.	Crowding in or out is not a linear connection. At low levels of government funding crowds in private contributions, but beyond a certain point crowding out begins.

Table 1 *Continued**Previously conducted research*

Author	Country	Sector	Time	Support forms	Result
Brooks (2003)	United States	Welfare, education, arts and culture, environment	1988 - 1994	Donated revenue, public spending.	Increased public funding has a neutral effect on total donations, but with a decrease in average donations and an increased amount of donors.
Dokko (2009)	United States	Cultural organisations	1995 – 1996	Donations, government support, fundraising investment.	A dollar decrease of government grants means an increase of fundraising efforts by roughly 25 cents. This increase is responsible for roughly 25 cents of the increase in private giving, leaving crowding out net-of-fund-raising at about 80 cents.
Duncan (1999)	United States	Charities	1974	Monetary and time (volunteer) contributions, local government support.	One dollar in local government spending crowds out 24 cents of private contributions. However, volunteering labour is more reactive to government policy than donations of money.
Heutel (2014)	United States	Non-profit organisations	1998 - 2003	Private donations, government support, other revenue, fundraising efforts	One dollar in government grants crowds in private donations with 10 to 30 cents. Crowding in is larger for younger charities.
Hughes and Luksetich (1999)	United States	Art and history museums	1989	Federal-, state-, local support, private contributions.	The effect of a reduction of federal support on private support is more severe for art museums than for history. Private funding is positively related to federal support, until a certain point of crowding out.
Hughes, Luksetich and Rooney (2014)	United States	Orchestra's	2004 - 2007	Government support, private support from individuals, corporations and foundations and fundraising efforts.	Government support significantly decreases fundraising efforts. Crowding in/out depends on the size of the orchestra, source of philanthropic support and type of government funding.
Kim and Van Ryzin (2014)	United States	Performing arts organisations		Government funding, donations.	Partial crowding out.
Khanna and Sandler (2000)	United Kingdom	Non-profit organisations	1983 – 1990	Fundraising, voluntary contributions.	Government grants cause significant crowding in for voluntary contributions.

Table 1 *Continued**Previously conducted research*

Author	Country	Sector	Time	Support forms	Result
Kingma (1989)	United States	Public radio stations	1986	Individual private contributions and all other sources of support.	14 cents of private contributions crowded out from one dollar increase at all levels of government.
Lindsey and Steinberg (1990)	United States	Social service	1979 - 1981	Federal support, state support, private donations.	One dollar of federal support crowded out 4.6 cents of private donations.
Maddison (2014)	United Kingdom	Museums	1989 - 2001	Central government funding, non-grant income, expenditure and operating costs, visitor number	An increase in private sponsorship/entrance admissions and other non-grant income may reduce government support.
Payne (2001)	United States	Universities	1972 - 1999	Private and public donations	One dollar of federal funding crowds in 65 cents of private donations at research universities, crowds out 9 cents at universities where a Master is the highest degree and crowds out 45 cents at liberal arts colleges.
Roberts (1984)	United States	Welfare	1928 - 1981	Private charity, public transfers	Complete crowding out.
Schiff (1985)	United States				While one dollar in local funding crowded out 66 cents in giving, one dollar in state funding crowded in 34 cents.
Schiff (1990)	United States	Social welfare charities		Donations per household, prices, income, support by other sources and government support	Crowding out or crowding in depends on the level of government support is coming from.
Smith (2003)		Dance	1998 - 1999	NEA and non-NEA funding, private funding	NEA grants significantly crowd in private and non-NEA public donations.
Smith (2007)	United States	Non-profit performing arts organizations	1998 - 2003	Government grants and private contributions	Government grants crowd in private donations between \$0.14 and \$1.15, the exact amount depends on the art form.

2.4 Philanthropy, foundations and corporate sponsorship

The previously conducted research into crowding effects, mostly focussed on the reaction and behaviour of supporters to non-profit organisations as a result to changes in government support to these organisations. The majority of these studies failed to look deeper into motivations of these supporters. Additionally, much research focus on the aggregation of all private donors: philanthropists, corporate, foundations, museum members etc. However, all supporters are different in nature and therefore have different motives to support the arts. This can result in different effects. Thus, it is important to separate them.

Philanthropists are usually art patrons and connoisseurs who care for arts (Alexander, 1996), while corporations often sponsor the arts to achieve their own goals (Alexander, 2014). Therefore they might react differently to government policies and fundraising efforts of museums and show different crowding effects.

Scaltsa (1992) defines sponsorship as a business relationship between a provider of funds, resources or services, and an individual, event or organisation which offers in return some rights and association that may be used for commercial advantage. Alexander (2014) explained that when a corporation or government agency gives to the arts, the recipient must return specified and unspecified benefits to the funder. This exchange obtains on a quid pro quo basis, in which they expect to receive benefits from their gifts (advertising exposure, corporate functions in the arts venue, private tours of the exhibition, or the backstage). This is different from a (philanthropic) gift, which was defined by Klamer (2003) as the transfer of a good without an explicit specification of a quid pro quo. A gift can be tangible (legate, money) or intangible (time, attention, knowledge) (Klamer, 2003).

To explain and illustrate the different behaviours and motives, Klamer (2016; 2011) developed a model with four spheres and four corresponding logics: the government, market, social sphere and the oikos. The government sphere represents the public institution which provides public goods and steps in when markets are failing. The government values ideals which are valued by the system and which are expressed in policies. The government sphere is characterized by management, procedures, bureaucracies and requirements that people and organisations need to fulfil to receive aid. Besides government institutions, foundations often also operate with this same logic of management and bureaucracy. The second sphere is the market sphere. Here, everything is about exchange and relationships are based on a quid pro quo basis. This is the sphere in which museums close sponsor deals, which are about exchange. The exchange in the market is always instrumental and serves other goals. The goals of corporations want to achieve by sponsoring the arts are discussed below. The third sphere is the social sphere. In this sphere communities, relationships, identity, conversations and sharing is central. This means this is an informal sphere, which makes this sphere different. Within this sphere, donations and gifts are made, which is derived from the sense of sharing. Philanthropists and especially members of museums operate within this sphere. Corporations can work in this sphere when they genuinely give gifts towards the arts, instead of sponsorships. The fourth sphere is the oikos, the home. Within this sphere common goals like family, a sense of care and responsibility are realized.

Thus, the main conclusion from this model is that each sphere operates differently and therefore contributions and sponsoring are made differently and with different motives. An important point made was that sponsor deals are established in the market sphere and only instrumental for other goals. The

following section will elaborate which goals this instrument serve and what the motives are to contribute to the arts.

Wright (1984) studied the internal decision-making process of corporations to sponsor the arts. The executives in the decision-making process care about the arts, have a sound knowledge and a key interest in the arts. Additionally they are passionate about the place of art within our society (Wright, 1984).

Reasons for corporations to sponsor art events and cultural institutions can be categorized in four categories: promotion of image and name (community relations, awareness and Corporate Social Responsibility), supply-chain cohesion, rent-seeking and non-monetary benefit to managers/owners (O'Hagan and Harvey, 2000; Gardner and Shuman, 1987). Thus, research confirmed that sponsoring is instrumental to other goals that benefit the corporations. The corporate sponsoring for the arts or any other sponsoring, is an increasingly important part of marketing, PR and promotion (Turgeon & Colbert, 1992).

Consumer's identification with a non-profit organisation and their intention to purchase a product produced by the sponsor are positively related (Cornwell & Coote, 2003). This indicates that sponsoring organisations that the target audience of a company identifies themselves with, is an efficient marketing tool for corporations.

Only few researchers focussed specifically on the sponsoring of museums. A clear research was conducted by Useem (1991). He found that reasons to sponsor museums are almost equal to cultural organisations in general: promotion of their reputation (of being socially responsible), support their recruitment, retention to their employees and enhancing their market position.

Alexander (1996) looked at resource-dependency of museums. She studied the effect different stakeholders have on the organisation, by looking at the exhibitions that were produced. Alexander (1996) found that the tastes of different funders is expressed in produced exhibitions, however they only have an effect on the organisation until a certain extent; museum managers use several strategies to keep their autonomy and legitimacy.

Alexander (1996) found that corporations prefer to sponsor exhibitions that appeal to large audiences and therefore sponsor popular exhibitions. Therefore, corporations encourage blockbuster or travelling exhibitions and accessible exhibitions such as theme shows or exhibitions with a popular style. According to Alexander (1996) and Useem (1991), corporations tend to sponsor larger and well-established organisations, preferably more prestigious than the organisations other companies support.

Noticeable is that most of these reasons found in the literature are focussed on the benefit of the corporation and not on the benefit of the arts organisation. The reasons to sponsor mainly involve reputation of the organisation to society, customers and employees. Only research by Wright (1984) indicates that the organisation cares about the cause they sponsor.

Interestingly, it is not only corporations that sponsor in order to increase their own reputation. While it would be logical for philanthropists to support organisations that keep fundraising investments low, this is not the case. Glazer and Konrad (1996) found that donators give to organisations with high fundraising investments, which indicates benefit concerts, dinners, flyers and other forms of promotions of the donors. In this way, donors can show their wealth, Glazer and Konrad (1996) call this conspicuous

giving. This is in line with the earlier discussed findings by Hughes et al (2014) and Andreoni and Payne (2003); this relationship is referred to in hypotheses 3 and 4.

Unlike Glazer and Konrad (1996), Alexander (1996) argues that individual patrons are often collectors and connoisseurs and care for the art itself. In general they don't support large-scale exhibitions and they do support different styles (Alexander, 1996). Kim and Van Ryzin (2014) also indicated this, by concluding that art patrons were less influenced by government grants than others, meaning that they genuinely care about the arts. Lindqvist (2012) argues that the reason why philanthropic individuals donate to art is, in contrast to corporate support, more related to their own preferences or values, making it hard to predict when philanthropic individuals will donate to art museums. The same goes for foundations. There are many different kinds, there are public ones and private ones, family owned and large institutions, focussed on all kinds of genres. Therefore, it is impossible to make hypotheses about foundations.

The different nature of philanthropists and corporate sponsors is expressed in the following hypothesis. In this thesis, the size of a museum is the closest indicator of its prestige and image.

H9. Large museums receive more sponsoring than smaller museums (H9a) and large museum receive less private contributions than small museums (H9b)

Most of the research to motivations of corporate sponsoring for the arts doesn't necessary specify why they choose the arts as opposed to other causes, like sports. Sports receives the largest amount of sponsoring from organisations, however the arts are running in (Wright, 1990). Also, sponsoring of arts organisations by corporations has never been the focus of research on crowding effects. Therefore, it is unknown to what extend corporations take the income of museums into account. It is unknown if they see their contribution as a substitute for government funding or whether they see government funding as a signal for quality.

