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Are culture houses making places more attractive?

Hanna Nyborg Storm
Copenhagen Business School
Department of Innovation and Organizational Economics
storm@tmforsk.no

Abstract

Are culture houses making places more attractive? Hanna N. Storm, Copenhagen Business School, enrolled 1.10.2014, expected final date 30/9/2017. Email: hns.ino@cbs.dk. Communities are encouraging development of cultural amenities as a strategy for improving quality of life, attracting productive workers and promoting urban revitalization. Art, culture and aesthetics have become important factors to promote attractive places to live.

Richard Florida is particularly known for the assumption that "the creative class" are attracted to cultural diversity and urban amenities, and that their presence leads to innovation, higher productivity and growth. Florida has been complimented by theories that highlight regeneration projects, often termed the Bilbao or Guggenheim effect after the successful regeneration of the city of Bilbao. Many Norwegian communities are struggling with low growth in jobs and population. Ideas about the creative class, the Bilbao effect and related theories can be seen as grand solutions to these challenges, and seem to have been adopted by regional and local policymakers. Partly inspired by such ideas, there has been a massive investment in culture houses. The culture houses are often large and spectacular architectural structures that not only intend to serve as arenas for local community life but also aim to attract the attention of tourists, investors and future residents who can contribute to economic and demographic development. The empirical evidence of the effect of these types of projects are however lacking. The theories of the positive effects of art and culture on development have in general been criticised for being a form of misguided political rhetoric, and Florida in particular for that his assumptions are based on "suggestive correlations" that disregard causality. The use of signature architecture is also controversial. Some argue it guarantees urban development in itself, while opponents point out that the gains are not automatic and the costs might outweigh the benefits. The object of this paper is to analyse the effect of the opening of culture houses on regional development in Norway. This study will be the first of its kind, as we are not familiar with empirical studies concerning the effect of contemporary buildings hosting cultural institutions beyond case studies of single projects. There is a lack of empirical studies addressing this issue in a European context in particular, which can partly be ascribed to a lack of tradition to consider cultural amenities as drivers of growth. This paper sets out to analyse the effect of the opening of 51 culture in Norway in the period 2001-2014 using a panel data structure and a difference-in-difference model. The paper has two main approaches. The first approach is to investigate the link between culture houses and cultural amenities. This is done through analysing whether opening of new culture houses has led to more or a different type cultural amenities, and whether it has led to more jobs in the art and culture sector. The second approach is to investigate if the culture house has made municipalities more successful in terms of attracting residents. Main

data sources are register data from Statistics Norway covering the years 2000-2015. Information on culture houses are collected from newspaper articles and webpages. The results show that the new culture houses have been followed by an increase in number of cinema displays and theatre performances, and there is also a positive effect on number of jobs in industries related to art and culture. The results are however less conclusive when it comes to attracting residents. There is some weak support of that culture houses have contributed to increased net migration, but the results overall indicate that the dominant explanation is that they were opened in municipalities where net migration was already increasing.

Are culture houses making places more attractive?

Art, culture and aesthetics are increasingly being used as a strategy to promote attractive places. Theories about the creative class, the Bilbao effect and other related theories seem to have been adopted by regional and local policymakers in Norway. Partly inspired by these ideas, there has been a massive investment in culture houses. The culture houses are often large and spectacular architectural structures that beyond serving as arenas for local community life also aim to attract the attention of potential tourists, investors and future residents who may contribute to the economic and demographic development of places. The empirical evidence of the effect of these types of projects are however lacking. This paper sets out to investigate the effect of opening of 51 culture houses in Norway in the period 2001-2014 using a panel data structure and a difference-in-difference approach. The effect on migration is the main focus, but it is also be considered other effects on local cultural amenities and jobs in the culture sector. The results show that the new culture houses have been followed by an increase in number of cinema displays and theatre performances, and there is also a clear indication of a positive effect on number of jobs in industries related to art and culture. The results are however less conclusive when it comes to attracting residents. It is confirmed to be a positive association between culture houses and net migration, but the results further show that the dominant explanation is that they were opened in municipalities where net migration was already increasing.

1. Introduction

Communities are encouraging the development of cultural amenities as a strategy for improving quality of life, attracting and retaining productive workers and promoting urban revitalization. Art, culture and aesthetics have become important factors to promote attractive places to live (Sheppard et al., 2006, Bille and Schulze, 2006). Where the focus previously was on jobs and economic development, it has gradually become an important task for policymakers to facilitate for goods such as arts and culture (Clark et al., 2002).

The technological development have made distances and traditional resources less important, but it is still the urban areas that have had the highest growth. This can according to Gleaser et al. (2001) be ascribed to the amenities the urban areas offer, including services and consumer goods like restaurants, theatres and social diversity. The empirical evidence however only partly support this. Gleaser et al. (2001) find that cities with more restaurants and live performance theatres have grown more quickly in both the US and France, but they find no connection between art museums and growth.

It is in particular assumed that individuals with high human capital are attracted to cultural amenities (Falck et al., 2011). Clark (2002) find that college graduates are attracted to what he calls constructed amenities, which include opera, juice bars, museums and Starbucks. Richard Florida (2002) is particularly known for the assumption that “the creative class” are attracted to cultural diversity and urban amenities, and that their presence leads to innovation, higher productivity and growth.

Regional and urban planning has increasingly become intertwined with cultural planning and programming, and cultural amenities are used as part of strategies to revitalize and develop places (Bille and Schulze, 2006). Famous examples using such concepts in Europe are Glasgow, Newcastle and Bilbao. Glasgow and Bilbao are in particular known for being deindustrialized communities that have used arts and culture in urban development. The transformation of Bilbao has even become known as the “Bilbao effect”, after opening of the iconic Guggenheim Museum in 1997 has contributed to making Bilbao a famous tourist destination and a symbolic site of industrial regeneration (Bille and Schulze, 2006, Henningsen et al., 2015, Plaza, 2006).

Theories about the creative class, Bilbao effect and other related theories seem to have been adopted by regional and local policymakers in Norway. Stimulating economic growth and finding countermeasures for depopulation is a main concern at these levels of government. The theories about the creative class and the Bilbao effect can be seen to offer grand solutions to these challenges (Henningsen et al., 2015).

Henningsen et al. (2015) show expenditure on the cultural sector have increased considerably, and that a large part of the costs are related to investments in culture houses. According to a survey carried out by the newspaper *Aftenposten* more than 60 culture houses have been commissioned to be built in the period 2003–2018, at an estimated investment cost of about NOK 14 billion (Henningsen et al., 2015, Gjestad et al., 2014). A major motivating factor behind the massive investments appears to have been Florida- or Bilbao-inspired ideas (Henningsen et al., 2015). The culture houses are often large and extravagant architectural structures, and are intended not only to serve as arenas for local community life but to draw the attention of the outside world to the local community or region. These arenas also aim to attract the attention of potential tourists, investors and future residents who may contribute to the economic and demographic development of places (Henningsen et al., 2015, Agedal et al., 2009). Public institutions that focus on art and other forms of ‘high’ culture are considered to characterize the progressive, dynamic place that will attract investments, encourage civic pride and welcome innovative individuals (Plaza, 2006).

