

DOES FACILITIES MANAGEMENT MEET THE REQUIREMENTS OF AN ACADEMIC DISCIPLINE?

ANTJE JUNGHANSⁱ and NILS OLSSON

CENTRE FOR REAL ESTATE AND FACILITIES MANAGEMENT, FACULTY OF ARCHITECTURE AND FINE ART, NTNU, TRONDHEIM, NORWAY

The extent to which facilities management can be regarded as an academic discipline is discussed. The characteristics of an academic discipline are presented and used to apply established criteria regarding the definition of an academic discipline to facilities management. There is a general need to develop facilities management into an established academic field. However, the study indicates that facilities management does not yet meet all the requirements of a traditional academic discipline, although it is moving in that direction. It is also questioned how important and realistic it is to meet such requirements, as other practitioner and management related fields, such as project management, are observed as being in a similar situation regarding their status as academic disciplines. The research focus in facilities management journals is studied and information from the Euro FM network utilized. A framework is used to analyze facilities management. In addition, the way in which facilities management and some related fields see themselves in relation to the academic discipline status are studied. The finding is that FM research covers a wide range of academic disciplines. The term academic discipline has different meanings, and the definitions vary depending on the particular disciplinary perspective that is taken.

Keywords: academic discipline, facilities management, professionalism, research focus

INTRODUCTION

Facilities management (FM) is a relatively new scientific field. In the 1990s, facilities management was characterized as the practice of coordinating the physical workplace with the people and work of an organization. Facilities management was considered an interdisciplinary approach, integrating principles of business administration, architecture, and the behavioural and engineering sciences (Cotts et al. 1992; Cotts 1999; IFMA 1998). Has the knowledge of FM advanced since then? Does FM meet the requirements of an academic discipline?

There is a general need to develop theoretical frameworks and categorize existing knowledge. There is also a need to gain more insights into the different services that are managed, as this would help practitioners and researchers when searching for information and could also stimulate more research. This is not new thinking. Other authors from outside FM have asked similar questions: “Is FM just a profession or has it a theoretical basis? This question has to be answered to give FM a position in the academic world” (Wagenberg 1997). But given that an adequate answer is still missing, a deeper study of the topic is justified. Working within a discipline can give a scholar a sense of belonging, an identity. The term discipline is related to tools, methods, procedures, concepts, and theories which coherently account for the objects or subjects studied (Holland 2008; Krishnan 2009). A wide array of research disciplines have touched upon facilities management, and this has created a need for not only mapping research but also for categorizing the research. The “Frascati manual” (OECD 2002:30) provides the following definition of research: “Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.”

Tondl (1998) points out that modern research activities are typically regarded as interdisciplinary or multidisciplinary. Contributions to FM-related research cover a wide range of academic disciplines, including architecture, various engineering disciplines, the social sciences, management, and finance. The term “disciplina” relates to the field of learning and teaching. It originates from the Latin words “discipulus” (pupil) and “disciplina” (teaching). Over time, disciplines are shaped and reshaped by external contingencies and internal intellectual demands. In this manner, a discipline becomes a way to organize and concentrate experiences (Goodlad 1979) into a particular world view (Miller 1982). A new discipline can be founded by creating a professorial chair devoted to it at an established university. Disciplines may have different degrees of formality and organization.

i. antje.junghans@ntnu.no

The term “academic discipline” incorporates several elements of the above-mentioned meanings. Its exact definition varies depending on the context of discussion. The term has frequently been used in relation to the organization of knowledge. A discipline is usually defined as the specialized exploration of particular objects and subjects by applying six particular characteristics: methods, concepts, tools, exempla, laws, and theories (Holland 2008). Krishnan’s (2009) list of the characteristics of disciplines is somewhat similar:

1. Disciplines have a particular object of research (e.g., law, society, politics), but the object of research may be shared with another discipline
2. Disciplines have a body of accumulated specialist knowledge referring to their object of research, specific to them and not generally shared with another discipline
3. Disciplines have theories and concepts that can organize the accumulated specialist knowledge effectively
4. Disciplines use specific terminologies or a specific technical language adjusted to their research object
5. Disciplines have developed specific research methods according to their specific research requirements; and maybe most crucially
6. Disciplines must have some institutional manifestation in the form of subjects taught at universities or colleges, respective academic departments and professional associations connected to it.

