

UNIVERSITY OF KWAZULU-NATAL

MARKETING PRACTICES OF CIVIL ENGINEERING CONSULTING FIRMS IN  
KWAZULU-NATAL

by

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## Declaration

I hereby confirm that this document is my own, original work. It is the result of a combination of various sources ranging from observations, books, journals and internet sources, which all have been acknowledged, along with the data acquired from the questionnaire.

I also confirm that this document has not been previously submitted by anyone for any degree.

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Signature.....

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## **Abstract**

Marketing is essential for the survival of professional services firms. Engineering firms are relational in nature. The marketing practices of engineers are particularly different from normal services firms. With the fast changing market environment in the construction industry, engineers need to react to client expectations. Marketing researchers have argued that marketing in services firms has moved from the traditional transactional marketing toward relational marketing practices. The aim of this study was to investigate marketing practices being used by engineering consulting firm in the professional context. The relationship between the impact of technology as well as that of market environment and marketing practices was investigated and a correlation calculated. A quantitative approach was preferred to conduct this descriptive study. Non-probability random sampling was used to collect data. The survey instrument used was a self-administered questionnaire. The sample size was very small formed by a mere 73 firms because of the limited population size of 88 firms. The response rate was 56%.

The study found that firms practised network marketing and interaction marketing, irrespective of firm size. There was an indication that the next preferred marketing practice of choice was transactional marketing over database marketing. There were no correlations between technology use and marketing practices of engineering firms. Market environment factors such as increased competition, reduced fees, irregular demand for work, and increased need for marketing resources seem to affect marketing practices. It is recommended that engineers should learn how to sell their services based on value and not on price. Database marketing still needs to be explored further by engineering firms to grow and secure future business through client contacts and relationships, making them more marketing efficient. The resource efficient marketing framework derived by this study suggests that consulting engineering firms should select their marketing practices based on their interactions with clients and should address specific client needs. The limitations of the study were characterized by a small population size. Therefore caution must be taken when generalizing the findings of this study to the population of civil engineering firms.



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# **CHAPTER ONE**

## **Introduction of the study**

### **1.1 Introduction**

One of the most important management field in running of businesses is marketing, this study sought to discover the marketing activities conducted within the professional environment of civil engineering. Engineering firms are key drivers of the construction sector. The construction sector plays a huge role in the delivery of infrastructure in a country such as South Africa. Some of the challenges faced by engineers today may be attributed to lack of understanding of the market environment and the client-base. The following chapter will outline the motivation for conducting the study in the field of marketing. Areas of focus in the marketing and engineering fields are then explained. A problem statement has been constructed from an analysis of literature. Objectives linked to the problem statement and the research questions are then identified. Lastly, the limitations of this study will be stated in brief, while their full explanation will be given in the recommendations chapter.

### **1.2 Motivation for the Study**

A company needs to have a marketing integrated system that will drive their marketing strategies and activities to be competitive. It is known that engineering firms are particularly poor at doing this (Ojo, 2011; Jaafar, 2008). According to Reid (2008) marketing intelligence needed for driving approaches to market a business must be kept up to date. The results of this study will benefit the engineering community because there has been minimum focus on marketing which has resulted in poor development of company strategies (Ojo, 2011). All participants in this study were given an indication that the findings of this report would be made accessible at the researcher's school of business.

The findings of this study, though limited will contribute to the small but growing knowledge on the subject. In particular as it is drawn from an existing contemporary marketing practices studies. The findings will make a contribution, as this study focuses specifically on engineering firms and would inform the practice of marketing in the construction industry.

### **1.3 Focus of the Study**

The civil engineering profession in South Africa is governed by the Engineering Council of South Africa, as set by the Minister of Public Works, and by Act 46 of 2000. Two other voluntary bodies guide the practices and operations of civil engineering professionals, namely, the South African Institute of Civil Engineers (SAICE), and Consulting Engineering of South Africa (CESA). CESA is a voluntary consulting engineering body established for the protection of the values and interests of its members. CESA has reported in their 2012 Annual Report a membership of approximately 2000 firms (CESA, 2012). This number has increased over the years, owing to demand for infrastructure development, ever since the FIFA 2010 World Cup in South Africa (CESA, 2012).

The decision by the Competition Board in 1987 to abolish the use of the minimum fee scale for remuneration of engineering services has had the greatest impact on the construction environment ([www.ecsa.co.za](http://www.ecsa.co.za)). The other great impact was felt by the relaxation of restrictions on the use of advertising. Engineering Council of South Africa (ECSA), whose main purpose is to promote the profession of engineering, for decades did not encourage advertising and direct solicitation. Even today, the published schedule of the code of conduct for registered engineers states that a registered professional or firm (ACT 46 of 2000): “may not advertise their professional services in a self-laudatory manner that is derogatory to the dignity of the profession”.

Civil engineering research and publications such as the Engineering News and ECSA Annual Report (ECSA, 2012) have indicated that there is a shortage of engineering skills in South Africa. With enhanced opportunities in the construction and engineering sectors, pressure on companies to find talent is imperative (Lawless, 2008). Special engineering skills are required by those trading in the construction sectors (Nienaber, 2007). Hence



there is an emphasis on upgrading engineering skills rather than on increasing management capabilities and capacity (Lawless, 2008). The construction industry is a diverse area of study. It is therefore important to focus on a sector, choosing an engineering discipline, rather than examining the industry as a whole. This study focused on engineering consulting firms.

The study focused on marketing as practised by both marketers and non-marketers within engineering firms. The study was not intended strictly to relate only to qualified marketing professionals. It also focused on aspects of marketing related to client-relationship management. The marketing practices were confined to the nine marketing dimensions of exchange identified by the contemporary marketing framework (Coviello et al., 2007). These dimensions were: management intent, purpose of exchange, duration of contact, type of contact, resources investment, nature of communication, formality of exchange, management focus, management investment, and management level of involvement. The relationship between marketing activities with general technology use and with the market environment was investigated. The market environment questions were divided into sections of competition, client expectations, technology changes, and company focus. Lastly, without any confinements, the data-collection information related to measurements of performance, as perceived by the respondents of the study.

#### **1.4 Problem Statement**

Owing to the need for infrastructural development in South Africa, a number of consulting engineering companies have emerged. Marketing is a tool that can be used by engineering consulting companies in gaining and maintaining competitive advantage (Reed, 2008). The variety of environmental changes, namely, intensified competition from sources such as developers, other design consultants, architects, building contractors, and other strategic groups within the construction industry; new technologies; deregulations and increased customer sophistication has prompted a response in marketing practices (Reed, 2008). Given the difficult situational challenges in obtaining credibility of marketing professional services, and the undertaking of integrating technical expertise into a relational approach, it may be asked how engineering firms conduct the

marketing of their service offerings. A need exists for engineers to enhance relationship marketing through networks, interactions, and technology. Freeman, Cray et al. (2007)); Macintosh (2009); Webster and Sundaram (2009) all encouraged the investigation of professional services' marketing. Therefore the following research questions were proposed:

RQ1: Do contemporary marketing practices (relational or transactional) of small civil engineering firms differ from those of larger firms?

RQ2: Does the current market environment affect the marketing practices of civil engineering firms?

RQ3: Does technology change affect the contemporary marketing practices of civil engineering firms?

## **1.5 Objectives**

The research examines the degree to which professional services have gravitated towards the more contemporary relationship marketing paradigm. The aim of this study is to determine marketing practices conducted by engineering consulting firms within the current turbulent marketing environment. This study has the following objectives:

- a. To determine the way in which marketing practices differ in small and large consulting firms (RQ1);
- b. To investigate the way in which engineering firms practise marketing; whether these practices are transactional or more relational (RQ1);
- c. to determine whether the changing market environment has an effect on marketing practices (RQ2);
- d. To investigate the way in which changes in the current market environment (competition, client expectations and strategy focus) affect marketing practices (RQ2); and

- e. To determine whether technology changes affect the way in which firms conduct marketing (RQ3).

## **1.6 Limitations of the Study**

This study has a number of limitations, some of which could not be addressed by the researcher, while others were addressed as further detailed in the recommendations chapter. These were limitations of this study:

- The study was characterized by a small respondent sample;
- There was a limitation in the population as it was drawn from a voluntary association of consulting firms;
- As a result of a low response rate there was a slight change in data collection strategy which could have introduced bias in completion of questionnaires.
- The study was confined to respondents from the province of KwaZulu-Natal.

## **1.7 Summary**

This study stands to benefit the engineering industry, including the consulting firms and the voluntary association. Findings will shape the marketing practices of both small and large organizations. An emphasis was placed on the nine relational dimensions of the contemporary marketing practices' framework. The effect of market environment on marketing practices would also help in enhancing the importance of marketing. With the change in the market environment there is a need for engineering firms to investigate ways of improving their relationships with clients, becoming more market-orientated. It is also important to gather perceptions of engineering firms on their rating of performance measures within their organizations. The population size proved to be the key limitation in conducting the research, compared with all other limitations. Other noteworthy limitations included the scant resources available for conducting a full-scale research, allowing results to be generalized. The next chapter will review literature on marketing practices by other researchers, in order to identify a gap in the literature.

## **CHAPTER TWO**

### **A conceptual framework for CMP of civil engineering consulting firms**

#### **2.1 Introduction**

The engineering industry, as with all other economic sectors, is facing challenges for survival. Engineering consulting in the construction industry involves planning, cost estimating, implementing of projects, construction supervision, as well as designing of the new and old infrastructure. The success of an engineering company is traditionally measured by the innovativeness and cost-effectiveness of a company's handling of a particular number of projects. Professionals including engineers, who have not adopted marketing, face difficulty in selling their services.

Owing to the need for infrastructural development in South Africa, a number of consulting-engineering companies have emerged. Competition in the engineering practice has increased, requiring firms to have strategies that will help them maintain a competitive position, and gain more market share. Marketing is a tool which may be used by engineering-consulting companies in acquiring and sustaining of competitive advantage by integrating into their client relationship management systems. The fundamental issue for the continued existence of professional services firms such as engineering-consulting firms, is that their existence cannot be guaranteed unless these organizations take marketing seriously. This chapter analyses marketing practices applicable to consulting engineering firms. A framework is developed on the basis of existing literature on marketing, market environment and technology in professional services firms marketing literature. This study draws heavily on the CMP for professional services firms developed by previous researchers (Coviello et al., 2000).

#### **2.2 General marketing**

Engineers define marketing as a process that seeks to influence customers to favour the products of their businesses and to understand service requirements (Lanigan 1992). The marketers outline the specifications for new and enhanced products. The entire marketing

process starts with the product or design requirements. The salient features of a typical engineering business environment are shown in Figure 2.1. The market environment includes clients/customers, competitors and constraints. Marketing is used to seek wealth by selling solutions to clients' needs at selling prices. The engineering solutions are the products of the business.

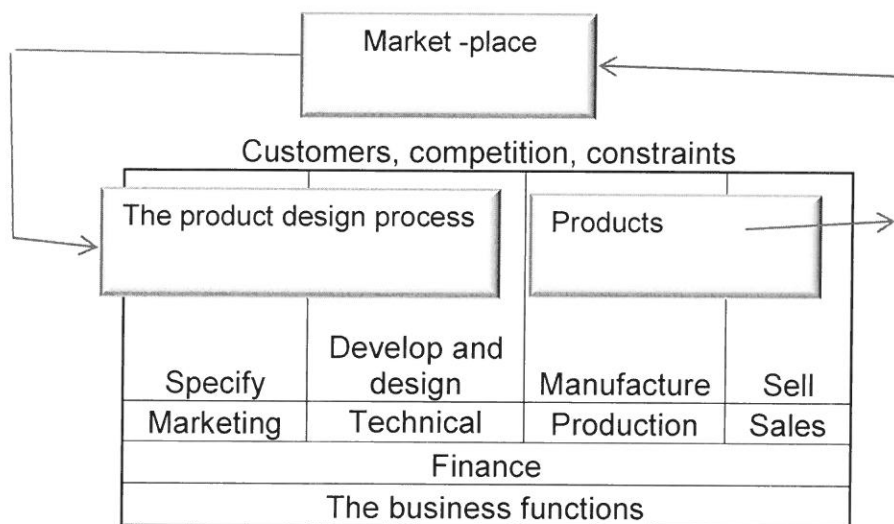


Figure 2.1 An overview of a manufacturing business within its environment

Adapted from Lanigan, M. 1992. Engineers in business: The principles of management and product design: Addison-Wesley Publishing Company. page xi.

Customer firms are more likely to practice transactional and database marketing because they are driven by volume requirements. On the other hand business-to-business firms are more likely to use interaction and network marketing because they are more focused on managing relationships. Consumer firms tend to focus on their marketing communication on specific customers, make use of specialist marketers to conduct marketing activities; and spend resources on communication technology. Business to business will focus on marketing communication that entails customers interacting with their employees and also encourages interpersonal contact with their primary customers.