The theories of the positive effects of art and culture on economic development have however been subject to much criticism for essentially being a form of misguided political rhetoric (Henningsen et al., 2015). The use of signature architecture is also controversial in urban planning and development. Many argue that signature architecture guarantees urban development in itself, but opponents point out that the gains are not automatic, and the costs might outweigh the benefits (Plaza, 2006).

The object of this paper is to analyse the effect of the opening of culture houses on regional development. This study will be the first of its kind, as we have not come across empirical studies of the effect of buildings hosting cultural institutions beyond case studies of single projects. There is a lack of empirical studies addressing this issue in a European context in particular, which can partly be ascribed to a lack of tradition to consider cultural amenities as drivers of growth. Research in Europe tend to highlight the predominance of economic conditions as the main drivers of migration and other measures of growth (Rodríguez-Pose and Ketterer, 2012).

This paper sets out to analyse the effect of culture houses using a panel data structure and a difference in difference approach. The paper has two main approaches. The first approach is to investigate if the culture house has made municipalities more attractive in terms of attracting more residents after opening a new culture house. The second approach is to investigate the link between culture houses and cultural activities and services. This is done through analysing

whether opening of new culture houses has led to more or a different type cultural activities, and whether it has led to more jobs in the art and culture sector. Main data sources will be register data from Statistics Norway, covering the years 2000-2015.

The paper is organised as follows. Section 1 accounts for the context and theoretical relevance. Section 2 outlines the model and data, while section 3 presents descriptive statistics. Section 4 presents the results, and section 5 discusses and concludes.

1.1 Cultural amenities and growth

Glaeser et al. (2001) distinguish between four types of urban amenities that are driving growth. The first type is services and consumer goods, like restaurants, theatres and social diversity. The second type of urban amenity is aesthetics and physical settings, like architecture and weather. The third type is public services. Good schools and low crime are linked to urban growth. The fourth type of amenity is speed, meaning that access to services and jobs is a function of how easy it is for individuals to move around. As time becomes more valuable, individuals will avoid areas where transport costs are high (Glaeser et al., 2001).

Migration flows consist of different kinds of people, who have different motives for moving to or from a place. Everyone are according to Clark (2004) driven by private goods concerns, such as job and income, and local amenities. It may be that those who do not work, such as retired, are primarily driven by amenities, while persons with fewer job opportunities are more driven by availability of jobs. But the talented workforce should be driven by a combination of jobs and amenities. Local amenities are to some degree important for everyone.

There has been an increasing focus on the knowledge society and highly educated and mobile labour force (Clark et al., 2002). Richard Florida is particularly known for the assumption that presence of *talent*, defined as certain types of knowledge and human capital, leads to economic growth. Florida finds a correlation between the presence of knowledge-intensive firms and talent, and interprets such correlations as an expression of that knowledge intensive businesses choose to locate where creative and highly educated people prefer to live. Talent is according to Florida attracted by diversity and openness (Florida, 2002).

Culture is a broad concept that can be distinguished as an aspect related to ideas, norms and habits, as a sector of and as art (Bille and Schulze, 2006). Florida emphasises in particular the first type, highlighting the importance of values like tolerance, attitudes to change and diversity. Localities with more tolerant and open culture appear attractive for in-flowing human capital. But he also includes the two other types, like a varied cultural offer and good meeting places as central elements in creating attractive cities. A city's cultural offer is however not at the core of the theory, but can be understood as means to make cities more attractive for human capital. It follows that there is no claim that growth will necessarily come from culture and cultural industries (Lysgård, 2012).

Florida's theories have received considerable attention, but is also criticized for that his assumptions are based on "suggestive correlations" that disregard causality (Tubadji et al., 2014, Bille and Schulze, 2006). Even if there is a causality behind this correlation, it can not be determined neither direction or magnitude of the effects. It could very well a third factor associated with the presence of both talent and creative firms (Bille and Schulze, 2006). Florida is further criticized for not taking into account the impact of other city-specific characteristics that might also influence the localizations of economic agents (Boualam, 2014). Isaksen (2005) attempted to implement Florida's theories in a Norwegian context, and points out that there

are many other factors that are relevant to explain why highly educated people and knowledge intensive businesses are both located in cities. Andersen et al. (2010) further show that the significance of Florida's theories is overrated in Nordic smaller cities, and that it is job opportunities that are the primary reason for location of "the creative class".

Florida has revitalized the interest of using culture as tool for development, but is only one of a wide range of theories and studies highlighting the positive effects of art and culture on economic development. Cwi and Lyall (1977) pioneered the first generation of economic impact (EI) studies, popularised in the 1980s (Bille and Schulze, 2006, Henningsen et al., 2015). Florida and Cwi and Lyall represents two different approaches to studying the effects of arts and culture on regional development; focusing on short-run spending impacts and long-run growth impacts.

The short-run spending impacts are mainly due to the fact that the arts and culture can attract visitors that spend money and thus effects the local economy. This includes cultural goods and services directly, but are also related goods and services like restaurants, accommodation, shopping etc. The long-run growth impacts consist of two types of effects; arts and culture as a localization factor for people, companies and investments, and the impact of culture on creativity etc. Arts and culture can also play an important role for both image and knowledge of a place, which is important for attracting tourists, inhabitants and firms (Bille and Schulze, 2006).

A culture house can be assumed to have an short term impact on the community by attracting visitors. In the direct way through concerts, theatre performances or cinema. The most spectacular houses can also itself become a tourist attraction, like in the case of Guggenheim. The expected long-term effects is that the building itself and the cultural amenities contributes to making the community attractive for residents and companies. The question is whether just one institution is able to transform a whole community. Bille and Schulze (2006) argue that Guggenheim is a unique case, and that most single institutions are too small to trigger such a process of development. More important is the cultural life created by many cultural institutions. Another important aspect is the significance of being the pioneer. As more cultural houses are being opened, the effect can be expected to be diminishing.

A general challenge in analysing the effect of local cultural amenities is that cultural amenities are not exogenously determined, unlike natural amenities like weather. It is for instance not possible to link an observed share of human capital in a region to the cause of cultural amenities and, consequently, it is not guaranteed that expenditures on cultural amenities attract human capital (Falck et al., 2011). The use of art data is highly sensitive to endogeneity issues (Tubadji et al., 2014), which in particular comes from the ability and willingness of the local high-human-capital-population to pay for cultural services (Falck et al., 2011).

Few studies has addressed this endogeneity problem properly, but an interesting exception is Falck et al. (2011) that find that proximity to a baroque opera house is a strong predictor of the share of high-human-capital employees in German regions. They argue that the development of baroque opera houses did not indicate regional wealth or predict future prosperity, but was a result of a competition for prestige. By contrast, opera houses built during and after the Industrial Revolution were built to meet a growing demand for music, mainly driven by economic development. Given that German regions have been and are still shaped by industrialization patterns, only opera houses that were built before 1800 can be viewed as exogenous to today's regional development. Proximity to these opera houses should accordingly be exogenous to the distribution of high human-capital that originates from the Industrial Revolution (Falck et al., 2011).

