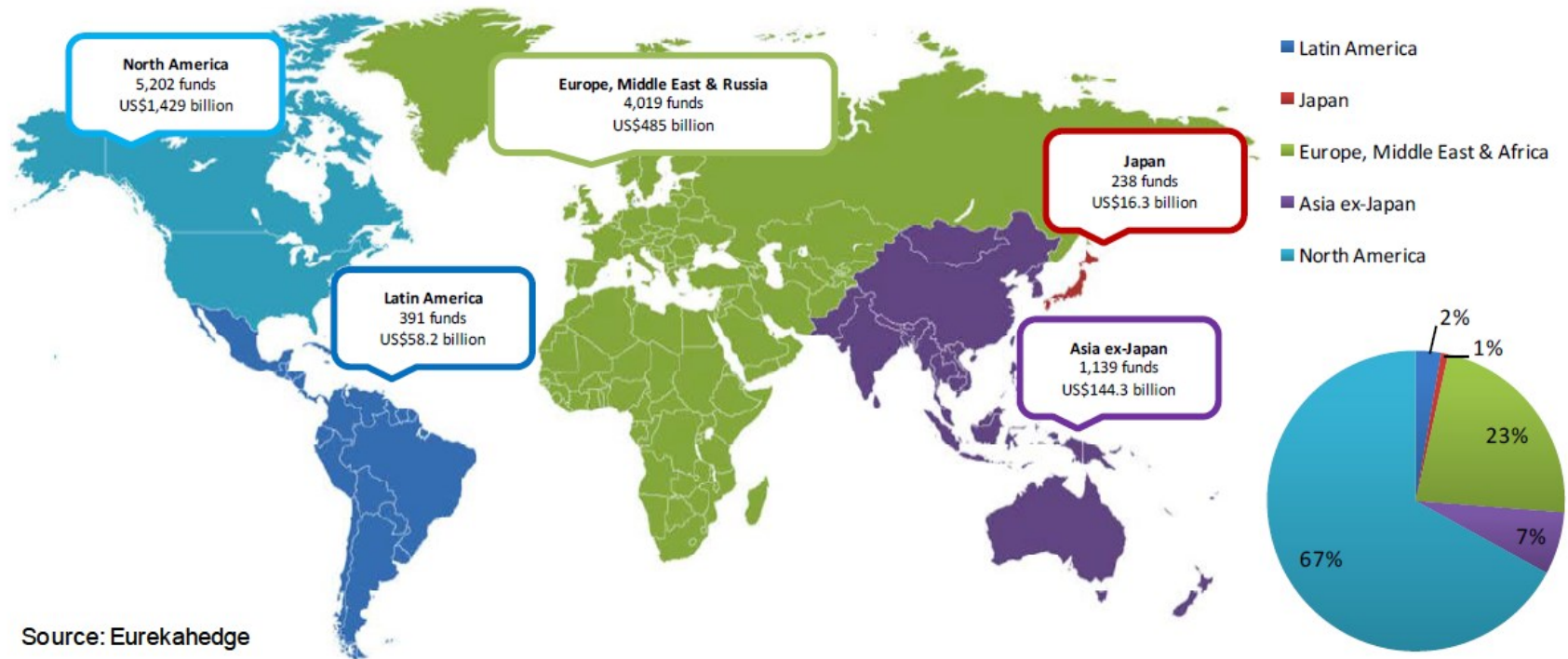


# Viken Teknologiklynge

Professor and Director Amir Sasson  
BI, Norwegian Business School  
30.11.2017

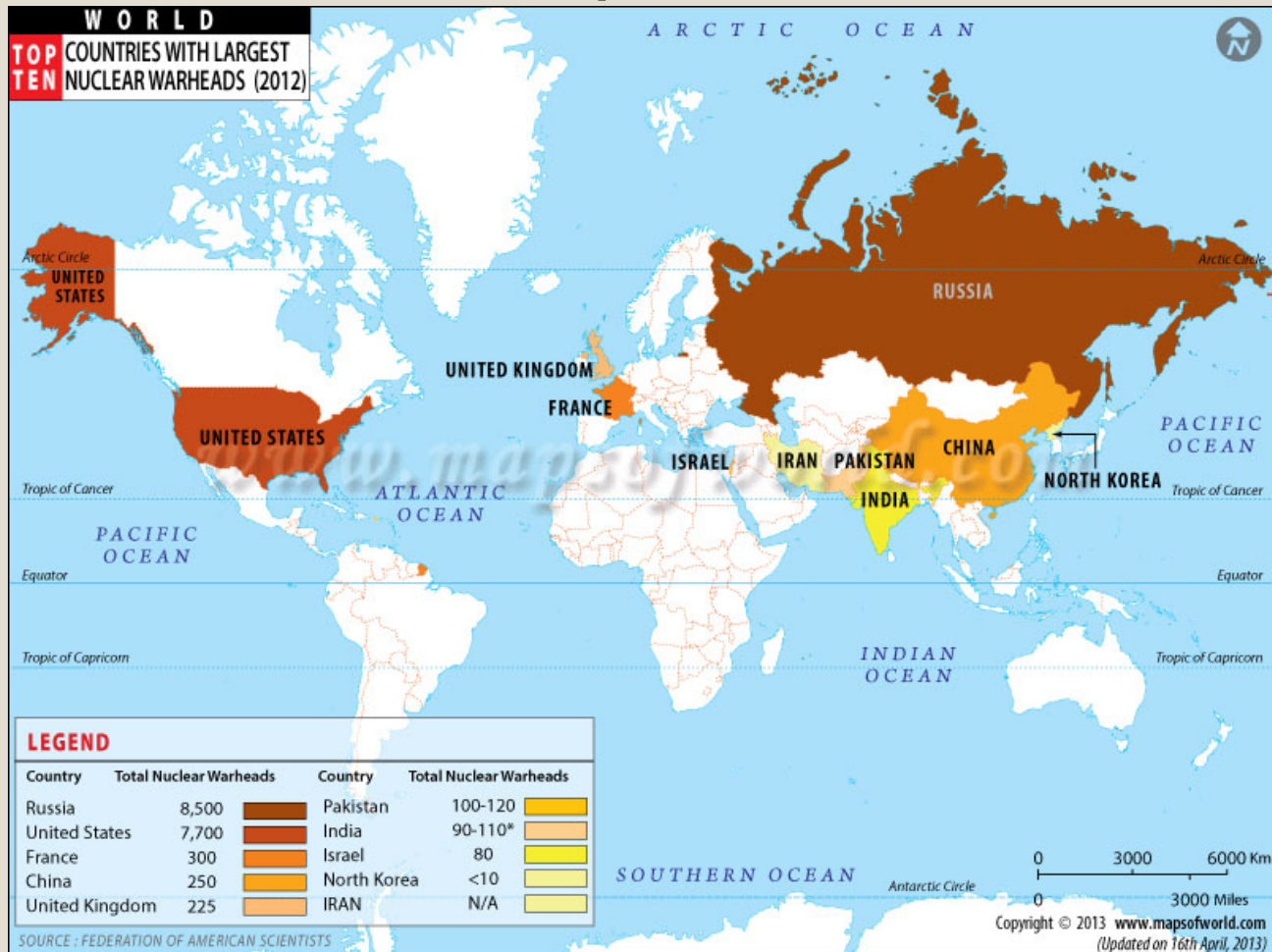
# Finance: Hedge Fund

Figure 1: Global hedge fund industry map



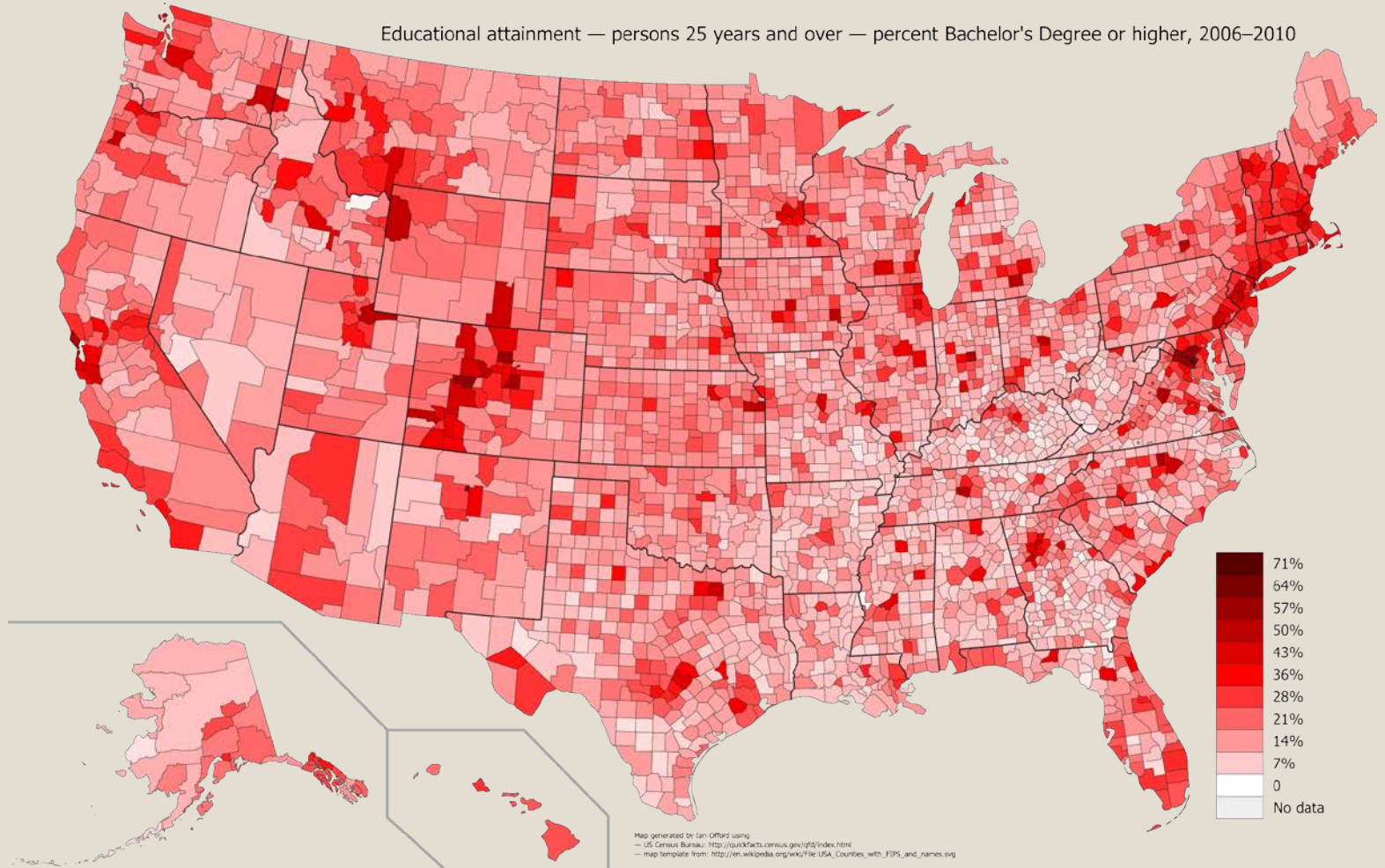
Source: EurekaHedge

