

Why I Registered for Construction Management

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Abstract

This research aimed to determine the reasons BSc undergraduate construction management (CM) students registered at Nelson Mandela University (NMU), including related issues, to inform career promotion interventions and increase registrations for the programme. The quantitative method was adopted, and the data were collected through the distribution of a structured questionnaire to BSc undergraduate CM students at NMU. The data was analysed using MS Excel to generate descriptive statistics in the form of frequencies and means. The study is based on a sample from a single university, which may affect the generalisation of the findings. Potential students consider a range of programmes and apply to several universities; however, both the programme and university are important factors in terms of their final decision. The CM programme is attractive due it being a vocational qualification, a business qualification, and the potential job opportunities. Although there is a general interest in the built environment among potential students, registered students envisage a career primarily in Construction Project Management and contracting in the capacity of CMs. CM programmes compete primarily with Construction Economics and Civil Engineering programmes, and therefore the difference between the programmes should be made clear. A multi-pronged approach is required to promote CM programmes, and a range of stakeholders need to contribute. A university should use the achievements of CM graduates and their career paths to promote its CM programme(s).

Keywords: Career, Construction Management, Registration

1. Introduction

A range of interconnected factors, including personal interests and aspirations, family occupations, societal perceptions, and remuneration prospects, influence the decision to register for an academic programme in tertiary education and pursue a related career. Research conducted by Robinson & Bornholt (2007) within the Australian tertiary higher education system determined that familial backgrounds, demographic factors, and transitions between various educational settings largely influence student registration decisions.

Given the competitive tertiary education environment, universities need to understand and appreciate the factors that influence potential students' decision-making with respect to programmes and the university of choice. Consequently, marketing and recruitment strategies must be enhanced to realise registrations (Agrey & Lampadan, 2014).

The research aimed to determine the reasons BSc undergraduate CM students registered at NMU, including related issues, in an endeavour to improve career promotion interventions and increase registrations for the programme, which constitutes the 'research gap'. The objectives were to determine the motivations, deterrents, and patterns associated with student registrations for the BSc CM programmes at the NMU.

2. Literature Review

To ensure the sustainability of a CM programme, students must be attracted to the CM programme, be compatible with the education process, integrated into the construction industry, and their continued participation in construction and the broader built environment engendered (Bigelow, Saseendran, & Elliott, 2017).

Jepsen and Dilley (1974) in Stead and Watson (2017) state that career decision making (CDM) strategies include a: decision maker; the necessity to decide; appropriate information internal and external to the individual; at least two choices; several outcomes and the related value or utility to the decisionmaker; a strategy based on organised information, and a commitment to make the decision.

2.1. Factors influencing students' career choices

According to John Holland's theory of career choice, most people fit into one of six personality types: realistic; investigative; artistic; social; enterprising, and conventional (Careers New Zealand, 2024). The interest areas, key skills, occupations with practical components, and subjects to develop the skills relative to each personality type are notable. Of the six, realistic, social, enterprising, and conventional relate more closely to CM than the other two. Table 1 describes the activities and skills related to these four personality types.

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Table 1: Holland's theory of career choice

Type	Description	Key skills
Realistic	• Likes to work mainly with hands, making, fixing, assembling or building things • Using and operating equipment, tools or machines • Often likes to work outdoors	• Using and operating tools, equipment, and machinery • Designing • Building • Repairing and maintaining • Working manually • Measuring • Working in detail
Social	• Likes to work with people to teach, train, and inform • Concerned for the well-being and welfare of others	• Communicating orally or in writing • Caring and supporting • Training and teaching • Meeting • Assisting • Informing • Interviewing • Coaching
Enterprising	• Likes meeting people • Leading • Talking to and influencing others • Encouraging others • Working in business	• Selling and promoting • Persuading • Developing ideas • Public speaking • Managing • Computing
Conventional	• Likes working indoors • Organising • Being accurate • Following procedures • Working with data or numbers • Planning work and events	• Computing • Record keeping • Paying attention to detail • Meeting • Doing calculations • Handling money • Organising • Arranging • Working independently