1.2 Culture houses

Local and regional governments in Norway have since the 1990s developed an infrastructure of culture houses. The statistics on local governments' investment expenditure and media reports of an ongoing "culture house boom" that indicate that this trend has accelerated in the 2000s. The development of culture houses signal a shift in orientation of Norwegian cultural policy away from a focus on the broad concept of culture and onto more elitist forms of art and culture. The culture houses are specifically designed to facilitate experiences of professional performing arts (Henningsson et al., 2015).

A culture house is a public building that is designed to hosts cultural activities, but it is a matter of definition what should be included in the term. The culture house network has following definition: "A culture house is a professionally managed building for culture and cultural production. A local and regional meeting place and arena for amateur and professional performers of art and cultural activities. Depending on the content can culture house also be termed as an art and cultural institution specializing in cultural production and dissemination [my translation]" (Norsk Kulturhusnettverk, 2015).

There is no register of culture houses, but national network of culture houses has currently 115 members, which they approximate represents 95 percent of the culture houses (Norsk Kulturhusnettverk, 2015). We have selected a sample of 51 culture houses that have opened over in the period 2001-2014. These are collected from the survey of Gjestad et al. (2014) and the member list of the network of culture houses (Norsk Kulturhusnettverk, 2015). In this sample, there is a large variation in sizes and types of houses. In some of the large cities, there are specialised facilities like professional concert halls designed by famous architects. The majority are however multifunctional. The culture house often includes a cinema and a scene that can be used for theatre performances and concerts. Some have also located the library and culture school in the building. In smaller municipalities, it is also common that the culture house is also located together with sporting facilities, hotels, schools or the town hall. We have included these in the sample, but left out single scenes in association with schools, town halls etc. The architectural expression also varies from spectacular architectural structures to renovated buildings that do not draw particular attention.

Figure 1 shows where the 51 municipalities that have opened new culture houses in the period 2001-2014 are located. The map shows that there is a relatively even geographical distribution where municipalities in all parts of the country are represented. Larger cities like Oslo, Trondheim and Stavanger are represented in the sample, but it is also represented regional centres in more sparsely populated areas.

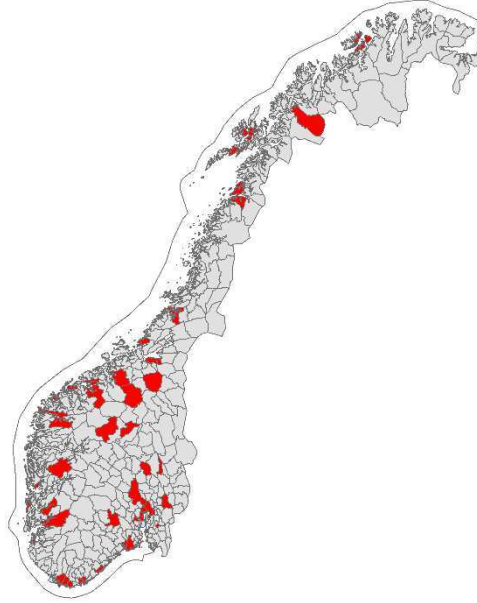


Figure 1: Municipalities that has opened culture houses in the period 2001-2014 marked in red.

2. Model

The fact that culture houses are built in different municipalities and years are exploited by contrasting net migration in municipalities with and without new culture houses in the period 2000-2014. A difference in difference (DD) model is estimated:

$$Nm_{jt} = \alpha + \delta(Ch_{jt}) + \gamma(\ln Emp_{jt}) + \varphi(Dem_{jt}) + \mu_j + \tau_t + \varepsilon_{jt} \quad (1)$$

The dependent variable is net migration in percent of population municipality j in year t . Ch is the binary treatment variable indicating whether or not the municipality has a new culture house, and is equal to one from the year the culture house opens to the end of the period, and zero otherwise. A vector of municipality dummies, μ_j , controls for mean differences in net migration across municipality, and year dummies, τ_t , control for net migration that is common to all municipalities. Further dummies control for linear and quadratic municipality time trends, and county by year dummies. Some models also control for jobs and demographics characteristics of the municipality. ε represents the unobserved characteristics of the municipality, which is assumed to be independent to the opening of the cultural house, have the same distribution over time and is normalized to have mean zero (Imbens and Wooldridge, 2009). Standard errors are throughout clustered at municipality level to prevent serial correlation produce biased standard errors, due to presence of correlation between outcomes within groups and time periods.

The main equation says that in the absence of new culture houses, net migration is determined by the sum of a time-invariant municipality effect and a year effect that is common across municipalities. Although the treatment and control municipalities can differ, this difference is meant to be captured by the municipality fixed effects. The treatment effect is the impact of the marginal effect of the single binary regressor that equals one if treatment of opening of a

culture house occurs and zero if treatment does not occur (Angrist and Pischke, 2009, Cameron and Trivedi, 2009).

In the ideal case, the establishment of culture houses would be independent, random events that varied in timing, according to size and geographical location and had no spill over effect to neighbouring municipalities. If these conditions are met, the equation will provide an unbiased estimate of the average treatment effect. In this case, the assignment to the treatment of opening a culture house can however not be claimed to be entirely random. The events are also not entirely independent events, where the decision of building a new culture house can be affected by presence of other culture houses in the region. In the same line of reasoning, it is plausible that there can exist spill over effects, where neighbouring municipalities are also effected by the opening of a culture house. The opening of a culture house in a municipality can make the neighbouring municipality more attractive. Some of these situations can, and will, be controlled for. It is important to control for observable differences in the distribution of characteristics between treatment and control groups, but it is at the same time important to avoid controlling for variables that are outcome variables affected by the treatment itself, which can be a challenge. For instance can labour market factors be directly affected by the opening of the culture house by generating new jobs. When choosing which covariates to include in the model, the literature is according to Imbens and Wooldridge (2009) not helpful beyond warnings about including covariates that are themselves influence by the treatment.

The DD approach identifies the effect of opening a new culture house by comparing the change in the outcome of interest before and after the new culture house in treatment and control municipalities. The key identifying assumption is that the migration trends would be the same in both groups of municipalities in the absence of the opening of the new culture houses. An apparent concern is that the treatment and control groups are very different types of municipalities, it is not entirely random which municipalities that decide to build culture houses.

Looking back at figure 1 it is clear that the municipalities with new culture houses are having different level and development of net migration, but the question is too what degree this is due to the establishment of culture houses or pre-existing trends. Adding municipality-specific time trends allows treatment and control states to follow different trends in a limited but potential revealing way. Estimation with municipality specific trends are more likely to be more robust and convincing when the pretreatment data establish a clear trend that can be extrapolated into the posttreatment period (Angrist and Pischke, 2009).

