

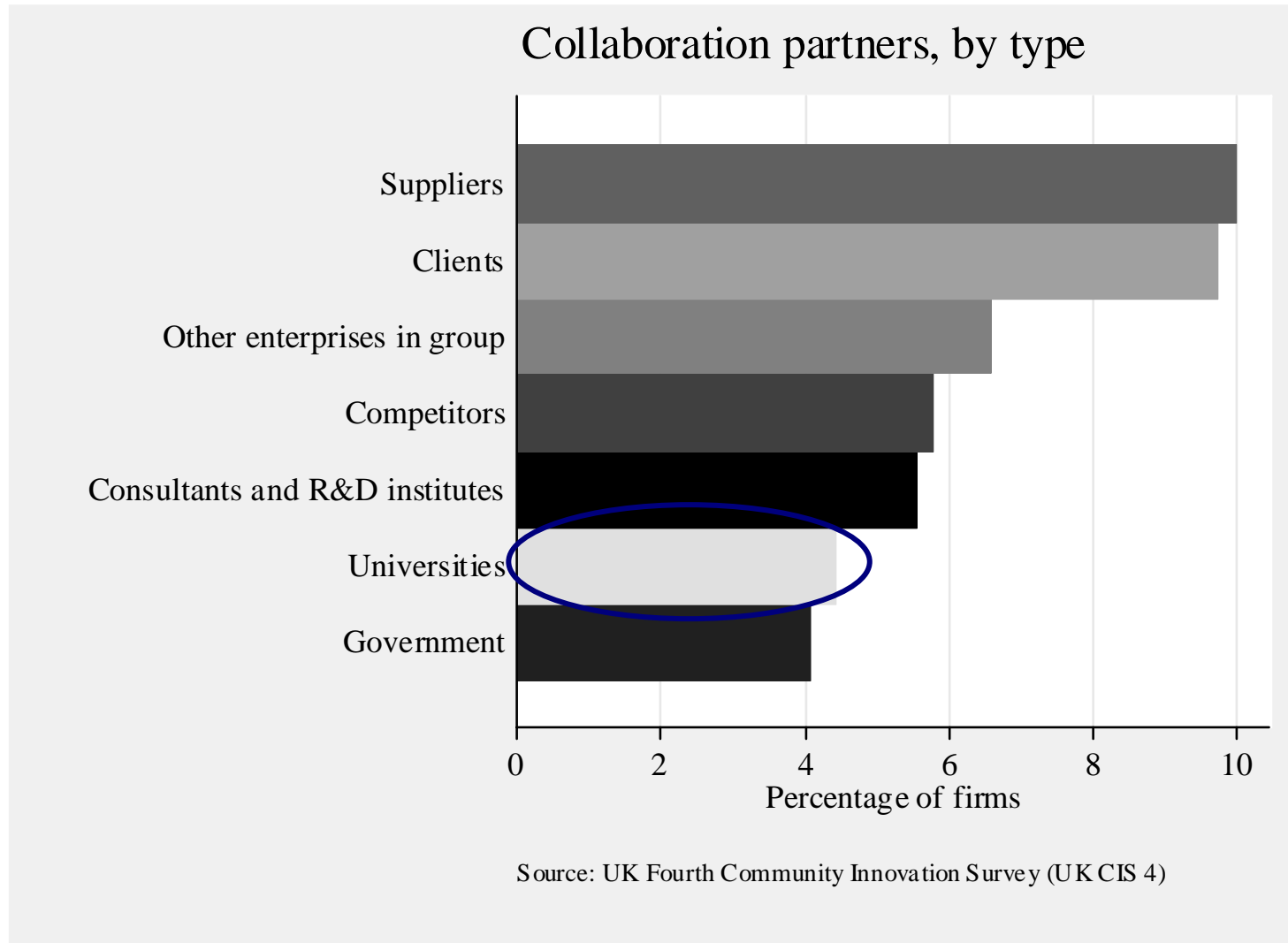


University-business links in the UK

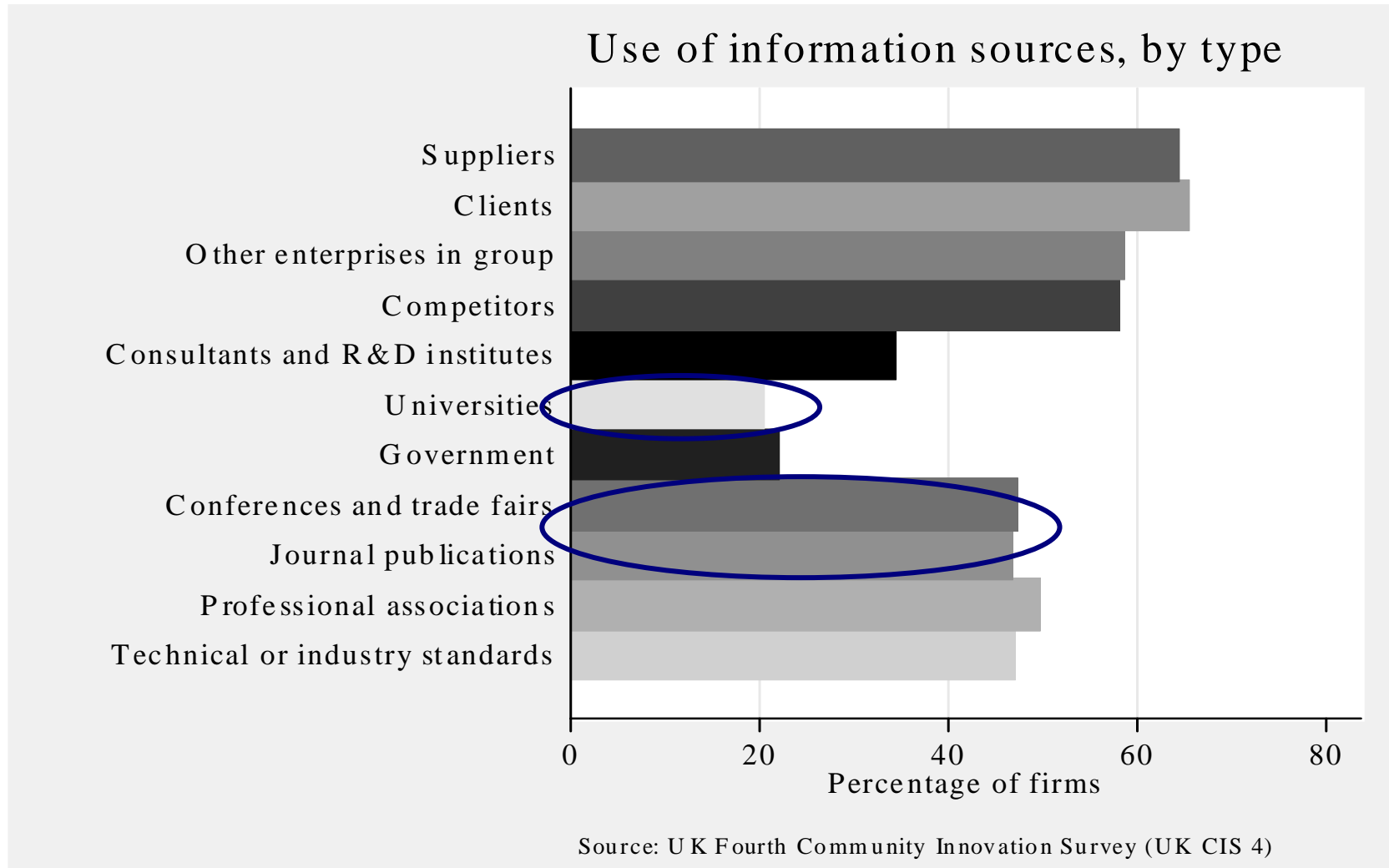
Boundary spanning,
gatekeepers and the process
of knowledge exchange

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Collaborative innovation



Sources of information





Universities as sources of knowledge

- Universities are one of many components in the innovation “ecosystem”
- Clients and suppliers are typically cited as the most important and frequent sources
- Universities are used in combination with internal sources, other businesses, and intermediary institutions
- Focusing on formal collaborations may be too restrictive



