

Arts Districts, Universities, and the Rise of Media Arts

Douglas S. Noonan and Shiri M. Breznitz

School of Public Policy

Georgia Institute of Technology

Impacts of cultural districts and major universities on local economic growth through jobs and innovation in media arts.



In particular

- How do media arts employment and innovation differ from overall employment and innovation in cities with and without arts districts? Major universities?
- How do trends in employment and innovation in new media arts differ in cities with arts districts and universities?
- What is the effect of the combination of major universities *and* an arts district in the same area on media arts employment and innovation?

The Results

- **Arts districts:** consistently stronger, positive impact on arts- and media arts-related **innovation**
- **Universities:** promote arts- and media arts-related **employment** if in the broader urban area (not the city itself)

Culture and Economic Development



Culture and Art in Economic Development I

- Direct income generated from local institutions and artists:
 - Artists contribute to region's exporting base (Markusen and Schrock, 2006, Markusen and King, 2003)
 - Arts and cultural institutions such as museums and theaters draw outside funding and visitors to a region
 - cost-benefit analysis here is tricky (Markusen and Gadwa, 2010)

Culture and Art in Economic Development II

- A powerful tool to impact other firms and industries:
 - attract firms and high-level human capital to region, contributing to the productivity of other industries (Florida, 2002)
 - add jobs to the region due to its impact on the economic diversification base in highly specialized cities (Pratt, 1997)

Universities and Economic Development I

- Universities are an important source of new knowledge and technology, with the potential to be commercialized
- Universities are now obliged to make a contribution to society through research and development (R&D), collaborations, and technology transfer with industry (Minshall et al., 2004)
- Universities contribution is mainly measured via technology commercialization (Kenney and Patton, 2009; Breznitz, 2011)

Universities and Economic Development II

- Florida (2002) claims that the main contribution of universities is in the 3Ts: technology, talent, and tolerance
- Many services and activities of universities (e.g., community and volunteer work) cannot be easily quantified, not recognized as universities' public service (Breznitz and Feldman, 2012, Forrant et al., 2001, Maurrasse, 2001)
 - Emphasis on “tech transfer”
 - Arts contributions *not* included in mainstream analyses

Enter ... Media Arts

- Media arts at the crossroads of high technology and artistic creation
 - Brings the “creative class” kinds of work together with conventional university activities
 - Important links to both universities and art districts.
 - We also look at more traditional arts-related occupations and industries

What are Media Arts?

- Artistic and creative content in new (especially digital) formats and media, such as digital art, computerized animation, internet and interactive art
 - Classified as ‘media arts’ by various (inclusive) occupation codes, industry codes, and patent classes.
- Major industries closely associated with new media arts:
 - Video games
 - Motion pictures, television
 - Internet publishing
 - Online entertainment (streaming content, music & video downloads, etc.)

Data

- Unit of observation: city
 - sample the 100 most populous cities
- Cities with arts districts based on Frost-Kumpf (1998)
 - 89 cities with cultural districts identified
 - add to sample $\Rightarrow N = 148$.
- Universities = Research Extensive (R1)
 - counts of R1s in the city, in the city's CBSA
 - CBSA's include the broader metro area but also smaller towns
- Patent data from the NBER patent database, up to 2006
 - matched to city name of the patent assignee
 - patents \sim innovation
- Employment data from the Current Population Survey, up to 2011
 - matched using the metro area of respondent
 - first or second job; share of all respondents in that town

A snapshot of the data, I

<u>Variable</u>	<u>Mean</u>	<u>Std.</u> <u>Dev.</u>	<u>Min</u>	<u>Max</u>
% of patents in MA in '06	0.021	0.034	0	0.2
# MA patents in '06	5.365	17.540	0	154
change in % of patents in MA from '99 – '06	0.006	0.040	-0.13	0.2
change in # of patents in MA from '99 – '06	4.047	16.345	-7	144
% employed in Arts industry in '06	0.029	0.012	0	0.06
% employed in Arts occupation in '06	0.015	0.008	0	0.05
% employed in MA industry in '06	0.024	0.011	0	0.06
% employed in MA occupation in '06	0.024	0.013	0	0.09
change in % employed in Arts industry from '99 – '11	0.010	0.016	-0.04	0.028
change in % employed in Arts occupation from '99 – '11	0.004	0.008	-0.02	0.013
change in % employed in MA industry from '99 – '11	-0.010	0.015	-0.06	0.042
change in % employed in MA occupation from '99 – '11	0.010	0.012	-0.03	0.020