(adapted from Careers New Zealand, 2024)

A study conducted by Ajayi *et al.* (2023) among South African grade 12 learners sought to determine the relationship between career interest and career decision-making. The findings support Holland's (1959) theoretical assertion that individuals prefer to choose vocations that allow them to be around others and relate with people of like minds. Individuals look for environments that support their skills and knowledge, where they can express personal principles and values, while engaging in pleasurable activities to solve problems. Similarly, Holland (1992) also argues that an individual's behaviour is a result of their personality and environment in which they live, which informs their values and interests through personal experiences and career choices.

Abe and Chikoko (2020) conducted a study among 1st, 2nd, 3rd, and 4th year Science, Technology, Engineering, and Mathematics (STEM) students in a South African university to determine the factors that influence career decision-making. Students reported, *inter alia*, that their families, personality, and

expectations influenced their career decision-making. Three key themes emerged, namely interpersonal factors, intrapersonal factors, and career outcomes expectancy. Interpersonal influences include family influence and teacher influence. Intra-personal influences include 'champion' mentality (save or change the world), career interest in STEM, personality, personal development, self-efficacy, spirituality and morality. Career outcomes expectancy includes financial matters, and career opportunities and prospects.

A study conducted by Siddiky and Akter (2021) among 120 students selected from 14 academic departments of a university in Bangladesh investigated the factors that determine students' career choice to determine their job preparedness strategies. Furthermore, the study sought to propose a theory which could explain the students' career choices from a social environmental perspective. The students' career choice and career preferences are determined by the interplay of several social and cultural, educational and training, and economic and

occupational forces. Social and cultural factors include: family influence in the form of preferences, and parents' occupations; teachers' advice; job prestige/dignity, and job security. Educational and training factors include: academic majors; educational achievements, and career development training. Economic and occupational factors include: remuneration; pension; scope of promotion, and scope of professional development.

2.2. Factors influencing female students' career choices

Construction is perceived as a masculine and hostile environment, physically demanding, and dirty (Francis, 2017). Numerous studies have identified the challenges in terms of attracting women to professional roles within construction, including enticing women to register for programmes in architecture, engineering, and construction (AEC), and thereafter, their retention in the industry (Rosa *et al.*, 2017). Furthermore, Powell *et al.* (2011) contend that the limited number of women who do register for construction programmes often encounter an educational journey deeply influenced by a predominantly masculine ethos, characterised by specific beliefs, actions, and presumptions.

A key recommendation arising from research conducted in New Zealand, which entailed surveying female AEC students, was the introduction of female professionals as guest speakers in secondary schools to promote construction-related careers for women. Further findings include: enhanced female representation in the construction sector to counter prevailing biases; career advisers' pivotal role in directing students towards AEC programmes, and for more interactive university day open-day events (MacDonald & Durdjev, 2020).

2.3. Factors influencing the selection of CM

Sparkling *et al.* (2019) conducted a study among CM technology students registered for an undergraduate programme in the United States of America. 49% of the students indicated they progressed to CM from high school; however, 34% migrated to CM from another programme in the university. Most of these students commenced exploratory studies or engineering before migrating to CM. In the case of male students, 32% learned about CM from their peers already undertaking the programme, while 35% of female students gained insights from their academic advisors or other academic counselling. In terms of prior work experiences during high school, 89% did not participate in vocational / career training work prior to entering the CM programme. However, 50% of the students participated in paid construction-related work, while 44% had been involved in volunteer construction work such as Habitat for Humanity. 'The hands-on experience' offered by CM was cited by 74% and 62% of female and male students, respectively.

2.4. Factors influencing students' university choices

Penceliah *et al.* (2016) conducted a study to identify factors that influenced university registration in South Africa. The top five of 17 factors were: the quality of teaching (1); availability of financial aid (2); ease of securing employment during and post-study (3); globally recognised qualifications (4), and sports and recreational programmes (5).