Towards the end of this paper, Krishnan’s list will be referred to in the discussion on the extent to which FM meets such criteria of an academic discipline. FM is not the only academic area that has asked “Are we an academic discipline?” Stanford (1998) describes women’s studies as an emergent discipline. She believes that the field of women’s studies is interdisciplinary, generating exciting transformations of knowledge across disciplinary boundaries. She also points out that for boundaries to be crossed, they must exist. Terras (2006) discusses to what extent humanities computing can be regarded as a discipline. She argues that it exists as an academic discipline without being a formal university subject, and that this gives the scholars a sense of freedom: they are free to develop their own research and career paths and develop their research agenda in the direction they may chose. Schalcher (2007) recognized similarities about research following practice between the practice-driven approach to FM and the use of knowledge from cybernetics before the scientific bases were completed. He calls it a “necessary and unavoidable learning process” and a methodological approach of “trial and error” (Schalcher 2007).

Berner and Hahr (2006) have presented the development of “Construction Management and Building Industry” in the faculties of civil engineering in German-speaking universities and institutes of technology. Berner is one of twenty-four professors representing the chairs in construction management and building industry who developed a “Professor memorandum” in team work in 2005. The objective was a consistent external presentation of the German-speaking chairs and departments, because of the importance for the construction industry. The industry depends on proper functioning of all production capacities and services. Diversity is a characteristic of the related education and research. The above mentioned German speaking universities and research institutions integrated knowledge in fields such as management, organization, structural engineering, business administration, building law, and contract law. The professors regarded the superior position of their knowledge and research field in civil engineering as an outcome of the approach (Berner and Hahr 2006).

STATE OF THE ART IN FM

A number of publications have documented the development of FM. Key publications have been written by professors from outside the FM field. Keith Alexander created a first structure for the FM work field, identifying processes, services, facilities, and objectives as important categories with regard to organizations’ primary activities, and distinguishing FM from other disciplines: “It is the emphasis on process and service and the relationship between facilities and the objectives of an organization which characterize facilities management and distinguish it from the established professional disciplines of the industries which it calls construction, hospitality, support and other service industries” (Alexander 1992). Schalcher has described the unique combination of different disciplines as a real challenge of research in FM. In his opinion the different disciplines are macro- and micro-economics, building and information technology, and behavioural sciences: “Thus, it is truly inter- and trans- disciplinary research” (Schalcher 2007).

Jensen recorded the institutionalization of the work field as one of the main drivers for the development of the FM discipline: “A discipline arises when persons within a work field create a community to define the discipline and ensure its development through a kind of institutionalization of the discipline. Disciplines do not emerge from technological and structural changes in society” (Jensen 2008). The managerial side of FM has special importance, and FM is often regarded as a management discipline (Jensen 2008). In Italy, FM has been defined as a practice for managing non core business services. Alberto F. De Toni and Fabio Nonino proposed their theory around the FM discipline and described a new model, named Open Facility Management: “It is presented as a multidisciplinary approach for the integrated and coordinated design, planning and management of non core services” (De Toni et al. 2009). In the United States, the first educational program in FM was established in the 1980s. Professor Bill Sims established the BS and MS degree programs in FM at Cornell University. By the end of 1990 approximately fifty programs in FM had been established at American Universities (Cotts 1999).