The definition of marketing has been under scrutiny for some time. Grönroos (2006, pg. 3) argued that "the definition of marketing must allow for both relational and non-relational marketing strategies and activities". Marketing may be described as an act of selling services or goods (customer wants). This definition is used worldwide. The American Marketing Association (2007) defines marketing as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large". Kotler and Armstrong (2010, p. 12)) defined marketing as "the science and art of exploring, creating, and delivering value to satisfy the needs of a target market at a profit. Marketing identifies unfulfilled needs and desires. It also defines measures and quantifies the size of the identified market and the profit potential. It pinpoints which segments the company is capable of serving best and it designs and promotes the appropriate products and services." At the core of these definitions is the customer's/client's needs which must be understood by the service provider in order to satisfy them (Darroch et al., 2004).

Cicmil and Nicholson (1998) argued that many firms do not recognize the true worth of marketing until it is too late to change. Ganah et al. (2008) found that engineering firms in the engineering sector lack an understanding of marketing; and that, in most instances, marketing strategies are never in place. Management commitment and acceptance of a marketing concept are somewhat limited. At best, most consulting firms' understanding of the subject may be described as conservative (Jaafar et al. 2008). The principles of marketing have been largely disregarded by the consulting professionals, owing to the incompatibility of marketing with 'professional ethics' (Kotler and Connor, Jr 1977; Sweeney, 2011).

## **2.3 Marketing approaches**

Marketing literature presents three main schools of thoughts. The first school of thought argues that firms are focused on relationship building with their clients/customers, moving away from the traditional marketing mix which places emphasis on product, price, promotion, and place (Webster Jr, 1992; Berry, 1995). The second school of thought

argues that marketing mix is still important, however, customer relationships (broad or narrow) for long-term success have become more important, therefore firms must choose which strategy would be germane to adopt in their market for effective results (Gronroos 1990; Day 2000). The third school of thought claims that both relational and transactional marketing may be practised simultaneously, because firm's marketing practices are pluralistic in nature (Coviello et al., 2000; Coviello, Brodie et al., 2002). The differing schools of thought have one feature in common - that marketing is not only an economic transaction. It also comprises relationship marketing. This study focuses on the third school of thought, which maintains that transactional and relational marketing are practised simultaneously.

Research has shown that both size and age have an important effect on firm structure (Lindgreen, 2004; Coveillo et al., 2002). Organizations become more formal and centralized as they become larger and/or older (Darley and Blankson, 2008). Small firms differ from large firms in their managerial practices. They encounter lack of managerial resources, experiencing capital and market power constraints (Stewart, 2009; Haugh and McKee, 2004). Marketing researchers generally agree that marketing in larger firms varies from that of smaller firms (Coviello et al., 2000; Gilmore et al., 2001; Fillis, 2002). Small-firm marketing is defined as being built on, as well as conforming to, industry norms which are reactive, spontaneous, unstructured, loose, informal and haphazard (Gilmore et al., 2001). This kind of marketing pays minimum attention to analysis, strategies, and plans, focusing instead on momentary needs (Stokes, 2000). Marcati et al. (2008) suggest that some marketers in small firms may even believe that selling or advertising is the same as marketing. Marketing is resource-based; the size of the firm and the number of resources available determining the type and extent of marketing practice in various businesses (Zahay and Griffin 2010).

Organizations cannot afford to overlook the importance of marketing for continued business sustainability (Waugh 2004). Business growth and overall success of business may be attributed to effective marketing within a competitive environment (Polat and Donmez, 2010). Researchers have highlighted a number of benefits of effective



marketing in the construction sector (Stewart et al., 2003; Dikmen et al., 2005; Ganah et al., 2008; Arslan et al., 2009; Polat and Donmez, 2010).

## **2.4 Services' marketing**

Services' marketing has grown, becoming a very important sub-topic of marketing. According to Freeman and Sandwell (2008), the role of services' marketing must be investigated because of the difference between goods' and services' marketing. Marketing of services is now seen as an economic and social process which is no longer guided by the old management school of thought. Berry (1983), Grönroos (1990) and Gummesson (1987) all argue that services firms are "relationship based" and that they are naturally relational.

Services firms have had to make drastic changes in their approach to clients and market needs. Economic downturns and globalization of service offerings have meant that these companies have had to be more creative in their marketing strategies for consumption and delivery of their services. Reid (2008) suggests that firms should adopt market orientation and improvement of marketing management capabilities through strong relationship-building with clients in this dynamic environment. Marketing orientation is a philosophy which places the clients' needs at the forefront of managerial functions; it is still a learning area in the construction industry (Prajogo and McDermott, 2008).

Professional services are differentiated from normal services offerings in that they possess professional authority and theory, exhibiting a professional culture, being governed by an ethical code, and being endorsed by the community (Thakor and Kumar 2000). Commonly cited traditional professions include medical, legal, accounting, surveying, and engineering services. These services should focus on problem-solving by qualified individuals. They should be advisory; and the service provider should be independent of other services and goods (Gummesson, 2008). According to Thakor and Kumar (2000), professional services differ from normal services in that the former are specialized services offered by highly qualified individuals over a continuous number of transactions. These services are highly customized, intangible, and very complex in



certain cases, such as in engineering. Client-relationship management, as well as technical quality, are key success areas for professional-services firms (Hausman 2003). Matters to be considered by such firms are how to leverage from client relationships and increased market orientation.

Engineers offer professional services to their clients. Kotler and Connor (1997, p.71) defined professional as “organized activities and programs by professional services firms that are designed to retain present clients and attract new clients by sensing, serving, and satisfying their needs through the delivery of appropriate services on a paid basis in a manner consistent with credible professional goals and norms”. Adegbile (2008) described professional services’ marketing as the creation of client-satisfying services at a profit to the firm. He listed professionals in the construction industry as structural and services engineers, estate surveyors, civil and building contractors, architects, and quantity surveyors. Jaafar, Aziz et al. (2008) and Adegbile (2008) maintained that construction professional firms differ from all other industries.

Bloom (1984) argued that, with the changes in their environment, the professional service providers have made a complete turnaround, in that marketing is now seen as essential. Bloom (1984, p.102) states: “... not many years ago, professionals could count on their reputations and country club contacts to obtain a steady stream of clients and patients. Today, though, lawyers, accountants, management consultants, architects, engineers, dentists, doctors, and other professionals, must do extensive marketing to maintain and build their practices.” Today, professionals must aggressively contest for business, and be more market-orientated compared with in the past, at which time sales were certain (Filiatrault and Lapierre, 1997).

With professionals facing a multitude of challenges, the nature of professional services-marketing is changing (Daniell 2006). Services firms continue to be exposed to a number of the following marketing environment challenges (Reid, 2008):

- The increasing number of clients with higher-quality-serving demands;
- increasingly educated clients placing emphasis on value addition; and who demand strictly specialist service providers;

- the pressure of having a shorter payback period and return on innovation in a short space of time, resulting from continuous development of new services;
- the increased emphasis on relationship quality, rather than on technical service quality as means of differentiation;
- the increased client retention costs associated with conducting business;
- the need for protecting existing client relationships, as competitive firms adopt aggressive marketing strategies;
- fragmented market caused by specialists and niche markets;
- limited growth caused by matured markets; and
- less profitable market and more dynamic marketplace created by price-based competition and aggressive markets.

## **2.5 The contemporary marketing practices framework**

There have been calls for research into what marketers do, and the way in which marketing practices are being implemented (Brownlie et al., 1999). The legitimacy of marketing academic literature has been at the centre of debate of a number of marketing practitioners within the contemporary business environment. Lindgreen et al. (2004) argued that marketing has evolved from classical transactional marketing to relationship marketing. Scholars such as Berry (1983), Webster (1992), and Morgan (1994), have interrogated the significance of marketing academic literature for management of entities. Contemporary marketing practice (CMP) is a combination of theory and practice gaining recognition across the globe.

The CMP framework is an integration of research of a number of American and European marketing scholars, such as Coviello et al., (1997); Pels et al. (2000); Lindgreen (2004); and Wagner (2005). This framework has the following primary objectives (Palmer and Wilson, 2009):

- To outline the practices of various firms operating in various sectors and markets when conducting marketing of their services; and

- To understand how firms relate to their markets in a manner that integrates modern and traditional views of marketing.

This framework examined the possibility of incorporating activities and decisions into marketing, which are both relational and transactional in nature. For increased understanding of contemporary marketing in emerging markets, Faria and Wensley (2000) suggested more empirical investigations be conducted. This current research study intends to fill the gap in literature with respect to the understanding of contemporary marketing practices of engineering firms in one province of an emerging market namely, South Africa. According to knowledge of the researcher this study is a first of its kind in South Africa.

### **2.5.1 Major elements of the CMP framework**

The principle of this framework is that firms practise pluralistic marketing, in which achievement of value creation to the client is based on careful development of strategies and allocation of resources (Coviello et al., (2002). According to the contemporary marketing-practice framework, transactional and relational marketing co-exist.

- According to Pels et al. (2004), one of the major findings of CMP studies is that managers are placing greater emphasis on retaining clients through existing client relationships and improved client relationship management. Strong relationships may be leveraged in gaining insightful information which may be used to deliver value-adding services efficiently.
- Another finding is that managers have stressed the importance of and have placed attention on stakeholder management. Through interactions, networks, and relationships with all stakeholders, service providers, especially professionals, are able to improve the service-delivery process and quality of the service to their clients. Stakeholders (internal and external) involved in the value chain, including the community, play an important role in successful marketing (Lindgreen et al., 2004).

- A third finding is that a combination of marketing styles is practised simultaneously by firms. Marketing strategies are selected based on the types of clients and their needs. Some clients may require transactional interactions, while others may be engaged in close relationships. Various client markets are allocated specific resources; and strategies are selected carefully in practising pluralistic marketing (Lindgreen et al., 2004).

### **2.5.2 Marketing (CMP) classification**

The final contemporary marketing framework by Coviello et al. (2001) is outlined in Table 2.1 at the end of this discussion. This framework is made up of five marketing practices, including the four initially identified by Coviello et al. (1997). The five marketing approaches were classified by the dimensions of exchange, or communication and contact, and the management focus. Transaction, Database, Interaction, Network and e-Marketing may be practised and used at varying levels of intensity in the contemporary marketing framework. Brodie et al. (2007) argued that the practices may either substitute for or complement one another. Marketing managers must balance and manage relationship-type portfolios (Holden, 2006).

#### **a. Transaction marketing**

Transaction marketing is the classical or traditional marketing mix commonly known as the “4Ps” approach. It involves pleasing potential clients, while attracting new clients. This is an impersonal process in which clients are inactively involved in the communication. In the mass market, the firm manages the communication with cautious transactions. Products are marketed to a group of predefined clients. Management develops market-mix-related capabilities; and marketing activities are simplified for functional marketing areas. This type of marketing is restricted to short-term planning (Coviello, Milley et al., 2001). During the exchange process communication relationships are limited in extent and nature. Fruchter and Sigué (2005) suggest that transactional marketing adds value in specific contexts.

#### b. Database marketing

Database marketing is a technique used in forging lasting relationships between target clients and the firm. This approach is similar to transaction marketing in also focusing on marketing mix, which must, in addition, utilize information exchange and economic transactions (Coviello, Brodie et al., 2000). Relationships are structured using database or the Internet, which differentiates firms from competitors using mass marketing, thus achieving a competitive edge. As with transaction marketing, communication is managed by the marketer. These relationships are impersonal; marketing is not conducted with the client, but to the client by the seller.

#### c. Interactive marketing

Interactive marketing involves personal interaction in client relationships. Individuals are engaged in the marketing process on the level of a personal interaction and social process. Both the client and the marketer are equally involved in the marketing process. The relationship may either be formal or informal, with both parties being adaptive. Managers communicate strictly with the customer in a mutually beneficial relationship. Interactive marketing involves not only the marketing specialist within the firm; it cuts across all the functional departments of the firm, involving all levels of management (Coviello, Brodie et al., 2000).

#### c. Network marketing

Network marketing is a marketing approach involving firms' resources developing a position in a network of relationships. This is as a result of keeping long-term interactions and maintaining of individual relationships over time, throughout the business and social dealings of company employees. These relationships vary in terms of power levels, dependence, closeness, and communication degrees. Network marketing may be conducted by non-specialist marketers, or by general managers. Relationships may be formed with competitors, suppliers, distributors, or customers (Coviello, Brodie et al. 2000).

#### d. eMarketing

The eMarketing approach occurs when communication with customers is created through the use of interactive technologies and the Internet. The customer is actively involved in the marketing process; and communication becomes mutual. The relationship between the sellers and buyers is closer (Brodie, Winklhofer et al. 2007).