Diversity of interaction

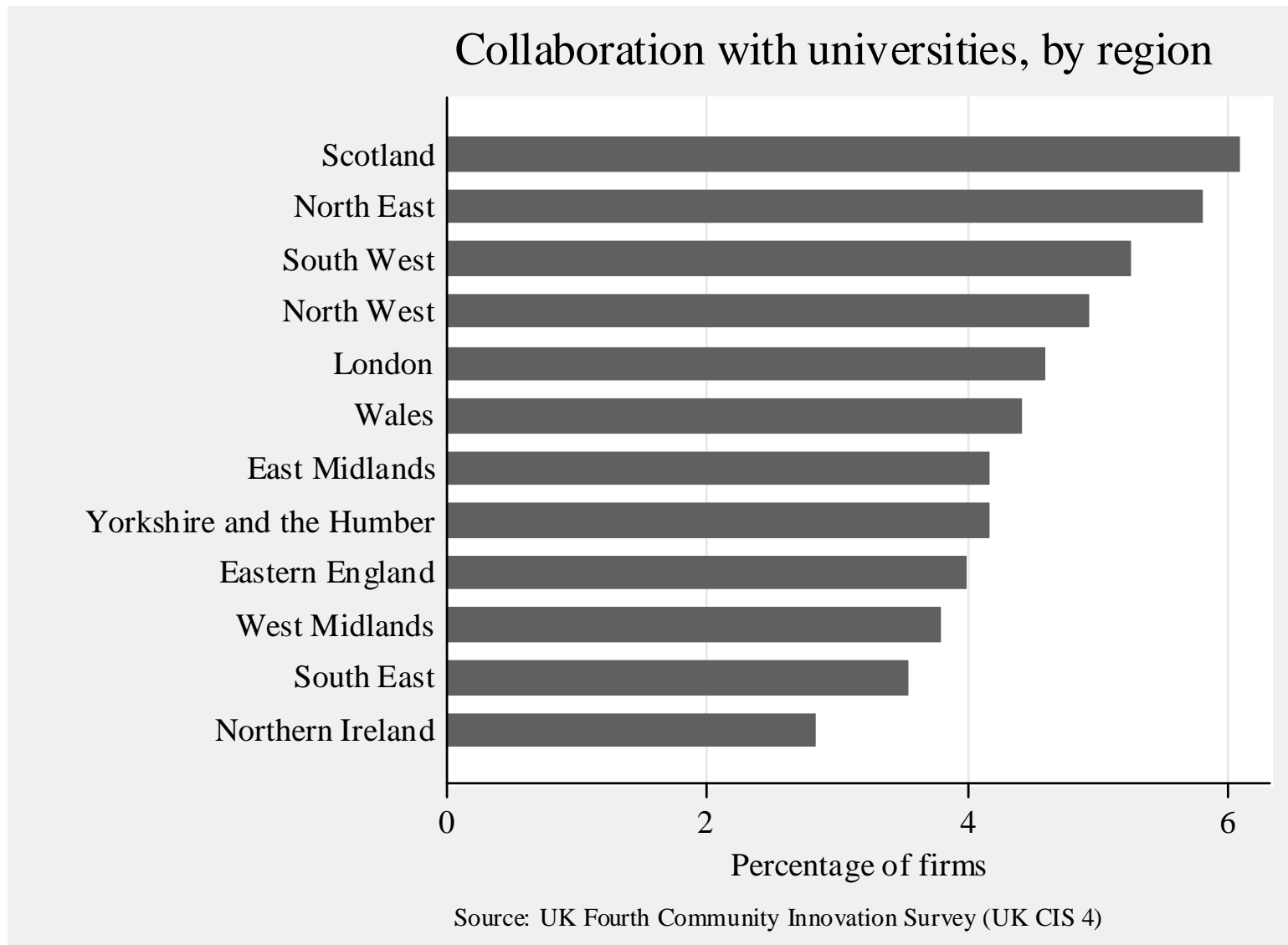
- Innovation Benchmarking Survey carried out by the Centre for Business Research (CBR) in Cambridge and the Industrial Performance Centre (IPC) at MIT (Cosh et al., 2006)
- Wide diversity in modes of interaction used by businesses to access university knowledge
- The traditional types of interaction such as patenting and licensing are relatively infrequent and less important compared to informal contacts, graduate recruitment, publications and conferences