# Nuclear Weapons

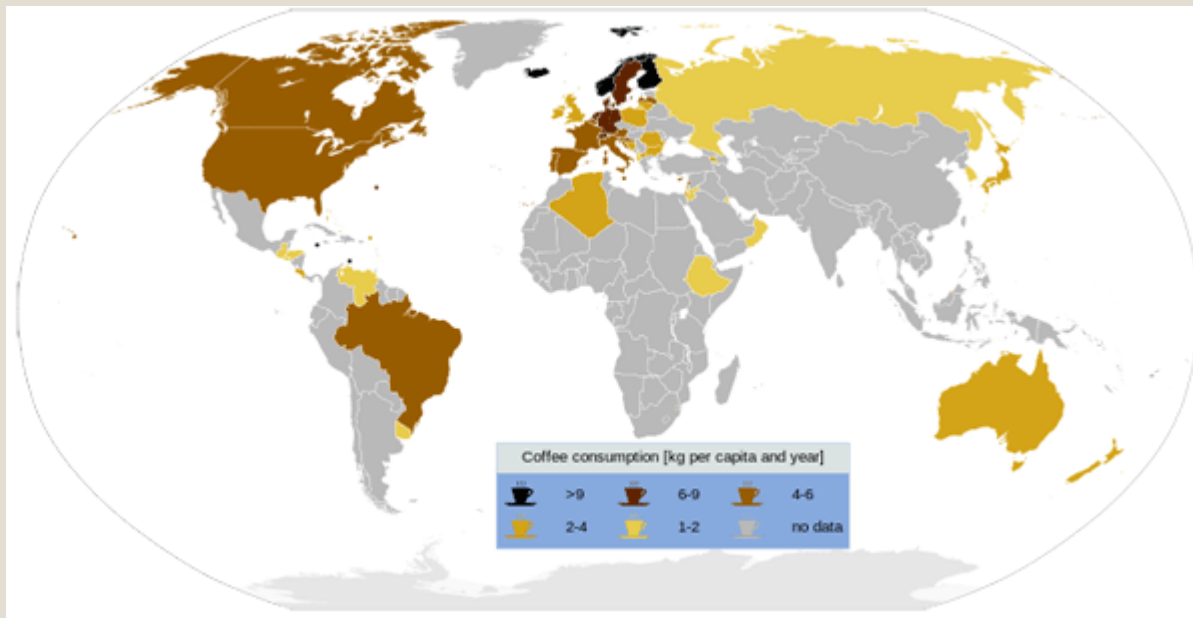


# Education

Educational attainment — persons 25 years and over — percent Bachelor's Degree or higher, 2006–2010



# Consumption inequality





WHAT IS A  
CLUSTER?

# What is a cluster?

- Definition:
- “**Geographic concentrations** of **interconnected** companies and institutions in a particular **field**” (Porter, 1998).
- See emphasis:
- Geographic: Vicinity
- Concentration: More than one? Yes!
- Interconnected: How are you interconnected?
- Institutions: Who are they? How can they affect performance?
- Field: It isn't agriculture!
  
- Clusters necessitates clustering, that is, an activity orientation from members.
  - We can distinguish between:
  - Pure agglomeration
  - Agglomeration and inter-firm connections.



DO CLUSTER  
MATTER?



# Dynamic Industrial Clusters are Engines of Value Creation

- Cluster firms have higher value creation
- Cluster firms have higher growth
- Cluster firms have higher productivity
- Cluster firms have higher salaries