	Transaction Marketing	Database Marketing	eMarketing	Interaction Marketing	Network Marketing
<b>Purpose Of Exchange</b>	Economic Transaction	Information and Economic Transaction	Information-generating dialogue between a seller and many identified buyers	Interpersonal relationships between a buyer and seller	Connected relationships between firms
<b>Nature of Communication</b>	Firm "to" mass market	Firm "to" targeted segment or individuals	Firm using technology for communicating "with" and among many individuals (who may form groups)	Individuals "with" individuals (across organizations)	Firms "with" firms (involving individuals)
<b>Type of Contact</b>	Arms-length, impersonal	Personalized (yet distant)	Interactive (via technology)	Face-to-face, interpersonal (close, based on commitment, trust, and cooperation)	Impersonal – Interpersonal (ranging from distant to close)
<b>Duration of Exchange</b>	Discrete (yet perhaps over time)	Discrete and over time	Continuous (however, interactivity occurs in real time)	Continuous (ongoing and mutually adaptive; cooperative)	Continuous (s Table yet dynamic, may be short- or long-term)
<b>Formality of Exchange</b>	Formal	Formal (yet personalized via technology)	Formal (yet customized and/or personalized via interactive technology)	Formal and informal (i.e. at both a business and social level)	Formal and informal (i.e. at both a business and social level)
<b>Managerial Intent</b>	Customer Attraction (to satisfy the customer at a profit)	Customer retention (to satisfy the customer, increase profit, and attain other objectives such as increased loyalty, decreased customer risk.)	Creation of IT- enabled dialogue	Interaction ( establishing, developing, and facilitating a cooperative relationship for mutual benefit)	Coordination (interaction between sellers, buyers, and other parties across multiple firms for mutual benefit, resource exchange)
<b>Managerial Focus</b>	Product or Brand	Product/Brand and customers (in a targeted market)	Managing IT – enabled relationships between the firm and many individuals	Relationships between individuals	Connected relationships between firms (in a network)
<b>Managerial Investment</b>	Internal marketing assets (focusing on product/service, price, distribution, promotion capabilities)	Internal marketing assets (emphasizing information and database technology capabilities)	Internal operational assets(IT, website, logistics) functional systems integration	External market assets (focusing on establishing and developing a relationship with another individual)	External market assets (focusing on developing the firm's position in a network of firms)

Table 2.1: Five Marketing Approaches Classified by Exchange and Managerial Dimensions

Source: Coviello, Milley and Marconlin (2001) "Understanding IT-enabled Interactivity in Contemporary Marketing", Journal of Interactive Marketing, 15(4), 18-33



## **2.6 Factors affecting marketing**

This section focuses on the factors that influence the marketing practices.

### **2.6.1 Clients' expectations**

Engineering projects all differ; no one project is identical to the next. Clients tend to have customized problems which require unique solutions (Alvesson, 2004; Downey and Lucena, 2004). Engineering consulting firms' management structures are distinct from other business sectors (Filiatrault and Lapierre, 1997). For these reasons marketing research has recommended marketing orientation and client orientation for professional services firms (Sweeney, Soutar et al. 2011). Management is also encouraged to enhance its capacity for following up on marketing leads (O'Sullivan, Abela et al., 2009).

Darley and Blankson (2008) argued that marketing practices also vary within different continents and countries. Culture may play a pivotal role in the formulation of marketing practices in Africa. Policies which are value-orientated are prone to be received favourably by clients. Sending a higher-ranking delegation of management when conducting marketing is desirable. Cultural sensitivity is important for clients' trust; non-verbal communication is therefore important (Darley and Blankson 2008). Wai-sum (2000) recommends that care be taken when practising marketing in certain geographical areas where there may be sociocultural differences.

### **2.6.2 Size of firm**

Implementation of individual marketing practices is affected by firm size and market served (Darley and Blankson, 2008). Coviello et al. (2002) argued that firms place emphasis on various types of marketing, based on the conditions in which they operate and the markets they serve. Larger firms with resources and infrastructure may practise transactional and database marketing. Smaller firms still at the stage of developing their businesses are more likely to practise network and interaction marketing. Within professional service providers, interaction and networking marketing are expected to be the more dominant marketing practices by comparison with traditional marketing.



Because of the small size and limited technical resources, professionals in construction often undertake simple marketing when active projects are nearing completion. Professional practitioners such as surveyors, engineers, and architects have understated the importance of market; often preferring to adopt an ad hoc approach in reacting to market demand and changes. A number of professional firms have limited understanding of the way in which marketing may be implemented, as well as the marketing concept (Jaafar, Aziz et al., 2008).

Size has an influence on marketing practices in SMEs. According to a study by Ojo (2011) conducted in Nigeria on marketing strategies in services firms showed that there is a relationship between firm size in the engineering-consulting sector and operations strategy (Zahay and Griffin 2010). Service-orientated strategies are found in large firms; process-oriented operational strategies are linked with medium firms; while smaller firms follow customer-orientated strategies (Aranda, 2002). Simpson and Taylor (2002) suggest that marketing forms one of the most important SME business activities essential to their survival and growth.

Findings of a study into marketing practices by Coviello, Brodie et al. (2002) showed that service firms implemented a transactional and pluralistic marketing approach. An interesting finding of that study was the significant number of services firms that emphasize transactional rather than relational marketing (Coviello, Brodie et al. 2002). These findings are consistent with Vargo and Lusch (2004)'s position that services-firms marketing is characterized by both relational and transaction processes.

Abrutt and Higgs (1994) observed that larger South African firms practise professional marketing comparable with their counterparts in industrialized countries, competing as they do in a global environment. Smaller firms have fewer resources with which correctly to analyse market information, therefore they do not pay attention to the quality of information they use for marketing purposes (Cacciolatti and Fearne, 2013). Stewart (2008) further concluded that firm size influences marketing information utilization.

Owners of small businesses are generalists who cannot be expected to be marketing experts (Stanworth and Gray, 1991). This means that for them complicated marketing theories and formal practices may be seen as inappropriate in managing their

businesses (Horgarth-Scott, 1986). Smaller businesses have an advantage over big business in that they are much closer to their clients, making it easier to gain information that will help them to grow and survive (Yisa, 2002).

Marketing researchers generally agree that marketing in larger firms varies from that of smaller firms (Coviello et al., 2000; Gilmore et al., 2001; Fillis, 2002). Small-firm marketing is defined as being built on, as well as conforming to industry norms, which are reactive, spontaneous, unstructured, loose, informal, and haphazard (Gilmore et al., 2001). This kind of marketing pays minimum attention to analyses, strategies and plans; focusing instead on momentary needs (Stokes, 2000). Marcati et al. (2008) suggests that some marketers in SMEs may even consider selling of advertising as marketing.

Service-orientated strategies are found in large firms; process-oriented operational strategy is linked with medium firms; while smaller firms follow customer-orientated strategies (Aranda, 2002). Size has an influence on marketing practices in SMEs. Simpson and Taylor (2002) suggest that marketing forms one of the most important SME business activities essential to their survival and growth.

Literature on the impact of marketing practices on performance of large services firms is in abundance, however, there is a paucity of substantial information on professional services, and in particular engineering services within South Africa. Performance is positively affected by relationship efforts and improved service (Verhoef 2003; Stewart 2009). The engineering profession has recognized the important role of marketing in performance enhancement within the construction sector (Arslan, Kivrak et al., 2009; Arditi et al., 2008; Chen and Muhamed, 2008; Polat and Donmez, 2010).

Marketing practices of civil engineering firms in the construction sector in general were studied; limited to the geographical area of KwaZulu-Natal. There are few empirical studies focusing solely on the civil engineering-consulting discipline within the construction sector which provide an in-depth examination of its marketing practices (Ojo, 2011). Literature presented above related to firms size and practices leads to the following proposed research question:

RQ1: Do contemporary marketing practices (relational or transactional) of small civil engineering firms differ from those of larger firms?

### **2.6.3 Market environment**

In volatile markets there are high levels of uncertainty. Firms operating in highly volatile markets may be affected in their making of long-term plans and optimal decisions. Firms in highly volatile markets tend to be externally focused; while those operating in low volatility markets are internally focused (Patrick and Wong, 2008).

Thinking trends on marketing have changed over time, moving away from the traditional marketing, with greater emphasis being placed on new aspects such as services' marketing, business-to-business marketing, and relationship marketing. Professional marketing has also evolved as market conditions have changed. According to Reid (2008), who investigated marketing practices of professionals in Australia, conditions which have changed include competition, technology, globalization, the economy, client knowledge, and client expectations.

New challenges, management risks and uncertainties have emerged from the globalization of industries (Faulconbridge and Muzio, 2008). The engineering-consultancy sector has been facing challenges brought about by globalization, the rapid changes in project procurement, implementation processes, and the pervasive utilization of information and communication technologies (Jaafar, Aziz et al. 2008). The evolving market has also brought external pressures on these firms to become more competitive and to operate in more technically challenging domains.

Dadzie, Johnston et al. (2008)'s findings of a marketing practices' investigation conducted in West Africa suggest that marketing practices are dependent on environmental stability. The study further notes that firms operating in technological and competitive environments stress the importance of transactional marketing activities; while those operating in less turbulent market conditions would conduct minimal marketing (Dadzie, Johnston et al. 2008). Hall and Allan (2008) argued that firms facing challenging competition and increased customer demands should, in order to survive, formulate network relationships with government bodies and other firms.

Past professionals did not perceive themselves as market-orientated, however, increasing competition requires them aggressively to compete (Lapierre, 1997). A variety of environment changes, such as intensified competition from sources such as developers, other design consultants, architects, building contractors, and other strategic groups in the construction industry, new technologies, deregulations, and increased customer sophistication, has prompted marketing practices' responses. At the centre of successful professional services firms is client-relationship management and technical success (Hauseman, 2003).

RQ2: Does current market environment affect marketing practices of civil engineering firms?

#### **2.6.4 Technology**

Managers focus specifically on target customers and products. Marketing specialists control and manage technological marketing tools within their organizations. The whole process is economically driven. Firms must communicate effectively with their clients and satisfy their needs through collecting their information; sharing the knowledge and use of databases across all functions within the organization. At the core of marketing education is the enhanced need for technology in marketing (Brady, Cronin Jr et al. 2002). Innovations in technology are a predominant factor in creating customer relationships, in that they give easy access to customer information useful in service customization.

Developments in information technology has allowed firms to gather in-depth information about their clients for business purposes (Park and Kim 2003). There is a number of ways information about clients. It could be information about the client, for the client or information from the client (Garcia-Murillo and Annabi 2002). Efficient use of information is considered essential for market orientation. Information also plays a role in creating and maintenance of client relationships (Jayachandran, Sharma et al. 2005). Learning organizations enhance their performance through utilization of marketing information (Low and Mohr 2001). Database marketing is heavily reliant on information gathering and technology.

Information technology (IT) is defined as the collective term given to the mechanism and the mode used for the application, dissemination, retrieval, storage, analysis, processing, and acquisition of information. According to Piccoli, Spalding et al. (2001) “the real opportunity for sustainable advantage lies with those who recognize the importance of using IT to improve service in all phases of customer’s involvement in the firm’s product or service.” Investment in database marketing is based on the supporting of information technology and its techniques. A literature gap exists in the role of technology in marketing engineering services, as well as in the impact of technology on marketing practices within the construction industry. This study will also attempt to answer the following research question regarding technology use:

RQ3: Does technology use affect the contemporary marketing practices of civil engineering firms?

## **2.7 The conceptual framework**

Combining literature theory on marketing practices, a resource efficient marketing framework is built for this study, explaining how engineering firms select appropriate marketing practices or combination thereof. This resource efficient marketing framework advocates that at the heart of marketing practices selection process are the client and their expectations. These expectations are influenced by the various market environment factors, such as aggregate demand for work, price-sensitivity, new competition and technology. Traditionally engineers are product orientated; they focus on the quality of their designs and reports. All engineering projects are unique with different sets of inputs and outputs. The end-users and clients in these projects will have different perception of value add and expect tailor made solutions. This conceptual model suggests that engineers should put an emphasis on relationships with their clients in order to understand their needs and their expectations. The information gathered from the relationships is then used to select an appropriate marketing strategy for a particular client. This efficient marketing framework for engineering firms advocates that no clients are similar; therefore marketing strategies should not be based on the characteristics of the firm such as size and age but rather on the end user of the service. Based on the above it is suggested that a research framework may look like Figure 2.2 below. In order for consulting firms to be effective

in choosing marketing practices, they should consider the market environment and make use of suitable technology.