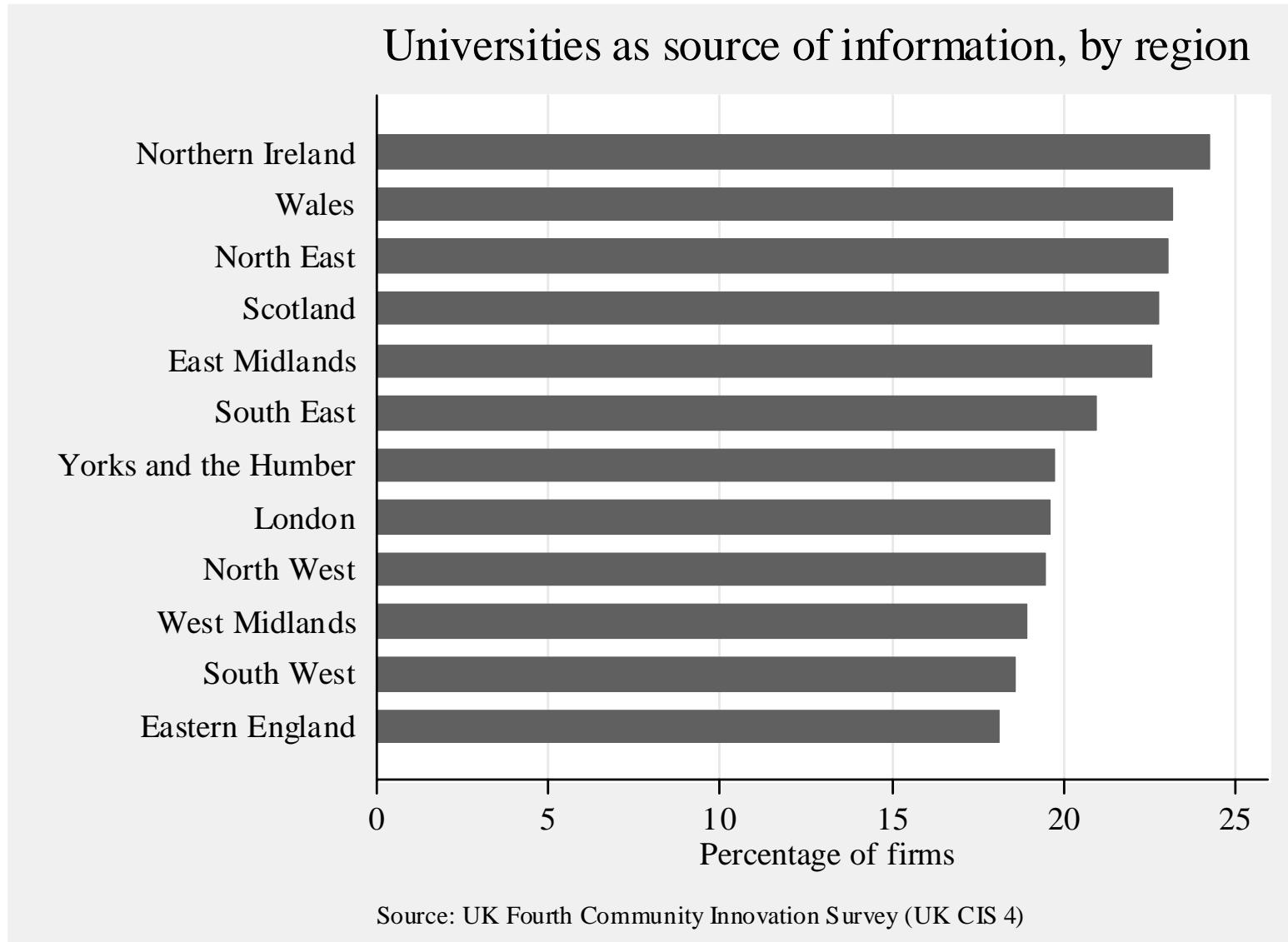
Diversity of interaction

- D'Este and Patel (2007) surveyed over 1500 academics who received grants from the EPSRC
- 30% of grant holders had no interaction with business, but over 15% interacted using 3 or more modes of interaction
- Academics are relatively specialised in the modes they use