The main concern using this approach is possible time varying omitted variables that might systematically effect either the treatment or control group. A central assumption is that there are no unobserved characteristics that is associated both with the potential outcome and the treatment (Imbens and Wooldridge, 2009). Substantial changes over time in the differences in the observable characteristics of the two groups might suggest unobserved compositional change, calling the empirical strategy into question.

2.1 Data

All data on demographics and labour market are collected from Statistics Norway's databases and covers the years 2000-2014. Information on culture houses are collected from the survey of Gjestad et al. (2014) and the member list of the network of culture houses (Norsk Kulturhusnettverk, 2015). This is supplemented with information from official webpages,

public documents etc. Data on theatre performances are provided directly by The Norwegian Touring Theatre (Riksteateret) and cover the years 2005-2014.

3. Descriptive statistics

Figure 2 presents the development in mean net migration for all municipalities that has opened new culture houses in the period 2001-2014 compared to the control group of municipalities that has not opened culture houses in the period. For each year it is indicated how many culture houses that opened, in total 51.

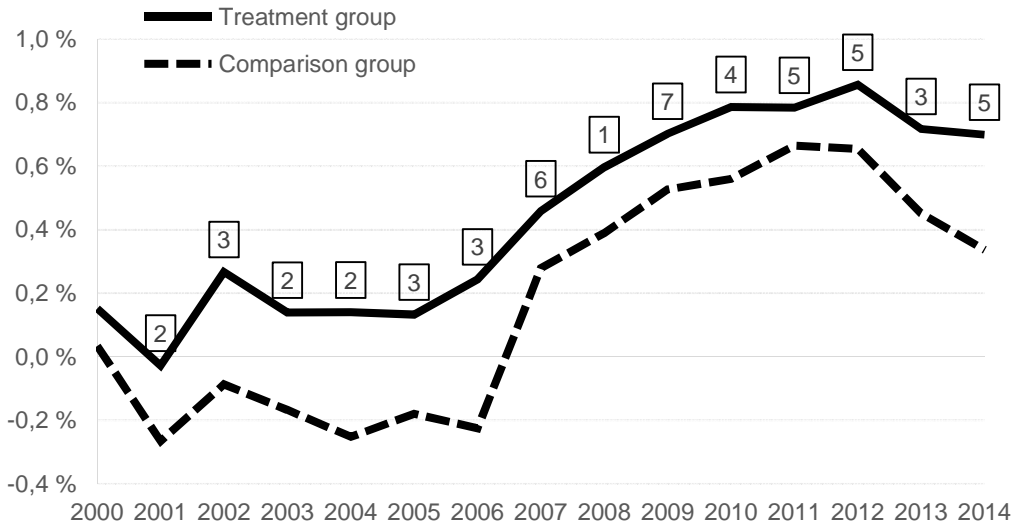


Figure 2: Mean net migration in 2000-2014 in percent of population in municipalities that has opened new culture houses in the period 2001-2014 compared to municipalities that has not opened new culture houses. The boxes show how many culture houses that has opened each year.

The figure shows that treatment group has had a higher net migration in all years. It can also be seen that the net migration increased in both groups of municipalities. It was in particular a large growth after 2006 for the municipalities in the control group. There was a large immigration to Norway in this period, as a result of the EU enlargement in 2007. A challenge is to be able to isolate the effect of establishing a culture house from this trend.

Figure 3 show the mean net migration collapsed in five year before and after opening of the culture houses. The solid line and left axis show mean net migration while the dotted line and right axis show mean net migration in percent of population.

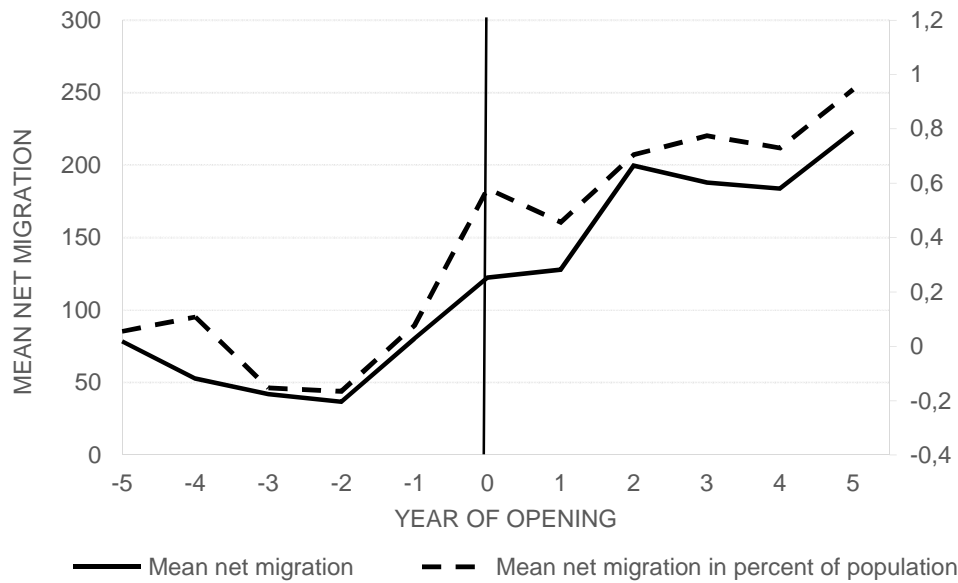


Figure 3: Mean net migration and mean net migration in percent of population in five years prior and five year after opening of culture house. N=20

It can be seen that the migration has increased in the period after the opening of the culture houses, which can indicate that the municipalities has become more attractive after the event. It can also be seen that there was a positive trend before the opening. There is a strong growth three years prior to the opening, which continues after opening, but then evens out. In year 5 there is again a growth. An alternative explanation is that the culture house has a positive effect on migration even before it opened.

The question is to what degree this observed growth can be explained by the opening of the culture house or if it is just an expression of a pre-existing trend in the municipality. To do this we must turn to the empirical model in the next chapter.

3.1 Demographic and labour market factors

Table 1 shows further descriptive statistics. The municipalities that has opened a culture house in the years between 2001 and 2014 are shown as a group and compared to the group of municipalities that has not opened a new culture house in this period. Statistics for the beginning and end of the period are reported, as well as the development.

Table 1: Descriptive statistics of labour market on demographic factors in municipalities with and without new culture houses. * indicates a difference of $p < 0.05$.