2.5 Public income

Besides subsidies, sponsoring and donations, museums also generate income from their visitors. This income is also indirectly related to the social sphere. Visitors come to museums with friends or heard about a certain exhibition from friends or colleagues. Visitors also come to a specific museum because they are a member, which means they have felt a special connection to that museum and perhaps even a sense of community.

The most straightforward public income is earned from the admission fee paid by visitors. For Dutch museums, in 1995 this amount was €48 million and grew to €128 million in 2011 (CBS, 2016). However, museums are getting more innovative in generating public income. Frey (1998) argues that, especially superstar museums, are required to provide a complete experience, in the direction of entertainment parks. However, this development is true for many museums to a larger or lesser degree.

For example, 71% of the Dutch museums, which are part of *Museum Association*, have a restaurant or café and 89% has a museum shop (Museana, 2016). Additionally, many museums give

guided tours, sell audio tours or have other arrangements to earn public income. Between 1995 and 2011, the total income from the museum shop for all museums tripled from 11 million to 32 million euro and the income from the restaurant and café increased from 3 million to 15 million euro (CBS, 2016).

Okten and Weisbrod (2000) found that public income has a positive significant effect to private contributions (crowding in) in higher education, scientific research industries, hospitals and arts organisations. Brooks (2000b) also included earned income in his analysis of orchestra's. However, he did not find a significant relation to private support. Both studies indicate the importance of including public income in the analysis.

2.6 Introduction to Dutch museums and government

In 2015 the museum sector in the Netherlands consisted of 685 museums (CBS, 2016). Together, these museums produced 1,630 exhibitions in 2015, which were visited by 33,109,968 people in total (of which 27,588,580 paid visits) (APE, 2016). In 2009, the total number of exhibitions was 2,145; 24% more than in 2015. This does not necessarily mean that the supply decreased, it can also mean that museums chose for bigger or longer lasting exhibitions (APE, 2016). While the number of exhibitions fell, the number of visitors increased with 33% from 2009 to 2015. The visitor number per exhibition therefore rose.

Figure 2 and 3 (APE, 2016) show the development of income sources in absolute amounts and in proportions of the total income. While the number of exhibitions declined, the real total income of these museums rose between 2011 and 2015 with 12%, this is an average of 2.9% growth per year (APE, 2015). In 2015 the total income of all museums was €723 million. Nonetheless, the real total expenditures rose by 10% during this period and 19% from 2009 to 2015 (APE, 2015). Figure 4 shows this in a long-term development from 1995 to 2011. Overall, total expenditures have been rising faster than total income (CBS, 2015).

Public funding is the largest source of income for museums. However, budget cuts caused the public income to decline. In 2015 the income from public funding was € 373 million, as opposed to 405 million in 2011, a decrease of 8% (APE, 2016). The proportion of public income of total income also declined: in 2011 62% percent of total income was from public funding, while this was only 52% in 2015.

Besides this decrease, private contributions and earned revenue are increasing for Dutch museums. The private contributions to museums increased the most between 2011 and 2015. Despite their increase of 66%, private contributions are still 12% (in 2015) of the total income, 83 million euros in total. Since earned income has also increased by 44% to 267 million euro, this means that Dutch museums are increasingly earning their income themselves (Museana, 2016).

When looking at long term developments, corporate sponsors are becoming increasingly important as an income source. Their annual support increased from four million in 1993 to 21 million in 2013 (CBS, 2015) and 26 million in 2015 (Museana, 2016). This means corporate support has surpassed philanthropic donations, which were 25 million euros in 2015, but has not surpassed support from private foundations, which was 72 million euros in 2015 (Museana 2016).

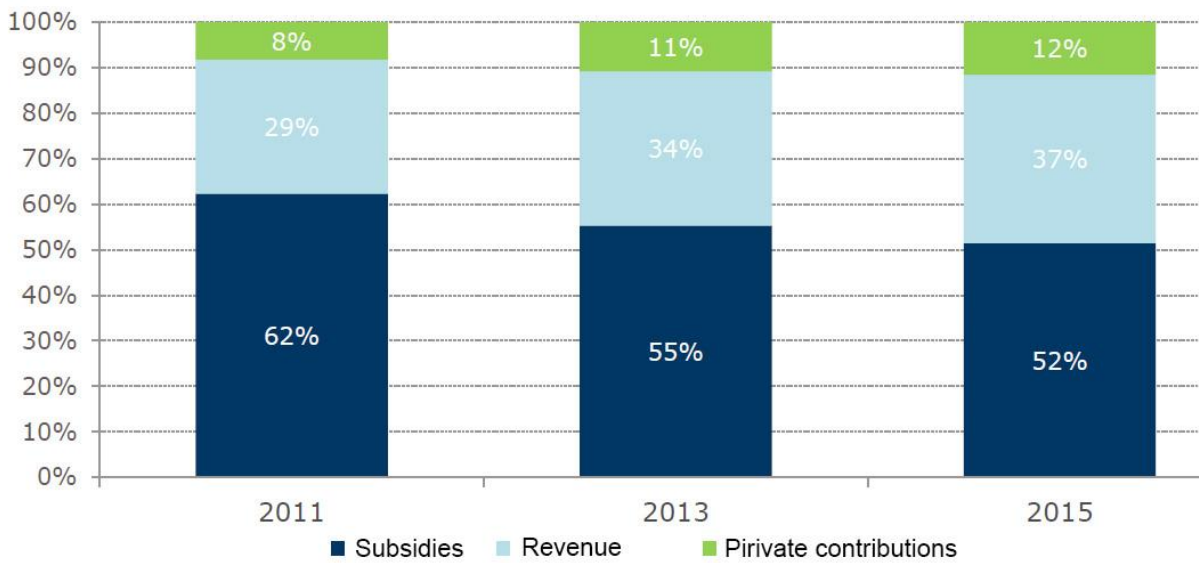


Figure 2 *Development of distribution of museum income sources 2011 – 2015 (Source: Ape, 2016).*

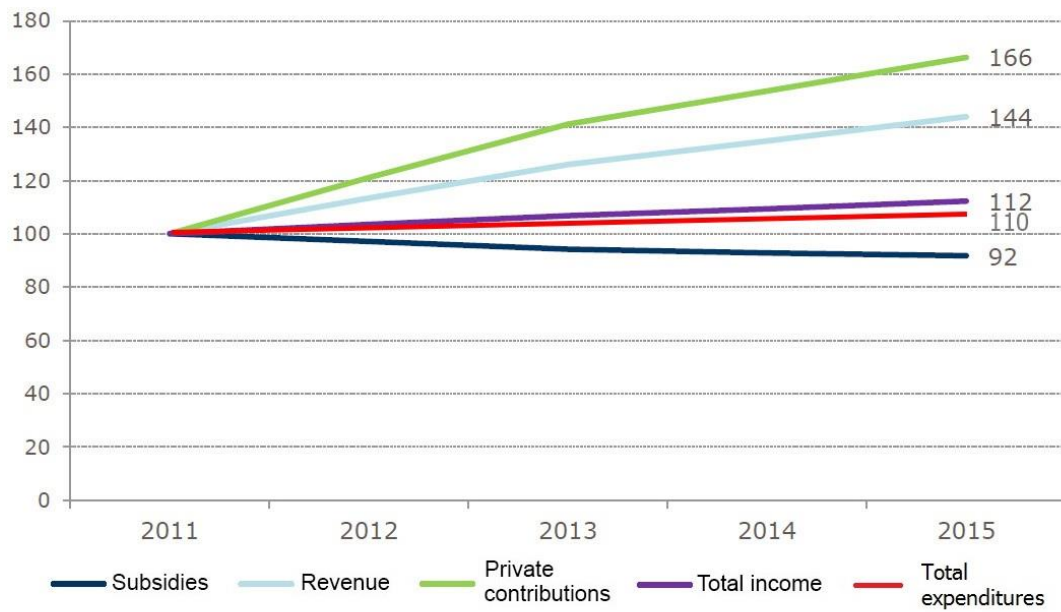


Figure 3 *Developments of museum real income sources, 2011 as base year (source: Ape, 2016).*

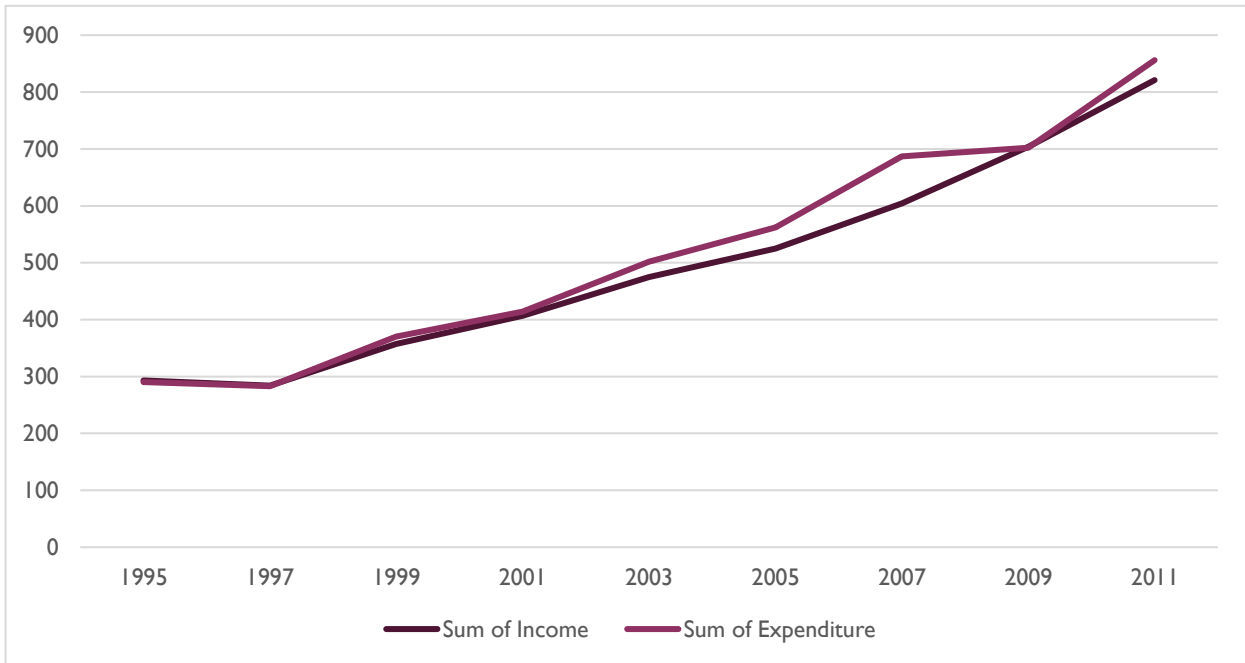


Figure 4 *Development of total income and expenditures over 1995 – 2011.*

The public funding for the cultural sector can come from three levels of government with their own cultural policies: national through the Ministry of Education, Culture and Science, province and municipal level. For the members of *Museum Association*, the national government financed 271 million euro's, the provinces 38 million euro's and the municipalities 189 million euros in 2015. 26 museums plus one supporting institution were chosen for the *Basisinfrastructure*, which is a group of museums supported by the national government. These museums were chosen for the national importance of their collection or because they are managing a collection owned by the national government (Cultuur, 2017). In this and other decisions, the national government is advised by the Council for Culture.