FM started to become an academic discipline in Europe after research centers and institutes were established at universities. The first European FM research centers were established in the UK, Netherlands, Norway, and Denmark:

- 1990, Glasgow; 2000, relocated to Salford: Centre for Facilities Management (CFM) at the University of Salford, Professor Keith Alexander, Architecture.
- 2001, Delft: Center for People and Buildings, at the Delft University of Technology, Professor Hans de Jonge, Real Estate Management, Wim Pullen, Director of CfPB.
- 2002, Trondheim: Metamorphosis – Centre for Real Estate and Facilities Management at the Norwegian University of Science and Technology (NTNU), Professor Tore Haugen, Architecture, and Engineering.
- 2008, Copenhagen: Centre for Facilities Management (CFM) at the Technical University of Denmark (DTU), Professor Per Anker Jensen, Engineering.

Researchers from all over Europe participate in the Research Network Group (RNG). RNG is a workgroup of the European Facility Management network (EuroFM). The vision of EuroFM is: “Advancement of knowledge in Facility Management in Europe and its application in practice, education and research, in order to communicate best practice through Europe.” EuroFM holds an annual research symposium and European FM conferences (EFMCs). These activities take place at different locations in Europe. The topics of the research symposiums are connected to the topics of the business symposiums and support the cooperation of business and science. To date, ten research symposiums have been held since the start in Salford (UK) in 2002. The eleventh EuroFM research symposium will be EFMC 2012 in Copenhagen (Junghans 2011d).

ARGUMENTS PRO FM AS AN ACADEMIC DISCIPLINE

FM can be discussed as an academic discipline regarding to the high number of education programs provided since the 1990s. Approximately 50 FM education programs are listed in “The facility management handbook” (Cotts 1999). They are located at universities in the United States and fall into the following categories: IFMA-recognized programs, other degree programs, programs with facility management related courses, and certificate programs in facility management (Cotts 1999). The “European Facility Management Education Guide” documents information about academic education programs in Europe (EuroFM 2009).

In addition a high number of FM specific books were published. Andrea Fornasier and Gianluca Zanutto have presented a list of more than 100 service management books regarding FM and global service contracts (Fornasier and Zanutto 2009). The books are mainly written in English and were published between 1989 and 2007. A common understanding about the object of research as non core business services can be recognized (Alexander 1992; De Toni and Nonino 2009; Schalcher 2007). The institutional manifestation of FM in Europe started with the establishment of research centers at universities (Jensen 2008). Beginning of 2011 the European Facility Management research network group (RNG) has participants from twenty-two universities in ten countries. The participants are mainly Professors of facilities management and also researchers (Junghans 2011c).

ARGUMENTS CONTRA FM AS ACADEMIC DISCIPLINE

FM can be discussed as a work field. Persons managing this work field have different professional and educational backgrounds (Jensen 2008). FM research in Europe might be not as much developed as in the United States. A literature research within the European library of earlier studies revealed a relatively small number of FM publications from Europe compared with the high amount of publications from the United States (Junghans 2011b).

APPROACH TO A NEW DISCUSSION OF FM AS ACADEMIC DISCIPLINE

The above-mentioned characteristics of an academic discipline will be used to discuss to what extent facilities management can be regarded as an academic discipline. Established criteria on what an academic discipline are applied to facilities management. Background information about the development of a European research agenda in FM was gathered from earlier studies. The EuroFM Research Network Group formed an additional source of information. By the beginning of 2011, the group consisted of representatives from twenty-two universities from ten countries. At this time Antje Junghans was chairman of the RNG. Junghans conducted a survey among the RNG members, and representatives from seventeen universities from nine countries participated. The survey delivered information related to ten international FM research fields (Junghans 2011c). In addition, the research focus in facilities management journals was studied and information from the Euro FM network utilized.

A systematic selection of papers was made in four main steps. The research fields were used as keywords for additional keyword

research in the “Journal of Facility Management” (“JFM”) and “Facilities.” Both of the aforementioned journals are recognized as important scientific journals in the FM field. A comparison of the survey results and the journal results identified “workplace” as the most important object of research. A search on the keyword “workplace” yielded 20 papers in the “JFM” and 27 in “Facilities.” The top five research papers were selected in historical order for further analysis (Figure 1).

