Risk mitigation in location decision-making

Adapting the preference-based accommodation strategy design approach to incorporate risk mitigation
A look into the Future
How can Risk management effectively be incorporated in a Preference-based Location decision-making process?
Matching supply to preferences

The Preference-based Accommodation Strategy design approach

Preferences

(Static) supply

Activities

Mathematical model

Procedure

Best aligned portfolio

Arkesteijn, 2015
A changing world

Building
- Sustainability improvements

City
- Changing accessibility

Region
- Dynamic demographics

Country
- Unstable economic conditions
Changing location characteristics pose a risk to the alignment between the corporate real estate strategy and the business strategy.
Matching supply to preferences

The Location Decision-Making design approach

Preferences

Dynamic supply
Location risks included

Procedure

Activities

Mathematical model

Best aligned portfolio

Adaptation from Arkesteijn 2015
Identifying preference

Corporate business strategy

Demand

Organisational characteristics

Real estate portfolio characteristics

Rovers, 2017; Nourse & Roulac, 1993
Identifying preference

- Talent
- Amenities
- Space
- Costs
Mapping preferences (step 1 – 4)

**Talent availability**

Weight: 0.5

Risk: yes
Determining constraints (step 5)

Not more than €5 mn for entire portfolio.
Selecting locations (step 6)

- **Amsterdam**
  - Sarphatistraat

- **Leiden**
  - Hooigracht

- **Delft**
  - Elektronicaweg

- **Rotterdam**
  - Blaak

- **Eindhoven**
  - PSV laan

- **Utrecht**
  - Oudenoord
Building the model

- Location data
- Preferences
- Constraints
- Weights & risk appetite

Matlab model
Building the model

- Location data
- Preferences
- Constraints
- Weights & risk appetite

Matlab model
Risk importance and appetite (step 7 – 8)

- 50% certainty of the location aligning with your preferences.
- Alignment now is slightly more important than future alignment.
Building the model

Location data

Constraints

Matlab model

Preferences

Weights & risk appetite
### Building the model

**Location data**

<table>
<thead>
<tr>
<th># IT students</th>
<th>t-9</th>
<th>t-7</th>
<th>t-5</th>
<th>t-3</th>
<th>t-1</th>
<th>t</th>
<th>t+1</th>
<th>t+3</th>
<th>t+5</th>
</tr>
</thead>
<tbody>
<tr>
<td>current value</td>
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</tbody>
</table>
Building the model

Location data

Current value

# IT students

Brockwell & Davis, 2002
Building the model

Location data

# IT students

- current value
- possible future values

Brockwell & Davis, 2002
Building the model

Location data

- Risk appetite
- Future value

Brockwell & Davis, 2002
Optimal portfolio Preferences Weights Locations Risk profile Optimal portfolio
Testing the framework
Testing the framework
Evaluation

Effective system

Experience

Effectiveness

Attractiveness

Joldersma & Roelofs, 2004
“Integrating the future in the model is certainly an added value. It forces us to think better on what we find important in a location, and how we should run our business.”
“Playing with selecting the locations helped me to understand how the model works, and increases my faith in the model in that it calculates everything based on my input.”
“It would be great if the model would be dynamic, that changes to for example the weights could be reflected in real-time, as to support the discussion during a workshop even better”
"The model helps in reaching a substantiated conclusion and making an informed decision on a lot more variables than in the current decision making process."
Conclusies

How can Risk management effectively be incorporated in a Preference-based Location decision-making process?
The Location Decision-Making design approach

Preferences

Procedure

Mathematical model

Activities

Dynamic supply
Location risks included

Best aligned portfolio

Adaptation from Arkesteijn, 2015
Recommendations

- Improving efficiency of the model
- Developing a Bézier curve based GUI
- Testing the model back in time
Thank you

Jeroen Meijler