

SOUTH AFRICAN STAKEHOLDER VIEWS OF THE COMPETENCY REQUIREMENTS OF FACILITIES MANAGEMENT GRADUATES

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Abstract. The aim of this study is to evaluate South African stakeholder views of the competency requirements of graduates of facilities management programmes. The study was done using a questionnaire survey of a cross-section of professionals registered with the South African Facilities Management Association (SAFMA). The responses cover graduates' technical, personal, interpersonal and professional skills as well as their ability to conceive, design, implement and operate business systems. Respondents also offered opinions on the degree of importance of these skills. The findings of this research will enable those designing FM degree programmes of study to ensure that their curricula are current and relevant to the needs of the relevant stakeholders within their respective contexts. The paper goes beyond previous research in the built environment in specifying the requisite proficiency levels in terms of the relevant skills and competencies.

Keywords: education, facilities management, stakeholder views, skills and competencies, curriculum design.

Introduction

The construction industry thrives on stakeholder management (Atkin & Skitmore, 2008). Studies in real estate (Boyd, 2005; Poon, Hoxley, & Fuchs, 2011; Tu, Weinstein, Worzala, & Lukens, 2009) and other built environment disciplines (Ahmed, Yaris, Farooqui, & Saqib, 2014; Benhart & Shaurette, 2014; Gale & Brown, 2003) have highlighted the importance of basing degree program design on stakeholder requirements. Stakeholder engagement has brought about progress in real estate education in South Africa (Cloete, 2002). It has also focused on internationalising (Schulte, Schulte-Daxböck, Holzmann, & Wiffler, 2005) while contextualising South Africa's real estate curriculum (Chikafalimani & Cloete, 2010). The facilities management (FM) discipline is still at its infancy in South Africa. It has yet to be a clearly defined discipline, susceptible to what Tay and Ooi (2001) have termed as an identity crisis, manifested in a lack of consensus on *what constitutes FM, who is a facilities manager, and how FM professionalism can be enhanced*. This identity crisis makes it difficult to distinguish the real FM professionals from whom indispensable knowledge and skills can be sought. This crisis also creates a problem in designing a (structured) FM curriculum because it becomes a challenge to identify the skills and competencies that meet stakeholder

requirements. This affects FM professionalism, manifested through the quality of service and professional performance (Evetts, 2013). Hightower and Highsmith (2013) argue that *"in order for an academic FM program to have adequate industry standing (be successful in the 21st Century), the academic program must have a full understanding of what the FM industry needs (i.e., specific skills acquired during college) for their entry-level employees. Without this understanding and long-term partnership (i.e., between FM industry organizations and academic institutions) the current shortage of FM talent produced by colleges and universities may never be corrected"*.

Consequently, as studies from real estate, construction and other disciplines illustrate, FM curriculum design can thus be approached objectively by making reference to the skills and competencies prescribed by one or two international FM professional bodies and contextualizing these through a local FM professional body, in addition to the articulated needs of other stakeholders. Consequently, this study evaluates South African stakeholder views of the skills and competencies that FM students should obtain after a degree in Facilities Management.

In this study, a skill is regarded as a predefined and operationalized personal quality that has the three key

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features of being productive, expandable, and social; as such, spanning knowledge and experience (adapted from Babatunde, 2014). A competency is regarded as “an integrated set of skills, knowledge, and attitudes that enables one to effectively perform the activities of a given occupation or function [or profession] to the standards expected in employment” (International Board of Standards for Training, Performance and Instruction, as cited in Benhart & Shaurette, 2014, p. 22). Performance measurements drive innovation in FM (Pitt & Tucker, 2008) to the extent that competency and competence are central to performance. Competency refers to the behavioural areas of performance while competence refers to the functional areas of performance or of competency itself as Le Deist and Winterton (2005) have articulated it. Since the functional areas are also diverse, competence has been further defined as including basic, core/essential, and optional, even within the field of built environment (e.g., Dada & Jagboro, 2015; Nkado, 2000). Basic competences are based on best practices and can be seen as foundational/building blocks (e.g., Bodenheimer, Ghorob, Willard-Grace, & Grumbach, 2014), while the optional competences are learner-defined (Darby, 2006; Ferrer-Caja & Weiss, 2002). Most importantly, core competences add value to curricula design (Perkins et al., 2005, p. 1628) and, as such, create competitive advantage (Le Deist & Winterton, 2005, p. 27). Consequently, core competences are used to (re)define curricula (Calhoun, Ramiah, Weist, & Shortell, 2008, p. 1598); more so, in the FM profession where increasing outsourcing calls for such (e.g., Roberts, 2001) to maintain an integrated resource management view of FM (see Then, 1999).