EUROFM RNG

The Research Network Group (RNG) of the European Facility Management network (EuroFM) conducted a survey of the goals, reality, option, and will of FM research in European universities: FHS Kufstein Bildungs GmbH (A); ZHAW Züricher Hochschule für angewandte Wissenschaften (CH); Fachhochschule Frankfurt am Main – University of Applied Sciences (D); HTW Berlin – Hochschule für Technik und Wirtschaft Berlin (D); Karlsruhe Institute of Technology, Universität Karlsruhe (D); DTU Management Engineering, Technical University of Denmark (DK); Alto University of Technology (FI); Inholland, University of Applied Sciences, Inst. of Higher Prof. Ed. (NL); NHTV Facility Management School Breda (NL); TU Delft (NL); Saxion Hospitality Business School (NL); Hanze University Groningen (NL); Akershus University College (NO); Norwegian University of Science and Technology NTNU (NO); IST – Technical University (PT); University of Bolton Built Environment (UK); and the Centre for Facilities Management, Manchester (UK).

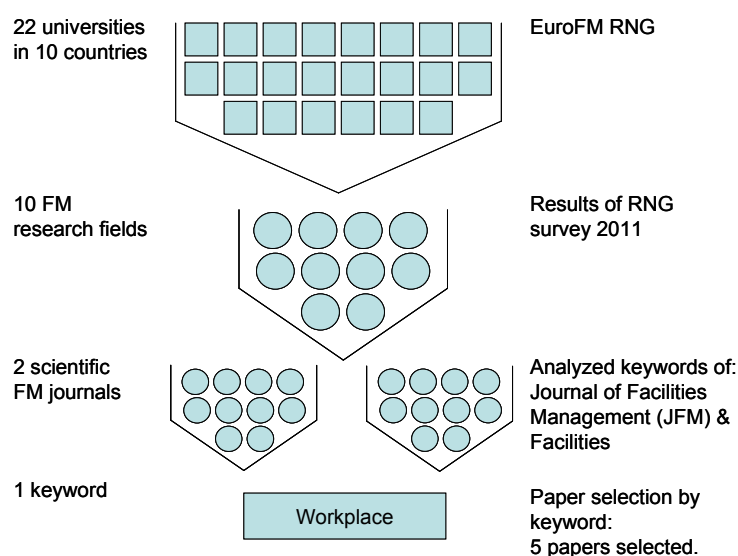


Figure 1: Paper selection process

IDENTIFICATION OF TEN FM RESEARCH FIELDS WITHIN THE RNG SURVEY

Within the RNG survey, ten European FM research fields were identified. First, the research fields were assessed using three criteria: number of participating institutions per research field, number of contributions per research field, and number of participating countries. Then, the total number for all three criteria was used to prioritize the ten research fields, as follows: sustainability (47), knowledge (45), added value (35), workplace (30), demand and supply (24), built environment (22), usability (21), future (20), health care (20), and work organization (17) (Junghans 2011d). Most of the identified research fields are related to earlier EuroFM projects or publications (e.g., added value (Jensen 2008), future (Alexander 2009), workplace (Nenonen et al. 2009, usability (Alexander 2010; Blakstad et al. 2010), health care (Lavy and Shohet 2009), sustainability (Balslev Nielsen et al. 2009; Junghans 2011a). The findings may indicate that EuroFM is a close community with relatively consistent research activities. They may also indicate that EuroFM research fields react to the mainstream and the notion of a common research focus.

KEYWORD RESEARCH IN SCIENTIFIC JOURNALS

In addition to the survey results and analyses of EuroFM projects and publications, a keyword research in two scientific journals was conducted, namely “Facilities” and the “Journal of Facilities Management” (“JFM”) (Table 1).

SELECTION OF FIVE RESEARCH PAPERS

The above-mentioned results underline that “workplace” is a main topic for FM research. Deeper insight into the use of this keyword was gained by examining the top five listed publications from “Facilities” and “JFM”, written by Becker (2002), Shabha (2007), Haynes (2008), Bakker and van der Voordt (2010), and Sailer (2011).