A snapshot of the data, II

R1s in the City	No District	District	Total
0	40	51	91
1	17	27	44
2	0	8	8
3	1	0	1
4	1	1	2
5	0	1	1
6	0	1	1
total	59	89	148

Method

- OLS regression approach
 - Think of **districts** and **R1s** as “treatments.” What are the effects?
 - Measure employment and innovation as shares of overall employment or innovations
 - Implicitly controls for “shocks” to whole city’s economy
 - Look at trends
 - changes in the share of media arts-related employment
 - changes in the share of media arts-related patenting
 - controls for possibility that ‘something special’ about those cities really explains treatment effect
 - Robustness checks
 - Investigate the ‘chicken and egg’ problem
 - Districts do *not* seem drawn to cities with high arts concentrations

A collage of results

- Many statistical models estimated
- The goal: to explain the impact of arts districts and universities on:
 1. employment shares, in 2006
 - 4 different measures of employment
 2. trends in employment shares, 1999 – 2011
 3. patenting, in 2006
 - 2 measures (shares and counts) of patents
 4. trends in patenting, 1999 – 2006

1. Impact on Share of Employment

- Arts districts \Rightarrow \uparrow arts and media arts employment
 - increase by $\sim 0.5\%$, off a base of $\sim 2.5\%$
- R1s in the city \Rightarrow no impact on employment
- R1s in the same urban area (CBSA) \Rightarrow \uparrow arts and media arts employment
 - each R1 increases jobs by $\sim 0.2\%$

2. Impact on Media Arts Employment Trends

- There is *no* effect of universities or districts on media arts (or arts) employment trends 1999- 2011
- R1s in CBSA \Rightarrow \uparrow arts and media arts employment trends
 - Modest impact: $\sim 0.1\%$ per R1, base of 1%

The Interaction between Art Districts and R1 Universities

- Cities with R1s and Arts Districts do not do better or worse in terms of arts and media arts employment
 - True for employment levels in 2006
 - True for employment trends, 1999-2011

3. Impact on Share of Patents

- Arts districts \Rightarrow \uparrow media arts patent share in 2006
 - roughly doubles the patenting rate!
- R1s in a town \Rightarrow no impact on media arts patent rates
- If you look at the raw count of patents:
 - R1s in City \Rightarrow \uparrow media arts patents (+4.9)
 - Districts \Rightarrow \uparrow media arts patents (+5.3)
 - Having both R1s and Districts? \Rightarrow \uparrow media arts patents (+4.2)

4. Trends in Share of Media Arts Patenting

- Districts lead to a *steeper* trajectory in Media Arts patenting.
 - Districts \Rightarrow threefold \uparrow in growth rate for media arts patents!
- The count of R1 universities *do not* lead to a rise in share of patents for media arts.
 - in the city or in the urban area, regardless
- There is *no* significant interaction effect between districts and universities when it comes to media arts patenting trends.

Conclusion I

Employment

- R1 universities in the urban area \Rightarrow \uparrow media arts employment shares *and* trends
 - R1 universities in the same city have no impact on media arts employment
- Arts districts \Rightarrow \uparrow media arts employment between 1999 and 2006 only
 - Transitory effect

Innovation

- Cultural districts \Rightarrow \uparrow media arts patenting shares *and* trends
- R1 universities have no effect on media arts patenting rates

Conclusion II

- Cultural districts promote innovation
 - Cluster the creative, entrepreneurs in media arts
 - Not the locus for (arts) jobs
- R1 universities promote arts- and media arts-related employment
 - Attract and train the labor for the nearby arts districts
 - Not the locus for (arts) innovation
- Preliminary results pose an interesting puzzle.
Clearly, more work is needed...

Further work -

- Qualitative analysis on the top- and bottom-performing cities in terms of media arts employment and innovation
- Extending to other years of CPS (employment) and patent data
- Evaluating the impact of art departments and colleges/institutions; other measures of arts districts
- Calculating LQ for Media Arts and analyzing several cases
- More localized economic impacts (income, education) of arts districts

Thank you!

Douglas.Noonan@pubpolicy.gatech.edu

Shiri.Breznitz@pubpolicy.gatech.edu