The research questions addressed in this study are as follows: What are the core competencies prioritised by South African FM professionals as desirable for graduates? What are the optional competencies prioritised by South African FM professionals as desirable for graduates, and what are the personal, interpersonal and professional skills prioritised by South African FM professionals as desirable for graduates? The rest of the paper is structured as follows: a review of similar studies, a description of the research methods adopted in this study, presentation and analysis of the findings, and recommendation for programs design in FM.

1. Literature review

Even though there is a gradual growth in the scope of FM (Becerik-Gerber, Jazizadeh, Calis, 2011; Elmualim, Shockley, Valle, Ludlow, & Shah, 2010; Shen et al., 2010) with implications for the number of FM courses and degree programmes in universities around the world, there is a lack of consensus on what constitutes the FM body of knowledge (FMBOK) (Tay & Ooi, 2001). While FMBOK appears to be on the horizon based on the concept of total FM (Chen, 2015) the risk remains that FM programmes may be driven by teacher availability than stu-

dents' and their eventual employers' needs as observed in the real estate discipline (Galuppo & Worzala, 2004). The consequence could be a glaring separation between curriculum requirements and constituent needs observed in real estate (Wells & Williams, 1993) and quantity surveying (Perera, Pearson, Ekundayo, & Zhou, 2013). As a result, different studies in real estate and construction have focused on investigating stakeholder requirements as a basis for curriculum design (see, for example, Ahmed et al., 2014; Poon, 2012; Poon et al., 2011; Weinstein & Worzala, 2008).

In addition to competencies specific to real estate and construction, the different stakeholders have indicated *written communication*; *problem solving*, *analytical decision making*, and *negotiations* as being the four most important real estate graduate skills (Butler, Guntermann, & Wolverton, 1998). In the US, *financial modelling* and *analysis* were top skills in the industry (Rabianski & Black, 1999). 166 corporate real estate executives have perceived *strategic planning*, *real estate portfolio management*, *negotiation and deal making*, and *customer relations* as being crucial for their roles (Gibler, Black, & Moon, 2002). US professionals have also agreed on the most important skills as being *basic financial analysis*, *discounted cash flow analysis*, *time value of money*, *economics*, *written communication*, and *presentation skills* (Galuppo & Worzala, 2004). Postgraduate real estate programs have been found producing graduate with *skills in decision-making*, *risk analysis*, *ethics*, *negotiation*, *critical thinking*, *communication*, *teamwork*, *leadership*, *use of technology*, and *the ability to respond to changes and to develop lifelong learning skills* (Weinstein & Worzala, 2008). Poon et al. (2011) identified *communication* as the most important followed by *numeracy*. FM degree programs prepare students to be equipped for a multi-disciplinary profession. The location of the degree program within the university and the segment of the industry in which most graduates are employed will influence the curriculum content and course offerings as well as what are perceived as essential skills for success.

Students, employers, and academics address the need to consider the opinions of all the stakeholders in the curriculum (Brown, 1979) because, as co-constructors of learning, their involvement has been found instrumental in transforming pedagogies in higher education (Baran, 2013). According to the South African Qualifications Authority (SAQA), a body responsible for setting the national qualifications framework (NQF), BSc degree are classified as Level 7 qualifications, honors and postgraduate diploma degrees are categorized as NQF Level 8, preceding Level 9 (Master's degree) and Level 10 (Doctoral degree). The framework specifies generic learning outcomes for different levels for the different degrees to differentiate it as an academic program as against the other lower-level training programs offered by private training providers outside of the universities. This ensures that the outcomes of surveys like this are interpreted in the context of the

specifications of the qualifications framework in terms of knowledge, skills and proficiency levels.

