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A review and classification of empirical research in facilities management

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Background

- Since the late 1980’s facilities management (FM) has gradually gained a foothold as a discipline and profession within the property and construction industry
  - While the profession of FM is new, the academic research and publishing in the field has even a shorter history
  - As the importance of FM has grown as a consequence of concentrating on core competencies, the need for academic empirical research has also been recognised

→ Need to analyse the earlier work done in the FM field
  - To gain an understanding of the evolution of FM research
  - To solidify and pull together previous research
  - To find out possible trends to research in future
Background

- Outsourcing of FM services
  - At first operational functions, such as cleaning and real estate maintenance, were outsourced
  - Short-term contracts and price as the most important purchasing criteria

- Transition in FM service purchasing
  - Reducing and trimming of service provider bases
  - Expanding of outsource contracts
  - Outsourcing of management functions and strategically more-important services

→ Need to develop relationships based on a more collaborative approach
  - Relationship management is replacing the traditional function of purchasing
  - New types of challenges to solve
Aim of the study

“...to review, evaluate and classify the empirical research that has been published in FM journals and conferences and to analyse how FM research and practice are linked.”

Research questions:

- How does empirical research appear to be published in FM literature?
- How can empirical research in FM be analysed?
Research method and data

- Literature review
  - Journal articles and conference papers
    - Facilities
    - Journal of Facilities Management (JoFM)
    - Nordic Journal of Surveying and Real Estate Research – Special Series (NJSRSS)
    - CIB W70 Symposium
    - European Research Symposium in Facilities Management (EuroFM)
  - Time period 1994-2004
  - Selection criterion:
    - FM as the main interest of the publication
    - FM journals and conferences intended mainly to practitioners were left out
    - Articles covering housing, construction and project management topics were left out
  - Altogether 451 articles analysed
## Research method and data

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Total 451
Classification of articles

- **Empirical articles**
  - Specific studies
    - focus on the individual organisations → case studies and action researches
  - Generic studies
    - supported by wider data, resulting in general knowledge that may be hard to implement in solving a specific problem → surveys and interviews

- **Normative articles**
  - Research that examines what individuals and organisations ought to be and ought to do. Literature might be cited, but the point of the inclusion is to support the opinions/assertions of the author.

- **Literature reviews**
Classification of articles

- Type of research
  - Exploratory study
    - refers to research that makes observations of FM for the purposes of developing theories, but leaves the testing of the theories for other studies
  - Hypothesis testing
    - refers to articles that introduce and then test research hypothesis or propositions
  - Methodology review
    - articles that review or introduce an academic research method in the field of FM
- Background of the authors (academic or practitioner)
- Research sector (private or public)
- Research field (the geographical area, where the study was carried out)
Classification of articles

- Topic
  - Technical issues
    - E.g. HVAC, safety, CAFM and standards
  - Performance measurement
    - E.g. benchmarking, facility performance and post occupation evaluation
  - Procurement
    - E.g. outsourcing, service purchasing and relationship management
  - Workplace
    - E.g. office layouts and space management
  - Sustainability
    - E.g. environmental issues, LCC and waste management
  - General trends in FM
    - E.g. the role of FM in business, development of FM industry and content of FM
Classification of articles: Theoretical framework

Subject of analyses
- authors’ background
- FM topic
- research sector & field

Type of research
- Empirical
  - Generic
  - Specific
- Theoretical

Data gathering
- Survey
- Interview
- Action
- Case study
- Normative
- Literature

FM articles
Classification of articles

- Articles were divided equally among the three authors
  - The full text of each article was reviewed
  - To ensure reliability, when the researcher was uncertain about his article topic or type of research category, all three researchers reviewed the article.
  - If at least two of the three researchers classified the article into same category, the article was confirmed in favour of the two authors. As a result, the categories were also developed in more detail.
Results

Amount per different article types

- Empirical: 67
- Normative: 168
- Literature: 216

0 50 100 150 200 250
Results

- Empirical articles
  - Specific studies (127)
    - Case studies (120)
      - Single case studies: 60
      - Multiple case studies: 60
    - Action researches: 7
  - Generic studies (89)
    - Surveys: 80
    - Interviews: 9

- Type of research
  - exploratory studies: 194
  - hypothesis testing: 22
  - methodology reviews: 0
Results

- Background of the authors
  - 337 academics
  - 113 practitioners

- Research sector
  - was not usually mentioned
  - public or non-profit sector: 51 articles

- Geographical area
  - Nordic countries
  - United Kingdom
  - Australia
  - Hong Kong
  - Netherlands
Results

Amount per different topics

- General: 167
- Workplace: 90
- Technical: 79
- Performance: 63
- Procurement: 35
- Sustainability: 17

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Findings

- Procurement and sustainability are topics with rising importance
  - The same phenomenon has been found out also in other industries

- Research method and data
  - Authors had seldom justified their selection of research method
  - The reporting of the methods used was often inadequate
  - Description of data collection was often missing
  - Most authors seem to avoid mentioning of the limitations of their research
Limitations

- Study does not include all the empirical research that has been done in FM
  - papers that are already under review by the journals and conferences
  - some conference proceedings are not considered in this paper, because gaining access to some data was difficult
  - empirical research that is part of dissertations
  - articles that were left out because of lack of time
- The amount of articles published in Facilities is too significant compared to other journals and conferences
  - the publishing policy of Facilities may have had some impact on the results
Conclusions

- Normative approach seems to be a common way to write papers about FM
  - many normative papers could have easily been developed into pure research papers by just linking the work to the existing body of knowledge and reporting methodology thoroughly
- FM as a scientific discipline seems to be maturing
  - the number of academic journals and conferences in the field is growing
- In order to progress
  - the discipline must continue to increasingly employ hypothesis testing and more valid data analysis techniques
  - introduce more theoretical frameworks to structure FM as a business industry
  - to link practice and research more tightly (articles should be related to the prior body of knowledge and previous research)
  - to report methodological issues more thoroughly
- It would help research in the field if the data would be publicly available through Internet databases
Thank you!

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