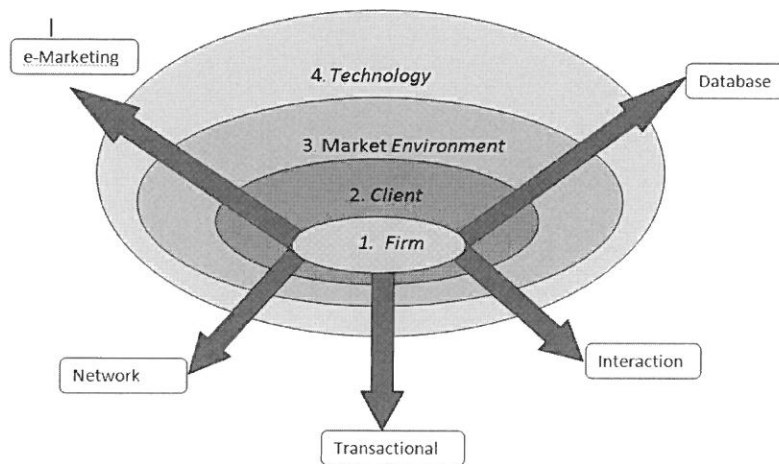


Figure 2.2: Resource efficient marketing framework

## 2.8 Summary

It is important for engineering firms to understand the prevailing marketing practices, given the unique nature of the professional services they offer to clients, finding the balance between giving a highly technical service and client satisfaction. Repeat work from loyal clients will only increase if these firms know which marketing practices are effective in affording client satisfaction. Overall, there is minimal literature on contemporary marketing practices expressing both relational and transactional marketing in engineering services. A broader understanding of the contemporary marketing practices within the construction and engineering sector is therefore required. It may be concluded that there is a shift from transactional marketing towards relational practices. Firms should take approaches and strategies which are market orientated and financially competitive in order to sustain themselves. This study will examine the construction industry in KwaZulu-Natal in particular, with the hope of filling the gaps in the literature for the civil engineering consulting sector. The next chapter will discuss the method adopted in conducting this study.



## **CHAPTER THREE**

### **Research Methodology**

#### **3.1 Introduction**

The previous chapter provided a theoretical framework informing this research study; and reviewed literature about marketing practices. The purpose of this study is to obtain an understanding of marketing practices of civil engineering consulting firms in the context of relational and transactional marketing. The study also investigates the impact of the current environment on marketing practices. The chapter details the methods used in conducting the research; more specifically data collection, sampling, data-analysis methods and techniques (Mouton, 1996:37).

#### **3.2. Aims and Objectives of the Study**

The aim of this study is to determine which contemporary marketing practices are predominantly used by engineering-consulting firms. The following objectives were identified:

- a. To determine the way in which marketing practices differ in small and large consulting firms;
- b. To investigate the way in which engineering firms practise marketing; whether these practices are transactional or more relational;
- c. to determine whether the changing market environment has an effect on marketing practices;
- d. To investigate the way in which changes in the current market environment (competition, client expectations and strategy focus) affect marketing practices;
- e. To determine whether technology changes affect the way in which firms conduct marketing; and

### **3.3 Participants and the location of the Study**

The research studied consulting firms listed and registered by Consulting Engineering South Africa (CESA). This voluntary association is recognized by the Engineering Council of South Africa. This database was chosen because it had the highest member registration of South African consulting firms within the engineering profession. Secondly, this voluntary association has a live database which is reliable and easily accessible.

The researcher limited the study to civil engineering firms, because of the differences between various engineering disciplines. Owing to time and monetary constraints only those civil engineering consulting firms registered in KwaZulu-Natal were selected for this study. The list of names of firms registered with CESA was accessed through the public website. There were eighty-eight firms registered in KwaZulu-Natal at the beginning of 2013 (CESA, 2012). The firms were geographically spread over the province of KwaZulu-Natal, in the following towns: Durban, Pietermaritzburg, Port Shepstone, Vryheid, and Richards Bay. To minimize research costs, in the event of a firm having two or more offices in the province, one of the offices was selected for convenience of participation.

The study intended to obtain participants who were involved in either marketing activities or had interactions with clients. These people formed part of senior, middle, junior management; and administration. Participants included CEOs (1), directors (9), partners (3), principals (4), engineers (3), technologists (1), technicians (3), and administrators (8).

### **3.4. Data-Collection Strategies**

This study employs survey method and technique in collecting, analysing, and interpreting data. Research data may be collected through primary or secondary sources (Sekaran and Bougie, 2006). Primary data would refer to information collected first-hand by the researcher, which was used in this study. There are a number of ways of collecting primary data. Secondary data would be data gathered from existing sources. Research data may be garnered by means of interviews, focus groups, and questionnaires. The greatest advantage of primary data is that the information does



not become obsolete - it is up to date. On the other hand, secondary-data sources have information readily available which saves on time and costs of acquiring information. This study required that information on current practices be collected, enabling this information to be used in improving marketing within engineering firms, for the benefit of the industry within the context of the current market environment.

### **3.5 Research Design and Methods**

There are various interrelated decisions incorporated into the design of a research study. Creswell (2004) suggests that, in designing a research study, there are three questions which must be answered, namely:

- Which philosophical stance supports the methodology (critical theory, positivism etc.)?
- Which strategy governs methods of choice (survey research, experimental etc.)? and
- Which procedures and techniques are to be used (focus groups, interviews, questionnaire, etc.)?

Research is a process of deriving claims, continuously refining these claims. Most quantitative research originates from some theory test. According to Creswell (2013) research seeks to develop true statements, either describing a causal relationship between variables of interest, or explaining a business situation of interest. Researchers pose questions or hypotheses in order to explain the relationships amongst variables of interest. In research, absolute truth can never exist - evidence is always flawed. It is for this reason that researchers indicate a failure to reject, rather than positive proof of an hypothesis (Creswell, 2013). Bias must be examined in conclusions and methods, so that the research study becomes objective and competent. Rational considerations, evidence, and data, eventually shape knowledge.

The researcher took a positivism philosophical stance in designing the research study. Positivism is a scientific method or science research. It aims to describe an experience or test a theory through observations and measurements. Positivist research is aligned with quantitative methods of data collection and analysis. This study was done

quantitatively to collect data of experiences of consulting firms in conducting marketing practices in current market environment.

Research may either be quantitative, qualitative, or mixed. Qualitative research usually involves small samples and produces information that by itself does not directly lead to decisions, however, is valuable as input for further research (Creswell, 2013). Quantitative research involves statistical large samples in which the intent is to provide descriptive results. The third method is the mixed method, which includes both qualitative and quantitative research. Factors affecting the choice of approach are audience of the study, researcher's/ researchers' experience, and more importantly, the research problem. A research problem may be any issue of concern. The quantitative approach is best when a researcher wishes to verify or test a theory, and when the problem is to identify outcome predictors (Creswell, 2013). On the other hand, qualitative research is exploratory in nature. It is used when little knowledge exists on a concept; however, the research attempts to create an understating of the concept. This study seeks to identify marketing practices which lead to success of organizations in the current market environment. The study also seeks to determine how technology is linked to marketing practices, hence the use of quantitative research for this study.

In order to make the correct research-strategy choice, Creswell (2013) also suggests that the researcher should examine his/her personal experience in conducting research, taking into account expectations of the target audience. Quantitative design requires knowledge of statistics, scientific writing, and subject technicalities. By contrast, a qualitative approach requires a researcher who is experienced in observing and conducting open-ended interviews. Researchers are normally acutely aware of their audiences, structuring their studies to suit audience needs. For this study, the researcher had limitations (lack of experience) in conducting detailed interviews, however, he had studied statistics and research methodology modules/courses, making the choice of conducting a quantitative study more convenient. The anticipated audience of this study were engineers (participants) and academics who are believed to be technically-orientated and competent with numerical data and presentation. This was also one of the reasons for preferring a quantitative study to a qualitative study.

There are several methods of conducting quantitative research. These include: surveys, telephone surveys, self-administered questionnaire surveys, Internet surveys, mailed-out questionnaires, and omnibus surveys. The survey comprises the following elements: designing of the questionnaire, sampling, handling of the questionnaire, and analysing of the data. The study made use of mailed surveys and self-administered surveys. Benefits of using self-administered surveys according to Johnson and Christensen (2008) are:

- they are cost-effective;
- they are quick to complete; and
- they maintain the anonymity of responders.

However, the disadvantage of this type of survey is that it takes a long time for sufficient responses to be received. Response rates are low, often requiring the researcher to follow up with respondents.

### **3.5.1 Description and Purpose**

The purpose of research may be either descriptive or exploratory in nature. Descriptive studies are conducted when there is a need to discover attributes of variables of interest (Sekaran 2006). Exploratory studies are conducted when one needs to find new information related to a problem, where no previous knowledge is available. This type of investigation may either be correlated or causal. To find the cause and effect of a problem, one conducts a causal study. When there is a need to identify factors which may be linked to a problem, a correlation-type investigation is conducted.

This research seeks to identify types of practices used in an engineering industry; detecting measures used in gauging success. This is a descriptive study which seeks to identify marketing attributes related to success of companies. The type of investigation is a correlation in which the study seeks to identify factors which result in sustainability of businesses. Correlation between technology usage and marketing practices were calculated in order to quantify the strength of the relationship between the groups of variables. Variables of interest for this study included:

- Size of firms;

- Technology use;
- Marketing practices, relational and transactional;
- Market environment.

This study may also be described as exploratory. There is information on marketing specific to consulting engineers and the researcher believes study of this nature is being conducted for the first time in an emerging country.

### **3.5.1.1 Construction of the Instrument**

A questionnaire was used to collect data for this study. The research instrument was divided into different sections according to the concepts comprising the aims of the study. The questionnaire included questions based on the CMP framework, as well as on general demographic information. The questionnaire was divided into six sections as follows:

- Section A: Demographic information;
- Section B: Firm information;
- Section C: Contemporary marketing practices;
- Section D: Current environment of the industry; and
- Section E: General views on marketing.

The questionnaire started with demographic questions which assisted respondents to become more comfortable, this section gathered information to enable the researcher achieve objectives 1 and 2, by determining the size of firms. The questions in Section C related to marketing behaviour of firms which was used to achieve the aim of the study and its objectives. Questions on Sections C and D were structured to gather marketing activities as well different prevailing environmental factors that impact marketing practices. The questions were adapted from the CMP marketing classification by Coviello et al. (2000). Section D presented questions which investigated current market-environment issues which might affect marketing practices of firms. The final section dealt with general views on marketing. It comprised

four open-ended questions which were intended to allow respondents to express opinions more fully.

Open- and close-ended questions were asked. Various types of scale were used in the questionnaire in preparation of questions. A mix of these scales was used for measuring modes, means, and arithmetic means. A scale is a tool used for measuring variance in individuals' understanding of a variable of interest in a study. There four types of scale are:

- Nominal scale;
- Ordinal scale;
- Interval scale; and
- Ratio scale.

#### **3.5.1.2 Recruitment of Study Participants**

A population means the whole group of elements, people, events, or things which are of interest to the researcher (Sekaran 2006), (Keller, 2009). The two steps involved in defining a population includes: construction of a sample; and identifying a target population. The initial strategy was to email questionnaires to member firms. According to Dennis Jr (2003), low response rates are common in emailed questionnaires. He suggests that researchers consider follow-ups to initial emails.

After four weeks of distribution of questionnaire, the response rate was low. Only 25 firms had returned questionnaires. This prompted the researcher to change strategy by hand delivering questionnaires. This was possible because the researcher comes from the industry investigated and is familiar with some of the personnel in some of the firms. This improved the response rate to 41 firms.

A consent letter (Appendix A) giving a brief description of the study accompanied all distributed questionnaires. This letter gave a brief introduction to the study. The research title was followed by guidelines on how to complete the research instrument. The conduct of the researcher, as well as that of the respondents, should always remain within expected norms during research studies. According to Sekaran and Bougie (2006), ethical behaviour should prevail throughout the research process, starting from the time data is collected and reported; continuing until the information has been published. Business ethics guides researchers on how to safeguard

confidential information; and how to treat respondents with integrity (Sekaran and Bougie, 2006). Participants were informed through the consent letter (sample attached in Appendix A) of their rights when participating in the study. Participation in this study was voluntary. The responses were to remain confidential. The researcher informed the participants that the results of the study were not for publication. The participants were also advised of their right to access the completed works at the institution. The University of KwaZulu-Natal's code of conduct for research requires that, prior to commencement with research studies, the Ethics Committee approve the undertaking of the study. An approved ethical clearance may be found in Appendix C.

The signed consent forms were scanned and saved in a folder. Those participants who did sign the consent form, were thanked by email for their participation in the study. These emails were saved in a folder on Outlook Express. All hard copies of self-administered questionnaire responses were scanned and saved in this folder so as to prevent any loss of data. Those responses which were received by email were saved in a folder on Outlook Express. All the data was manually captured in Microsoft Excel spreadsheet for later conversion to SPSS.

