Soccer Clubs and Regional Image

Rüdiger Hamm
NIERS – Niederrhein Institute for Regional and Structural Research
Structur of Presentation

1. Introduction

2. Soccer Clubs and Regional Image – Empirical Analysis
   a. Aim and Methods
   b. Descriptive Analysis – Results
   c. Factor Analysis and Regression – Results

3. Summary
Introduction

• Empirical Studies on regional effects of soccer clubs normally focus on demand-side effects, i.e. regional multiplier analysis.
• But there seems to be more beyond regional multipliers (CROMPTON)
• Paper deals with the following effect:
  o Firm surveys suggest regional image to be a separate “soft” factor of location (Hamm/Wenke).
  o Sports clubs might be able to transfer their (positive) image to their hometown and thus …
  o … might also be able to affect regional economic development of this city.
Aims and Methods

Research questions:

- Are there awareness increasing effects of a soccer club for its home town?
- Can a soccer club be an important image builder of its hometown?
- Is it possible to identify an image transfer from the club to the city?
Aim and Methods

Methods

• **Case study: Borussia Mönchengladbach**

• **Data for analysing image effects stem from three surveys all of them conducted in autumn 2013.**
  
  o **Audience of soccer matches (913).**
  
  o **Face-to-face passer-by-surveys in several North Rhine-Westphalian cities (579).**
  
  o **Family-and-friends online-surveys (265).**
Aim and Methods

• Respondents have been clustered the following way

![Clustering of Respondents diagram]

• Descriptive statistics

• Factor analysis combined with linear regression
Descriptive Analysis

Increasing the city’s national awareness?

• 93.5% of the home-fans think that the club increases the national awareness of the city.

• Even 70.1% of the outsiders believe so.

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Descriptive Analysis

Increasing the city’s international awareness?

- About 75% of the two fan groups believe that Borussia increases the city’s international awareness.

- Nearly 30% of the outsiders believe in these effects.
Descriptive Analysis

It can be stated that Borussia is an awareness increasing factor for the city of Mönchengladbach.

But, are there also image improving effects of Borussia for the city?

<table>
<thead>
<tr>
<th>Image Improving Effects of Borussia Mönchengladbach for the City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outsider</td>
</tr>
<tr>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Home-Fan</th>
<th>Satellite-Fan</th>
<th>Regional Non-Fan</th>
<th>Outsider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very strong</td>
<td>31,5%</td>
<td>32,1%</td>
<td>3,5%</td>
</tr>
<tr>
<td>Strong</td>
<td>45,0%</td>
<td>48,6%</td>
<td>33,1%</td>
</tr>
<tr>
<td>Middle</td>
<td>19,8%</td>
<td>16,5%</td>
<td>40,1%</td>
</tr>
<tr>
<td>Low</td>
<td>2,1%</td>
<td>2,1%</td>
<td>14,0%</td>
</tr>
<tr>
<td>Not at all</td>
<td>1,5%</td>
<td>0,8%</td>
<td>9,3%</td>
</tr>
</tbody>
</table>

• 76,5% of the home-fans and nearly 40% of the outsiders believe in these effects.
In all respects the club is noticeably rated more positive than the city.
Descriptive Analysis

Ratings by fan groups – regional supporters compared to regional non-supporters

• Expectation in case of a transfer: fans do not only judge the club more positive than non-fans but also the city.

• Exactly this can be observed in the diagram.

• The points tend to move to the upper right part of the coordinate system meaning that home-fans give better ratings to both – club and city.
Descriptive Analysis

Ratings by fan groups – satellite-supporters compared to outsider

• The same can be observed by comparing satellite fans and outsiders.
• The points tend to move to the upper right part of the coordinate system meaning that satellite-fans give better ratings to both – club and city.
Factor Analysis

- Results suggest that a transfer of (positive) image takes place.
- Combination of factor analysis and regression to check the results.
- In the surveys the respondents had to evaluate seven attributes for the city and the club. Factor analysis is used
  - to discover whether variables are overlapping,
  - to structure the relationships between these variables and
  - to identify groups of variables highly correlated to each other and to separate them from those with low correlation.
  - Results of Factor analysis are used to calculate values for the structured factors.
  - Finally new variables are used for analysing the relationship between the city’s and the club’s image by means of a regression.