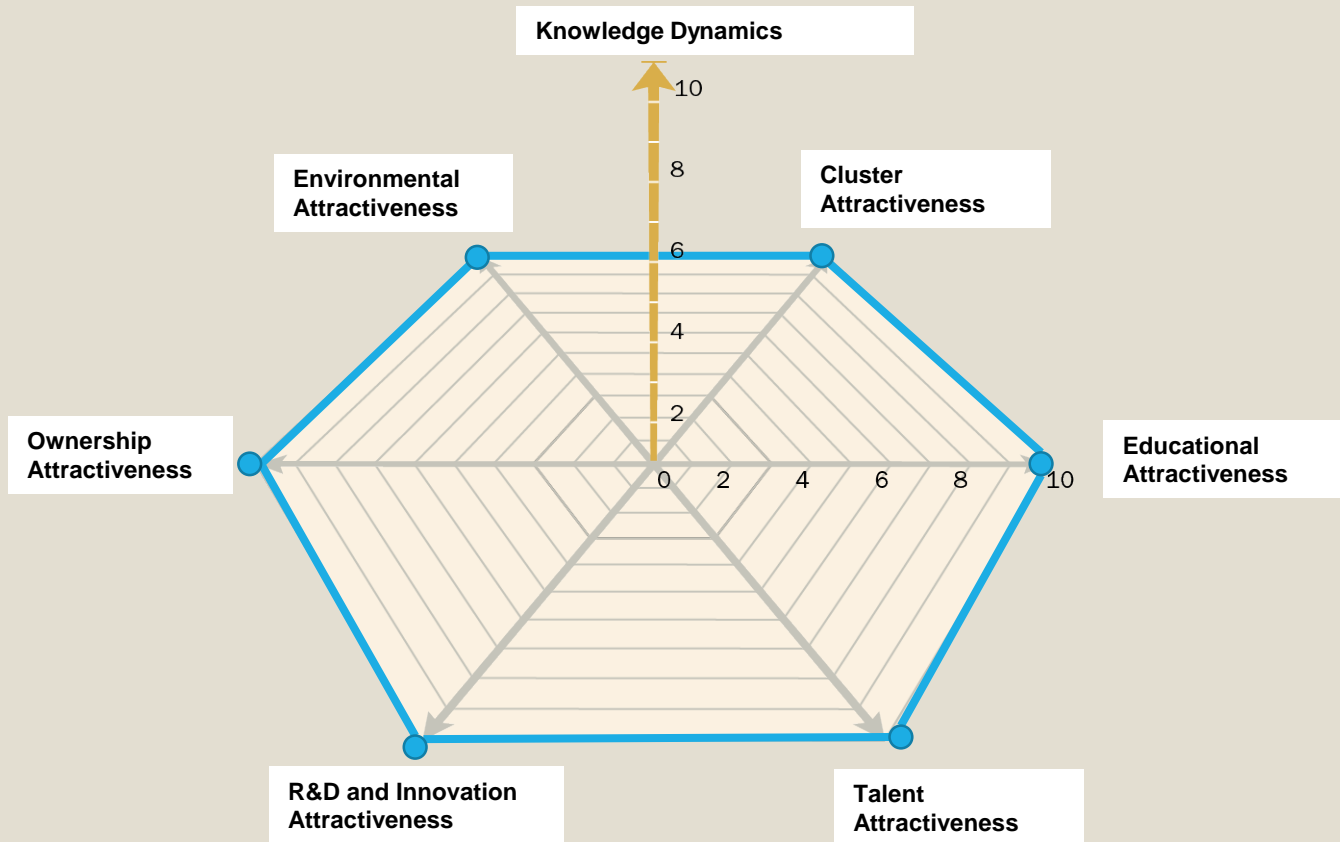
# Dynamic Industrial Cluster are Engines of Innovation

- Cluster firms have higher innovation capacity
- Cluster firms have higher commercialization rates
- Cluster firms have higher spin off activity
- Cluster firms have higher dynamism of change