		2000	2014	Growth 2000-2014	Percent growth 2000-2014
Population	Treated	33 804.00	39 889.14	6 085.14	18.00
	Comparison	7 306.35	8 155.73	849.38	11.63
	Difference	26 497.65*	31 733.41*	5 235.76	6.38
Net migration	Treated	15.86	375.06	359.20	2 264.40
	Comparison	23.55	50.47	26.92	114.29
	Difference	-7.69	324.59*	332.28	2 150.11
Share of population living in densely populated areas	Treated	69.65	74.15	4.50	6.46
	Comparison	45.22	50.52	5.30	11.72
	Difference	24.43*	23.63*	-0.80	-5.26
Share of population with higher education	Treated	30.58	44.81	14.23	46.54
	Comparison	23.17	35.96	12.79	55.21
	Difference	7.41*	8.85*	1.44	-8.67
Share of population below age 45	Treated	60.71	56.37	-4.34	-7.16
	Comparison	58.77	54.01	-4.76	-8.09
	Difference	1.94	2.35	0.41	0.94
Jobs	Treated	20 226.25	23 668.43	3 442.18	17.02
	Comparison	3 220.20	3 769.14	548.94	17.05
	Difference	17 006.05*	19 899.29*	2 893.24	-0.03
Employment	Treated	17 360.27	21 025.06	3 664.79	21.11
	Comparison	3 651.53	4 184.94	533.41	14.61
	Difference	13 708.74*	16 840.12*	3 131.38	6.50
Share of working age population unemployed	Treated	1.87	1.83	-0.04	-2.14
	Comparison	1.88	1.73	-0.15	-7.98
	Difference	-0.01	0.10	0.11	5.83
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		2000	2013	2000-2013	% 2000-2013
Median income	Treated	196 023.50	346 980.40	150 956.90	77.01
	Comparison	182 439.00	330 125.20	147 686.20	80.95
	Difference	13 584.50*	16 855.20*	3 270.70	-3.94
Income distribution (mean/median income)	Treated	1.15	1.13	-0.02	-1.93
	Comparison	1.13	1.11	-0.02	-1.78
	Difference	0.02	0.02*	-0.00	-0.15
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		2002	2014	2002-2014	% 2002-2014
Average housing prices per m ²	Treated	10 471.16	19 145.28	8 674.12	82.84
	Comparison	9 135.16	16 058.00	6 922.84	75.78
	Difference	1 336.00*	3 087.28*	1 751.28	7.06

This table confirms that municipalities with new culture houses on average are significantly larger in terms of population than the comparison group. They have also had a higher percentage growth, the population has increased with 18 percent in the municipalities with new culture houses and 12 percent in the comparison group.

Average net migration in 2000 was actually lower in the treatment group, but had increased much in 2014. The difference in net migration between the two groups was significant in 2014 but not in 2000. This is an interesting observation that can indicate that the municipalities have become more attractive for residents after the culture house has opened, but we saw in figure 2 that there was a large variation in net migration in particular the control group, and that net migration increased much in the period.

Several of the measures indicates that the treatment group are larger and more urbanised on average. 74 percent of the population was in 2014 living in densely populated areas, as opposed to 50 percent in the control group. The treatment group have further a significantly higher share of population with higher education. 45 percent of the population had at least a bachelor degree or equivalent in 2014, while only 36 percent had the same in the control group. The treatment group have also a slightly younger age distribution, measured by the share of population below the age of 45, but the difference between the two groups is not significant. Both groups of municipalities had reduced the share from 2000 to 2014, which reflects the general aging of the population.

The treatment group is also significantly larger in terms of employment and number of jobs. The statistics includes number of jobs in the municipality, irrespective of where the employers live, while employment includes number of employed persons living in the municipality irrespective of where their job is located. The treatment group has had a higher growth in jobs and employment from 2000 to 2014, but there is no difference between the two groups when it comes to development of number of jobs. This indicates that the growth in jobs are more evenly distributed, but that population and employment still increases more in municipalities with new culture houses. This further indicate that there is more than just the development in the labour market that influence the population development.

Share of adult population registered as unemployed was practically the same in the two groups of municipalities in 2000. Share unemployed was more reduced in the control group in 2014, but the difference is not significant.

The municipalities in the treatment group had a significantly higher median income in both 2000 and 2013, but the control group has had a higher growth from 2000 to 2013. The income distribution is slightly more uneven in municipalities with new culture houses. Average housing prices was further significantly higher in the treatment group in both 2002 and 2014.

3.2 Cultural amenities

Table 2 shows some indicators that describe the level of cultural amenities. The level of local cultural amenities are assumed to be closely related to number of jobs in the art and culture sector. The first rows in table 2 describe number of jobs related to artistic and recreational activities and cultural institution such as libraries and museums. Six classes from the Standard Industrial Classification SIC2002 are selected to describe number of jobs related to art and culture in the years 2000-2007, and the corresponding 22 classes from the SIC2007 are used for the years 2008-2014.

There was on average 161 jobs related to art and culture in 2000 in the group of municipalities that opened new culture houses in the period 2001-2014. This number had increased to 306 in 2014. There was significantly fewer jobs in art and culture in the control group. Number of jobs have increased in both groups of municipalities, but the percentage growth was slightly higher in the treatment group

32 of the 51 culture houses in the sample includes a cinema. The municipalities probably already had a cinema prior to building a new culture house, but the facilities was upgraded with the new building. Table 2 shows that there has been significantly more visits to the cinema and number of displays per inhabitant in these municipalities, and the growth has also been higher in absolute numbers. This shows that both the possibility to go to the cinema and the participation has increased in municipalities with the new culture houses. The percentage change in number of visits has however been larger in municipalities without new culture houses.

In the bottom of the table, we can see statistics on number of theatre performances from The Norwegian Touring Theatre, that that sets up large productions all over the country. During a year they typically send 12 to 14 productions on tour and have around 450 performances at 70 destinations (Riksteateret, 2015). In 2005 they had performances in 72 municipalities in total, where 10 where in places¹ that later opened a new culture house. In 2014 they visited 71 municipalities, where 20 were places that in the years prior had opened a new culture house. This shows that there was also theatre performances in some of these municipalities prior to the opening of the new culture house, but that more municipalities in the treatment group are being visited after opening a new culture house. Average number of performances increased from 1,67 in 2005 to 3,05 in 2014 in municipalities with new culture houses. In the comparison group, average number of performances went down from 0,96 in 2005 to 0,76 in 2014.

Table 2: Descriptive statistics of factors related to cultural amenities in municipalities with and without new culture houses. * indicates a difference of $p < 0.05$.

		2000	2014	Change 2000-2014	Percent change 2000-2014
Jobs in art and culture	Treated	161.25	305.69	144.43	89.57
	Comparison	16.37	30.22	13.85	84.64
	Difference	144.89*	275.47*	130.58	4.93
Number of visits to cinema per 100 inhabitants	Treated	214.33	248.01	33.68	15.72
	Comparison	92.78	111.41	18.63	20.08
	Difference	121.55*	136.60*	15.05	-4.36
Number of cinema displays per 100 inhabitants	Treated	4.79	8.61	3.82	79.87
	Comparison	2.51	4.33	1.82	72.49
	Difference	2.28*	4.28*	2.00	7.38
		2005	2014	2005-2014	% 2005-2014
Number of theatre performances	Treated ¹	1.67	3.05	1.38	83.08
	Comparison	0.96	0.76	-0.20	-21.07
	Difference	0.70	2.29	1.59	104.14

¹ Sample reduced to 39 culture houses opened between 2006 and 2014.