- Short (slide 14) or long (slide 15 – 20) version.
Factor Analysis

1. Testing appropriateness of data (city-image and club-image). Result: Data is appropriate!

2. Deciding how many factors should be extracted. Scree-test and Kaiser-Criterion suggest to extract one factor in both cases (city-image and club-image).

3. Principal component analysis for extraction of factors. Calculation of two new variables: “Image of the club” and “Image of the city”.

4. Last step: OLS.

\[ I_{\text{city}} = f(I_{\text{club}}) \]

Expectations:

- The better the club’s image, the better the city’s image,
- i.e. first derivation is expected to be positive:
  \[ \frac{dI_{\text{city}}}{dI_{\text{club}}} > 0 \]
Regression Analysis

Results of OLS:

• „Image of the city“ is the better the better the „Image of the club“ - so there seems to be a transfer of image.
• The transfer-effect of the negative attribute “boring” (0.025) is less intensive than that of positive attributes (like e.g. „successful “: 0.079)
Regression Analysis

Extension

Are there differences due to sex, age, origin or fan-status? Using dummies.

<table>
<thead>
<tr>
<th>Results of Regression Analysis - Dependent Variable: Image of the City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
</tr>
<tr>
<td>Regression 2</td>
</tr>
<tr>
<td>Const.</td>
</tr>
<tr>
<td>Image of the club</td>
</tr>
<tr>
<td>Dummy 1: Fan of Borussia</td>
</tr>
<tr>
<td>Dummy 2: Origin &quot;Fan-Region&quot;</td>
</tr>
<tr>
<td>Own calculations</td>
</tr>
</tbody>
</table>

Results:

- There are no significant effects of sex and age.
- Transfer effects are significantly higher for people living in and around Mönchengladbach.
- Surprisingly the effects are lower for fans of Borussia.
Summary

Main results:

• Borussia Mönchengladbach is increasing the city’s national and international awareness.

• Descriptive analysis and the combination of factor analysis and regressions suggest a transfer of image from the club to the city.

• Furthermore, regression analysis gives a hint that positive image attributes are transferred more probably than negative ones.

• The transfer-effect seems to be highest for people stemming from Mönchengladbach and around without being fan of the club.

Conclusion: In the case of Borussia Mönchengladbach …

• … the soccer club influences regional image …

• … and as regional image is a relevant factor of location …

• … the soccer club also influences regional development behind regional multipliers.
Thank You for Your Attention!
Factor Analysis

First step: Testing appropriateness of data (city-image and club-image):

- Correlation: All variables used to describe the image are correlated to each other. Correlation is below 0.7 in all cases, i.e. no clear conclusion.
- Significance of correlation: All correlations are highly significant (1%-level).
- The Bartlett-Test tests whether a sample stems from a population of uncorrelated variables. Result: With a probability < 1% the variables are uncorrelated.
- The Kaiser-Meyer-Olkin-Criterion ("measure of sampling adequacy"=MSA) tests whether a factor analysis is meaningful or not. It allows an evaluation of the overall correlation matrix as well as of single variables. Literature suggests the MSA to be above 0.8; in our case the MSA-values for the correlation matrices are above 0.9, the MSA-values for the single variables lie between 0.779 (middling) and 0.940 (marvellous).
- Data is appropriate!
Factor Analysis

Second step: Deciding how many factors should be extracted

Literature suggests two different ways for solving this problem.

1. Scree-test, i.e.
   - Plotting the eigenvalues in diminishing order,
   - Look where the difference of the eigenvalues between two factors takes a maximum (the curve must have a sharp bend),
   - Choose the first point left to this sharp bend – it determines the number of factors to be extracted.
   - Method suggests to extract one factor in both cases (left hand – city; right hand – club!)

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Factor Analysis

Alternatively:

2. **Kaiser-Criterion**: Number of extracted factors should equal the number of factors with an eigenvalue above one.
   - The table shows that only the eigenvalue of the first factor is above one. So this method, too, would propose to extract one factor in both cases.
   - Decision: Extraction of one factor for the city and the club.