In 2011, major budget cuts in the cultural agenda of the Netherlands were announced for 2012. After the budget cuts, the cultural policy increased their focus on entrepreneurship and encouraged cultural organisations to reach out to the private market (Leden, 2016). Cultural entrepreneurship became one of the four focal points of the national cultural policy. Particularly, members of the *Basisinfrastructure*, must follow this to receive structural subsidy. Museums must actively strengthen their connection with (possible) financiers, find innovative income sources and search for new markets to increase their income (OCW in cijfers, n.d.). In this way, the government hopes that the market sphere and the social sphere can step in and compensate for the budget cuts. Therefore, I refer back to hypothesis 2 and I propose the following hypotheses:

H10a. Being part of the *Basisinfrastructure* has a positive effect on fundraising efforts.

H10b. Being part of the *Basisinfrastructure* has a positive effect on all private support.

Hypothesis 2 is relevant in the context of the Dutch government, because different kinds of governments are likely to cause different crowding effects. As discussed before, crowding effects are influenced by signalling power. In other words, if the government supports an organisation, this is a signal of quality which increases the amount of private donations. These donors often do not have time or resources to check the quality of every organisation themselves and therefore rely on a reliable source. The Netherlands has one of the most trusted governments in the world according to the Corruption Perception Index (2016). To illustrate, the Netherlands is ranked 8th and the United States to which most research into crowding effects is focussed, is ranked 18th and there are 176 countries ranked in total. A high position in this index, indicates that support from the government for an organisation is more likely to be seen as a legitimate stamp of approval than a low ranked country with an untrustworthy government.

The Dutch museums that are not funded by the federal government are mainly funded by their municipality and sometimes by their province. The municipalities form their own policy towards culture and are often advised by their own Council of Culture, which makes it impossible to form a hypothesis based on municipalities in general. While the policy of the national government focusses mainly on quality, talent, education and professionalism of the organisation, municipalities can have different goals. For example, the municipality of Rotterdam heavily focusses on the social role of arts and culture within the community. They focus on the role of arts and culture to connect different people, groups and places within the city (Cultuurplan, 2016). Meanwhile, the municipality of Amsterdam choose to keep their policy closer to the national policy (Kunstenplan, 2016).

In the Netherlands, 413 out of 685 museums are organised within the *Museum Association* (*Museumvereniging*). The goal of this association is to keep the positive image of museums in general and to defend the interests of museum towards press and politics, to improve and professionalize the organisations and to increase the enthusiasm of the public for museums.

The *Museum Association* aims to increase the enthusiasm for museums by offering the public a *Museumcard* for an annual amount. Someone who purchased this card can enter all museums that are a member of the *Museum Association* for free. Each year, the museums receive an amount of money from the *Museum Association* relative to the number of people that visited the museum with this card. This has an effect on public income, because presumably this card raises visitor numbers, but the money received for this is usually lower than the admission fee. Between 2011 and 2015 the number of people owning a *Museumcard* rose with 50% from 800,000 to 1.2 million (Museana, 2016). In the panel research by APE (2016), it was found that number of visits to Dutch museums increased by 33% between 2009 and 2015, indicating that the policy of the *Museum Association* is meaningful.

The *Museum Association* produces an annual report, which illustrates core developments of their members: *Museumcijfers* (Museana, 2016). The most interesting results on museum finances have been discussed above. However, they also produce information on the distribution of FTE's by their members. The members of the *Museum Association* have 10% of their personnel working on commercial issues, which is equivalent to 1062 FTE's in 2015. In 2011 these museums had only 8.8% of their personnel working on commercial issues, this was by then not measured in FTE's. This indicates that museums are responding to their task to turn to the private market.

Museums that are member of the *Museum Association* in the Netherlands are spread all around the country, but are mostly located in the *Randstad*, in the provinces North-Holland (89 museums) and South-Holland (79 museums). Groningen, Zeeland and Drenthe have the smallest number of museums, respectively, seventeen, fifteen and twelve museums. Museums in North-Holland had the most visitors of all provinces, which is obviously highly influenced by the large museums in Amsterdam. In figure 5 is illustrated how museums are spread across the Netherlands

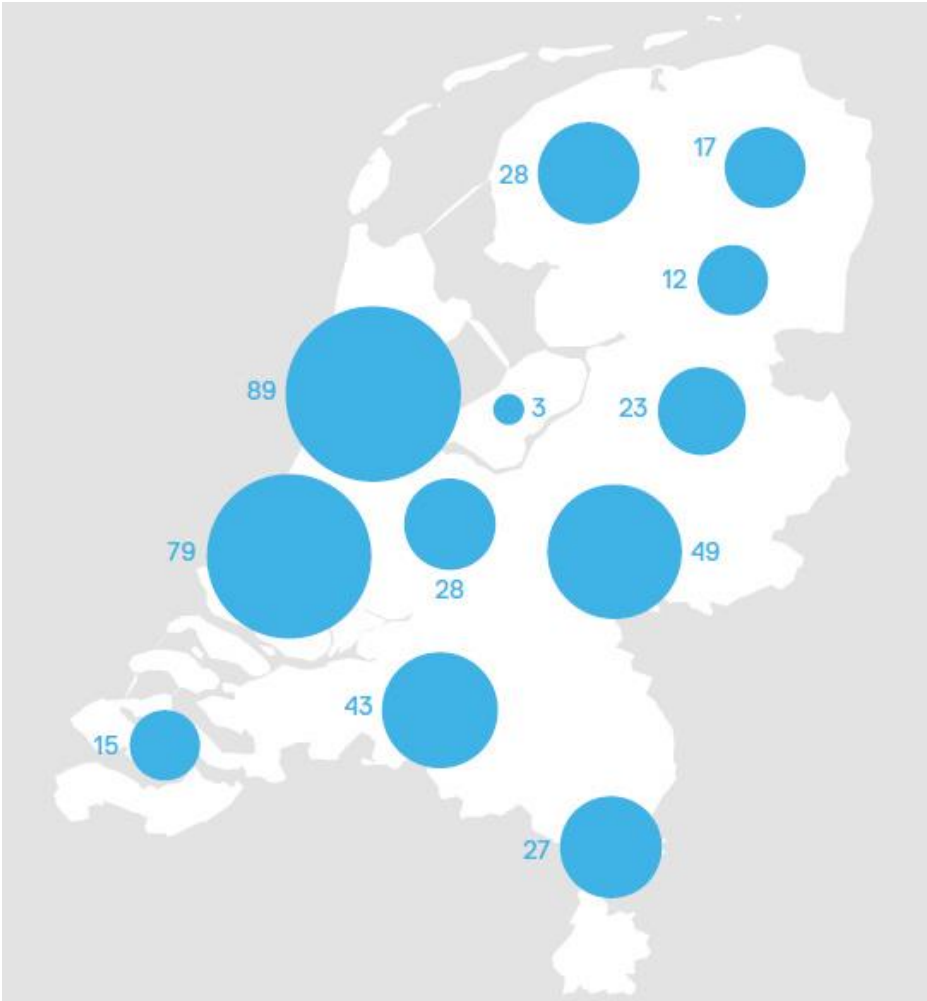


Figure 5 *Museums in the Netherlands per province.*

3. METHODOLOGY

This section will discuss how the empirical work was conducted. It will elaborate on the research design, methods, the population and variables and operationalisations.

The question asked in this research will be: How does government funding and corporate and private support relate in Dutch museums? This question will be answered using a quantitative research method. A quantitative research strategy is recommended by Bryman (2012) when research has a deductive instead of an inductive approach; when the accent is placed on testing theories instead of generating theories. For this research, multiple hypotheses were formed, based on earlier formed theories. The emphasis in the data collection will be on quantification, typical for quantitative research (Bryman, 2012).

3.1 Research design and method

The majority of this research is a cross-sectional design. Many cases at one point in time were selected in order to have generalizable results. A cross-sectional research is good to examine relationships between variables, but not to determine a causal relation (Bryman, 2012). A longitudinal research is better to determine the causality of a relationship and will therefore also be conducted. Due to data availability, it will only be possible to do a longitudinal research for 10 museums between 2010 and 2015.

A content analysis was performed on all found annual reports and financial statements of 2015 and 2014. The annual reports and financial statements were the coding units. The income sources of the museums were coded, separated and aggregated. By means of this time intensive process, a primary data-set with all known income sources of museums was formed.

3.2 Population

According to the CBS, there were 685 museums in the Netherlands in total in 2015 (CBS, 2016). In this measurement the following definition was used: a museum has a permanent location and is permanently open for at least 28 weeks per year and three days per week, is a non-profit organisation, has its own collection and performs research into this collection to spread knowledge and has its own website or is traceable through a reference on a larger platform. However, it was impossible to access the list of all museums. Therefore the 405² members of the Dutch *Museum Association* (Museumvereniging), were chosen as a population and sample frame. Assumed is, that these museums are more open in providing information about their finances, since the *Museum Association* also asks for this information. Members of the *Museum Association* meet with the same definition as mentioned above. The population contains museums with collections of all different natures: visual arts, history, natural history, company & technology and ethnology. By this definition, also some botanical gardens and castles were included in the sample frame. The Rijksmuseum was excluded from the population. This is a superstar museum,

² Initially, *Museum Association* has 415 members, however some fell under the same foundation and were merged. The Rijksmuseum was left out, because they are an outlier, 77% of all sponsoring to museums is for the Rijksmuseum and their re-opening would have disturbed the longitudinal research.

according to the definition by Frey (1998). Therefore, the Rijksmuseum is an extreme outlier, which would skew the results.

This research is an examination of the entire population. For each museums was checked if an annual report and financial statements of 2015 were available on their website. This was found for 275 of the museums (67.9%). For very few museums it was suggested to email for the information. When information was missing, museums were only emailed when they actively recommended this.