### **3.5.2 Pre-testing and Validation**

A pilot test of the questionnaire is conducted in order to detect any weakness in the research design and instrumentation (Cooper, 2001). An important purpose of the pilot test is that of discovering the respondent's reactions to questions; it also helps to locate repetitiveness or redundancy (Cooper 2001). Pretesting of the instrument was done by sending the initial questionnaire to the researcher's colleagues at his workplace. It was also submitted to the researcher's supervisor, who is an academic specialist in the field of marketing, for further pretesting. The language of questions was found to be marketing-orientated and therefore not easily comprehensible to engineers. Questions in Section C relating to marketing practices were reworded, thus providing simpler, easier to understand questionnaire.

Reliability is a test of how consistently a measuring instrument calculates the concept it is measuring. Reliability analysis intends to check whether the research questionnaire may be deemed reliable enough, by considering a measure of how consistent the respondents were in answering the questions contained in the



questionnaire. According to Gliem and Gliem (2003), validity is a test of how well an instrument measures the particular concept it is intended to measure. The Cronbach alpha statistic is used for evaluating the research tool (questionnaire). Only the Likert-scale questions like in Sections C and D are normally used in the computation of the Cronbach alpha statistic. The demographic variables, which are mostly nominal, are not included, as they do not have some form of scale.

### **3.6 Analysis of the Data**

The questionnaire comprised two types of questions - close-ended questions, and open-ended questions. These two types of questions require different data-analysis methods. Responses to open-ended questions were summarized in tabular form. Responses to close-ended questions were coded. The responses were coded in order for data to be easily analysed using SPSS. Data-coding is the process of assigning numbers to responses so they may be imported into a specific database(Zikmund 2003). The code may be a number indicating the position of a column, and the data record of the code. Transfer of data from the responses to computer software is possible after assignment of numerical symbols (Zikmund, 2003).

Study responses received (data) were captured and stored on a Microsoft Excel spreadsheet. The data was also subjected to a verification process in order to eliminate non-response and data-capturing errors. The Excel file was prepared for data processing using the SPSS, a computer statistical software package. After entering data to SPSS, various types of tests were conducted, depending on the nature of the relationship being investigated.

In testing for the existence of differences in the means of the marketing practices investigated for the various firm sizes, Analysis of Variance (ANOVA) was used. The ANOVA tests consist of the *F*-statistic and a corresponding *p*-value(Keller 2009). The *F*-statistic is used in testing for the effect of firm size on marketing practices used. The testing procedure in this study makes use of the *p*-value, which is computed from the *F*-value, as a handy indicator of significance. The *p*-value is an indicator showing whether there are significant differences among the means of the various firm sizes in the way in which they responded to questions about marketing practices(Keller 2009). A *p*-value less than 5% (or <0.05) indicates significant differences among the means

of the various firms' marketing practices. On the other hand if the  $p$ -value is greater than 5% ( $>0.05$ ) then there are no significant differences in marketing practices among the different firm sizes.

Pearson's correlations were used in measuring the effects of dependency between dependent and independent variables. The variables of interest were technology and marketing practices. This test was conducted in order to detect how technology changes affect marketing practices. The strength of the relationship between technology (question D14) and each marketing practice was indicated by correlations calculated. The  $p$ -values for the Pearson's correlations are used to indicate whether the correlations are significant. A significant correlation is indicated by a  $p$ -value less than 5% ( $p\text{-value}<0.05$ ).

### **3.7 Summary**

This chapter explained in detail the research decisions, methods, and techniques which were employed for this study. The chapter explained various research types, and purposes of research; it listed objectives of the study, and went on to explain data-collection methods, as well as analysis-data methods to be used in this study. The chapter also justified preference for certain methods over alternative methods. The next chapter will present data collected by means of methods explained in this chapter. It will also present an analysis of this data.



## **CHAPTER FOUR**

### **Findings and Discussions**

#### **4.1 Introduction**

This chapter presents finding of the research study. Findings are presented in the form of statistics, and characteristics of the respondents are summarized. The statistics are presented in the form of Tables and diagrams. The chapter opens by summarizing key characteristics in summary Tables. It goes on to present data of variables of interest. Also in the chapter, various tests are used in presenting data which will assist the researcher to meet his objectives. Tests used in the section were previously explained in the research methodology chapter. It is important to understand marketing practices of engineering firms, and professional services' providers in general. Firstly, this sector plays a significant role in the South African economy. Secondly, the sector has grown over the past twenty years with the new democratic country facing the high pressure of improving infrastructure within the country. Thirdly, there have been a number of market environment changes, which means that practising marketing can become a challenge. Lastly, the firms in this sector have the need for advanced technical expertise, however, the whole process of service delivery requires relationship management and market orientation. This chapter discusses all the detailed findings of the studies, comparing them with some previous studies.

#### **4.2 Key characteristics of the sample and firms**

There were fourthly one (41) firms who responded to the survey out of a possible seventy three (73). The key characteristics of the sample are discussed. This is important in order to understand the nature of the respondents who participated in the study. The statistics of participants' descriptive characteristics are summarized in Table 4.1 below. Of the total sample size, 87% of the respondents occupied middle- and higher-management positions. The majority of the respondents had worked in the firms they represented for more than 4 years (83%). The sample was also

characterized by educated participants, the majority of whom had post-graduate degrees (36.6%).

Characteristic	Percentage of sample	
Current position	Senior Management	39.0
	Middle Management	48.8
	Junior Management	12.2
Years position held	Less than 1 year	4.9
	1 to 3 years	24.4
	More than 3 years	70.7
Years worked in firm	Less than 1 year	7.3
	1 to 3 years	9.8
	4 to 5 years	22.0
	More than 5 years	61.0
Position reporting to	Shareholders/Board	31.7
	Executive	43.9
	Management	24.4
Education	Diploma	2.4
	Undergraduate Degree	29.3
	Technical qualification	31.7
	Postgraduate degree	36.6
Age	Less than 26 yrs.	2.4
	26 - 35 years	31.7
	36 - 45 years	39.0
	46 - 55 years	14.6
	>55 years	12.2

Table 4.1: Respondents' general profile

The following Table 4.2 summarizes characteristics of marketing departments in responsive firms. The highest number of respondents indicated that their firms did not have a senior marketing position (51.2%). Only 39.9% of the firms had formal marketing personnel, that is, either a marketing manager or a senior marketing manager. There were 4.9% firms who reported that, in the absence of a marketing team, various people in their organization performed marketing duties. The category included CEOs, directors, and partners. It was also reported that 85.4% of the respondents did not have any formal marketing qualifications, even though they were involved in some marketing activities.

Characteristic	Sample Percentage	
Senior marketing position	Senior Management	19.5
	Marketing Manager	24.4
	Other	4.9
	None	51.2
Formal marketing qualification	Yes	14.6
	None	85.4

Table 4.2: Characteristics of the marketing departments of sample firms

Summaries of the characteristics of the firms participating in the survey are detailed in Table 4.3. The geographical location of the firms is generally within the major cities of KwaZulu-Natal. The highest number of respondents came from Durban (53.7 %), followed very closely by Pietermaritzburg (41.5 %), with the lowest number from Richards Bay and Port Shepstone (including Margate), with a combined representation of 4.8%. The majority of the firms surveyed were either a head office (46.3%) or a local branch (41.5%). The maturity in terms of age of the firms showed that over two-thirds of the responding firms had been established over 11 years ago; 39 % over 30 years ago; and 34.1% had been established between 11 and 30 years ago. A low 26.8% of surveyed firms had been established under 11 years ago.

The size of each organization was defined in terms of staff employed. There was a good spread of the various-sized firms in terms of the categories on the survey questionnaire. The larger firms formed 22.0% of the sample, medium-sized firms came in at 29.3%, and the smaller firms were at 48.8% (those that employed fewer than 20 employees). The smallest firms were divided into two categories: those that employed 11-20 staff members; and those that employed fewer than 11 staff members. The data/survey sample showed 26.8% of firms employing between 11-20 staff; and 22% of those employing fewer than 11 staff members.

When firms were asked what they thought defined success in their organization, some firms listed financial performance, while others listed client-related factors. A summary of results in Table 4.4 for the definition of success, indicates that 41.5% of firms defined success of their business in terms of financial success; 43.9% defined success in terms of client satisfaction; 7.3% defined success in terms of growth of company; and 7.3% defined success in terms of attracting new clients.

Results for the annual sales turnover in Table 4.4 indicates that 4.9% firms had a turnover of less than five million; 14.6% had a turnover of between 5.1 and 15 million; 22.0% had a turnover of between 15.1 and 50 million; 17.1% had a turnover of greater than 50 million; and 41.5% did not have actual published financial details of turnover. Reporting the results over the past three years on the change in sales turnover indicated that in 4.9% firms there was no change; 41.5% had increased by 1-10%; 24.4% had increased by 11-20%; 19.5% had increased by over 30%; and 9.8% had decreased.

Company Profile	Category	Percentage of sample
City	Durban	53.7
	Margate	2.4
	Pietermaritzburg	41.5
	Richards Bay	2.4
Type of office	Head Office	46.3
	Branch	41.5
	Independent company	7.3
	Independent branch	2.4
	A division	2.4
Establishment date	< 5yrs ago	7.3
	5 - 10 yrs ago	19.5
	11 - 30 yrs ago	34.1
	>30 yrs ago	39.0
International client base	None	61.0
	<10%	9.8
	11 - 25%	14.6
	26 - 50%	4.9
	51 - 80%	2.4
	>80%	2.4
	Information not available	4.9
Firm ownership	Totally domestically owned	87.8
	Jointly domestically and foreign owned	9.8
	Totally foreign owned	2.4
Division/subsidiary	Yes	12.2
	No	87.8
Number of people employed	<10	22.0
	10 – 20	26.8
	21 – 100	29.3
	>100	22.0

Table 4.3: Key characteristics of the firms

Company Profile	Category	Sample Percentage
Annual turnover (R Million)	0 – 5	4.9
	5.1 – 15	14.6
	15.1 - 50	22.0
	> 50	17.1
	Not any	41.5
Change in turnover (last 3 years)	No change	4.9
	Increased by 1-10%	41.5
	Increased by 11-20%	24.4
	Increased by >30%	19.5
	Decreased	9.8
Definition of success	Financial success	41.5
	Growth of company	7.3
	Client satisfaction	43.9
	Attracting new clients	7.3
Measure of success	Increased profitability	65.9
	Increased market share	9.8
	Service quality	14.6
	New sales	9.8

Table 4.4: Financial statistics and key financial comparisons

The size of the organizations was defined in terms of staff employed. There was a good spread of the various-sized firms in terms of the categories on the survey questionnaire. The largest portion of the sample was formed by small to medium companies, equating to 78%. Most firms conducting consulting work in KwaZulu-Natal were well matured, having been established over 11 years ago. The geographical location of the firms was set in two major cities of KwaZulu-Natal. Of the 41 firms, 39 of them operated in either Durban or Pietermaritzburg. This was an indication that strategically, engineering firms preferred to be based in cities of high economic activity. This confirmed Ojo (2008)'s finding that location was of strategic importance. Preference was given to places where there is a regular demand for engineering work. There is a high concentration of construction work in these cities, hence the justification for the number of firms located in the two major cities of the province.

The respondents held senior management positions; only 2% not occupying management positions, rather, they were conducting marketing as part of their administrative duties. The marketing activities conducted were predominantly undertaken by the most senior people in the firms. This confirms earlier findings by previous researchers such as Ganah et al. (2008) and Jafaar et al. (2008) on marketing practices, that marketing was the responsibility of senior staff, including directors, partners, and CEOs of companies. Having senior management take part in marketing activities can only be a positive sign that firms are increasingly emphasizing marketing as an activity. Simpson (2006) stated that small firms relied on personal contacts of these business owners in conducting marketing. McCartan-Quinn and Carson (2003) further explained that firms also depend on the expertise and experience in marketing of the owners.

Just over half of the firms surveyed indicated that they did not have a senior marketing position. Again, the study found that, even though there were people in companies who were involved in daily marketing activities, 85.4% of them did not have any formal marketing qualifications. This was not surprising - previous studies had confirmed this. A study conducted in Ireland found that marketing practitioners in professional services firms do not have prior qualifications in marketing (Brady and Palmer 2004). Despite these findings, marketing activities took place in these firms. Goal-orientated behaviour can be predicted by attitude (Wiklund et al., 2003). It is therefore important to examine the general thoughts and actual practices held by 'marketers', these being

able to guide future marketing practices within the engineering industry. The following section discusses the descriptive statistics and correlations of marketing practices.

#### **4.3 Reliability of the instrument**

Reliability analysis is conducted for the purpose of checking whether the research instrument may be deemed reliable enough, by considering a measure of consistency of the respondents in answering the questions contained in the questionnaire. The Cronbach alpha statistic is used in evaluating the research tool (questionnaire). Only the Likert scale questions are used in the computation of the Cronbach's alpha statistic. The demographic variables, which are mostly nominal, are not included, as they do not have some form of scale.