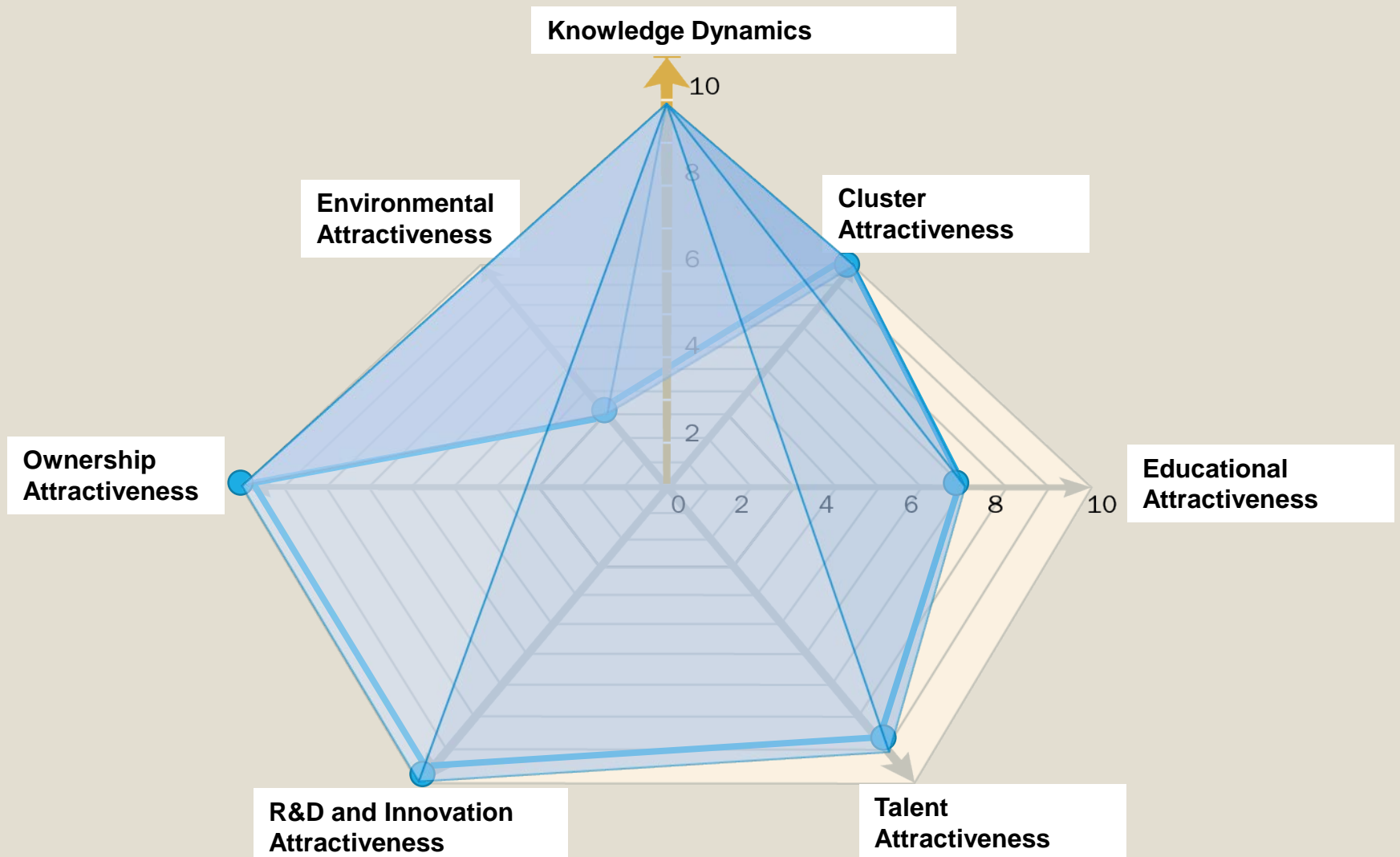


# PROPERTIES OF SUCCESSFUL CLUSTERS

# The Emerald Model



# Offshore Oil & Gas



# Cluster Attractiveness

- **How large is the cluster?**
- **To what extent does it add value?**
- **Is it complete?**
- **Does it indicate specialization (Regionally & Nationally)**
- **How much does it export?**
- **Is it productive (e.g., Value creation/Employee)?**

# **Educational Attractiveness**

## **(Supply of knowledge workers)**

- **Do cluster specific educational programs exist?**
- **Do they attract more students at vocational, undergraduate, and graduate levels?**
- **Do they attract more foreign students?**

# Talent Attractiveness

- **Does it manage to attract high skilled employees (e.g., Engineering, Science and PhD)?**
- **And Skilled foreign workers?**
- **Does the media assist? Industry Sexiness.**



# **R&D and Innovation Attractiveness (Cluster knowledge production)**

- **Cluster specific researchers**
- **Cluster specific foreign researchers**
- **R&D investments**
- **R&D output (Publications, Patents)**
- **Innovation output (Products, Services, Markets)**
- **Innovation content (New products/Total sales)**

# **Ownership Attractiveness**

## **(Cluster competent capital)**

- **Cluster serial entrepreneurship**
- **Is foreign ownership so bad?**

# Environmental Attractiveness

- **Emissions and pollutants**
- **Total energy usage (CO2)**
- **Proportion of renewable energy**
- **Environmental investments**
- **Environmental technology**
- **Industry specific measures**

# Knowledge Dynamics

- **Employee Mobility between firms**
- **Knowledge Linkages between firms (in innovation and internationalization)**
- **Knowledge Linkages with institutions**
- **Cooperative Networks: Alliances**

# The Emerald Model