A study conducted among students registered at a university in South Africa by Fourie (2015) determined that students use social media as an information source to some extent when deciding whether to register at a university. It should be noted that social media was found to be a credible source of information, although it only has a slight influence on their decision-making process. Therefore, universities should take note of the role that social media plays in the lives of potential students and market their institutions accordingly.

3. Research Methodology

Due to the nature and extent of the data required, the quantitative method was adopted, which entailed the use of a self-administered questionnaire consisting of eleven questions, ten of which were closed-ended, and one open-ended. Five of the closed-ended questions pertained to the study and included a further five sub-questions. The remaining five closed-ended questions were demographically related and included a further sub-question.

The data has been presented in the form of two cohorts, namely < 2024 and 2024. The < 2024 cohort included two first-year CM cohorts over two academic years during first-year orientation at the commencement of the respective academic years, and a further cohort consisted of second-year students from an academic year. The 2024 cohort consisted solely of first-year students.

A total of 48 (< 2024) and 22 (2024) responses were included in the analysis of the data, utilising Microsoft Excel to produce descriptive statistics in the form of frequencies and means.

4. Findings and Discussion

Table 2 presents the gender and nationality of the respondents, and the form of funding. Notably, females constitute 50.7% and males 49.4% of the respondents, which bodes well in transforming the construction industry, which features limited female representation. In terms of the mean, South Africans (89.1%) predominate in terms of the nationality of students; international students only constitute 10.9% of the respondents. 59.6% of students are funded, 44.3% by NSFAS, 15.4% by others, and 40.4% are not funded.

Table 2: Gender and nationality of the respondents, and form of funding

Demographic	Age (%)		
	<2024	2024	Mean
Gender			
Female	46.8	54.5	50.7
Male	53.2	45.5	49.4
Nationality			
South Africa	83.0	95.2	89.1
International	17.0	4.8	10.9
Form of Funding			
Funded by NSFAS	34.0	54.5	44.3
Funded (Other)	17.0	13.7	15.4
Not funded	49.0	31.8	40.4

The mean age, which is not presented in Table 2, is 20 years for females and 21 years for males.

Table 3 indicates the respondents' source of awareness of the CM programme. It is notable that in terms of the mean, no source was identified by > 41.7% of the respondents, > 45.5% (2024), and > 37.8% (< 2024). The internet (41.7%) predominates, followed by family (24.8%) and career guidance (17.9%).

9.0%) indicate limited influence. The influence of the case of the 'career fair' and 'professional association' amplify the need for interrogation relative thereto.

Table 4 indicates that on average, 30.3% of respondents' family work in the built environment: 33.3% (< 2024), and 27.3% (2024). In terms of the capacity in which they do so, Civil Engineers predominated in terms of the mean (35.4%) and the <

Table 3: Respondents' source of awareness of the CM programme

Source	<2024	2024	Mean
Internet	37.8	45.5	41.7
Family	22.2	27.3	24.8
Career guidance	22.2	13.6	17.9
Professional association	8.9	9.1	9.0
Friends	8.9	4.5	6.7
Career fair	0.0	0.0	0.0

Table 4: The occupations of respondents' family members working in the built environment

Occupation	< 2024	2024	Mean
Civil Engineer (CE)	37.5	33.3	35.4
Quantity Surveyor (QS)	12.5	16.7	14.6
Construction Manager	25.0	0.0	12.5
QS & CE	0.0	16.7	8.4
Construction firm	0.0	16.7	8.4
Construction Project Manager	0.0	16.7	8.4
CAD Technician	6.3	0.0	3.2
Interior Designer	6.3	0.0	3.2
Plant Operator	6.3	0.0	3.2
Town Planner	6.3	0.0	3.2

Notable differences include: 22.2% (< 2024) vis-à-vis 13.6% (2024) relative to 'career guidance', and 37.8% (< 2024) vis-à-vis 45.5% (2024) relative to 'internet'.