1.1. Core and optional competencies in facilities management

FM core competencies have been defined by the International Facility Management Association (IFMA) that is also responsible for accrediting FM degree programs globally. They are: *Communication, Emergency preparedness and business continuity, Environmental stewardship and sustainability, Finance and business, Human factors, Leadership and strategy, Operations and maintenance, Project management, Quality, Real estate and property management, and Technology.*

The Royal Institution of Chartered Surveyors (RICS) is also a global professional body that offers a chartered qualification in FM; RICS offers status, recognition and a competitive advantage in FM professional development in a manner similar to IFMA. Its core competencies are: *Analysis of client requirements, Corporate real estate management, Maintenance management, Procurement and tendering, Project financial control and reporting, and Supplier management.*

Optional competencies according to RICS are: *Construction technology and environmental services, Consultancy services, Contract administration, Contract practice, Design and specification, Environmental management, Fire safety, Geographic information system, Landlord and tenant (including rent reviews and lease renewals), Project audit, Project financial control and reporting, Property management, Strategic real estate consultancy, and Works progress and quality management.* IFMA, however, has no specification of optional competencies.

1.2. Personal, interpersonal and professional skills

Increasing emphasis has been placed on identifying the types of skills that the real estate graduates need to be successful. Professionals have indicated *written communication; problem solving, analytical decision making, and negotiations* as being the four most important real estate graduate skills (Butler et al., 1998). In the US, *financial modelling and analysis* were top skills in the industry (Rabianski & Black, 1999). 166 corporate real estate executives have perceived *strategic planning, real estate portfolio management, negotiation and deal making, and customer relations* as being crucial for their roles (Gibler et al., 2002). US professionals have also agreed on the most important skills as being *basic financial analysis, discounted cash flow analysis, time value of money, economics, written communication, and presentation skills* (Galuppo & Worzala, 2004). Studies of postgraduate real estate programs reveal *skills in decision-making, risk analysis, ethics, negotiation, critical thinking, communication, teamwork, leadership, use of technology, and the ability to respond to changes and to develop lifelong learning skills* as desirable (Weinstein & Wor-

zala, 2008). Poon et al. (2011) identified *communication* as the most important skill followed by *numeracy*.

1.3. Methods used in stakeholder studies for curriculum development

According to Poon (2013), several research studies have investigated the employability of real estate graduates in New Zealand. Galuppo and Worzala's (2004) USA-based survey of 78 *real estate professionals found real estate investment, finance, market analysis, valuation, economics, capital markets, law, brokerage/leasing, and planning* as important topics in postgraduate real estate education. Weinstein and Worzala's (2008) follow-up study identified the elements needed to create successful graduates from the newer postgraduate real estate programmes. Gibler et al.'s (2002) survey identified the key areas of knowledge and skills required for corporate real estate managers in Australia, Hong Kong, the UK and the USA. Epley (2004) identified that the skills and knowledge needed by corporate real estate professionals were focused on the *areas of corporate real estate executives' decision making in relation to their areas of responsibility.* In South Africa, Chikafalimani (2013), as part of the process of assessment of Masters Real Estate (MRE) curricula in South Africa, surveyed real estate professionals to rank topics included in the curricula in order of their importance. Results revealed that professionals consider *Property Finance* as the most important topic in the curriculum and *Information Technology* as the least important topic. Hightower and Highsmith's (2013) USA-based survey of multinational corporations, educators and FM professionals attributed the shortage of qualified FM personnel to a failure on the part of the university system to teach the appropriate skills. They observed that majority of schools are not teaching skills that meet industry needs. They also point to the difficulty of differentiating FM majors from engineering majors. This appears to be the only paper that attempts to address this issue.

