ECONOMIES OF SCOPE AND SCALE IN PUBLICLY FUNDED BIOMEDICAL AND HEALTH RESEARCH

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1. BACKGROUND
- Publicly funded biomedical and health research is expected to achieve the best return possible for taxpayers and for society generally.
- Economies of scale/scope: More and/or higher quality outputs if undertaken in centres with a large number of researchers and/or a variety of research activities.

Is biomedical and health research more productive if concentrated or if dispersed?

2. METHODS

- Literature reviews
  - Economies of scale and scope in medical research
  - 23 interviews with UK MRC funded researchers
  - Basic/clinical, early/late career, large/smaller institutions
  - Two case studies: (1) Centre for Regenerative Medicine, Edinburgh (2) MRC Institute of Metabolic Science, Cambridge
  - Economic model identified: Econometric analysis
  - Bibliometric data: the number of articles, journal, institution of affiliation and co-authors.
  - Survey to 500 researchers: size of the research group.
  - Method: Segmented linear regression model.

3. RESULTS - Literature Review

Table 1. Numbers of papers finding (dis-)economies of scale in biomedical and health research – by type of research group whose productivity is being analysed.

4. RESULTS - Interviews

- Researchers distinguish between different levels of co-location (group, institute, town)
- Ideal group size 5-20 researchers.
- Ideal institute size 20-40 groups (with outliers)
- Many different perspectives on collaboration

5. RESULTS - Case studies

- Shared building/facilities force interaction
- Shared vision/branding has helped
- Role of students - e.g. joint supervisors, informal discussions
- Bringing together diverse researchers can isolate them from their peers
- Structure of university and research system can be barriers
- Challenges of expansion

6. RESULTS - Econometric Analysis

Figure 2. Segmented linear regression model (Without outliers)

7. CONCLUSION

Economies of Scale: The empirical literature is varied both in method and findings. Taken as a whole: Greater likelihood of finding positive economies of scale in biomedical and health research.

Economies of Scope: Effect on research outputs of varying the scope of activities was less often reported in empirical studies than the effect of scale. Taken as a whole: The empirical literature more often suggests the existence of positive economies of scope, but the picture is mixed.

Largely focused at the whole-university or whole-institute level.


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