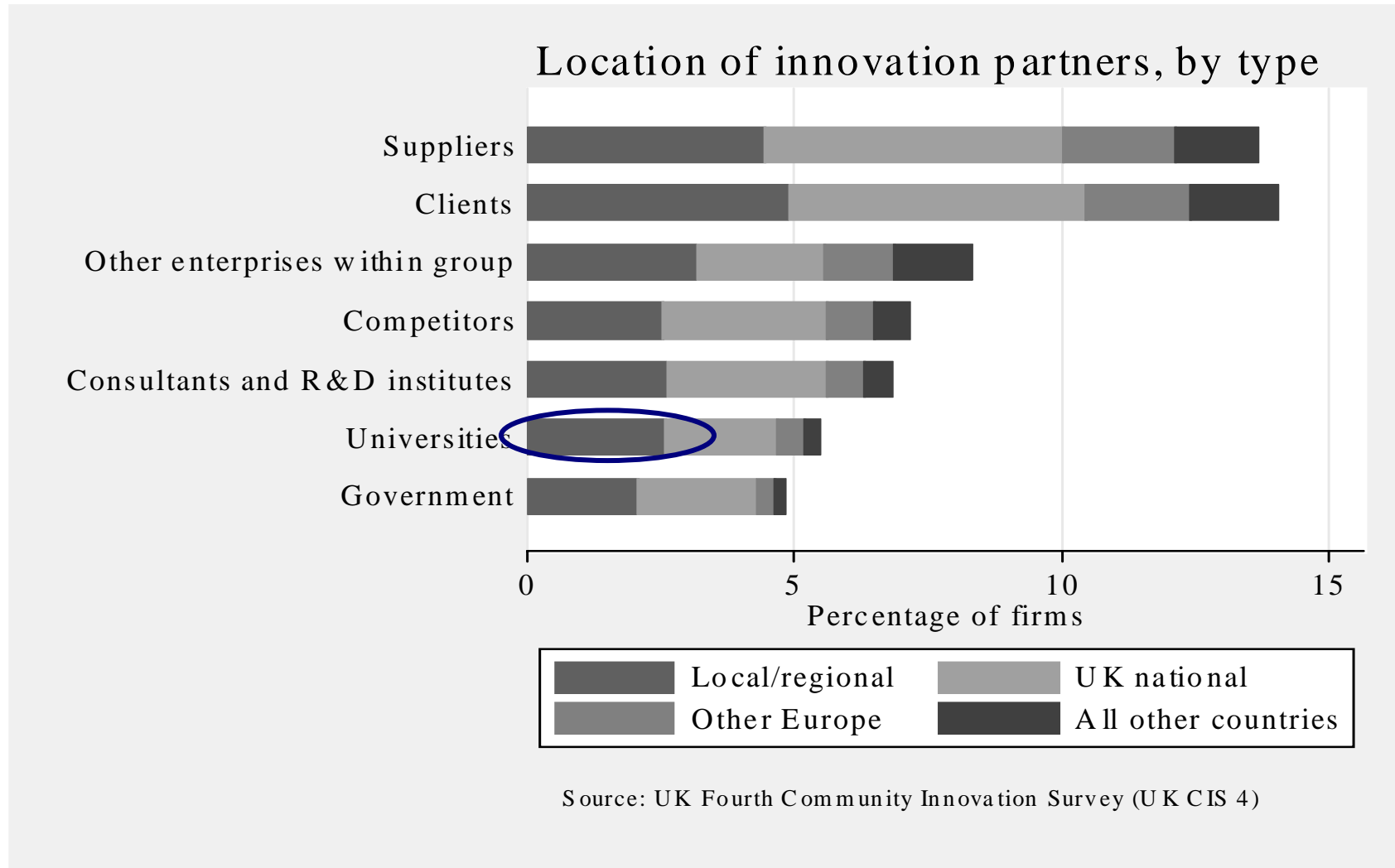
Regional differences



Regional differences



Importance of local interactions





Unresolved issues

- Non-traditional types of interaction, including “public space” roles are relatively important
- Focus on knowledge-exchange rather than knowledge transfer
- Extent of collaboration of businesses with academics beyond science and engineering
- Extent of collaboration with services
- Process by which interactions are identified and by which they develop
- Motivations and measures of success for both businesses and academics
- Determinants of regional variation in collaborations