Some of the earlier studies in curriculum research used the survey method to identify what constitutes graduate-ness for undergraduate or postgraduate real estate programs. Gibler et al. (2002), Galuppo and Worzala (2004), Weinstein and Worzala (2008), Poon (2013), as well as Chikafalimani (2013) performed stakeholder studies using survey questionnaires.

2. Research methods

In order to answer the research questions, the study used a survey approach for data collection by means of an electronic survey, administered with the help of the South African Facilities Management Association (SAFMA) who sent the questionnaire to their membership database between mid-May and mid-June 2016. One reminder was sent after two weeks and the survey was closed two weeks afterwards. The data collection, thus,

lasted for four weeks. The structured questionnaire designed was sent to respondents in the SAFMA membership database through the membership administrator as the database is not available to the public. This is a common practice even for the other members' databases under the Council for the Built Environment in South Africa. 29 professionals responded to the questionnaire; however, the response rate cannot be established with a certainty because of the administrator-approach used, analogous to a hard-to-reach population (Teitler, Reichman, & Sprachman, 2003). Galuppo and Worzala (2004), for example received 33 completed responses from real estate professionals.

The two-section questionnaire covered, in its first section, respondent characteristics such as job title, highest academic qualification and respondent firm size. It also covered their duties as facilities managers. The second section of the questionnaire adopted a 5-point ordinal scale discussed below. It covered respondent opinions of the core and optional competencies (based on specifications by RICS and IFMA two professional bodies responsible for accrediting FM degree programs globally) as well as the personal, interpersonal and professional skills (identified from prior built environment research) that we believed FM graduates should also possess on graduation. The core competencies help facility managers understand the latest processes to efficiently and cost effectively manage building facilities.

The list of core competencies adopted includes:

- Customer service.
- Project management.
- Working with suppliers and specialists.
- Maintenance management.
- Corporate real estate management.
- Procurement.

Similarly, the list of optional competencies adopted includes:

- Strategic facilities planning.
- People management.
- Application of legislation, codes and regulations to facilities.
- Financial management.
- Managing support services.
- Risk management.
- Managing building services.
- Quality management.
- Facilities operations administration.
- Information management.
- Environmental issues and sustainability.
- Space management.
- Management and business organization.
- Consultancy services.









Not only were the respondents asked to rank these skills, they were also asked to indicate the degree of proficiency they need to display in terms of these skills and

competencies. We used the NIH Proficiency Scale¹, developed by the US National Institutes of Health (2009), which captures a wide range of competence levels and organizes them into five steps – from 1 = “Fundamental Awareness”, 2 = Novice (limited experience), 3 = Intermediate (practical application), 4 = Advanced (applied theory), and 5 = Expert (recognized authority). In the analysis that follows, we also used the measures of skill criticality used by Ahmed et al. (2014) in which skill criticality was divided into three zones: minor, moderate, and major corresponding to mean rankings of between 0 to 2.50, 2.5 to 3.75, and 3.75 to 5.00, respectively. These were designed to provide educational developers with more precise feedback in terms of the relative importance of these skills and competencies and facilitate their incorporation into existing curricula or new curricula.

3. Results and analysis

Table 1 indicates the job titles of the respondents and highlights the diversity of job titles in the sector. Majority of respondents in the survey have job titles other than Facilities Manager. Table 2 contains the qualifications of respondents and suggests higher degree holders are in the minority, which appears to reflect the shortage of university qualifications in FM in South Africa. Table 3 indicates the respondents' firm size, measured by the number of employees. About 40 percent can be classified as large firms, followed by firms employing up to 50 employees.