According to Sekaran (2006) a reliable research tool should have a Cronbach's alpha statistic of at least 0.600. The research instrument was constructed using questions from the CMP framework. The questions on the nine dimensions of exchange in the CMP framework formed the core of this study. These questions were in a study investigating the differences in contemporary marketing practices of business-to-business and consumer firms. In this study Coviello (2001) conducted pretesting of the instrument and came to a conclusion that it had adequate face validity and content. The reliability of the measures was tested using the Cronbach Alpha Tests. Each of the nine variables within the nine dimensions was used to calculate the alpha values. The following final alpha values were obtained 0.77 (network marketing), 0.71 interaction marketing, 0.64 (database marketing) and 0.65 (transactional marketing). These levels are all above 0.6 and considered acceptable. Reid (2008) who investigated marketing practices in professional services firms also used the same questions. A study on business to business contemporary marketing in United States, Argentina and West Africa also used the same questions and found that respondents in Africa understood the context of the questions differently than American respondents (Dadzie, Johnston et al. 2008). The same instrument was used in an investigation into marketing practices-performance relationship in professional firms by Sweeney and Soutar (2010) proving the instrument was valid. This study also used an adaptation of the instrument to investigate marketing practices of engineering firms in KZN.



#### 4.4 Marketing practices of firms

In this section the predominant marketing practices of civil engineering consulting firms are investigated. Coviello et al. (1997; 2002) marketing researchers found that the use of interaction and network marketing practices was the preferred choice of business firms. These results were found by Sweeney and Soutar (2010) to be true in an investigation of professional services firms. To test for the existence of differences in the means of the marketing practices investigated for the various firm sizes, Analysis of Variance (ANOVA) was used. The ANOVA tests consist of the *F*-statistic and a corresponding *p*-value. The *F*-statistic is used in testing for the effect of firm size on marketing practices used. The testing procedure in this study makes use of the *p*-value, which is computed from the *F*-value, as a handy indicator of significance. The *p*-value is an indicator showing whether there are significant differences among the means of the various firm sizes in the way they responded to questions about marketing practices. A *p*-value less than 5% (or  $<0.05$ ) indicates significant differences among the means of the various firms' marketing practices. On the other hand if the *p*-value is greater than 5% ( $>0.05$ ) then there are no significant differences in marketing practices among the differently sized firms.

The scoring scale was as follows:

- 1=more often practised;
- 2=often practised;
- 3=occasionally practised;
- 4=less often practised; and
- 5=least often practised.

In Table 4.5 the means of transactional, database, interaction, and networking marketing were calculated. Interactions marketing with an average mean score of 2.932 was found to be the predominant practice among engineering firms. The next most frequently used marketing practice was networking marketing, with a mean of 3.610. Interaction marketing was closely followed by transactional marketing, with a mean of 3.699. The least-practised marketing approach was found to be database marketing, obtaining a mean value of only 4.190. An *F*-value test result on each of marketing approaches in comparing the different firms was also computed. In all four

marketing approaches there were no significant variances in the use among different sizes. A p-value of 0.341 was reported in the use of transactional marketing amongst all sizes of firms. The use of database amongst firms of different sizes had a p-value of 0.342. A p-value of 0.335 was calculated on the use of interaction marketing amongst all firm categories. Lastly, a p-value of 0.613 was reported when investigating the differences in the use of networking marketing amongst all firm size categories.

Marketing Approach		Mean	Std. Deviation	ANOVA Tests	
				F-value	p-value
Transactional	20 or less	3.850	0.459	1.107	0.341
	21 – 100	3.574	0.606		
	>100	3.531	0.959		
	<b>Total</b>	<b>3.699</b>	<b>0.638</b>		
Database	20 or less	4.089	0.602	1.105	0.342
	21 – 100	4.389	0.518		
	>100	4.148	0.515		
	<b>Total</b>	<b>4.190</b>	<b>0.562</b>		
Interaction	20 or less	2.861	0.782	1.127	0.335
	21 – 100	3.176	0.617		
	>100	2.765	0.517		
	<b>Total</b>	<b>2.932</b>	<b>0.689</b>		
Networking	20 or less	3.500	0.784	0.495	0.613
	21 – 100	3.653	0.760		
	>100	3.796	0.716		
	<b>Total</b>	<b>3.610</b>	<b>0.753</b>		

Table 4.5: Significant variances in marketing approaches within variously sized firms

This paragraph and others to follow relates some of the empirical results above to literature. The research examined the extent, to which each practice was conducted, by examining the means for the relevant composites. The means of transactional, database, interaction, and networking marketing were computed and compared. Interaction marketing was found to be the predominant practice among engineering firms. The next most frequently used marketing practice was networking marketing. These results confirmed the study findings presented by Reid (2008) that professional service' firms used both interaction and networking more than did the other contemporary marketing practices. Earlier authors such Berry (1983), Grönroos (1990), and Gummesson (1987), had also argued that services' firms are "relationship-



based” and that they are naturally relational. Further research into professional services showed that technical services are also relational in nature (Hauseman, 2003; Kotler et al., 2002; Laing and Lian, 2005).

Relationship marketing is important in the professional conducting of business (Sweeney and Soutar, 2010). However, this study, interestingly, found in terms of preferences that transactional (over database marketing) was the next preferred marketing approach, with a mean below the median of 3. The least practised marketing approach was database marketing, indicating that engineering firms still do not use much technology in their marketing activities. The use of technology and marketing practices is discussed later. These findings could indicate the use of both transactional and relational marketing in some engineering firms. This could not, however, be conclusively proved by this study. Indications are that transactional marketing is still relevant in certain contexts, as Fruchter and Sigué (2005) had suggested.

An F-value test result on each of the marketing approaches in comparing different firms was also computed. In all four marketing approaches there were no significant variances in the use among different sized firms. This finding differs from claims by Darley and Blankson (2008), that firm size affected the implementation of individual marketing practices. Earlier authors had concurred that marketing within smaller firms varied from that practised by larger firms (Coviello, Brodie et al. 2000; Gilmore et al., 2001; Fillis, 2002).

The general findings into marketing practices are consistent to a lesser degree with the position by Vargo and Lusch (2004), that services’ marketing is considered a relational and transactional process. Coviello, Brodie et al. (2000) proved by means of empirical evidence that services’ firms were characterized by the implementation of both relational and transactional approaches. ANOVA tests were conducted on each of the nine marketing activities of the contemporary marketing practices: marketing activities’ managerial investment, managerial focus, managerial level, management intent, formality of exchange, duration of exchange, type of contact, nature of communication, and the purpose of exchange. The scoring scale remained as above.

Table 4.6 below indicates that all sizes of firms are more inclined to the transactional marketing practice of attracting new customers when it comes to management intent.

In fact all firm sizes concurred, the F-test for the difference between means showing that the four levels of firm size are not significantly different ( $F=0.047$ ,  $p\text{-value}=0.986$ ) as they all have means lower than 3 (occasionally). In the scaling of the responses to questions in this section a lower score indicates that the marketing practice is popular, whereas a higher score indicates that the practice is unpopular.

The relational marketing practices had higher values, which indicate that they are less important or less popular with civil engineering consulting firms (means $\geq 3$ ). They are also not significantly different across the four firm sizes, which means that they are less important for all sizes of firms ( $p\text{-values}>5\%$ ).

Marketing Intent		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Attract new clients TM	Mean	2.556	2.727	2.750	2.889	0.047	0.986
Retain existing clients DM	Mean	3.667	3.909	3.000	3.667	0.469	0.705
Develop cooperative relationships with our clients IM	Mean	4.000	3.545	4.000	3.222	0.417	0.742
Coordinate activities between ourselves, clients, and other parties in our wider marketing system NM	Mean	3.889	4.636	3.833	4.111	0.577	0.634

Table 4.6: Significant variances in management intent across various firm sizes

Table 4.7 results show that transactional marketing scored low mean values, having means less than and closer to 3, compared with all other relational marketing categories. This indicates that most firms preferred focusing on issues related to service offering. In this category the p-value is reported to be  $p=0.009$  ( $p<5\%$ ), which is less than a p value of 0.05. This implies that there are significant variances of use of the marketing activity across differing sizes of engineering firms.

Management focus		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Issues related to our product/service offering (TM)	Mean	2.778	4.636	2.000	3.222	4.422	0.009**
Issues related to clients in our market(s) (DM)	Mean	3.667	3.909	4.083	3.556	0.180	0.909
Issues related to specific clients in our market(s), or individuals in firms we deal with (IM)	Mean	3.667	3.182	4.417	4.111	0.983	0.411
Issues related to the network of relationships between individuals & firms in our wider marketing system (NM)	Mean	4.222	4.273	4.417	3.333	0.870	0.466

Table 4.7: Significant variances in management focus within variously sized firms

Results shown in Table 4.8 indicate that, as far as market focus is concerned, the sole transition market practice (C3.1) has higher means (mean>3) for all firm sizes, which indicates that the market practice is not favoured. The relational marketing practice of building long-term relations with specific clients shows lower means, which indicates that it is a favoured marketing practice (C3.3). This implies that, as far as market focus is concerned, the marketing practice is tilted towards relational rather than transactional practice. Across all marketing approaches there is no significant variance in the use of management focus within variously sized firms.

Purpose of exchange		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Focus is on generating a profit or other "financial" measure(s) of performance TM	Mean	3.556	4.273	4.333	3.222	0.967	0.419
Focus is on acquiring client information DM	Mean	4.778	4.636	4.750	4.444	0.207	0.891
Focus is on building a long-term relationship with a specific client(s) IM	Mean	2.000	3.182	2.333	2.111	0.812	0.495
Focus is on forming strong relationships with a number of firms in our market(s) NM	Mean	3.667	3.545	4.000	4.778	1.009	0.400

Table 4.8: Significant variances in purpose of exchange within variously sized firms

Results in Table 4.9 indicate that, as far as the type of client contact conducted by engineering firms, the sole transition market practice has higher means, which indicates that the market practice is not favoured. The relational marketing practice of interpersonal contact (involving one-to-one interaction between people) has lower means, which indicates that it is a favoured marketing practice (C4.3). This implies that, as far as market contact is concerned, the marketing practice is tilted towards relational rather than transactional practice. In the category in which respondents preferred that client contact be somewhat impersonal, there is significant difference in use of that practice across different firm sizes ( $F=4.642$ ;  $p\text{-value} = 0.007$ ).

Client contact		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Is impersonal (i.e., no individual or personal contact) TM	Mean	5.000	5.000	5.000	5.000	-	-
Is somewhat personal (e.g., by direct mail) DM	Mean	2.444	3.909	5.000	4.111	4.642	0.007*
Is interpersonal (e.g., involving one-to-one interaction between people) IM/NM	Mean	2.889	1.727	1.667	1.889	1.045	0.384

Table 4.9: Significant variances in type of contact within variously sized firms

Results in Table 4.10 show that marketing activities are inclined towards forming ongoing one-to-one personal contact with people in the engineering firms ( $\text{mean} < 3$ ).

Duration of exchange		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Clients expect no future personal contact with us	Mean	5.000	5.000	5.000	5.000	-	-
Clients expect some future personal contact with us	Mean	4.000	5.000	5.000	4.556	2.148	0.111
Clients expect one-to-one personal contact with us	Mean	3.778	4.273	4.333	3.667	0.384	0.765
Clients expect ongoing one-to-one personal contact	Mean	2.778	1.364	2.333	2.778	1.319	0.283

Table 4.10: Significant variances in duration of exchange within variously sized firms

The only scoring marketing approach was networking marketing. Overall there is no significant difference in the expected duration of exchange across engineering firms of every size.

Results in Table 4.11 indicate that engineering firms preferred investing their resources in establishing and consolidating personal relationships with their clients (mean<3). This infers that, as far as resources investments are concerned, the marketing practice is tilted towards relational rather than transactional practice. In the category in which respondents indicated that they preferred developing their firm's network relationships within their markets, there is significant difference in the use of this practice across the various firm sizes (F=3.686; p-value = 0.020).

Resources Investment		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Product, promotion, price, and distribution activities (or some combination of these)	Mean	4.778	4.636	4.333	4.556	0.232	0.874
Technology which improves communication with our clients	Mean	3.222	4.364	5.000	5.000	4.396	0.010
Establishing and building personal relationships with individual clients	Mean	2.889	3.182	2.667	2.333	0.305	0.822
Developing our firm's network relationships within our market(s)	Mean	3.778	2.091	4.333	4.111	3.686	0.020*

Table 4.11: Significant variances in managerial investment within variously sized firms

Results in Table 4.12 indicate that marketing is often practised by Managing Directors and CEOs in engineering firms. There was no significant difference in the use of practices in the activity of management involvement in marketing within organizations.