After data gathering, there was enough data available for 78 of the 405 museums; many annual reports or financial statements were incomplete. This means the sample contains these 78 museums. This is a non-probability sample based on data availability, in which museums that have enough information publicly available are more likely to be in the sample (Bryman, 2012). Another perspective is that the response rate of 405 museums is 19.3% with 326 non-respondents. This may be due to the nature of the organisation, which may have influence on the outcome of this research. Therefore, it is important to see how much the sample differs from the entire population. Unfortunately, this is only possible for simple characteristics (Bryman, 2012). In the results section will be further discussed how two two-independent sample *t*-tests show that the sample is representative for the major part of the population, when looking at number of visitors and total income. Furthermore, the type of museums within the sample and population are discussed there.

To perform a longitudinal analysis, the data availability of older annual reports was checked. 10 out of the 78 museums had enough information in their reports to do a longitudinal analysis from 2010 to 2015. This data was collected to examine possible trends in museum finances within these years. This sample is too small for conclusive results, but is used here to illustrate possible trends.

3.3 Variables and operationalisations

The main variables are income sources of museums. These variables were segregated, as far as the data allowed, because many studies concluded that it is important to narrow down the variables to measure crowding effects (Hughes et al, 2014). Income sources that were taken into account were: government funding, sponsor income, public revenue and private contributions. These are all variables on an interval level. Government funding was segregated into structural subsidies from the Ministry of Education, Culture and Science, provinces, municipalities and other structural subsidies and incidental or project subsidies from the government. Government funding is the independent, because it is estimated that this causes other sources of income to crowd in or out.

Public revenue was segregated into income from entrance fees and income from the restaurant and museum shop. Private contributions was segregated into contributions from corporations and from other sources, but there was not enough data available. Private contributions are not necessarily a gift, when the definition of Klamer (2011) is used, because this variable also included museum memberships, which has clearly defined benefits for a donator. This and income from other private sources are the dependent variables.

Control variables are necessary to see if there is no other variable influencing the relationship between the independent and dependent variable (Bryman, 2012). The first control variable is the size of a museum. Kimberley (1976) states that the number of employees or FTE's is mostly used to measure the size of an organisation. However, due to unavailability of data, this was not possible. It would also

be a tricky variable, since the volunteers and interns are not always included when FTE's are calculated. For example, in some data on Statline the CBS only includes personnel on payroll, to determine FTE's (Statline Podiumkunsten, 2016). When this information was available in the annual reports, it was not clarified how it was calculated. This makes it hard to compare FTE's per museum.

Organisational size can be measured in four ways: physical capacity, personnel available, organisational input and output and resources available (Kimberley, 1976). Since assets and total income are too closely related to the independent and dependent variables, I chose to measure size by organisational input and output. Kimberley (1976) hereby refers to the number of clients or sales. In the case of museums, I chose to look at visitor numbers as a proxy variable for size. This number was mostly found in the annual reports or otherwise trustworthy newspaper articles.

Hughes et al (2014) and Andreoni and Payne (2003) found that fundraising efforts have an impact on the crowding in or out effect. Therefore, fundraising efforts by a museum are the second control variable. The data for monetary or personnel investment was not available. Therefore a proxy variable was chosen: the complexity of a membership and the promotion of this membership.

Slater (2004) examined the different membership schemes for different kind of museums. He concluded that the more professional a relationship department is, the more stratified the options for membership are and the more it is promoted. Therefore the investment in fundraising is measured by the professionalism of the department, which is measured by the complexity and promotion of memberships. The complexity and promotion of memberships for museums were graded on a scale from two to ten. For the complexity of a membership, a maximum of six points could be obtained, from no membership at all being graded as one and a complex membership scheme with a separate one for corporations, being graded as six. The promotion of this membership was graded on a scale from one to four. One if promotion was not applicable, because a membership was absent, two for no promotion for their membership at all, three for promotion somewhere on the website and four for promotion on their homepage. When complexity and promotion grades were accumulated, a scale from two to ten was the result. Further details on the complexity and promotion of memberships can be found in the codebook in appendix 1.

Besides fundraising efforts, marketing efforts were also taken into account, since they were expected to have a relation to visitor numbers and therefore public income. The monetary or personnel investment in marketing is again not available for the majority of museums, therefore a proxy variable was chosen: presence on social media. This was measured by the total followers of a museum on Facebook and Twitter combined. It was hereby assumed that museums with little effort in social media, would have less followers.

Museums within the sample were coded by type to see to what extent the sample is representative for the population. The museums within the sample were coded according to categories used in *Museumcijfers: Visual arts, History, Natural History, Business, science and technology and Ethnology* (Museana, 2016). How all variables were precisely coded can be found in the codebook in Appendix 1.

All variables (except fundraising and marketing efforts) were measured for 2015 and 2014. Then, the mean between these two years was calculated for further analysis. It was chosen to use a mean, because income for a museum can differ over years. This difference can occur, because they

can receive exceptionally large private contributions, because of an inheritance, or have unusual high public income, visitor number or sponsoring revenue, because of a blockbuster exhibition. By using the means, the effect of exceptional revenue was lessened.

4. RESULTS

This section will first discuss to what extent the sample is representative for the population. Next, it will review the descriptive statistics of all variables, followed by the inferential statistics, where the hypotheses are tested. Then, the proportions and relationships between proportions of different income sources of total income are examined. Lastly, the longitudinal research will be discussed.

In this thesis, annual reports and financial statements were examined to find the government support, public income, corporate support and private contributions to Dutch art museums in 2015 and 2014. Of the 413 members of *Museum Association*, 78 museums gave enough information for this research. Because the sample is based on data availability, it should first be checked whether the sample is representative for the population (Bryman, 2012). This can only be done for simple variables: visitor number, total income, type of museum and membership of the *Basisinfrastructure*.

The visitor number of 2015 is known for all 78 museums within the sample and 274 museums within the population. A two-independent sample t-test was conducted to test if both means are significantly equal. This test found that there is no significant difference in the visitor numbers of the larger sample ($M=93,516$, $SD=201,229$) and the smaller sample ($M=69,725$, $SD=119,631$), $t(350)=0.995$, $p<0.05$. This means that the actual sample is representative on visitor numbers for the 274 museums and therefore is most probably also representative for the entire population.

The total income of 2015 is known for 220 museums in the population and for all 78 museums in the sample. A two-independent sample t-test was again conducted to compare the means. The test found no significant difference on total income between the larger sample ($M=3,208,146$, $SD=7,485,546$) and the smaller sample ($M=2,946,070$, $SD=8,040,656$), $t(296)=0.261$, $p<0.05$. This means that the sample is representative for a large part of the population when looking at total income. Because the sample is likely to be representative for the population on visitor numbers and total income, it is likely that it is also representative when looking at the more complicated variables.

The distribution of types of museums within the population and sample is expressed in table 2. In both groups, the majority of the museums is a history museum, respectively 61% and 51.3%. The second biggest category is Art museum and the other three categories are minorities in both the population as well as the sample.

Table 2
Type of museums in the population and sample

Type of museums	Population (n=413) ³	Sample (n=78) ⁴
Art	96 (23%)	23 (30%)
History	252 (61%)	40 (51%)
Natural history	26 (6%)	9 (12%)
Business, science and technology	32 (8%)	2 (3%)
Ethnology	7 (2%)	4 (5%)

³ Source: Museana (2016)

⁴ See appendix 2 for coding

In the sample, twelve out of 78 (15.4%) museums are part of the *Basisinfrastructure* and in the population, 24 out of 405 (5.9%) museums are part of the *Basisinfrastructure*. This means the sample is not very representative when looking at this ratio.

4.1 Descriptive statistics

Table 3 provides the descriptive statistics for visitor numbers and the data on the finances of Dutch museums in structural government subsidies, incidental government subsidies income from sponsors, private contributions and public income. The amounts were taken as a mean of 2015 and 2014 to account for exceptionally good or bad years. The standard deviation is really high for all variables, this indicates that there are some museums that earn a lot of money and have a lot of visitors, but overall there are a lot of museums that are not dealing with such high numbers. Table 3 also shows the descriptive statistics for the final grading of fundraising efforts, on a scale from 2 to 10, and for marketing efforts: the accumulation of Facebook and Twitter followers.

Table 4 shows the descriptive statistics for each variable divided by the visitor number of each museum. In this way, the size of museums is controlled for. When not accounting for size, the standard deviations are still high, showing that there is a lot of diversity. These variables are used in all further statistical tests.

Table 5 presents the descriptive statistics for fundraising efforts of museums and the grading coupled to different levels in a more detailed way. Fundraising efforts was measured by two variables: the complexity of a membership and the promotion of this. A stratified membership is one that museums choose for most often (27%). This means that potential members can choose a membership that is most suited for them. A special corporate membership is present seventeen times (21%) within the sample. As predicted, more complicated memberships are more actively promoted on the homepage of museums' websites. The simplest membership (one category) is sometimes not even promoted at all. This means that both variables are consistent with each other and therefore suitable to aggregate.

However, figure 6 shows the relationship between the total grade in fundraising efforts and private contributions per visitor. This figure shows a negative correlation, indicating that higher fundraising efforts result in lower private contributions. This sounds illogical. Figure 7 shows a positive relation between fundraising efforts and public income per visitor. This indicates that the proxy variable for fundraising efforts is not a very accurate proxy variable for fundraising efforts, rather than for marketing efforts. This makes sense, since the proxy variable for fundraising efforts focusses on members who are visitors to the museum. Also, members only generate small private income and lots of effort in memberships might distract a museum away from the larger donations.

High public income per visitor also indicates a professional department, since this means the entrance fee is probably high. Fundraising efforts remained in the model, since it gives a good indication of operations within the museum, but results should be interpreted with caution.