Table 1. Job titles of respondents

Job titles		Percentage (N = 29)
Other (please specify)		34%
Facilities manager		21%
Head of facilities		14%
Head of property and facilities		14%
Facilities technical manager		7%
Facilities and purchasing manager		3%
Facilities account manager		3%
Senior facilities manager		3%
Total		100%

¹ <https://hr.od.nih.gov/workingatnih/competencies/proficiency-scale.htm>

The final set of respondents’ characteristics cover their functions as presented in Table 4. The items measured cover standardized functions listed in Atkin and Brook (2015). The dominant functions appear to cover performance management, service delivery, service procurement and FM strategy development.

Table 2. Highest educational qualification












Qualifications		Percentage (N = 30)
National diploma		30%
Honors degree/postgraduate diploma		23%
Other (please specify)		20%
MSc		13%
Bachelor degree		10%
PhD		3%
Total		100

Table 3. The size of respondents’ firms

Firms size		Percentage (N = 30)
over 1000		40%
0–50		30%
251–500		17%
51–100		10%
501–1000		3%
Total		100%

3.1. Core competencies

The first question that addresses the research objectives concerns respondents’ opinions of core competencies identified by different professional organizations as presented in Table 5. Customer service was the highest ranked competency, followed by project management as well as working with suppliers and specialists. This appears to underscore the service nature of FM (Alexander, 1994). Curiously, procurement and corporate real estate management ranked as the least important core competencies. Van der Voordt (2017) discusses overlaps and differences between the scope of FM and corporate real estate management to include for example, a concern with aligning the businesses physical resources to support business success; in addition, however, he notes a debatable difference in time span of each with the former covering a shorter time frame than the latter. One would have expected to see corporate real estate ranked higher due to the commonality in their ultimate goal. However, Atkin and Brook’s (2015) model of facilities management places procurement at the heart of the FM process. Further studies might need to be done to understand why procurement was ranked so low as a core competency.

What the results illustrate is that for customer service, project management and working with suppliers and specialists, graduates must be able to perform the actions associated with these skills without assistance. They are expected to be recognised within the firm as the go to person when difficult questions arise regarding these skills. The required proficiency for maintenance management, corporate real estate management and procurement is the ability to complete tasks in these areas even if they have to seek assistance from an expert.

In terms of skill criticality, the Table 5 also appears to indicate customer service, project management and working with suppliers and specialists as well as maintenance management as major competencies, whereas, corporate real estate management and procurement are of moderate importance. As discussed earlier, the latter could also be because there is an ongoing debate as to whether corporate real estate management belongs in the domain of facilities management (Van der Voordt, 2017).

Table 4. Respondents’ roles in FM







FM Functions		No of responses	Percentage of responses
Performance management (service review, performance measurement, benchmarking)		22	76%
Service delivery (mobilization, transition, contract management)		20	69%
Service procurement (pre-qualification, request for proposals/tenders, tendering)		19	66%
Development of FM strategy (strategic analysis, solution development and strategy implementation)		19	66%
Determining sourcing model (in-sourcing, outsourcing, co-sourcing)		14	48%
Other (please specify)		4	14%

Table 5. Respondents' raking of core competencies

Core competencies	Total responses	Mean	Skill criticality
Customer service	20	4.20	major
Project management	20	4.15	major
Working with suppliers and specialists	20	4.10	major
Maintenance management	20	3.85	major
Corporate real estate management	20	3.70	moderate
Procurement	20	3.70	moderate

3.2. Optional competencies

Table 6 displays the rankings of the optional competencies. Strategic facilities planning, people management and application of the relevant laws in an FM context appear to be the top 3 optional competencies identified as important. The least important optional competencies were consultancy service capacity, business management and space management. This appears to be a rather unusual result considering the noted high costs of operating real estate in international studies (Veale, 1989), and the trend towards space optimisation in terms of space flexibility and co-working spaces. This may be evidence of FM practitioners from corporate real estate considerations in South Africa. In terms of the proficiency scales, what Table 6 appears to demonstrate is that strategic facilities planning, people management, application of relevant laws and financial management are important in the sense that graduates must be able perform the actions associated with these skills without assistance and serve as the person people turn to in resolving questions around these skills. Almost