Management involvement		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Marketing carried out by functional/specialist marketers	Mean	4.556	3.909	3.750	3.222	0.821	0.491
Marketing carried out by non-marketers who have responsibility for marketing as well as other aspects of the business	Mean	4.556	3.545	3.333	3.778	0.801	0.501
Marketing carried out by the Managing Director or CEO	Mean	1.889	3.000	3.750	2.778	1.608	0.204

Table 4.12: Variances in level of management involvement per size firm

Results on Table 4.13 show that there is no significant difference in the nature of communication conducted by engineering firms. Engineering firms, across all sizes, preferred communication at various levels, having interpersonal relationships with their counterparts in their client institutions.

Nature of communication		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Communication involves communicating to the mass market TM	Mean	4.444	5.000	5.000	5.000	1.880	0.150
Communication involves targeting specifically identified segment (s) or client(s) DM	Mean	4.333	3.636	4.333	3.222	0.950	0.426
Communication involves individuals at various levels personally interacting with their individual clients IM	Mean	3.333	1.727	3.417	2.889	1.824	0.160
Communication involves senior managers' networking with other managers from a variety of firms in our market(s) or wider marketing system NM	Mean	3.444	4.455	3.000	3.667	1.220	0.316

Table 4.13: Significant variances in nature of communication within variously sized firms

Results in Table 4.14 showed that there is no significant difference across firm sizes, in the formality of exchange in engineering firms. Engineering firms, across all sizes,

indicated that they conducted their meetings with clients at both formal and social levels (mean<3). In describing formality of exchange, engineering firms seem to prefer interaction and networking practices.

Client Meetings		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Mainly at a formal, business level TM	Mean	4.111	5.000	4.000	3.667	1.346	0.274
Mainly at an informal, social level DM	Mean	4.778	5.000	5.000	5.000	1.346	0.274
Both a formal, business, and informal, social level IM/NM	Mean	2.000	1.364	2.000	1.889	0.373	0.773

Table 4.14: Significant variances in formality of exchange within various sized firms

Results in Table 4.15 indicate that, as far as a general approach to primary clients is concerned, the sole transition marketing practice has higher means (mean>3.7) for all firm sizes, implying that this marketing practice is not favoured.

Marketing General Practice		Size of firm (employees)				ANOVA Test	
		<10	10-20	21-100	>100	F-value	p-value
Managing the marketing mix so as to attract and satisfy clients in a broad market TM	Mean	4.778	3.909	4.667	4.111	0.868	0.466
Using technology-based tools in targeting and retaining clients in a specific segment of the market DM	Mean	3.778	5.000	5.000	4.111	2.763	0.056
Developing personal interactions between employees and individual clients IM	Mean	2.778	2.455	1.667	1.889	0.769	0.519
Positioning the firm in a wider, organizational system/network NM	Mean	4.111	4.273	4.333	4.111	0.048	0.986

Table 4.15: Significant variances in marketing general approach within variously sized firms



The relational marketing practice of developing personal interactions between employees and individual clients has lower means, which indicates that it is a favoured marketing practice (C10.3). The p-values across the different firms did not show significant variances in their general approach to marketing.

This study went further, analysing each dimension of the CMP framework. Data was collected across all relational and transactional marketing, and across both relational exchange and managerial exchange dimensions. Accounting for the significant differences and general trends of the scores, it is apparent that every size of firm tends to be more relational than transaction oriented. Relative to larger firms, smaller engineering firms are likely to focus on:

- Issues related to service offerings;
- Client contact being personal; and
- Investing in developing client networks.

Both groups do have some distinct similarities in that:

- Their marketing intent is focused on attracting new clients;
- The purpose of exchange is to build long-term relationships;
- Their client contact is interpersonal;
- The duration of exchange is expected to be ongoing with the client at a one-on-one level;
- Investments of their resources are based on creating relationships with clients;
- Marketing is conducted by managing directors or the CEO; and
- Client meetings are conducted at a social and formal level.

In contrast to Coviello (2000), these findings, in an exploratory sense, suggest that larger engineering firms are also relationship-focused, much like smaller firms, perhaps indicating a distinct movement towards developing this aspect of business in reaction to the changing market environment. As with the findings of Coviello et al. (2000), it must be acknowledged that, even though statistical differences were found in certain marketing activities, these findings cannot be generalized for all other engineering firms, these differences and similarities being relatively small compared with the number of variables examined.



Coviello et al. (2000) had empirically proved that there were similarities between various firm sizes in marketing intent; resources investment; nature of the client contact; client relationship expectation; and marketing intent decisions. From a general point of view, respondents explained marketing as a means by which to inform clients of their service offerings. The firms were also interested in maintaining customer relationships. These responses confirmed the findings of Marcati et al. (2000), who found that Italian firms are interested in improving perceptions of their clients on their service offerings.

#### **4.5 Current market environment**

In this section the strengths of the relationship between marketing activities and prevailing marketing environment was measured. The contemporary marketing practices as summarised in Table 2.1 were presented to respondents in the form of marketing activities. The marketing activities were listed in the form of questions, starting from C1.1 to C10.4 in the questionnaire. Each of the questions belonged to one of the marketing activities as showed at the top of Tables 4.16a and 4.16b. The key to these questions is listed at end of Tables 4.16a and 4.16b. Marketing environment was also divided into three subsections, firm emphasis, client demands and completion. Each section on the questionnaire had market environment questions which ranged from question D1 to D13 as per key at the end of Tables 4.16a and 4.16b.

There was no significant measured relationship between firm emphasis and the following marketing practices, management intent, client contact and formality of exchange as indicated by the non-significant correlations in Table 4.16. However as indicated in Table 4.16a and Table 4.16b there was significant relationship, at the p less than 5% significance level, between firm emphasis and the following marketing practices, management focus, purpose of exchange, duration of exchange, resources investment, management involvement and nature of communication.

There was no significant relationship between client demands and the following marketing practices: management intent, client contact, duration of exchange, management involvement, nature of communication and formality of exchange as the

correlations between variables representing these constructs were not significant at  $p$  less than 5% significance level. However as indicated in Table 4.16a and 4.16b significant correlations were observed between client demands and the following marketing practices, management focus, purpose of exchange and resources investment.

Relationship strength was also observed between competition and marketing practices. The results show there was significant relationships, at a significant level of  $p$  less than 5%, between competition and management intent, management focus, purpose of exchange, duration of exchange, resources investment, management involvement and nature of communication. The significant correlations were either significant at  $p$  less than 0.01 or 0.05 meaning there is very close relationship between the two variables whose relationship is being measured.

The impact of changing and prevailing marketing conditions on marketing practices was investigated as conceptualized by the contemporary marketing. In Table 4.16a and Table 4.16b there were significant correlations between the following statements:

- One hears of a new competitive move almost every day and when dealing with our market(s), our focus is on acquiring client information
- One hears of a new competitive move almost every day and when a client buys our services we believe they expect some future personalized contact with us
- One hears of a new competitive move almost every day and our marketing resources are invested in establishing and building personal relationships with individual clients
- One hears of a new competitive move almost every day and our marketing resources are invested in developing our firm's network relationships within our market(s)
- One hears of a new competitive move almost every day and our market communication involves senior managers networking with other managers from a variety of firms in our market(s) or wider marketing system

The increasing number of new competition was the most common variable that was related to marketing practices. There were five significant correlations reported on Table 4.16a and 4.16b.

- Price competition is a hallmark of our industry and our marketing activities are intended to attract new clients
- Price competition is a hallmark of our industry and our market communication involves senior managers networking with other managers from a variety of firms in our market(s) or wider marketing system
- Price competition is a hallmark of our industry and our marketing planning is focused on issues related to clients in our market(s)
- Price competition is a hallmark of our industry and when dealing with our market(s), our focus is on building a long-term relationships with a specific client(s)

Statements relating price competition being the hallmark of the engineering industry was the second most closely related to marketing practices with four significant correlation measured as shown in Table 4.16a and 4.16b:

- Sometimes our clients are very price-sensitive, but on other occasions, price is relatively unimportant and our marketing planning is focused on issues related to our product/service offering
- Sometimes our clients are very price-sensitive, but on other occasions, price is relatively unimportant and when dealing with our market(s), our focus is on building a long-term relationships with a specific client(s)
- Sometimes our clients are very price-sensitive, but on other occasions, price is relatively unimportant and our marketing resources are invested in technology to improve communication with our clients

The third most closely related variable or statement to marketing practices was that clients was that sometimes clients are sometimes very price sensitive while on other occasions price was found to be relatively unimportant.

- Growth and acquiring new resources. Readiness to meet new challenges is important and when a client buys our services we believe they expect ongoing one-to-one personal contact with people in our firm
- Growth and acquiring new resources. Readiness to meet new challenges is important and our marketing resources are invested in technology to improve communication with our clients

- Growth and acquiring new resources. Readiness to meet new challenges is important and our market communication involves our firm targeting a specifically identified segment (s) or client(s)
- Growth and acquiring new resources. Readiness to meet new challenges is important and overall, our firm's general approach to our primary clients involves positioning the firm in a wider organizational system/network

Also the statement related to growth and acquiring new resources, in an effort to become ready to meet new challenges had four significant measured correlations to marketing practices.

- The demand conditions for our supplier's product are very irregular and our marketing planning is focused on issues related to the network of relationships between individuals and firms in our wider marketing system
- The demand conditions for our supplier's product are very irregular and in our firm, marketing activities are carried out by functional/specialists marketers
- The demand conditions for our supplier's product are very irregular and our market communication involves individuals at various levels in our firm personally interacting with their individual clients

The statement about demand conditions of engineering services being irregular was also closely related to marketing practices. There were other significant correlations between the following statements:

- Anything that one competitor can offer, others can match readily and in our firm, marketing activities are carried out by non-marketers who have responsibility for marketing and other aspects of the business
- Our most important competitors are regularly carrying out product adjustments and development of new products and overall and our firm's general approach to our primary clients involves positioning the firm in a wider organizational system/network
- Permanence and stability. Efficient, smooth operations are important and when dealing with our market(s), our focus is on building a long-term relationships with a specific client(s)
- We cater to many of the same clients that we used to in the past and overall and our firm's general approach to our primary clients involves using

technology-based tools to target and retain clients in a specific segment of the market

- New clients tend to have product-related needs that are different from those of our existing clients and overall and our firm's general approach to our primary clients involves developing personal interactions between employees and individual clients

Marketing Environment	Marketing Practices (Activities)																
	1. Management Intent					2. Management Focus					3. Purpose of Exchange					4. Client Contact	
	C1.1	C1.2	C1.3	C1.4	C2.1	C2.2	C2.3	C2.4	C3.1	C3.2	C3.3	C3.4	C4.2	C4.3	C5.2	C5.3	C5.4
D1	-0.242	0.073	-0.015	-0.222	-0.129	-0.157	-0.193	0.019	-0.248	-0.212	0.056	0.025	-0.066	0.039	-0.048	0.227	<b>-0.321*</b>
D2	-0.051	-0.296	-0.120	-0.143	-0.122	-0.038	-0.252	0.130	0.171	-0.183	<b>-0.383*</b>	0.065	0.205	-0.296	0.033	0.172	-0.174
D3	0.100	0.018	0.033	-0.097	-0.115	0.288	-0.020	-0.148	0.287	0.081	-0.204	0.045	-0.026	0.000	-0.152	-0.129	0.132
D4	0.092	-0.083	-0.024	0.049	0.026	0.156	0.185	<b>-0.356*</b>	0.026	-0.081	-0.247	-0.072	-0.173	0.137	-0.128	-0.170	0.289
D5	0.245	0.179	0.012	-0.201	-0.136	-0.034	0.097	0.112	0.138	-0.071	0.058	-0.083	-0.079	0.164	-0.135	-0.030	0.253
D6	0.011	-0.118	-0.134	-0.126	<b>-0.324*</b>	0.153	-0.123	-0.002	0.274	-0.080	<b>-0.344*</b>	-0.141	0.053	-0.224	-0.216	0.240	-0.144
D7	-0.063	-0.174	0.015	0.023	-0.078	-0.138	0.111	-0.034	-0.261	-0.062	-0.022	0.305	0.162	-0.270	0.293	0.052	-0.063
D8	-0.004	0.181	-0.106	-0.227	-0.159	0.130	-0.201	0.044	-0.014	-0.203	0.193	-0.107	0.086	-0.135	-0.107	0.241	-0.257
D9	-0.039	-0.166	-0.239	0.103	-0.225	0.065	0.008	-0.199	0.111	-0.180	-0.250	-0.016	0.142	-0.176	-0.239	0.092	0.159
D10	0.148	0.061	-0.141	-0.190	0.245	0.123	-0.220	-0.249	0.130	-0.095	-0.048	0.130	0.177	-0.101	0.177	-0.080	-0.027
D11	0.124	-0.148	-0.069	0.141	0.145	-0.009	0.044	-0.061	0.057	0.053	-0.006	0.044	0.132	0.049	-0.126	-0.104	0.165
D12	<b>-0.385*</b>	-0.241	-0.099	0.125	-0.088	<b>-0.347*</b>	0.110	-0.067	-0.209	-0.238	<b>-0.329*</b>	0.308	-0.176	0.029	-0.029	0.299	-0.201
D13	-0.161	0.177	-0.076	-0.055	0.078	-0.113	-0.237	-0.033	-0.280	<b>-0.349*</b>	0.075	0.151	-0.147	0.014	<b>-0.403**</b>	0.298	-0.148