'Career fair' was not identified by any respondents relative to both cohorts of respondents, and 'friends' (mean = 6.7%), and 'professional association' (mean =

2024 and 2024 cohorts, followed by Quantity Surveyors (14.6%), and Construction Managers (12.5%). The remaining seven occupations were identified by less than 10.0% of respondents. 83.3% of the < 2024 cohort of respondents considered another or other programmes, and 72.7% of the 2024 cohort did, which equates to a mean of 69.7%.

Table 5 indicates the number of other programmes the respondents applied for. It is notable that the majority of the respondents only applied for one programme, as indicated by the mean, and both cohorts. Thereafter, 15.0% (< 2024) and 25.0% (2024) applied for two programmes, and then only one applied for three programmes relative to both cohorts.

Table 5: No. of other programmes respondents applied to

No	< 2024		2024		Mean
	No.	%	No.	%	
1	33	82.5	11	68.8	75.7
2	6	15.0	4	25.0	20.0
3	1	2.5	1	6.2	4.4
Total	40	100.0	16	100.0	

In terms of other programmes considered by respondents, the < 2024 respondents considered a total of 25, and the 2024 cohort, 16. Only eight programmes were identified by both cohorts. In terms of the mean, BSc Construction Economics (15.6%) predominates, followed by Civil Engineering (15.0%), which are 'close' sister disciplines of CM. Then, they both predominate in terms of the < 2024 cohort. Of the 32 (66.7%) of students who considered other programmes, 30 / 32 (93.8%) applied to another university. Table 6 presents an overview of the respondents who applied to another university. In summary, there is no significant disparity between females and males.

Table 6: Respondents who applied to another university

Nationality	Female				Male				Total			
	Yes		No		Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
South African	12	26.7	5	11.1	14	31.1	7	15.6	26	57.8	12	26.7
International	2	4.4	2	4.4	2	4.4	1	2.2	4	8.9	3	6.7
Total	14	31.1	7	15.6	16	35.6	8	17.8	30	66.7	15	33.3

A total of 14 male (56.0%) students applied to eight universities, NMU (24.0%) included, and 11 female (44.0%) students applied to seven universities, NMU (16.0%) included.

Table 7 indicates the factors that resulted in respondents who considered other programmes finally registering for CM at the NMU. In terms of the mean, three factors predominate, namely 'first choice (programme)' (29.6%), followed by 'changed my mind' (25.4%), and 'first choice (university)' (23.6%). Notable differences include: 44.4% (< 2024) vis-à-vis 6.3% (2024) relative

to 'changed my mind', and 2.8% (< 2024) vis-à-vis 18.8% (2024) relative to 'was not accepted elsewhere'.

Table 8 indicates the extent to which factors contributed to respondents registering for the CM programme. Respondents were presented with ten factors and an 'other' option.

In terms of the mean responses, 'wish to pursue a career in construction' (39.8%) is followed closely by 'wish to pursue a career in the built environment' (39.5%), and 'wish to pursue a career in CM' (38.9%). 'Potential income' (23.7%), 'job opportunities' (23.5%), 'business qualification' (14.0%), and vocational qualification

(12.8%) follow. The remaining four factors were identified by between 0.0% to 5.6% on average.

Table 7: Factors that resulted in respondents finally registering for CM at the NMU

Factor	Yes (%)		
	< 2024	2024	Mean
First choice (Programme)	27.8	31.3	29.6
Changed my mind	44.4	6.3	25.4
First choice (University)	22.2	25.0	23.6
Was not accepted elsewhere	2.8	18.8	10.8
Other	2.8	0.0	1.4

Table 8: Extent to which factors contributed to respondents registering for the CM programme