<table>
<thead>
<tr>
<th>Component</th>
<th>City</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Club</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original Eigenvalues</td>
<td></td>
<td></td>
<td></td>
<td>Original Eigenvalues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>1</td>
<td>4,212</td>
<td>60,16</td>
<td>60,16</td>
<td>4,046</td>
<td>57,80</td>
<td>57,80</td>
</tr>
<tr>
<td>2</td>
<td>0,759</td>
<td>10,85</td>
<td>71,01</td>
<td>0,995</td>
<td>14,22</td>
<td>72,02</td>
</tr>
<tr>
<td>3</td>
<td>0,515</td>
<td>7,36</td>
<td>78,37</td>
<td>0,538</td>
<td>7,69</td>
<td>79,70</td>
</tr>
<tr>
<td>4</td>
<td>0,493</td>
<td>7,04</td>
<td>85,41</td>
<td>0,433</td>
<td>6,18</td>
<td>85,88</td>
</tr>
<tr>
<td>5</td>
<td>0,360</td>
<td>5,15</td>
<td>90,55</td>
<td>0,373</td>
<td>5,32</td>
<td>91,21</td>
</tr>
<tr>
<td>6</td>
<td>0,345</td>
<td>4,93</td>
<td>95,48</td>
<td>0,357</td>
<td>5,10</td>
<td>96,30</td>
</tr>
<tr>
<td>7</td>
<td>0,316</td>
<td>4,52</td>
<td>100,00</td>
<td>0,259</td>
<td>3,70</td>
<td>100,00</td>
</tr>
</tbody>
</table>

Extraktionsmethode: Hauptkomponentenanalyse.
Factor Analysis

<table>
<thead>
<tr>
<th></th>
<th>City</th>
<th></th>
<th></th>
<th>Club</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
<td>Coefficient</td>
<td></td>
<td>First</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Component</td>
<td></td>
<td></td>
<td>Component</td>
</tr>
<tr>
<td>Sympathetic</td>
<td>0,793</td>
<td>0,188</td>
<td></td>
<td>0,847</td>
<td>0,209</td>
</tr>
<tr>
<td>Modern, cosmopolitan</td>
<td>0,821</td>
<td>0,195</td>
<td></td>
<td>0,826</td>
<td>0,204</td>
</tr>
<tr>
<td>Inspiring</td>
<td>0,840</td>
<td>0,199</td>
<td></td>
<td>0,862</td>
<td>0,213</td>
</tr>
<tr>
<td>Family-friendly</td>
<td>0,749</td>
<td>0,178</td>
<td></td>
<td>0,786</td>
<td>0,194</td>
</tr>
<tr>
<td>Successful</td>
<td>0,818</td>
<td>0,194</td>
<td></td>
<td>0,764</td>
<td>0,189</td>
</tr>
<tr>
<td>Young, dynamic</td>
<td>0,805</td>
<td>0,191</td>
<td></td>
<td>0,803</td>
<td>0,198</td>
</tr>
<tr>
<td>Boring</td>
<td>-0,571</td>
<td>-0,136</td>
<td></td>
<td>-0,240</td>
<td>-0,059</td>
</tr>
</tbody>
</table>

Own calculations by principal component method

Image of the city:

- All variables have high factor loadings.
- Coefficients of the components of factor 1 estimated by multiple regression.
- They are the weights for calculating the values of the new factor by multiplication with the original data for the seven attributes.
- Six positive attributes with similar positive weights.
- Negative attribute “boring” has a lower, but negative weight.
- New variable is defined as ”Image of the city”.
### Factor Analysis

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Own calculations by principal component method

### Image of the club:

- Similar results as in the case of the city.
- New variable is defined as "Image of the club".
Regression Analysis

Last step: OLS.

\[ I_{\text{city}} = f(I_{\text{club}}) \]

Expectations:
- The better the club’s image, the better the city’s image,
- i.e. first derivation is expected to be positive:
  - \( \frac{dI_{\text{city}}}{dI_{\text{club}}} > 0 \)