Table 6. rankings of optional competencies

Optional competencies	N	Mean	Skill criticality
Strategic facilities planning	19	4.21	major
People management	20	4.20	major
Application of legislation, codes and regulations to facilities	20	4.00	major
Financial management	20	4.00	major
Managing support services	20	3.95	major
Risk management	20	3.95	major
Managing building services	19	3.95	major
Quality management	20	3.85	major
Facilities operations administration	20	3.80	major
Information management	20	3.65	moderate
Environmental issues and sustainability	20	3.65	moderate
Space management	20	3.60	moderate
Management and business organization	20	3.55	moderate
Consultancy services	20	3.35	moderate

the same could be said of managing risk, support services as well as building services. The proficiency level of the rest of the competencies still go above intermediate level where graduates are required to have the ability to practice these skills.

In terms of skill criticality, the picture is similar. Strategic facilities planning, people management, application of relevant laws, financial management, managing risk, support services, building services, and quality and facilities administration are of major importance, whereas the remaining five are of only moderate importance.

3.3. Personal, interpersonal and professional skills

Success as a facilities management professional requires possession of more than just technical competence as the RICS and IFMA competency requirements demonstrate. The literature from research on real estate and other professions highlight the importance of personal, interpersonal and professional skills (see, for example, Crawley, 2001). Table 7 reports how respondents prioritize these skills. The ability to work independently in a team, and oral and written communication skills were ranked as the top three respectively. This compares favourably with Poon et al. (2011) whose study identifies communication as the most important skill for real estate graduates, alongside Weinstein and Worzala's (2008) study which includes communication as a top skill for real estate graduates. The next three important skills are leadership, project management, and understanding of professional ethics.

Table 7. Personal, interpersonal and professional skills

Personal, interpersonal and professional skills	N	Mean	Skill criticality
Ability to work with minimum supervision	20	4.55	major
Ability to work in a team	20	4.55	major
Oral and written communication	20	4.50	major
Leadership	19	4.42	major
Project management	19	4.42	major
Understanding of professional ethics	20	4.35	major
Planning	20	4.15	major
Change management	20	4.00	major
Analytical skills	20	3.85	major
Systems thinking	19	3.84	major
Commercial awareness	19	3.79	major
Financial statement analysis	20	3.70	moderate
Understanding of the impact of FM in a global and societal context	19	3.68	moderate
Research	19	3.58	moderate
Local and international legislation	20	3.55	moderate
Other skills (please specify)	3	3.33	moderate
IT skills	20	3.15	moderate

Knowledge of local and international legislation as well as IT skills were ranked as the least important. In terms of skill criticality, Table 7 shows all skills above including commercial awareness are considered of major importance. The rest are of moderate importance.

Conclusions

This paper sought to elicit South African FM professionals' views of the core and optional competencies as well as personal, interpersonal and professional skills of FM graduates. These competencies were extracted from the requirements of IFMA and RICS and are, as such, applicable to any FM degree around the world. The results reveal FM graduates need to develop competence in customer service, project management, working with suppliers and specialists as well as maintenance management. The top optional skills include: strategic facilities planning, people management, application of legislation, codes and regulations to facilities as well as financial management. The top-ranked skills include: ability to work with minimum supervision, ability to work in a team, oral and written communication as well as leadership. It is also important to highlight the significance attached to professional ethics, in light of the business consequences of ethical lapses that led to the financial crises that effected the built environment industries as well.

These confirm, to a large extent, what the organisations consider important as core and optional skills for FM professionals. The implication is that degree programmes in FM must ensure these competencies are covered in any programme at both undergraduate and graduate levels. In addition, the skills identified above must be integrated in FM curricula, not necessarily as separate courses but as activities within the normal disciplinary courses. The successful integration requires that the skills be taught, practiced and explicitly assessed. The proficiency levels as well as the measures of criticality also sets boundaries on the relative importance of the different competencies and how much credit hours in the curriculum must be allotted to them. Future research can look at the impact that local contexts, for example the degree of maturity of the industry has on the curricula.

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