4. Results

We first want to see if the culture house has made municipalities more attractive in terms of attracting more residents after opening a new culture house. In section 4.2 we investigate the link between culture houses and cultural activities and services.

4.1 Net migration

Table 5 shows the initial estimates of equation 1. The first column shows net migration in percent of population regressed on the dummy for new culture houses, which is the same as the correlation between the two variables. The two variables are significantly correlated, but the low R^2 shows that the dummy of opening a culture house explains little of the variation in net migration. In the second column is net migration regressed on indicator variables of having a culture house and municipality and time dummies. The results show that the effect of opening a culture house vanishes after removing mean municipality net migration rates and common year effects. The coefficient of 0,037 indicates municipalities with new culture houses has on average a net migration that is 0,04 percent of population higher than municipalities without new culture houses. The results are similar when municipality linear time trends are included in column 3.

Figure 2 showed a pattern that strongly indicates that the time trends are not linear. Column 4 includes quadratic municipality time trends, which allow net migration to trend nonlinear. The effect of having a new culture house is now lower, 0,164, but still not significant.

Norway is a vast country with regional differences. In order to control for county specific shocks, column 5 includes the interaction between year dummies and indicators for each of the 19 counties in Norway. The effect of culture house has increased to 0,168, which can be interpreted as having a new culture house is associated with an extra net migration of 0,17 percent of population on average. The average size of municipalities with new culture houses was 38 951 in 2014, so this will be equivalent to an extra migration of 65 persons. The average migration for this group of municipalities was 365 this year.

Table 3: Estimated effects of new culture houses on net migration, 2000-2014.

	(1)	(2)	(3)	(4)	(5)
Culture house	0.468*** (5.07)	0.037 (0.46)	0.038 (0.41)	0.164 (1.52)	0.168 (1.34)
Municipality and year dummies	No	Yes	Yes	Yes	Yes
Municipality * time trends	No	No	Yes	Yes	Yes
Municipality * quadratic time trends	No	No	No	Yes	Yes
County and year dummies	No	No	No	No	Yes
N	6420	6420	6420	6420	6420
R^2	0.008	0.338	0.411	0.469	0.493

Note. Dependent variable: Net migration in percent of population. OLS estimates. Huber-White robust SEs in parentheses allow for arbitrary correlation of residuals within each municipality. Level of significance indicated by asterics: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

As an alternative specification are controls that describe factors related to the labour market and demographic characteristics of the municipalities included in table 4. There is a concern that some of the control variables are affected by the treatment itself, and which way the causal relationship function. The controls are therefore lagged by one year. Log of jobs is entered in (2) as a strong and significant predictor. The coefficient remain stable and significant in all versions of the model until (10). Share registered unemployed enters negative and significant in (3). The main variable of interest, culture houses, is not significant.

Share of population below the age of 45 is positively but not significantly associated with net migration when entered in (3), but becomes significant from (8) when median income is introduced. Share of population with higher education enters positive and significant in (4), but becomes insignificant and change sign from (8). Median income enters positive and significant in (8). Median income and share of population with higher population is highly correlated. Income distribution is also positive and significant in (9) and (10). When housing prices are introduced in (10), many of the results change. Jobs and median income are no longer significant. Housing prices are strongly correlated with jobs, share with higher education and median income. As not all municipalities have statistics on housing prices, the sample is limited to 2488 in (10).

Table 4: Estimated effects of new culture houses on net migration, 2000-2014.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Culture house	0.468*** (5.07)	0.104 (1.24)	0.057 (0.68)	0.096 (1.06)	0.068 (0.74)	0.068 (0.74)	0.074 (0.77)	-0.074 (-0.79)	-0.077 (-0.81)	0.010 (0.13)
Log of jobs _{t-1}		0.255*** (12.24)	0.264*** (13.02)	0.255*** (11.79)	0.179*** (6.16)	0.179*** (6.16)	0.178*** (5.15)	0.240*** (7.69)	0.234*** (7.51)	-0.018 (-0.39)
Share unemployed _{t-1}			-0.253*** (-8.49)	-0.247*** (-8.44)	-0.214*** (-7.10)	-0.214*** (-7.10)	-0.234*** (-7.66)	-0.157*** (-5.32)	-0.159*** (-5.51)	-0.061* (-1.66)
Share of pop. below age 45 _{t-1}				0.004 (1.16)	0.004 (1.38)	0.004 (1.38)	0.004 (1.34)	0.008*** (3.20)	0.007*** (3.10)	0.005*** (2.94)
Share of pop. with higher education _{t-1}					0.019*** (4.89)	0.019*** (4.89)	0.018*** (4.47)	-0.007 (-1.47)	-0.006 (-1.49)	-0.006 (-1.12)
Share of pop. in dense area _{t-1}							0.001 (0.72)	-0.001 (-0.98)	-0.001 (-0.86)	-0.001 (-0.74)
Median income (1000 Nkr) _{t-1}								0.006*** (12.95)	0.006*** (13.29)	0.000 (0.12)
Income distributions _{t-1}									0.678* (1.79)	0.845** (2.16)
Housing prices _{t-1}										0.000*** (6.39)
N	6420	5992	5933	5807	5798	5798	5382	5381	5381	2488
R ²	0.008	0.0709	0.114	0.111	0.123	0.123	0.133	0.178	0.179	0.144

Note. Dependent variable: Net migration in percent of population. OLS estimates. Huber-White robust SEs in parentheses allow for arbitrary correlation of residuals within each municipality. Level of significance indicated by asterics: * p<0.05; ** p<0.01; *** p<0.001

4.1.1 Contents

In order to investigate if it is of significance the type of building and contents of the culture houses, we have in unreported analyses included dummies for being a signal building, having a cinema, library or culture school, and being located together with sporting facilities or educational institutions. The information on this are collected online from e.g. the webpages of the culture houses and municipalities. Most of information have been easy to categorise, except for whether the culture house can be termed a signal building or not. It has been necessary to subjectively give them values of being a signal building. The results show that none of the coefficients are significant, but some of the indicators show consistent signs. Being a signal building and having a library are positively associated with net migration when the controls are added, and having a culture school is negatively associated with net migration.

4.1.2 Timing

Table 3 and 4 provides no information on the dynamics of the effect of culture houses. Net migration can be expected to be a sluggish variable that responds slowly, and an effect might not be able to trace before some time has passed. The effect might also stabilise or vanish after some time has passed. Looking back at figure 3, net migration was stable some years after opening, before it increased in year 5. There was also a growth in net migration in the years prior to the opening. It is plausible that an ongoing project of building a culture house can

contribute to increasing the attractiveness of the place for potential residents even before the house has opened. According to private correspondence with the network of culture houses, it typically takes 5-6 years from the project is launched until the house has opened.

To explore these dynamics, table 5 provides estimates with leads and lags of the year of opening. Indicator variables includes dummies for year opened, 1-3 years before opening and 1-4 years after opening and five years after opening and forward. Granger causality testing means a check on whether past policy variable predicts outcome while future policy variables does not (Angrist and Pischke 2009), conditional on municipality and year effects. The idea is to see whether causes happen before consequences, and not vice versa, in this case the culture house opening and growth in migration.