Table 1: Keyword research in two scientific journals

| “FACILITIES” | | “JFM” | |
|----------------------|---------|----------------------|---------|
| Keywords | Results | Keywords | Results |
| 1. Workplace | 27 | 1. Workplace | 20 |
| 2. Knowledge | 18 | 2. Knowledge | 6 |
| 3. Health care | 13 | 3. Sustainability | 6 |
| 4. Built environment | 1 | 4. Added value | 1 |
| 5. Sustainability | 6 | 5. Future | 1 |
| 6. Added value | 4 | 6. Health care | 1 |
| 7. Work organization | 4 | 7. Built environment | 0 |
| 8. Demand and supply | 0 | 8. Work organization | 0 |
| 9. Future | 0 | 9. Demand and supply | 0 |
| 10. Usability | 0 | 10. Usability | 0 |

The five articles and additional information about their authors was discussed regarding to Krishnan’s (2009) sixth criterion: “Disciplines must have some institutional manifestation in the form of subjects taught at universities or colleges, respective academic departments and professional associations connected to it.” The authors come from different disciplines, and hence FM encompasses multiple disciplines (Figure 2).

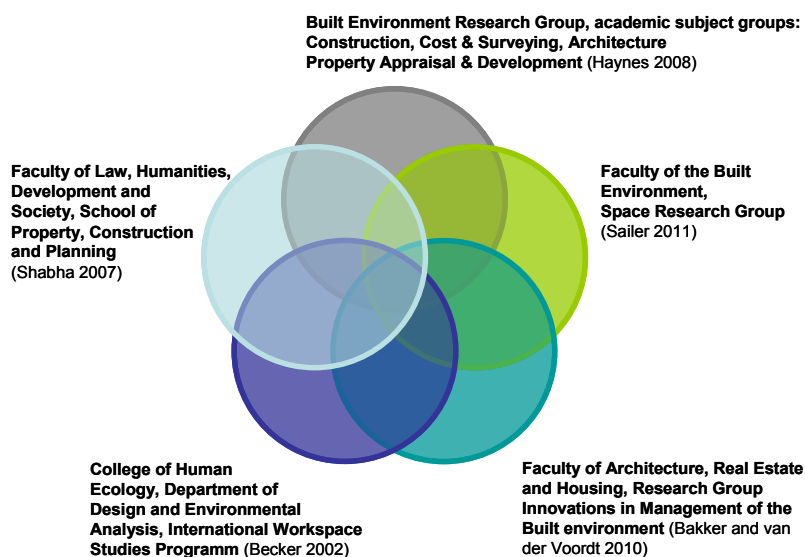


Figure 2: Institutional manifestation of FM research

CONCLUSIONS

The following discussion of the extent to which FM meets the established criteria of an academic discipline is based on the work of Armin Krishnan (2009).

PARTICULAR OBJECT OF RESEARCH

“Disciplines have a particular object of research (e.g., law, society, politics), but the object of research may be shared with another discipline.” (Krishnan 2009; criterion 1). FM has a particular object of research, which is characterized by its belonging to non core business services, focusing on workplaces and their management. Indications of this were found through literature research. A common understanding of the FM research focus on non core business services can be underlined (Alexander 1992; Cotts 1999; De Toni and Nonino 2009; Schalcher 2007). And FM can be seen in close relation to the design and management of workplaces (Alexander 1992; Cotts 1999; IFMA 1998; Wagenberg 1997). Further, FM is often regarded as a management discipline (Jensen 2008).