Table 3

Descriptive statistics for all income sources and visitor numbers for museums, calculating with the means of 2015 and 2014, and fundraising and marketing efforts (n=78)

Variables	Obs.	Mean	SD	Total	Min.	Max.
Visitor number	78	68,379	115,567	5,333,567	2,387	693,928
Total income	78	2,670,890	6,594,798	208,329,435	21,433	49,778,627
Total structural government support	78	1,520,467	4,016,828	118,596,400	0	26,617,071
Ministry of Education, Culture and Science	78	1,037,893	3,843,056	80,955,692	0	26,617,071
Province	78	98,470	537,544	7,680,632	0	3,892,000
Municipality	78	361,736	1,390,335	28,215,437	0	10,013,206
Other structural subsidy	78	7,109	37,169	554,500	0	300,000
Incidental/project subsidies	78	449,988	2,104,366	35,099,093	0	16,884,327
Sponsoring	78	23,378	52,037	1,823,498	0	304,834
Private contributions	78	226,271	415,969	17,649,135	0	2,024,472
Public income	78	435,950	861,326	34,004,126	3,053	4,575,695
Entrance admissions	78	320,822	692,322	25,024,142	108	3,959,170
Other public income	78	118,402	240,848	9,235,336	0	1,217,952
Fundraising efforts	78	6	3		1	10
Marketing efforts	78	8,586	15,635	669,740	0	81,941

Table 4

Descriptive statistics of all income sources (mean of 2014 and 2015) divided by their visitor number (mean of 2014 and 2015)

Variables per visitor	Obs.	Mean	SD	Min.	Max.
Total income	78	29.79	26.33	2.99	154.94
Total structural government support	78	15.16	17.67	0	82.85
Ministry of Education. Culture and Science	78	6.26	15.79	0	82.85
Province	78	1.32	5.52	0	39.39
Municipality	78	6.95	10.25	0	49.52
Other structural subsidy	78	0.34	1.86	0	14.22
Incidental/project subsidies	78	3.46	10.90	0	76.67
Sponsoring	78	0.72	1.57	0	10.44
Private contributions	78	4.00	5.95	0	28.88
Public income	78	5.04	3.18	0.20	18.02
Entrance admissions	78	3.52	2.04	0.02	10.68
Other public income	78	1.58	1.87	0	12.51
Marketing efforts	78	0.12	0.11	0	0.56

Table 5

Complexity of membership and corporate membership and its promotion (n=78)

Complexity and promotion	Number	Percentage	Grading
No membership	13	16.5%	
- Not applicable	13	16.5%	2
Yes, one category membership	21	25.3%	
- No, not on website	3	3.8%	4
- Yes, on website	10	12.7%	5
- Yes, on homepage website	8	8.9%	6
Yes, stratified membership	21	26.6%	
- Yes, on website	16	20.3%	6
- Yes, on homepage website	5	6.3%	7
Yes, only corporate membership	1	1.3%	
- Yes, on website	1	1.3%	7
Yes, one category + corporate membership	7	10.1%	
- Yes, on website	3	3.8%	8
- Yes, on homepage website	4	6.3%	9
Yes, stratified + corporate membership	15	20.3%	
- Yes, on website	7	11.4%	9
- Yes, on homepage website	8	8.9%	10
Total	78	100,0%	

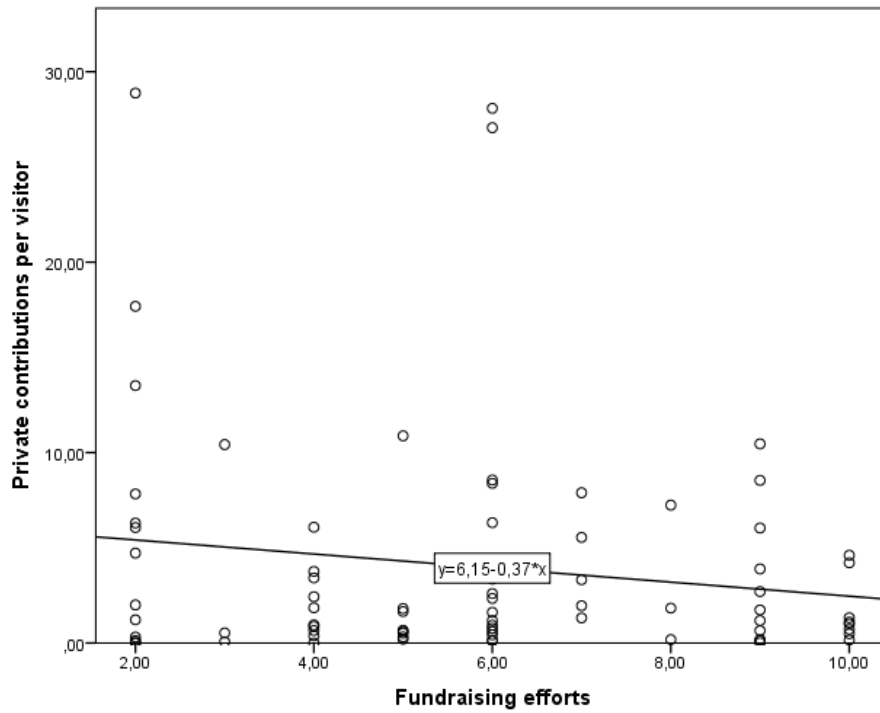


Figure 6. Grade of fundraising efforts and private contributions per visitor.

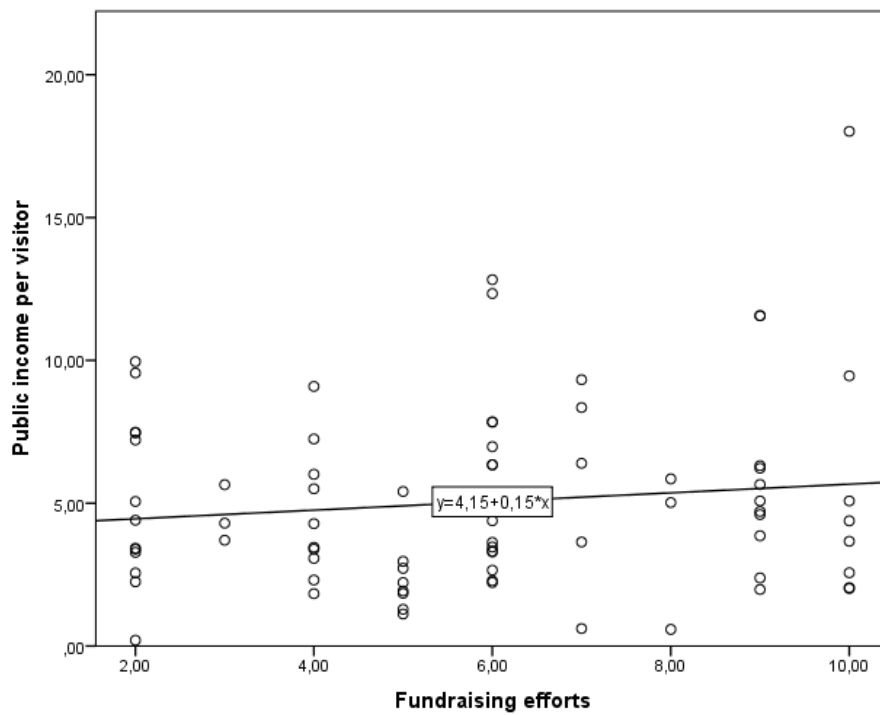


Figure 7. Grade of fundraising efforts and public income per visitor.

4.2 Inferential statistics

The main model that was tested in this research, as discussed in the literature review, looks as follows:

$$(1) P = \beta_0 + \beta_1SGF_i + \beta_2SGP_i + \beta_3SGM_i + \beta_4SGO_i + \beta_5IG_i + \beta_6PI + \beta_7FE_i + \beta_8ME_i + \alpha$$

Additionally, a shorter model was created which only takes total structural subsidies into account, instead of the segregated levels. Since the sample is relatively small for so many variables, the shorter model is expected to show more significant results:

$$(2) P = \beta_0 + \beta_1SG_i + \beta_5IG_i + \beta_6PI + \beta_7FE_i + \beta_8ME_i + \alpha$$

P = all private income (private contributions + sponsoring)

SG = total structural government support

SGF = structural support from the federal government

SGP = structural support from provinces

SGM = structural support from municipalities

SGO = structural support from other government levels

IG = incidental government support

PI = public income

FE = fundraising efforts

ME = marketing efforts

This model and hypotheses one to eight were tested by estimating eleven equations using multiple regression. All amounts were taken per visitor; in this way there was controlled for differing sizes of museums. Table 6 shows the results. The first model resulted in eight significant equations: total government support, federal support, province support, municipality support, incidental government, private contributions, total private support and marketing efforts. In the second model, where the multiple levels of government in the model were replaced by total structural government support, fundraising efforts also showed significant and total private support and private contributions showed a higher level of significance. All were included in table 6.

Only two factors are significantly related to total structural government support: incidental government support and marketing efforts. The amount of incidental government support has a positive relation to total structural government support: when incidental government support increases with one euro per visitor, total structural support increases with 78 cents per visitor. It was also found that one extra social media follower per visitor results in an increase of 63.45 euro structural government support. Therefore, hypothesis one is rejected entirely: total government support has no relation to any private form of museum support.

Federal support was significantly related to support from provinces and municipalities, incidental government support and marketing efforts. This means that hypothesis two is also rejected: federal

Table 6

Estimated models using regression analysis

	Total government support (Shorter model)	Structural support from the federal government	Structural support from provinces	Structural support from municipalities	Structural support from other government levels	Incidental government support	Public income	Private contributions + sponsoring	Private contributions + sponsoring (shorter model)
Constant	-6.565 (-1,330)	-7.278 (-1.635)	0.007 (0.005)	1.993 (0.555)	-0.179 (-0.247)	3.627 (1.278)	4.406*** (4.128)	5.112** (2.266)	4.792** (2.202)
Total government support	-	-	-	-	-	-	-	-	0.051 (0.948)
Structural support from the federal government	-	-	-0.159*** (-4.415)	-0.322*** (-3.669)	-0.010 (-0.508)	0.339*** (5.234)	0.049 (1.551)	0.060 (0.959)	-
Structural support from provinces	-	-1.397*** (-4.415)	-	-0.844*** (-3.178)	-0.035 (- 0.612)	1.308*** (8.041)	-0.065 (-0.688)	-0.063 (-0.341)	-
Structural support from municipalities	-	-0.513*** (-3.669)	-0.153*** (-3.178)	-	-0.013 (-0.537)	0.264 (2.883)***	-0.019 (-0.467)	-0.001 (-0.017)	-
Structural support from other government levels	-	-0.385 (-0.508)	0.156 (-0.612)	-0.322 (-0.537)	-	0.263 (0.549)	-0.170 (-0.854)	-0.125 (-0.320)	-
Incidental government support	0.776*** (5.305)	0.847*** (5.234)	0.373*** (8.041)	0.413*** (2.883)	0.017 (0.549)	-	0.040 (0.794)	-0.032 (-0.322)	-0.066 (-0.854)
Public income	0.625 (1.261)	0.703 (1.551)	-0.107 (-0.688)	-0.170 (-0.467)	-0.63 (-0.854)	0.231 (0.794)	-	-0.146 (-0.618)	-0.081 (-0.361)
Private contributions	0.289 (0.992)	0.296 (1.140)	0.007 (0.075)	-0.012 (-0.060)	-0.015 (-0.351)	-0.094 (-0.568)	-0.010 (-0.143)	-	-
Sponsoring	0.087 (-0.086)	-0.334 (-0.370)	-0.266 (-0.878)	0.064 (0.089)	0.009 (0.065)	0.293 (0.514)	-0.235 (0.997)	-	-
Fundraising efforts	1.211* (1.9533)	0.902 (1.593)	0.251 (1.305)	0.577 (1.278)	0.172* (0.549)	-0.861** (-2.462)	0.186 (1.243)	-0.349 (-1.187)	-0.408 (1.441)
Marketing efforts	63.448*** (3.954)	52.495*** (3.606)	11.285** (2.174)	34.966*** (2.948)	0.202 (0.080)	-15.661 (-1.586)	-3.429 (-0.824)	18.470 (2.374)	4.792** (2.202)
Number of observations	78	78	78	78	78	78	78	78	78
R	0.682	0.704	0.727	0.499	0.263	0.759	0.376	0.412	0.396
Adjusted R ²	0.420	0.429	0.467	0.149	-0.54	0.520	0.028	0.073	0.098
Sig. of the model	0.000***	0.000***	0.000***	0.016**	0.822	0.000***	0.283	0.100*	0.028**

