

Distance is not dead:
*21st century geography of
university-business research cooperation*

Robert Tijssen,
Wouter van de Klippe and Alfredo Yegros



Research questions and European STI policy perspective

To what degree are European universities, and the European Research Area as a whole, localizing, regionalizing and/or globalizing their R&D interactions with the business sector?

Have European STI policies made a difference ?

Policy analysis issues:

- Focus on connections interactions and cooperation between universities and firms; impacts of universities on industrial R&D, innovation and economies
- Regional development strategies ('Smart specialisation') and global ambitions of large research-intensive universities ('Global Universities')
- Funding mechanisms and incentive structures
- Need for internationally comparative M&E framework and quantitative data

Complex system with interacting determinants

Organisational:

- Strategies; resources; infrastructure; knowledge management
- R&D specialization; competitive environment; critical mass of attractive assets; economies of scale and scope
- Incentive systems and organisational culture

Geographical:

- Located in areas with high levels of R&D activity and connectivity (metropolitan areas; economic hot spots)
- Differential proximity effects

General framework conditions:

- Alignment between knowledge supply (university) and knowledge demand (industry)
- Support systems and transfer structures (co-creation processes and open science, open innovation)
- Local, regional or domestic policies and funding instruments

Performance indicator

University-business research cooperation

- Reflecting a university's attractiveness as R&D partner
- Partial indicator of academic research commercialisation and innovation potential
- Joint research publications co-authored by academic researchers and R&D staff with a business enterprise affiliation
- Represents productive and successful research partnerships
- Enables international comparative geographical analysis

Analytics

University-business co-publications (UBCs):

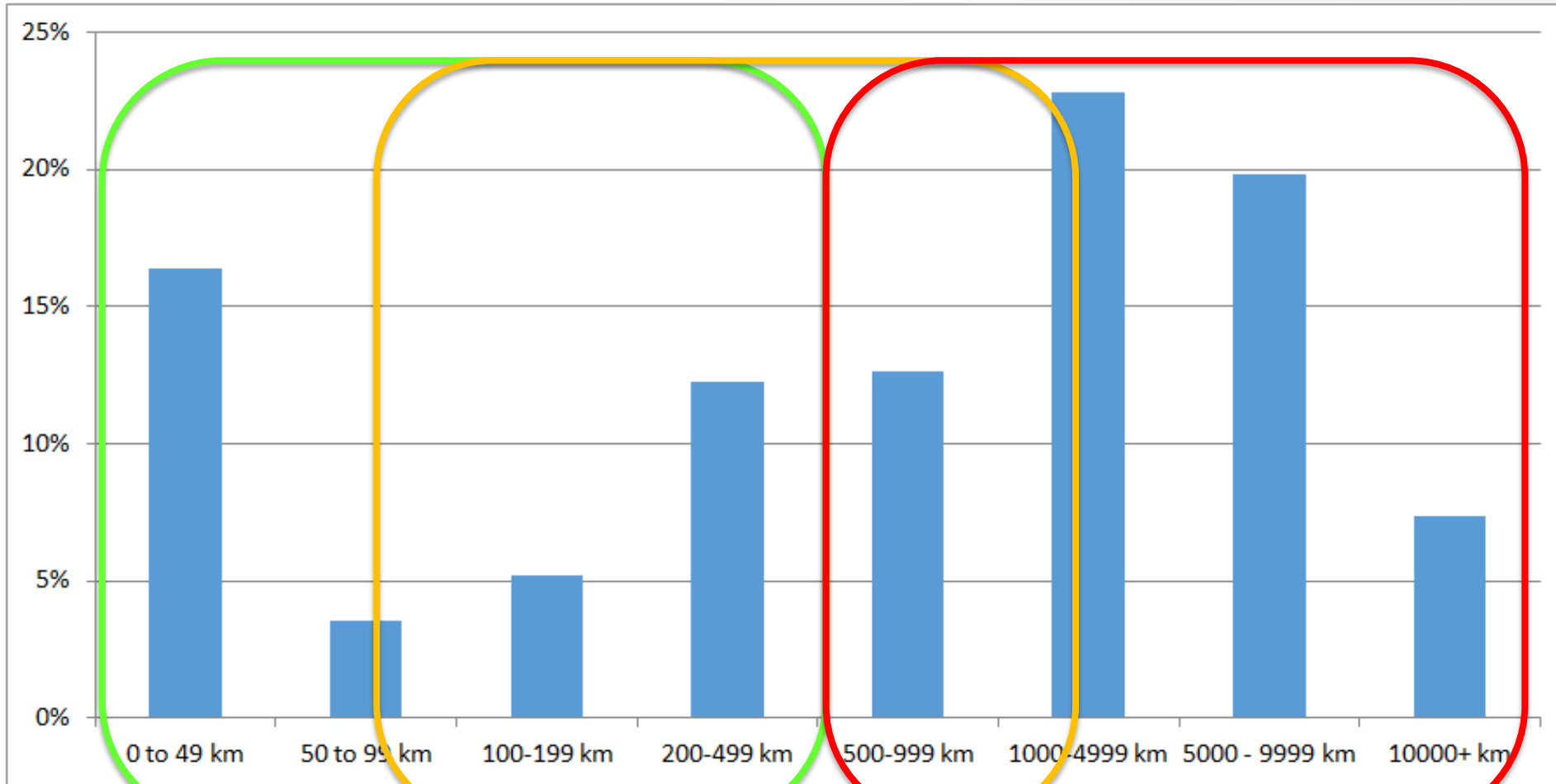
Number of joint research publications co-authored by academic researchers and R&D staff at a firm

Distance metrics:

Author affiliate addresses used to compute the spatial distance (in km) between university's city of location and that of the partner firm

UBC output distribution by distance zone

(2013-2017; n=808 universities)



Local ?