BODY OF SPECIALIST KNOWLEDGE

“Disciplines have a body of accumulated specialist knowledge referring to their object of research, which is specific to them and not generally shared with another discipline.” (Krishnan 2009; criterion 2). FM has a body of specialist knowledge. The indications of this are the high numbers of FM education programs which have been developed since the 1980s. More than fifty American universities are listed in “The facility management handbook” (Cotts 1999). FM is a work field. Even though persons working in this field might have different educational and professional backgrounds (Jensen 2008) they are likely to share common specialist knowledge. How much of this knowledge is shared with other disciplines can be questioned.

THEORIES AND CONCEPTS THAT CAN BE USED TO ORGANIZE KNOWLEDGE

“Disciplines have theories and concepts that can organize the accumulated specialist knowledge effectively.” (Krishnan 2009; criterion 3). The theories and concepts of FM are shared with a number of other disciplines. In general, research seems to follow practice. The methodological approach has been described as “trial and error” (Schalcher 2007). Thus, FM does not have any common theories and concepts that can be used to organize knowledge.

SPECIFIC TERMINOLOGIES

“Disciplines use specific terminologies or a specific technical language adjusted to their research object.” (Krishnan 2009; criterion 4). FM has specific terminologies. Under the European standardization (EN 15221-1:2007), the terms and definitions are documented: “The purpose of this standard is to define the terms in the area of Facility Management.”

SPECIFIC RESEARCH METHODS

“Disciplines have developed specific research methods according to their specific research requirements.” (Krishnan 2009; criterion 5). The theories and concepts of FM are common to a number of other disciplines. It is not apparent that there is a need for specific FM research methods.

INSTITUTIONAL MANIFESTATION

“Disciplines must have some institutional manifestation in the form of subjects taught at universities or colleges, respective academic departments and professional associations connected to it.” (Krishnan 2009; criterion 6). FM has a large and growing institutional manifestation. The starting point was the development of FM programs in the US at the beginning of the 1980s (Cotts 1999). Today, many universities in different countries offer FM courses. The Research Network Group of the European Facility Management network currently has twenty-two members representing universities in ten countries (Junghans 2011c).

Based on recent developments in the field, FM meets several of the criteria that qualify a subject as an academic discipline. Important questions concern to what extent FM knowledge is unique to the FM field, and to what extent there is a unique FM research methodology, and whether there is a need for such a methodology. FM appears to be on the way to becoming an academic discipline, even though it also has clear multidisciplinary characteristics. Depending on what criteria are applied, it may already be one. It may also be questioned to what extent it is important for FM, as a multidisciplinary, interdisciplinary and practitioner-focused “discipline,” to meet all the defined criteria.

REFERENCES

- Alexander, K (1992) An agenda for facilities management research. “Facilities”, 10(7), 6-12.
- Bakker, I and van der Voordt, T (2010) The influence of plants on productivity: A critical assessment of research findings and test methods. “Facilities”, 28(9/10), 416-39.
- Balslev Nielsen, S, Jensen, J O & Jensen, P A (2009) Delivering sustainable facilities management in Danish housing estates. II International Conference on Sustainability Measurement and Modelling, ICSMM 09 © CIMNE, Barcelona, 2009.
- Blakstad, S H, Olsson, N, Hansen, G K & Knudsen, W (2010) Usability mapping tool. Alexander, K (ed.) Usability of Learning Environments, 17-29. CIB W111: Usability of Workplaces – Phase 3. CIB Publication 330. International Council for Research and Innovation in Building and Construction, Rotterdam.
- Becker, F (2002). Improving organisational performance by exploiting workplace flexibility. “Journal of Facilities Management”, 1(2), 54-162
- Berner, F and Hahr, H (2006). Professor – memorandum: construction management and building-industry – research and teaching at universities. “Bauingenieur”, 81(März), 110-16.
- Cotts, D G (1999). “The facility management handbook”. 2ed. New York: American Management Association.
- Cotts, D G and Lee, M (1992) “The facility management handbook”. New York: American Management Association.
- De Toni, A F and Nonino, F. (2009) “The facility management: non core services and taxonomy: open facility management, a successful implementation in a public administration”. Milan: IFMA.