Factor	Yes (%)		
	< 2024	2024	Mean
Wish to pursue a career in construction	34.0	45.5	39.8
Wish to pursue a career in the built environment	42.6	36.4	39.5
Wish to pursue a career in CM	59.6	18.2	38.9
Potential income	6.4	40.9	23.7
Job opportunities	10.6	36.4	23.5
Business qualification	23.4	4.5	14.0
Vocational qualification	25.5	0.0	12.8
Variety of subjects (Programme)	2.1	9.1	5.6
Types of subjects (Programme)	0.0	9.1	4.6
Manage the family business	4.3	4.5	4.4

Notable differences include: 59.6% (< 2024) vis-à-vis 18.2% (2024) relative to 'wish to pursue a career in CM'; 6.4% (< 2024) vis-à-vis 40.9% (2024) relative to 'potential income'; 10.6% (< 2024) vis-à-vis 36.4% (2024) relative to 'job opportunities'; 23.4% (< 2024) vis-à-vis 4.5% (2024) relative to 'business qualification', and 25.5% (< 2024) vis-à-vis 0.0% (2024) relative to 'vocational qualification'.

Table 9 indicates the respondents' medium to long term desired career in terms of the built environment. Respondents were presented five careers and an 'other' option. In terms of the mean responses, Construction Project Management (63.8%) predominates, followed by contracting (CM) (34.5%), and CM consulting (13.3%). A notable difference between the cohorts is the percentage of respondents relative to Construction Project Management in 2024 (81.8%) vis-à-vis < 2024 (45.7%).

of CM as a career. The CM programme faces competition from other built environment programmes and those leading to non-built environment careers - 69.7% of respondents considered another or other programmes. However, the notable percentage responses relative to BSc Construction Economics and Civil Engineering pinpoint them as the principal competitor programmes.

Potential students tend to apply to various universities, suggesting a non-exclusive preference for any single institution. However, the CM programme and NMU are key factors in terms of students registering for the CM programme at NMU. The extent to which ten factors contributed to respondents registering for the CM programme informs in terms of the approach and issues that must be addressed when promoting CM as a career. However, potential students must wish to pursue a career in construction, the built environment, or CM.

Table 9: Respondents' medium to long-term desired career in terms of the built environment

Career	Yes (%)		
	< 2024	2024	Mean
Construction Project Management	45.7	81.8	63.8
Contracting (CM)	32.6	36.4	34.5
CM consulting	13.0	13.6	13.3
Materials manufacturing / Supply	0.0	13.6	6.8
Other	4.3	9.1	6.7
Research & Development	4.3	0.0	2.2

5. Conclusions

The gender composition of respondents indicates that the construction industry and the Department of Construction Management are making progress in terms of enhancing female representation. The degree of response relative to the six sources of awareness of the CM programme indicates that there is potential to intensify awareness through the respective channels, especially career guidance, professional association, and career fairs. Given that on average, 30.3% of respondents' family members work in the built environment, this can be seen as influencing the choice

Construction Project Management predominates in terms of the respondents' medium to long term desired career followed by contracting in the capacity as a Construction Manager. This underscores the recognition of CM programmes as the foundation programme for Construction Project Management. Although the CM programme offered at the NMU is recognised and valued, the competitive environment must be acknowledged. The programme must evolve to respond to the changing nature of the construction industry and the aspirations of potential students, and marketing strategies must be revisited.

6. Recommendations

A multi-pronged approach is required to promote CM programmes. Furthermore, a range of stakeholders need to contribute, which includes employer associations, government departments, primary and secondary schools, professional associations, statutory councils, and tertiary institutions. However, a prerequisite in many cases is the development and provision of suitable material for, inter alia: the internet, including social media; career fairs; career guidance, and distribution. CM career promotion should differentiate itself from other built environment programmes and highlight the multiple career paths that graduates can pursue. Given that students consider other programmes and apply to a range of universities, the achievements of CM graduates and their career paths, especially non-standard career paths, should be used by a university to promote its CM programme(s).

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The inherent aspects of CM programmes, namely being a vocational qualification, a business qualification, and the potential job opportunities or career paths, should be emphasised during career promotion interventions.

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