* Significant at 10% level (p<0.1)

** Significant at 5% level (p<0.05)

*** Significant at 1% level (p<0.01)

Table 6 Continued

Estimated models using regression analysis

	Private contributions	Private contributions (Shorter model)	Sponsoring	Fundraising efforts	Fundraising efforts (Shorter model)	Marketing efforts
Constant	3.250 (1.575)	2.905 (1.458)	0.811 (1.349)	5.145*** (7.125)	5.437*** (8.094)	0.084** (2.550)
Total government support	-	0.047 (0.992)	-	-	0.042* (1.953)	-
Structural support from the federal government	0.063 (1.140)	-	-0.006 (-0.370)	0.040 (1.593)	-	0.003*** (3.606)
Structural support from provinces	0.013 (0.075)	-	-0.042 (-0.878)	0.097 (1.305)	-	0.006** (2.174)
Structural support from municipalities	-0.004 (-0.060)	-	0.002 (0.089)	0.041 (1.278)	-	0.003*** (2.948)
Structural support from other government levels	-0.123 (-0.351)	-	0.007 (0.065)	-0.298* (1.915)	-	0.000 (0.080)
Incidental government support	-0.005 (-0.568)	-0.058 (-0.831)	0.013 (0.514)	-0.095 (-2.462)**	-0.082 (-2,685)	-0.002 (-1.586)
Public income	-0.030 (0.877)	0.026 (0.127)	-0.061 (-0.997)	0.119 (1.243)	-0.091 (0.985)	-0.003 (-0.824)
Private contributions	-	-	0.063* (1.827)	-0.078 (-1.430)	-0.090* (-1.669)	0.005*** (2.816)
Sponsoring	0.745 (1.287)*	0.747* (1.872)	-	0.094 (0.498)	0.087 (0.463)	-0.006 (-0.871)
Fundraising efforts	-0.376 (-1.430)	-0.422* (-1.669)	0.039 (0.498)	-	-	-0.001 (-0.250)
Marketing efforts	19.603*** (2.816)	19.442*** (2.860)	-1.849 (-0.871)	-0.835 (-0.250)	-0.989 (-0.300)	-
Number of observations	78	78	78	78	78	78
R	0.490	0.478	0.279	0.417	0.371	0.588
Adjusted R ²	0.139	0.163	-0.044	0.064	0.065	0.259
Sig. of the model	0.021**	0.004***	0.759	0.137	0.094*	0.000***

*Significant at 10% level (p<0.1)

** Significant at 5% level (p<0.05)

*** Significant at 1% level (p<0.01)

support has no relation to any form of private support for museums. It does show an interesting relation between the three different levels of government. Federal support is negatively related to provinces, where a one euro per visitor increase in provincial support would result in a 15 cents decrease in federal support and one euro per visitor increase in municipal support would also result in a 15 cents decrease in federal support. The structural support of government levels show a crowding out effect. This means that hypothesis four is confirmed. In contrast, federal support and incidental government support show a crowding in effect: a one euro increase per visitor in incidental government support results in an increase of 84 cents in federal support.

The other levels of Dutch government show similar results. Both provincial and municipal support are negatively related to federal and municipal/provincial support. One euro increase of federal support per visitor results in 15 cents decrease of provincial support and 32 cents decrease in municipal support, one euro in municipal support increase results in a 15 cents decrease in provincial support and one euro in provincial support increase results in 84 cents decrease in municipal support. This means that hypothesis five and six are confirmed: provincial and municipal support crowd out structural support from other levels of government.

This indicates that an increase at any level of government support results in a decrease of support at the two other levels of government. This means that different levels of government support are complementary to other levels of government supports and they crowd each other out. However, only partial crowding out can be found. Thus, whenever a certain level of government increases its support, another level will not reduce it with the same amount, but less, resulting in a higher total income. Nonetheless, when a level of government decides to reduce its support, other levels of government will step in, but only to a certain extent. Municipal support does not show any further significant relations. Therefore hypothesis three is rejected. Municipal support does not have a positive relation to any form of private support.

All three levels of government show a positive relation to marketing efforts. This corresponds with the intentions of federal and municipal policy aims. Federal support is the strongest related to marketing efforts: one unit of marketing efforts (one extra social media follower) per visitor results in an increase of 59.50 in federal support.

All three levels of government also show a positive relation with incidental government support and other public aid. So, structural government support crowds in incidental or project support from public funding. When federal, provincial and municipal increase their support with one euro per visitor each, incidental government support increases with respectively 0.34, 1.31 and 0.26 euro.

Thus, table 6 shows that private contributions and sponsorship are not related to the level of government support, in any way. It does show that the level of private contributions is related to the level of sponsorship, marketing and fundraising efforts. An increase of one euro per visitor of private contributions results in 6.3 extra cents in sponsoring per visitor and vice versa in 75 cents in private contributions per visitor. So, private support for museums crowds in other sources of private support for museums.

As discussed before, fundraising efforts have a negative effect to private contributions. But it is assumed that the wrong proxy variable is chosen. In this research H7a must be rejected for this:

fundraising efforts do not have a positive relation to income from private sources. Other research that chooses for a different operationalisation of fundraising efforts, may come to different results.

Marketing efforts show a positive relation to private contributions and the aggregated amount of sponsoring and private contributions. When marketing efforts per visitor increase by one, they are respectively increased by 19.44 and 4.79 euro. This again indicates that other research, with a different operationalization for fundraising efforts, might accept hypotheses H7a.

Fundraising efforts was not significantly related to the three levels of government or to incidental government support. Therefore H7b is also rejected. It is, however, significantly positive related to other sources of government, like the European Union or different ministries. One increase in fundraising efforts on the scale from two to ten, results in an increase of 17 cents per visitor in incidental subsidies. Since marketing efforts are positively related to all sorts of Dutch government subsidy, other research might again show different results on this. Hypothesis eight is also rejected, since neither fundraising efforts nor government support, show a significant relationship to any sort of private income.

H9a predicted that size (prestige) has a positive relation to sponsorship. The museums were again divided into three groups according to their visitor number in: small ($n=26$, $M=1.15$, $SD=2.29$), medium ($n=26$, $M=0.790$, $SD=1.34$) and large ($n=26$, $M=0.219$, $SD=0.40$). This shows that small museum have the largest amount of sponsorship per visitor, followed by medium sized and then large museums. A two-sample independent t-test showed that the difference is only significant between medium and large museums ($t(29)=2.076$, $p<0.05$) and small and large museums ($t(50)=0.669$, $p<0.05$). This means that medium and small sized museums receive relatively more sponsorship per visitor than large museums and that the difference between small and medium sized museums is small, which means H9b is rejected.

H9b assumed a negative relationship between the prestige of a museum and the private contributions. Private contributions are divided by visitor number, to make the relative relation of size to private contributions more accurate. In this research, the closest measure to prestige is size (visitor numbers), three equal groups were formed based on their visitor number: small ($n=26$, $M=4.20$, $SD=6.39$), medium ($n=26$, $M=4.26$, $SD=7.67$) and large ($n=26$, $M=3.54$, $SD=3.26$). Three two-independent sample t-tests were conducted between all groups. All three tests indicated that there is no difference in private contributions per visitor between different sizes of museums. The tests showed the following test statistics: small vs. large; $t(37)=0.470$, $p>0.05$, small vs. medium; $t(50)=-0.34$, $p>0.05$, medium vs. large; $t(50)=0.445$; $p>0.05$. H9b predicted a negative relation between size (prestige) and private contribution, his hypothesis has to be rejected, because there is no relation at all.

A two-independent sample t-test was performed to see whether being part of the *Basisinfrastructure* has a positive effect on fundraising efforts (H10a). This test found that museums that are part of the *Basisinfrastructure* ($M= 6.67$, $SD=2.06$) have no significantly higher (or lower) degree of fundraising efforts than museums that are not part of the *Basisinfrastructure* ($M= 5.75$, $SD=2.72$). This means that hypothesis H10a is rejected ($t(76)=-1.116$, $p>0,05$).

The same test was conducted to see if members of the *Basisinfrastructure* ($M=0.20$, $SD=0.136$) had a higher level of marketing efforts per visitor than non-members ($M=0.11$, $SD=0.094$). This test, whereby equal variance was not assumed, revealed that marketing efforts are significantly higher for

museums within the *Basisinfrastructure* ($t(13)=-2.293$, $p<0.05$). This indicates that H10a, might not be rejected in other research that uses a different (proxy) variable for fundraising efforts.

To test H10b, a two-sample independent t-test was conducted to test whether members of the *Basisinfrastructure* received more private contributions per visitor (including and excluding sponsorship) than non-members. It was found that there is no significant difference between the two groups. Therefore H10b was rejected: members ($M=6.38$, $SD=8.06$; $M=6.03$, $SD=7.46$) do not receive more private contributions (including and excluding sponsorship) than non-members ($M=4.42$, $SD=6.15$; $M=3.63$, $SD=5.67$) ($t(76)=-0.970$, $p>0.05$; $t(76)=-1.284$, $p>0.05$).

4.3 Proportions

Besides the absolute amounts and amounts per visitor, proportions of all income sources in relation to the total income of museums were also looked at. This information was available for the previously used 78 museums plus an additional one. The proportions for each variables were grouped in three groups of approximately the same size. Then, the proportions of income of these groups were studied and reported in table 7. Multiple conclusions can be drawn from this table. Most of all, the table shows a crowding out effect between government subsidies and private contributions. When proportions of one of these increases, the other one decreases relatively a lot compared to public income.

Sponsoring and private contributions show a positive relation, which is consistent with the findings in the regression analysis. When private contributions to museums increase, the proportion of sponsoring also increases or remains the same, which means an increase in absolute amount.

Additionally, when public income becomes a larger proportion of total income, structural subsidies decrease much more rapidly than private contributions.

Structural subsidies are the largest source of income for the majority of museums. When the proportion of structural subsidies is low, the proportion of public income is relatively high compared to private contributions. However, private contributions decrease relatively the most when the proportion of structural subsidies is increased.