Table 5: Estimated effects of new culture houses on net migration, 2000-2014.

	1	2	3	4	5
Opening _{t-3}	0.131 (1.09)	-0.180** (-2.31)	-0.251** (-2.36)	-0.305** (-2.28)	-0.287* (-1.84)
Opening _{t-2}	0.124 (1.16)	-0.243*** (-3.03)	-0.359** (-2.59)	-0.432** (-2.48)	-0.429** (-1.99)
Opening _{t-1}	0.229* (1.81)	-0.137 (-1.42)	-0.303** (-2.06)	-0.396* (-1.84)	-0.362 (-1.45)
Year of opening	0.396*** (3.62)	-0.0272 (-0.27)	-0.235 (-1.52)	-0.302 (-1.32)	-0.268 (-0.93)
Opening _{t+1}	0.372*** (3.90)	-0.0749 (-0.89)	-0.344** (-1.97)	-0.347 (-1.20)	-0.316 (-0.88)
Opening _{t+2}	0.464*** (2.97)	-0.0285 (-0.19)	-0.356 (-1.51)	-0.291 (-0.76)	-0.310 (-0.70)
Opening _{t+3}	0.476*** (3.39)	-0.0265 (-0.21)	-0.413* (-1.78)	-0.278 (-0.69)	-0.318 (-0.65)
Opening _{t+4}	0.380*** (2.96)	-0.119 (-0.94)	-0.562** (-2.13)	-0.360 (-0.86)	-0.406 (-0.79)
Five years after opening and forward	0.569*** (4.96)	-0.0445 (-0.37)	-0.611** (-2.13)	-0.270 (-0.56)	-0.270 (-0.47)
Municipality and year dummies	No	Yes	Yes	Yes	Yes
Municipality * time trends	No	No	Yes	Yes	Yes
Municipality * quadratic time trends	No	No	No	Yes	Yes
County and year dummies	No	No	No	No	Yes
N	6420	6420	6420	6420	6420
R ²	0.009	0.339	0.412	0.469	0.493

Note. Dependent variable: Net migration in percent of population. OLS estimates. Huber-White robust SEs in parentheses allow for arbitrary correlation of residuals within each municipality. Level of significance indicated by asterics: * p<0.05; ** p<0.01; *** p<0.001

The first column presents the regression with only leads and lags. The coefficients from one year before opening and all years after are significantly positive. When municipality and year dummies are included in column 2, all coefficient change sign and becomes negative. The leads indicating two and three years prior to the opening are also significant. The results are similar when all dummies are included in (5). If we are to interpret this directly, it means that the new

culture houses has on average had a negative effect on net migration the years prior to the opening. The worry however is that we pick up on something else that is happening in these municipalities. It can in figure 2 be seen that the municipalities that did not open a culture house has in certain years had a stronger growth in net migration, especially in the years after 2006.

4.1.3 Spill over effects

Previous research has shown that there exist a spill over effect of cultural services between neighbouring municipalities (Werck et al. 2008; Lundberg 2006). Culture houses and the activities occurring here will also be available for residents in neighbouring municipalities, and it is plausible that this can influence the attractiveness of these municipalities as well. One way to investigate if municipalities bordering to municipalities with culture houses has had a higher net migration rates than municipalities not bordering to municipalities with culture houses is to include them in the model by using dummies.

We have in the analysis included dummies for two different definitions of being neighbour to municipalities with new culture houses. The first definition includes neighbouring municipalities connected by land, and the second includes neighbouring municipalities where the border is at sea. The treatment effect of culture houses is positive, but small and not significant for both definitions of neighbouring municipalities. As a third alternative are municipalities with culture houses merged with its neighbours. The estimates of establishing a culture house are smaller compared to the baseline, indicating a weaker effect, but not significant.

4.2 Cultural amenities

Even though the culture houses does not seem to have significantly affected the migration rates, it still seems likely that it should affect the level of cultural amenities. We first investigate if the opening of culture houses affected the development of jobs in art, entertainment and institutions like libraries and museums. Table 6 shows estimates where log of jobs in the culture and art sector are regressed on the dummy for opening culture houses.

Table 6: Estimated effects of new culture houses on jobs in culture and art sector, 2000-2014.

	(1)	(2)	(3)	(4)	(5)
Culture house	1.502*** (6.51)	0.148* (1.84)	0.157** (2.08)	0.157* (1.66)	0.173* (1.75)
Municipality and year dummies	No	Yes	Yes	Yes	Yes
Municipality * time trends	No	No	Yes	Yes	Yes
Municipality * quadratic time trends	No	No	No	Yes	Yes
County and year dummies	No	No	No	No	Yes
N	6262	6262	6262	6262	6262
R ²	0.056	0.928	0.951	0.963	0.965

Note. Dependent variable: Log of jobs in art industries and culture institutions. OLS estimates. Huber-White robust SEs in parentheses allow for arbitrary correlation of residuals within each municipality. Level of significance indicated by asterics: * p<0.10; ** p<0.05; *** p<0.01

There is a positive and significant association between opening a culture house and jobs related to art and culture. The effect of opening a culture house remains positive and significant at ten percent level when including municipality and year dummies, municipality linear time trends, quadratic municipality time trends and county and year dummies. This is a strong indication of that the opening of the culture house has led to more jobs related to art and culture.

Table 7 provides estimates with leads and lags of the year of opening, to see when the growth in jobs occur in relation to opening the culture house. Indicator variables includes dummies for year opened, 1-3 years before opening 1-4 years after opening and 5 years and forward.

Table 7: Estimated effects of new culture houses on jobs in culture and art sector, 2000-2014.

	(1)	(2)	(3)	(4)	(5)	(6)
Opening _{t-3}	1.406*** (5.74)	-0.005 (-0.09)	0.014 (0.29)	0.017 (0.29)	0.037 (0.54)	-0.019 (-0.20)
Opening _{t-2}	1.365*** (5.73)	-0.010 (-0.16)	0.010 (0.18)	0.036 (0.37)	0.096 (0.85)	-0.079 (-0.79)
Opening _{t-1}	1.405*** (6.14)	0.045 (0.71)	0.079 (1.13)	0.119 (0.85)	0.221 (1.42)	-0.048 (-0.57)
Year of opening	1.563*** (7.05)	0.139* (1.73)	0.176* (1.95)	0.227 (1.20)	0.342 (1.65)	0.105 (1.04)
Opening _{t+1}	1.637*** (6.99)	0.175* (1.93)	0.211** (2.24)	0.285 (1.28)	0.421* (1.72)	0.166 (1.49)
Opening _{t+2}	1.674*** (6.42)	0.180 (1.64)	0.196* (1.78)	0.288 (1.14)	0.445 (1.60)	0.030 (0.22)
Opening _{t+3}	1.564*** (6.00)	0.153 (1.55)	0.171 (1.59)	0.272 (0.99)	0.439 (1.49)	0.116 (1.01)
Opening _{t+4}	1.649*** (5.73)	0.193* (1.88)	0.208* (1.79)	0.306 (0.98)	0.489 (1.50)	0.214* (1.81)
Five years after opening and forward	1.401*** (4.71)	0.115 (0.95)	0.146 (1.02)	0.272 (0.74)	0.486 (1.27)	-0.003 (-0.02)
Municipality and year dummies	No	Yes	Yes	Yes	Yes	No
Municipality * time trends	No	No	Yes	Yes	Yes	No
Municipality * quadratic time trends	No	No	No	Yes	Yes	No
County and year dummies	No	No	No	No	Yes	No
Demographic variables _{t-1}	No	No	No	No	No	Yes
N	6262	6262	6262	6262	6262	5660
R ²	0.078	0.928	0.951	0.963	0.965	0.745