ESRC project on university-business knowledge exchange

- Multi-methodology approach
- In a first stage, scoping case studies of businesses and academics to help in the development of two survey instruments
- In the second stage, two large-scale surveys of businesses and academics, with matched questions
- Finally, a number of in-depth case studies to follow up on findings from the surveys



Scoping case studies

- 33 interviews with firms in the primary (2), manufacturing (15), construction (1), utilities (2) and service (13) sectors.
- Large firms selected to provide a spread of sectors; small firms chosen at random
- Firms asked to identify range of interactions, and to provide a specific example
- 7 interviews with academics identified by firms
- Interviews conducted using a semi-structured questionnaire

Scoping case studies





Motivations - firms

- Access broad spectrum of expertise relevant to the industry to identify new business and technology opportunities
- General capability development related to research, technology development, training, human resource management, firm infrastructure and business vision
- Specific problem solving, often at precompetitive stage of product or process development



Motivations - academics

- To engage with the industry agenda
- To improve the state of the art and get new ideas which can feed back into fundamental research
- To access funding from RC and other public funding bodies
- To access funding in the areas not supported by the University



Selection of the mode of interaction

- Nature and objectives of the project
- Potential for leveraging public funding
- Prior experiences and perceptions
- Full economic costing
- In most cases firms are able to weigh up two or more options, however it can be no choice
- Large firms are more likely to consider multiple modes of interaction



Selection of the mode of interaction

- Collaborative and consortium research - precompetitive research outcomes on a highly leveraged basis; high risk and unclear perception of value
- Consultancy – specific problem identified by or with the company
- Sponsored degrees, graduate placement and recruitment– problem solving or capability need
- Networks – facilitating academic contacts
- Licensing – spinning out a company



The importance of “gatekeepers”

- Contacts between individuals rather than institutional contacts dominate the initial stages of interaction
- Most large firms have identifiable “gatekeepers” who are familiar with both the business and academic environments. They
 - understand the ways in which universities may assist the company and
 - establish how the knowledge exchange can be effected
- In small firms the gatekeeper’s role is more likely to be performed by senior management



The importance of “gatekeepers”

- Lack of a suitable gatekeeper is recognised by some firms as a limiting factor in identifying business and technology opportunities.
- Interactions where the academic partner’s main role is to locate, absorb and reinterpret the findings of academic research in a way which could be assimilated and applied within the firm.



Geography of interactions

- Large firms are generally not concerned with location, and will look for the best academic in the field
- For sensitive projects, and those requiring quick results, large firms are more likely to choose a local university
- SMEs are more likely than large firms to collaborate with local universities
- What is meant by local depends on the context, for a large multinational “local” may mean Europe



Geography of interactions

Academics:

- UK firms are preferred
- May be pre-conditioned by the funding bodies
- For challenging research – big blue chip multinationals; for student placements – local SMEs
- Also varies by academic field



Measures of success - firms

- Firms measure success using both informal and formal metrics
- Few firms evaluate the outcome of interactions in financial terms
- Project specific non-financial milestones and post-project reviews are seen more important
- The use of informal metrics is at odds with policy incentives for formal metrics such as patenting and licensing



Measures of success - firms

- Contribution of knowledge and expertise which takes a wider or different perspective from that of the firm
- Importance of different disciplines
- Increased capability of the firm to absorb, apply and diffuse the knowledge
- Importance of co-production of knowledge and feedback links with academics



Measures of success - academics

- Making a difference in a firm: “whether they want us to do more”
- Publications
- Amendments in teaching programmes
- A good public profile
- Extra income



First Results from the Business Survey

- Over 1500 responses so far with one more reminder to go
- 33% of firms are interacting with academics
- Very close to CIS results if a broader spectrum of university-related sources of knowledge is taken into consideration
- The CIS collaboration question substantially underestimates the extent of university-industry interactions



Conclusions

- Wide range of interactions, but people-based interactions are most important
- Importance of “gatekeepers”, on both sides of the relationship, to identify, promote and ensure the success of interactions
- Many interactions involved strategic, long-term problems rather than specific technical issues
- Research driven businesses and business driven academics in relation to motivation and results
- Impact of geography depends on the mode of interaction, firm size, sector and academic field