Table 7

Proportion of different income sources of total income

Proportion public income	N	Average proportion private contributions	Average proportion sponsoring	Average proportion total subsidy	Average proportion incidental subsidy
0> - <0.15	32	0.15	0.03	0.55	0.1
0.15≥ - <0.30	21	0.15	0.06	0.48	0.04
0.3≥ - 1	26	0.11	0.01	0.23	0.03
Private contributions (excl. Sponsoring)	N	Average proportion public income	Average proportion sponsoring	Average proportion total subsidy	Average proportion incidental subsidy
0> - <0.05	30	0.35	0.02	0.47	0.07
0.05≥ - <0.15	25	0.21	0.04	0.56	0.06
0.15≥ - 1	24	0.22	0.04	0.24	0.05
Private contributions (incl. Sponsoring)	N	Average proportion public income	Average proportion total subsidy	Average proportion incidental subsidy	
0> - 0.05	26	0.35	0.46	0.07	
0.05≥ - <0.2	29	0.23	0.55	0.06	
0.2≥ - 1	24	0.22	0.24	0.05	
Structural subsidies	N	Average proportion public income	Average proportion sponsoring	Average proportion private contributions	Average proportion incidental subsidy
0> - <0.35	31	0.37	0.05	0.23	0.08
0.35≥ - <0.6	21	0.27	0.03	0.07	0.04
0.6≥ - 1	27	0.14	0.02	0.08	0.06

4.4 Longitudinal research

A longitudinal study was performed to indicate trends in museum finances between 2010 and 2015. The sample consisted of ten museums with different collections, levels of income and locations across the country. The sample consists of six museums with a large total income (one million>) and four museums with a small total income (<one million). The percentage change in absolute amounts between 2010 and 2015 can be found in table 8. Besides absolute amount, the proportions of total income were also calculated, and the change between 2010 and 2015 can be found in table 9.

In five years, the total income of seven out of ten museums increased. The biggest increases in total income were found in the smaller museums. This is partly due to the changes in total structural subsidy from the government. The total structural subsidy increased for three out of four small museums, while the total structural subsidy of five out of six large museums decreased. However, when looking at the proportion of structural subsidy of total income, a decline or less rapid growth can be seen. This means that other sources of income are slowly increasing.

As regards to total incidental subsidies, a lot of decreases can be seen. Not all museums received incidental subsidies, this may be because they focussed on other sources of income than subsidies. The museums actively receiving incidental subsidies of a significant amount are: Bijbels Museum, Amsterdam Museum, EYE, Rijksmuseum Twenthe and Museum Rijswijk. Of these, only Rijksmuseum Twenthe saw an increase in total incidental subsidies. The decreases (and one increase) in proportions of incidental subsidies was equal to the percentage changes in absolute amounts. Interesting is that this museum saw a decrease of structural subsidies, which is in contrast with what was found in the regression analysis of the cross-sectional data.

It is harder to find a trend in sponsoring for museums, because this involves smaller amounts. Especially the smaller museums receive no sponsoring at all or lost their sponsors between 2010 and 2015. Except for the Bijbels Museum, all large museums receive sponsor income. The data shows inconsistent results. Three of the larger museums saw a decline in sponsorship investments, while two museums had a rise income from sponsoring.

Despite the mixed results for sponsoring, private contributions are in general given a boost. This trend of rising private contributions is very diverse and ranges between an increase of 1.4% to 772.9%. However, the increases in proportion are less big than the increase in absolute amount, which means other sources of money must also be increasing. Museum Veere had a large increase in private contributions (54.49%), but the proportion of private contributions decreased by 4.65%. For that museum, public income increased a lot.

The Natuurhistorisch Museum Rotterdam had a decline in private contributions, however the data from many other years is unknown. They received a lot of private contributions in 2014, which also resulted in an increase in proportion, so there cannot be spoken of a structural decline for that museum. The same applies to EYE; they have a lot of turbulence in income from private contributions, and it is therefore hard to speak of a structural decline.

Table 8

Percentage change from 2010 to 2015

Income source	Bijbels Museum	Amsterdam Museum	EYE	Natuurhistorisch Museum Rotterdam	Texels Museum	Rijksmuseum Twenthe	Museum Haarlem	Museum Rijswijk	Museum Veere	Pers- museum
Total income	0.62	19.70	-11.79	-12.89	-22.95	13.19	99.48	52.31 ¹	62.02 ¹	-7.16 ²
Total structural subsidy	-13.13	-1.11	11.60	-2.51	-7.36	-2.42	91.44	81.07 ¹	14.24 ¹	-13.77 ²
Total incidental subsidy	-24.29	-68.02	-92.90	-1.00	∞	210.62	0.00	-100.00	∞	-100.00
Sponsoring	0.00	∞	-6.48	-68.25	16.64	-25.00	-100.00	0.00 ¹	0.00 ¹	0.00 ²
Private contributions	1.41	107.21 ¹	139.89	-62.82	-16.90	18.88	772.90	∞ ¹	54.49 ¹	36.84 ²
Public income	-26.12	180.50	934.33	61.62	31.08	382.32	349.00	73.19 ¹	135.95 ¹	-4.85 ²

1. Measured from 2011

2. Measured from 2012

Table 9

Percentage change in proportions from 2010 to 2015

Income source	Bijbels Museum	Amsterdam Museum	EYE	Natuurhistorisch						
				Museum Rotterdam	Texels Museum	Rijksmuseum Twenthe	Museum Haarlem	Museum Rijswijk	Museum Veere	Pers- museum
Total structural subsidy	-13.67	-17.39	26.52	11.91	20.23	-13.79	-4.03	18.88 ¹	-29.49 ¹	-7.11 ²
Total incidental subsidy	-24.76	-71.18	-91.95	-100	∞	174.42	0.00	-100.00	∞	-100.00
Sponsoring	0.00	∞	6.02	-63.55	51.39	-33.74	-100.00	0.00 ¹	0.00 ¹	0.00 ²
Private contributions	0.78	86.73 ¹	171.97	-57.32	7.86	5.03	337.60	∞ ¹	-4.65 ¹	47.40 ²
Public income	-26.58	134.34	1072.63	85.54	70.12	326.11	125.09	13.71 ¹	45.62 ¹	2.50 ²

1. Measured from 2011

2. Measured from 2012

When looking at public income, a general increase can be found within the data. 7 out of 10 museums saw a general increase in public income. Of the other three museums, the Bijbels Museum sees a big structural decline and the Persmuseum sees a small structural decline in public income. When looking at the proportions of public income of the total income, only the Bijbels Museum experienced a decrease. Museum Rijswijk shows an increase in visitor numbers when comparing 2015 to 2010. However, the museum heavily expanded in 2012 which largely increased their public income. Despite this, a decline in public income can be seen from 2012, but this amount of public income is still far larger than the public income received in 2010.

There is no indication that an increase in public income results in a decrease of government grants, which was found by Maddison (2004) in the United Kingdom.

Thus, overall public income and private contributions are increasing for most museums, both in absolute amounts as in proportions. The structural and incidental subsidies are in general declining, especially in proportions of the total income. This total income has been declining for four out of ten museums, especially the larger museums have a rough time to keep their total income at a constant level.

5. CONCLUSION

The main objective of this research was to investigate the effect of public funding on other income sources for Dutch museums. The findings emerging from this research enable me to draw various conclusions.

The most important result is, that no significant relation could be found between government support and private support for museums in the Netherlands. This means that there is no crowding effect between government and private support. This result is in line with research by Brooks (1999) and Borgonovi and O'Hare (2004).

Nonetheless, when looking at more segregated variables, some crowding in and out effects were found within government support and within private support for the arts. The structural support of all three levels of government partially crowd out structural support by the other two levels of government. This means that different sorts of structural supports from the government are substitutes for each other, which is in line with the findings of Hughes and Luksetich (1999). In contrast, all three forms of structural government support crowd in incidental government support. Consistent with crowding in theories, this indicates that the government agencies and public foundations that ascribe these incidental subsidies see the structural subsidies as signals for quality or a stamp of approval and react by giving subsidies to these museums.

A significant relationship was also found within private support for the arts. The analyses show that private donations and sponsorship for museums are significantly positively related. This means that private support to museums crowds in other forms of private support. Therefore, private contributions and sponsorship are complementary goods.

Thus, there are no significant crowding effects between the government sphere and the market sphere, but there are crowding effects within the government sphere and between the market sphere (sponsorship, corporate contributions) and the social sphere (memberships, philanthropic contributions).

Nonetheless, the study into the proportions of different sources of income to total income also confirms that museums either receive a lot of support from the government or receive a lot of support from private sources. This study, and the longitudinal study, show a slight crowding out effect as well. Especially the longitudinal study shows that structural subsidies are declining and private contributions and public income are increasing. Since only a small sample is used, no actual conclusions can be drawn from this. This means that private contributions and public income to museums are rising, however this is not significantly related to government support.

The regression analysis also shows the importance of marketing efforts to structural government support and private contributions, by giving a significantly positive relation. It shows that Hughes et al (2014) were right and that crowding effects are influenced by an indirect impact, which is due to the (fundraising and) marketing efforts of the non-profit organisations. In other words, an organisation that is active in attracting attention, is more successful in attracting financial support.

5.1 Behaviour of organisations and other further research

Besides investment in fundraising, studies into crowding effects lacked attention to the non-profit organisations and focussed on the behaviour of donors. These studies assumed that the amount of

donations and contributions is a reaction to the amount of government support for non-profit organisations. Nonetheless, Horne, Johnson and Van Slyke (2005) already showed that it is not necessarily true that people are aware of these amounts. Additionally, the findings of this research shine light on another theory, which is focussed on the behaviour of organisations, instead of the behaviour of donors.

The marketing efforts of organisations were proven to be very important in fundraising. This indicates that the activities of organisations are crucial in fundraising. More research in the behaviour of organisations is necessary when determining the effect of government support on private contributions, since it is proven that the indirect effect is significant.

When researching the behaviour of organisations, the four spheres as described by Klamer (2016) are relevant. The different spheres show different environments, different sources of money and different attitudes, behaviour and motivations that drive these spheres. This thesis shows that museums either receive a lot of subsidies or receive a lot of private support, both from sponsors and philanthropists. There is no significant connection between structural subsidies and private support. Further research should examine whether this is because some museums are more suited for the government sphere and others more for the market or social sphere.

The results of this thesis show that it is possible that some museums know how to handle the bureaucracy of the government and some museums know better how to convince corporations why sponsoring museums gives them other benefits in return. Others are better to create a community within the social sphere and attract philanthropists and thereby corporations. It is important to look further than the reactions, motivations and behaviour of sponsors and more often include the behaviour of organisations when examining crowding effects.