Note. Dependent variable: Net migration in percent of population. OLS estimates. Huber-White robust SEs in parentheses allow for arbitrary correlation of residuals within each municipality. Level of significance indicated by asterics: * p<0.05; ** p<0.01; *** p<0.001

It can in (1) be seen that there is a significant and positive effect of opening culture houses on number of jobs in the art and culture sector in the year of and after the opening, but also the years prior. When controlling for municipality and year in (2), we see the positive and significant effect is limited to the year of opening and one and four years after the opening. When including linear time trends in (3), the effect in year two is also significant. None of the coefficients are significant when including quadratic time trends in (4), but the effect is significant at ten percent level in (5) when the county dummies are included. The results are not very robust, but there is an indication of a positive effect.

In (6) we include lagged variables that control for demographic characteristics of the municipality instead of controlling for municipality, county and time trends. All coefficients are negative in the years prior to the opening, and turn positive from the year of opening and in the four years after. The effect four years after opening is significant at ten percent level. In unreported analysis, we found that the results were similar when lagging the variables by two years. When lagging by three years, the sign changed from positive to negative from the year of opening until the end of the period, but none of the coefficients was significant.

We further want to see if the opening of culture houses has had an effect on more direct and short-term measures of cultural amenities. In table 8 we use number of cinema displays and theatre performances as dependent variables. The table shows first that the opening of a new culture house has had a positive and significant effect on number of cinema displays per inhabitant, also when the controls for municipality, year, trend and county are included. The second part of table 8 show that the opening of a new culture house has also had a positive effect on number of theatre performances. We have however only data on theatre for the years 2005-2014, so the size of the sample is reduced to 726. These results are robust to alternative specifications. It was also attempted to look at the effect on libraries and music school, but none of the results were significant.

Table 8: Estimated effects of new culture houses on number of cinema displays per 100 inhabitants, 2000-2014, and theatre performances, 2005-2014.

	Cinema displays					Theatre performances				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Culture house	5.015*** (6.92)	2.180*** (3.92)	1.962*** (4.48)	1.640*** (3.39)	1.403*** (2.76)	1.777*** (3.52)	1.249*** (2.80)	0.837* (1.84)	0.822 (1.43)	1.021** (2.16)
Municipality and year dummies	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Municipality * time trends	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Municipality * quadratic time trends	No	No	No	Yes	Yes	No	No	No	Yes	Yes
County and year dummies	No	No	No	No	Yes	No	No	No	No	Yes
N	3711	3711	3711	3711	3711	726	726	726	726	726
R ²	0.042	0.856	0.910	0.934	0.939	0.005	0.700	0.828	0.873	0.914

Note. Dependent variable: Log of cinema displays and theatre performances. OLS estimates. Huber-White robust SEs in parentheses allow for arbitrary correlation of residuals within each municipality. Level of significance indicated by asterics: * p<0.10; ** p<0.05; *** p<0.01

5. Discussion and conclusion

The aim of this paper has been to analyse the regional effect of culture houses using a panel data structure and a difference in difference approach. The effect on migration have been the main focus, but it has also been considered effects on local cultural amenities and jobs in the culture sector. It is confirmed to be a positive association between culture houses and net migration, but the results further show that the dominant explanation is likely that they were opened in municipalities where net migration was already increasing. Opening a culture house does not lead to the municipalities breaking out of the pre-existing trend, but have some smaller and positive effects for the community. It first of all seem to have a positive effect on certain types of cultural amenities. There is also a strong indication that new culture houses have in average had an effect on number of jobs related to art and culture, but the results are not robust for all specifications. The analysis are further unable to say anything about how

this transforms into cultural amenities for the community, but it is likely that there is a close connection between number jobs and amenities provided. The results do however confirm that number of cinema displays and theatre performances in the municipality increase after the new culture house has opened.

The results indicate that opening a culture house is not an efficient measure alone if the main goal is to attract residents. The idea of a “Bilbao effect” seem in this respect unrealistic, at least when it comes to most Norwegian municipalities. The idea of getting the investments in return through increased attractiveness is not supported. The first culture houses opened might have had an advantage, but when there are already 100 culture houses, the effect of opening the 101th can be expected to be small. The competition between communities to attract residents is a null sum game, and this type of contest can result in that the culture houses must be increasingly spectacular in order to draw attention. Being a signal building is positively, but not significantly associated with net migration. The services the culture house and the community provides seem more important than the house itself.

The largest concern regarding the empirical setup is that it is not random which municipalities that open new culture houses. In the ideal case, the establishment of culture houses would be independent, random events that varied in timing, according to size and geographical location and had no spill over effect to neighbouring municipalities. In fact, the treatment group are on average larger and more urban, and have a different labour market and demographic composition. The results support that the dominant trend is that culture houses are opened in municipalities that are already experiencing a positive trend. When this trend is controlled for, it is not possible to trace a significant effect of opening culture houses on net migration.

One concern is still that the results are dominated by the big cities in the sample, in particular Oslo, Trondheim and Stavanger. These municipalities differ from the average municipality in many aspects, and their culture houses are also more specialized. They are all professional concert halls or music scenes, while the typical culture house outside the largest cities are multifunctional houses with a cinema and perhaps the local library, culture school or sporting facilities. In unreported analysis, we left out the three big cities Oslo, Trondheim and Stavanger, but this did not change the overall results. It is therefore unlikely that these cities are driving the results.

Another main concern is of unobserved events systematically affecting either the treatment or the control group. One main event is the immigration wave Norway experienced after the EU enlargement in 2007. It is unlikely that this have systematically affected municipalities with or without new culture houses, but it seems like the immigration has had a different and more even geographical pattern than the strong centralised domestic migration pattern.

Using Norway as a case presents a different context, being a small country with a very different demographic structure and mobility pattern than for instance North America. Even though the results are from small municipalities in a small country, it is likely that the results are relevant for similar projects in other countries. The large scale investments in culture houses in Norway is a unique case. There are a large number of studies addressing the positive effects of culture, but few that have a convincing empirical setup. This is a comprehensive study that take account of the causal impact of contemporary buildings hosting cultural institutions on a broader scale, which makes it a novel contribution to the discourse.

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