Regional ?

Global ?



How local is 'local' ?

- Close-distance UBC patterns and trends depend on many variables (geographical and economic circumstances; industrial structure, population density, university-industry concentration effects; urban agglomeration effects, etc.)
- Selecting an appropriate 'close-distance zone' requires a case-by-case customized solution
- Selecting a 'close-distance zone' for international comparisons:
0-49 km or 0-99 km ?

Centre for Global Higher Education working paper series

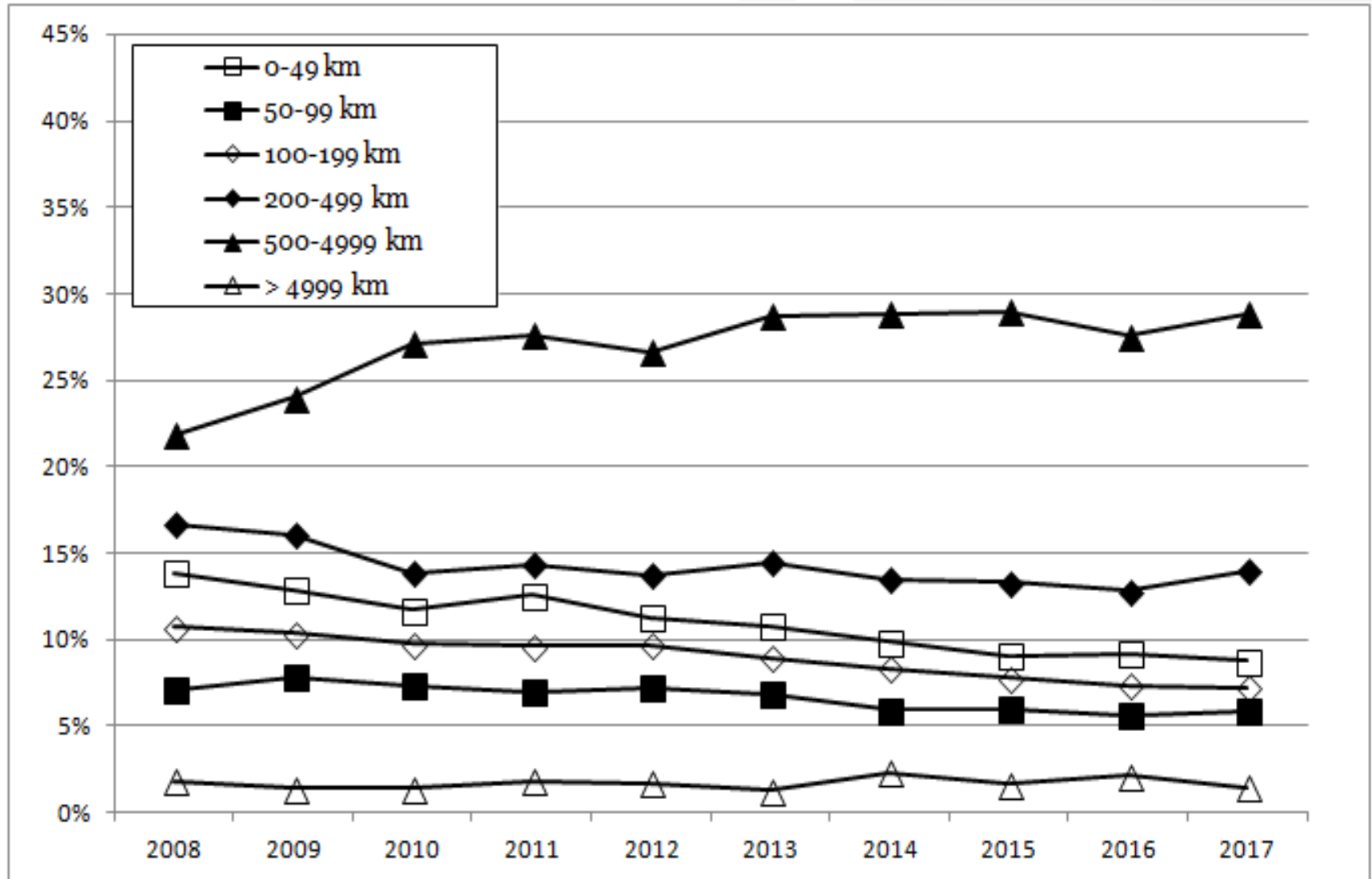
Globalisation, localisation and glocalisation of university-business research cooperation: general patterns and trends in the UK university system