Since it was hard to draw conclusions on causality, further research might dive deeper into this. A useful analysis would be to see how museums react to structural subsidies and private support, when examining fundraising and marketing efforts.

Furthermore, this research did not find anything that supports the superstar theory that states that popularity attracts more popularity and that a winner-take-all market exists. This is because government and private support show no significant relation and when looking at the proportions: Private contributions decrease most when the proportion of structural subsidy increases. This means that money does not always attract more money. The longitudinal research and tests to the relevance of size and prestige even showed that larger museums are struggling more to keep their total income at a constant level than smaller museums and receive the smallest amount of sponsoring per visitor.

It would be interesting to research crowding effects between superstar museums on a global scale, instead of the national scale which is usual for studies to crowding effects. Superstar museums are each other's competition, which would make this research interesting.

Lastly, the public system in the Netherlands is trusted (Corruption Perception Index, 2016). The results of this research may be different for other countries are less trusted or even seen as corrupt. Further research should indicate whether the results can be generalized over these countries.

5.2 Limitations

This study has multiple limitations, which should be taken into account when interpreting the findings of this research. As discussed before, studies to crowding effects assume that individuals and corporations are aware of the amount of government support non-profit organisations receive. However, Horne et al (2005) showed how this is not necessarily true.

Furthermore, when analysing the financial statements of museums, it was found that financial statements of museums show little consistency. Therefore, some variables had to be aggregated and less data could be used. This resulted in 78 museums that could be used in the regression analyses. Because some data could only be measured as an aggregated variable, it was not possible to distinguish between pure gifts and other contributions. Membership contributions were included in the variable private contributions. Since there are clear benefits of becoming a member of a museum, this is not a pure gift.

This research followed the advice of Kingma (1989), Brooks (200a) and Hughes et al (2014) to segregate variables as far as possible and to analyse only a small sector. By doing this, a much more detailed and accurate conclusion can be drawn. In further research, it is good to follow this advice.

Forming this data set was a time intensive process and everything was added by hand. Although, carefully conducted, some typos and accidental errors might have slipped in. Lastly, it was found in section four that membership complexity and promotion is probably not a suitable proxy variable for fundraising efforts. Possibly because it does not cover all aspects of fundraising efforts. For further research, I recommend using the FTE's in fundraising efforts or another variable that covers all areas of fundraising.

6. IMPLICATIONS FOR POLICY

The absence of a relation between structural government support and private support has a major impact on public policy. The Dutch cultural policy has been focussed on cultural entrepreneurship and private giving to the arts (Leden, 2016). The goal is that private institutions will compensate for budget cuts in government support for the arts. However, this research shows that it is unrealistic to assume that private contributions will fill the gap caused by a decrease in government support, since there is no relation between the forms of support.

This research did find that structural government support from different levels are substitutes for each other. So, when federal support to the arts would be cut, provinces and the municipality step in. The regression model found that a one euro per visitor decrease in federal support, results in a 32 cents extra support from municipalities and 15 cents extra support from provinces. Nonetheless, this would mean a decrease of 33 cents in incidental government support and no change in private or corporate support. This means that a one euro decrease in federal support, results in 86 cents decrease in total income per visitor.

This is disastrous for the Dutch museum sector, because the government does expect the private institutions to fill this gap, but the results show that, although private contributions are increasing, they can only fill the gap until a certain extend.

The results also indicate that it is favourable that policies put emphasis on cultural entrepreneurship and community building, because marketing efforts are positively related to private contributions (and sponsorship). Thus, the government should emphasize that museums must invest in marketing efforts, because this makes it easier to attract private contributions. Additionally, private contributions show a positive relationship to income from sponsors. So, a focus on marketing efforts, could help fill the gap that budget cuts in cultural subsidies cause.

Based on the results of this research, I would recommend the government to be very cautious in cutting the budget for museums. Private contributions to museums are increasing, but the lack of significant relationships between government funding and private support are worrisome. I would also suggest to reward museums that invest in marketing, because this makes it easier to attract money from private sources. At this moment, members of the *Basisinfrastructure* show significantly more marketing efforts than non-members. A reward system that reduces these differences, will result in a more sustainable museum sector.

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APPENDIX 1: CODEBOOK

Codebook

Units of analysis: financial statements (within an annual report)				
Concept	Variable	Measurement	Units of measurement	Further Explanation
Income sources	Total income	Interval	Total amount of euro a museum receives for a year	
	- Total structural government support	Interval	Yearly total amount of structural income a museum receives for a year from all levels of government. accumulated	
	- Ministry of Education, Culture and Science	Interval	Total amount of structural income from the Ministry of Education, Culture and Science	
	- Province	Interval	Total amount of structural income from the province	
	- Municipality	Interval	Total amount of structural income from the municipality/municipalities	
	- Other structural subsidy	Interval	Total amount of structural income from all other levels of government	For example the structural subsidies from the European Union and other Dutch Ministries
	Incidental/project subsidies	Interval	Total amount of incidental, one time subsidies from all levels of government accumulated	This also includes public foundations.
	Income from sponsors	Interval	Income from corporate sponsors who receive something in return for their gift	
	Private contributions	Interval	Gifts from private philanthropists or firms	This includes membership contributions, private foundations and contributions from corporations (which are not sponsoring)
	Public income	Interval	Accumulated income over a year from entrance admissions, the museumshop and the restaurant or café.	For the sake of consistency, only include these when it is highly specified that it is these categories. Other categories like admissions to events or guided tours is not included.
	Entrance admissions	Interval	Yearly income from the sale of entrance tickets	This includes revenue from people entering with a <i>Museumcard</i> , but excludes revenue from the sale of the <i>Museumcard</i> . This excludes revenue from sales at other locations or abroad.

	Other public income	Interval	Yearly income from the museumshop and the restaurant and/or café.	
Museum size	Visitor numbers	Interval	The amount of visitors to a museum in 2015	This includes free entrances and schools.
Fundraising efforts	Membership complexity	Categorical	No = 1 Yes. one category = 2 Yes. stratified = 3 Yes. only corporate = 4 Yes. one category + corporate membership = 5 Yes. stratified + corporate membership = 6	A membership offers members free entrance to a museum and sometimes other benefits. There can be only one option to become a member (one category) or a member can choose a membership best suited for him/her. When there is one set of benefits but different prices for an individual, couple or family. this also counts as stratified.
Fundraising efforts	Membership promotion	Categorical	Not applicable = 1 No. not on website = 2 Yes. on website = 3 Yes. on homepage website = 4	The membership is sometimes referred to as a donor contribution. When this is periodical and the donor receives the same benefit as a member usually receives (free entrance). this counts as a membership. A simple 'support us' button on the homepage does not count as the membership being visible on the homepage. Also. the membership being mentioned in a dropdown menu does not count as homepage. The promotion on the homepage only counts when the membership is mentioned. for example 'membership' or 'become a friend'. 'Become a donor' only counts when this includes the same contribution as a membership.
Type of Museum	Type of museum	Categorical	Visual arts History Natural History Business. science and technology Ethnology	Visual arts = art or applied arts. This includes museums focused on film, photography, sculptures and architecture. History includes archeology and culture history. Natural history = museums focused on biology, geology, paleontology and ecology. This includes zoos with a museum function and botanical gardens, Business, science and technology = museums focused on exact sciences such as astronomy, mathematics,

				<p>physics, chemistry or techniques like industrial processes and crafts.</p> <p>For the dubious cases, I checked how the museums described themselves and what they focused on. In this way, a museum about the history of shipping, could be defined as history instead of business, science and technology, when they focused more on the historical aspect.</p>
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APPENDIX 2: MUSEUMS IN THE SAMPLE (N=78)

1. Historischgenootschap Beemster
2. Amsterdam Pipe Museum
3. BAK. Basis voor Actuele Kunst
4. Biesbosch Museum Eiland
5. Bijbels Museum
6. Comenius Museum
7. De Zaanse Molen Vereniging
8. Museumplein Limburg
9. Stichting Texels Museum
10. EYE
11. Flessenscheepjesmuseum
12. Fries Museum
13. Geologisch Museum Hofland
14. Haags Historisch Museum
15. Het Dordts Patriciërshuis
16. Het Nieuwe Instituut
17. Historische Tuin Aalsmeer
18. Huizer Museum
19. Humanity House
20. Huygensmuseum Hofwijck
21. Ikonenmuseum Kampen
22. Japanmuseum SieboldHuis
23. Kasteel De Haar. Stg.
24. Kasteel Museum Sypesteyn
25. Katwijk's Museum
26. Keramiekmuseum Princessehof
27. Landgoed Fraeylemaborg
28. Literatuurmuseum
29. Museum Beelden aan Zee
30. Museum Buurtspoorweg
31. Museum de Buitenplaats
32. Museum De Koperen Knop
33. Museum Gevangenpoort
34. Museum Haarlem
35. Museum Hindeloopen
36. Museum Jan van der Togt
37. Museum Kennemerland
38. Museum Meermanno
39. Museum Ons' Lieve Heer op Solder
40. Museum Paul Tétar van Elven
41. Museum Rijswijk
42. Museum Slot Loevestein
43. Museum Speelklok
44. Museum Stad Appingedam
45. Museum Sterrenwacht Sonnenborgh
46. Museum Swaensteyn
47. Museum Terra Maris
48. Museum Veere
49. Museum Vlaardingen
50. Museum Wierdenland Ezinge
51. Muzee Scheveningen
52. Nat. Reddingmuseum Dorus Rijkers
53. Nationaal Baggermuseum
54. Nationaal Monument Kamp Vught
55. Nationaal Vlasserij-Suikermuseum
56. Nationaal Vlechtmuseum
57. Naturalis Biodiversity Center
58. Natuurhistorisch Museum Rotterdam
59. Nederlands Fotomuseum
60. Openluchtmuseum Ootmarsum
61. Paleis Het Loo Nationaal Museum
62. Persmuseum
63. Rijksmuseum Twenthe
64. Rijksmuseum van Oudheden
65. Stadsmuseum Doetinchem
66. Stg. Amsterdam Museum
67. Stg. Centraal Museum
68. Stg. GeoFort
69. Stg. Kasteel Amerongen
70. Stg. Museum Nijkerk
71. Stg. Nationaal Sleepvaart Museum
72. Stg. Nederlands Volksbuurtmuseum
73. Stg. TwentseWelle
74. Stichting Glas
75. Streek & Landbouwmuseum
Goemanszorg

76. Techniekmuseum HEIM
77. Touwmuseum 'De Baanschuur'
78. Trompenburg Tuinen & Arboretum
79. Valkerij en Sigarenmakerij Museum