- EN 15221-1: 2007, Facility Management Part 1: Terms and definitions.
- European Facility Management Education Guide – A resource for the FM industry, students and FM educators across Europe 2009, EuroFM publication 2009, www.eurofm.org.
- Fornasier, A and Zanutto, G (2009) “A road map of facility management: open facility management, a successful implementation in a public administration”. Milan: IFMA.
- Goodlad, S (1979) What is an academic discipline? In: R Cox (ed.) “Cooperation and choice in higher education”. London: University of London Teaching Methods Unit.
- Holland, G A (2008) Information science: an interdisciplinary effort? “Journal of Documentation”, 64(1), 7-23.
- Hynes, B P (2008) The impact of office comfort on productivity. “Journal of Facilities Management”, 6(1), 37-51
- IFMA (1998) “International Facility Management Association: about facility management”. Houston, Texas. <http://www.ifma.org/fm/about.htm> (accessed 29 March 1999).
- Jensen, P A (2008) “Facilities management for students and practitioners”. Lyngby: Centre for Facilities Management – Realdania Research, DTU Management Engineering, Technical University of Denmark.
- Junghans, A (2011a) How can FM contribute to a sustainable development of the built environment? International FM & REM Congress 2011 – Built Environment, Kufstein, 24-35.
- Junghans, A (2011b) State of the art in sustainable Facility Management. 6th Nordic Conference on Construction Economics and Organisation – Shaping the Construction/ Society Nexus. Vol. 3: Construction in Society. Copenhagen April 2011.
- Junghans, A (2011c) European FM Research Agenda – RNG survey 2010/11 (final report). Working paper presented at EuroFM, Naarden, 28 February 2011.
- Junghans, A (2011d) European FM research agenda, Centre for Facilities Management’s (CFM) Nordic Conference at Technical University of Denmark (DTU), Copenhagen, 22-23 August 2011.
- Krishnan, A (2009) “What are academic disciplines? Some observations on the disciplinarity vs. interdisciplinarity debate”. NCRM Working Paper Series 03/09. University of Southampton: National Centre for Research Methods.
- Lavy, S & Shohet, I M (2009) “Integrated healthcare facilities maintenance management model: Case studies”. Facilities 27, 3–4.
- Miller, R (1982) Varieties of interdisciplinary approaches in the social sciences. “Issues in Integrative Studies”, 1, 1-37.
- Nenonen, S, Airo, K, Bosch, P, Fruchter, R, Koivisto, S, Gersberg, N, Rothe, P, Ruohomäki, V & Vartiainen, M (2009) “Managing Workplace Resources for Knowledge Work”. <http://prowork.typepad.com/prowork/PDF/proworkfinalreport.pdf> (accessed 25 June 2011).
- OECD (2002) “Frascati manual 2002: proposed standard practice for surveys on research and experimental development.” Paris: Organisation for Economic Co-operation and Development. http://www.uis.unesco.org/Library/Documents/OECDFrascatiManual02_en.pdf
- Sailer, K (2011) Creativity as social and spatial process. “Facilities”, 29(1/2), 6-18
- Schalcher, H R (2007) Facility management – a scientific discipline? In: H R Schalcher (ed.) 6th EuroFM Research Symposium, 26-27 June 2007, Zurich, Switzerland.
- Shabha, G (2007) An assessment of the effectiveness of embedded smart sensors on users’ performance in the workplace. “Journal of Facilities Management”, 5(3), 179-187
- Stanford, S (1998) (Inter)disciplinarity and the question of the women’s studies Ph.D. “Feminist Studies”, 24(2), 301-25.
- Terras, M (2006) Disciplined: using educational studies to analyse “humanities computing”. “Literary and Linguistic Computing”, 21(2), 29-246
- Tondl, L (1998) What is the thematic structure of science? “Journal for General Philosophy of Science”, 29, 245-64.
- Wagenberg, A F (1997) Facility management as a profession and academic field. “International Journal of Facilities Management”, 1, 3-10.