**Robert Tijssen, Wouter van de Klippe
and Alfredo Yegros**

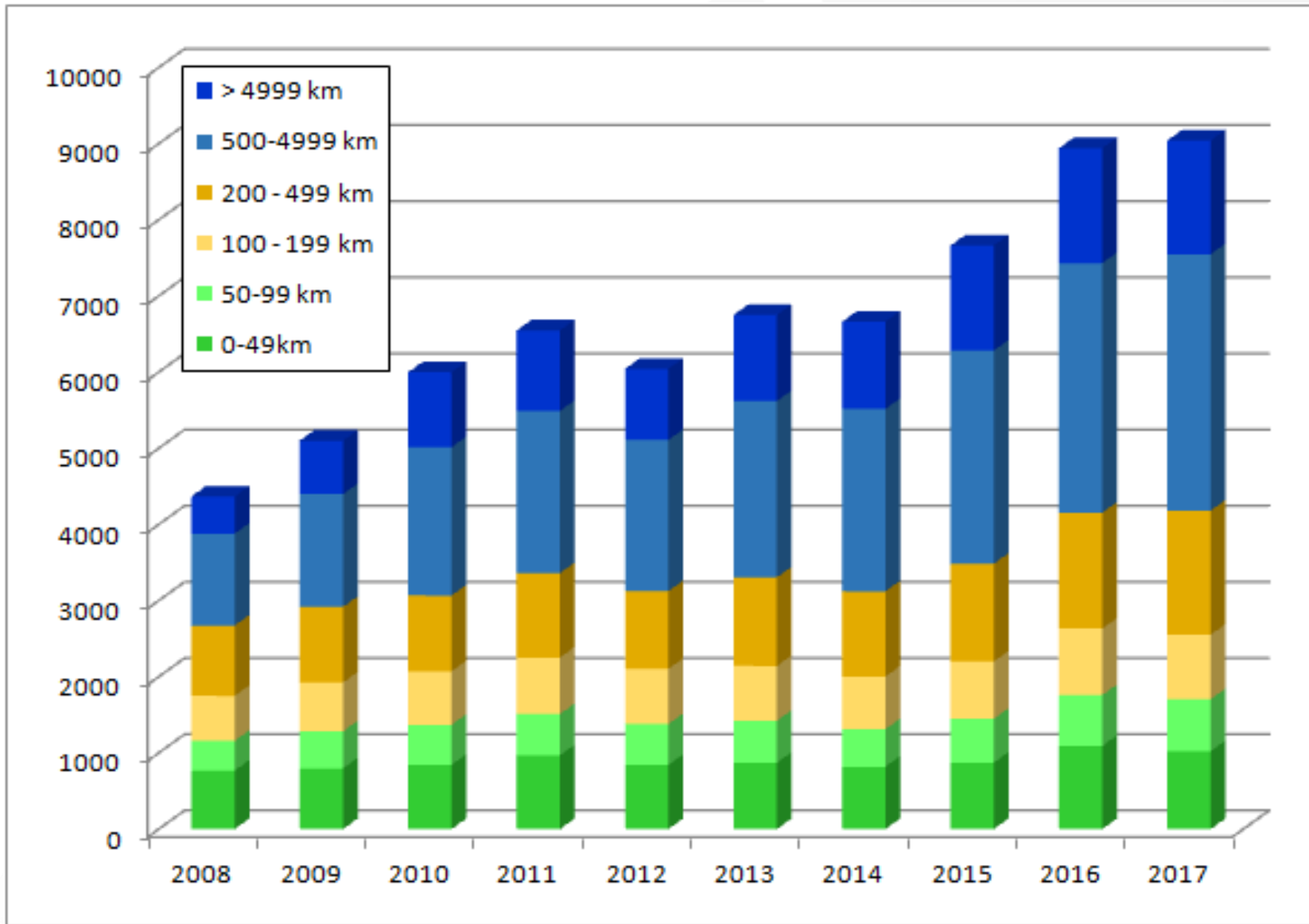
Working paper no. 50
April 2019



Annual trends in UBC shares by distance zone



Annual trends in UBC output by distance zone



What explains the UBC counts ?

Negative binomial regression of UBC output per zone
(statistically significant Wald's chi-square values in green)

	0-49 km	50-99 km	100-199 km	200-499 km	500-4999 km	> 4999 km
Cross-over researchers						
Cross-sectoral mobile researchers						
Dual affiliation researchers						
Business sector R&D environment						
Local business R&D expenditure						
Business sector income streams						
Contract research - SMEs						
Contract research - large firms						
Consultancy - SMEs						
Consultancy - large firms						
Research						
Research publication output - total						
Publication output - medical fields						
Publication output - STEM fields						
Top 10% highly cited publications						
Technological development, entrepreneurship and innovation						
Inventions - disclosures						
Inventions - new applications						
Inventions - new patents						
Spin-off & start-up firms - new						
Spin-off & start-up firms - active						