\*=significant at 5% level

Table 4.16a: Correlations measured between market environment and marketing practice relationship

Marketing Environment		Marketing Practices (Activities)																	
		1. Resources Investment				2. Management Involvement			3. Nature of Communication				4. Formality of Exchange			5. General marketing Approach			
		C6.1	C6.2	C6.3	C6.4	C7.1	C7.2	C7.3	C8.1	C8.2	C8.3	C8.4	C9.1	C9.2	C9.3	C10.1	C10.2	C10.3	C10.4
Firm Emphasis	D1	-0.142	-0.313*	0.227	-0.125	-0.268	0.267	-0.105	-0.192	-0.324*	0.032	0.127	-0.072	-0.158	0.003	-0.164	-0.157	0.203	-0.323*
	D2	-0.054	-0.121	0.124	-0.058	-0.149	-0.009	0.096	-0.158	0.012	-0.058	0.112	-0.241	0.109	0.114	-0.209	-0.039	0.163	-0.125
	D3	-0.224	-0.185	0.031	0.064	-0.002	0.092	-0.034	-0.176	-0.127	0.223	-0.181	-0.038	-0.145	-0.030	-0.223	0.079	0.014	-0.203
	D4	-0.005	-0.060	-0.121	0.244	0.349*	-0.100	-0.110	0.018	0.009	0.365*	-0.204	0.150	0.167	-0.166	-0.024	0.016	-0.099	-0.072
Client Demand	D5	0.064	-0.142	-0.075	0.139	-0.177	0.060	-0.033	-0.097	-0.117	0.187	-0.176	0.034	0.162	-0.109	0.064	-0.142	-0.045	0.034
	D6	-0.006	-0.424**	-0.116	0.055	-0.022	0.004	0.030	-0.225	-0.154	-0.154	0.245	-0.210	-0.068	0.161	-0.127	-0.086	0.077	-0.210
	D7	0.186	0.208	-0.225	0.167	-0.005	0.164	-0.008	0.164	-0.075	-0.052	0.169	-0.188	0.015	-0.047	0.171	0.108	-0.263	0.104
	D8	-0.222	-0.142	0.214	-0.214	-0.408**	0.119	0.068	-0.248	-0.307	0.164	0.121	0.056	0.037	-0.059	-0.092	-0.136	0.309*	-0.236
Competition	D9	-0.152	-0.307	0.132	0.062	-0.034	-0.037	-0.041	-0.213	-0.062	0.045	0.053	-0.164	-0.174	0.054	-0.279	-0.328*	0.159	-0.100
	D10	-0.068	0.139	0.220	-0.225	-0.257	-0.103	0.258	0.260	-0.081	0.177	-0.177	0.162	-0.123	-0.150	0.018	0.126	0.168	-0.328*
	D11	-0.243	0.012	0.208	-0.140	0.168	-0.344*	0.155	0.096	-0.055	0.164	-0.279	0.146	-0.066	-0.069	-0.263	0.112	-0.037	0.075
	D12	-0.104	-0.090	0.044	0.116	0.207	0.058	-0.272	-0.151	0.190	-0.156	0.355*	-0.210	0.133	0.135	0.096	-0.242	-0.052	-0.085
	D13	0.147	-0.131	0.444**	-0.436**	-0.127	0.160	0.024	-0.293	-0.097	0.039	0.351*	-0.041	-0.113	-0.010	0.234	-0.185	0.188	-0.227

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

Table 4.16b: Correlations measured between market environment and marketing practice relationship



### Variable Codes for Correlation Tables

- C1.1= Our marketing activities are intended to attract new clients
- C1.2=Our marketing activities are intended to retain existing clients
- C1.3= Our marketing activities are intended to develop cooperative relationships with our clients
- C1.4= Our marketing activities are intended to coordinate activities between ourselves, clients, and other parties in our wider marketing system (e.g., key suppliers, service providers and other firms)
- C2.1= Our marketing planning is focused on issues related to our product/service offering
- C2.2 =Our marketing planning is focused on issues related to clients in our market(s)
- C2.3 =Our marketing planning is focused on issues related to specific clients in our market(s), or individuals in firms we deal with
- C2.4 =Our marketing planning is focused on issues related to the network of relationships between individuals and firms in our wider marketing system
- C3.1= When dealing with our market(s), our focus is on generating a profit or other "financial" measure(s) of performance
- C3.2=When dealing with our market(s), our focus is on acquiring client information
- C3.3 =When dealing with our market(s), our focus is on building a long-term relationships with a specific client(s)
- C3.4= When dealing with our market(s), our focus is on forming strong relationships with a number of firms in our market(s)
- C4.1= Our firm's contact with our primary client is impersonal (e.g., no individuals or personal contact)
- C4.2 =Our firm's contact with our primary client is somewhat personalized (e.g., by direct mail)
- C4.3 =Our firm's contact with our primary client is interpersonal (e.g., involving one-to-one interaction between people)
- C5.1= When a client buys our services we believe they expect no future personalized contact with us
- C5.2 =When a client buys our services we believe they expect some future personalized contact with us
- C5.3 =When a client buys our services we believe they expect one-to-one personal contact with us
- C5.4 =When a client buys our services we believe they expect ongoing one-to-one personal contact with people in our firm
- C6.1 =Our marketing resources (i.e., people time and money) are invested in product, promotion, price, and distribution activities (or some combination of these)
- C6.2= Our marketing resources (i.e., people time and money) are invested in technology to improve communication with our clients
- C6.3 =Our marketing resources (i.e., people time and money) are invested in establishing and building personal relationships with individual clients
- C6.4= Our marketing resources (i.e., people time and money) are invested in developing our firm's network relationships within our market(s)
- C7.1 =In our firm, marketing activities are carried out by functional/specialists marketers (e.g., marketing manager, sales manager, major account manager)
- C7.2= In our firm, marketing activities are carried out by non-marketers who have responsibility for marketing and other aspects of the business
- C7.3 =In our firm, marketing activities are carried out by the Managing Director or CEO
- C8.1= Our market communication involves our firm communicating to the mass market
- C82. =Our market communication involves our firm targeting a specifically identified segment (s) or client(s)
- C8.3= Our market communication involves individuals at various levels in our firm personally interacting with their individual clients
- C8.4= Our market communication involves senior managers networking with other managers from a variety of firms in our market(s) or wider marketing system
- C9.1= When people from our firm meet with our primary clients, it is mainly at a formal, business level
- C9.2= When people from our firm meet with our primary clients, it is mainly at an informal, social level
- C9.3= When people from our firm meet with our primary clients, it is at both a formal, business and informal social level
- C10.1= Overall, our firm's general approach to our primary clients involves managing the marketing mix to attract and satisfy clients in a broad market
- C10.2 =Overall, our firm's general approach to our primary clients involves using technology-based tools to target and retain clients in a specific segment of the market
- C10.3= Overall, our firm's general approach to our primary clients involves developing personal interactions between employees and individual clients
- C10.4 =Overall, our firm's general approach to our primary clients involves positioning the firm in a wider organizational system/network
- D1. =My firm emphasizes growth and acquiring new resources. Readiness to meet new challenges is important
- D2. =My firm emphasizes permanence and stability. Efficient, smooth operations are important.
- D3.= My firm emphasizes competitive actions and achievement. Measurable goals are important.
- D4. =My firm emphasizes The demand conditions for our supplier's product are very irregular.



- D5. =In our kind of business, clients' product preferences change quite a bit over time.
- D6. =Sometimes our clients are very price-sensitive, but on other occasions, price is relatively unimportant.
- D7. =We are witnessing demand for our products and services from clients who never bought them before.
- D8. =New clients tend to have product-related needs that are different from those of our existing clients.
- D9. =We cater to many of the same clients that we used to in the past.
- D10. = Our most important competitors are regularly carrying out product adjustments and development of new products.
- D11. =Anything that one competitor can offer, others can match readily.
- D12. =Price competition is a hallmark of our industry.
- D13. =One hears of a new competitive move almost every day

The impact of changing and prevailing marketing conditions has some effect on marketing practices. Other studies has been conducted into investigating the correlation between all nine marketing activities as conceptualized by the contemporary marketing framework with changing market environment emphasizing issues such as client expectations, competition, technology change, changing demand pressure and firms general focus. The summary findings of the listed can be grouped into the following statements:

- i. The statement that price competition was the hallmark of the engineering industry was found to impact marketing practices, with four significant correlations reported. The industry has seen fierce competition for projects put on tender as the aggregate demand has increased over time (Bruggemans, 2013).
- ii. There was also a strong relationship between marketing practices and the statement, clients sometimes are very price sensitive, while on other occasions price was found to be relatively unimportant.
- iii. The findings also showed a relationship exists between marketing practices and the, statement about demand conditions of engineering services being irregular had three correlations to marketing practices.
- iv. Growth and acquiring new resources, in an effort to become ready to meet new challenges was also closely related with significant correlation measured between the statement and marketing practices.

Market environment factors found to be related to marketing practices confirmed previous studies findings. These research study findings may be closely linked with previous results of a study into marketing of professional firms in Australia by Reid (2008):

- The aggressive nature of competition makes it difficult for firms to survive economic downturns;

- The price has become more of a competitive tool; competitors are using heavily discounted prices as a means of securing projects;
- Clients have become more knowledgeable, demanding excellent service at cheaper prices. Clients know the exact scope of work required and ride at the back of heavily discounted rates; and
- Growth in the construction sector is declining, which contrasts with the growing need for new infrastructure.

These study findings were in support of Pels and Brodie (2004), who suggested that managers should place emphasis on understanding their client's perceptions of value, their client needs, and indeed their market environment. It is also important for managers to understand that value includes emotional benefits relative to their competition and their clients' perceived benefits (De Chernatony, Harris et al. 2000).

#### 4.6 Technology usage effect on marketing practices

When a question was posed to the respondents about general perception of technology, only 12.2% strongly agreed with the statement that their companies were technology-inclined firms. The balance of the responses is summarized in Table 4.17. The majority (41.5%) of the firms out of the total sample were neutral on the issue. A general perception is that engineering firms are not technologically inclined businesses.

Company Profile	Category	Percentage of sample
Company is a high-technology firm	Disagree	17.1
	Neutral	41.5
	Agree	29.3
	Strongly Agree	12.2

Table 4.17: Perceptions on use of technology

Pearson's correlations were used in measuring the effect of technology on marketing activities. The correlations between technology changes (D14) and each marketing activity are calculated and tabulated in Tables 4.18a, 4.18b, and 4.18c. The *p*-values for the Pearson's correlations are used in indicating whether the correlations are significant

or not. A significant correlation is indicated by a  $p$ -value less than 5% ( $p$ -value $<0.05$ ). The results of the Pearson's correlations between technology change and marketing practices show that there is no significant relationship between the two variables. These findings suggest that engineers have not accepted technology as part of their operation, even though authors such as Park and Kim (2003) have suggested that information technologies have assisted firms in collecting useful information about clients for strategic business purposes.

Marketing Practice	D14. Technological changes provide great opportunities in our industry.	
	Correlation	$p$ -value
C1.1 Our marketing activities are intended to attract new clients	0.162	0.312
C1.2 Our marketing activities are intended to retain existing clients	0.114	0.479
C1.3 Our marketing activities are intended to develop cooperative relationships with our clients	-0.215	0.177
C1.4 Our marketing activities are intended to coordinate activities between ourselves, clients, and other parties in our wider marketing system (e.g. key suppliers, service providers, and other firms)	-0.154	0.337
C2.1 Our marketing planning is focused on issues related to our product/service offering	-0.015	0.924
C2.2 Our marketing planning is focused on issues related to clients in our market(s)	0.089	0.581
C2.3 Our marketing planning is focused on issues related to specific clients in our market(s), or individuals in firms we deal with	-0.094	0.558
C2.4 Our marketing planning is focused on issues related to the network of relationships between individuals and firms in our wider marketing system	-0.155	0.335
C3.1 When dealing with our market(s), our focus is on generating a profit or other "financial" measure(s) of performance	-.035	.828
C3.2 When dealing with our market(s), our focus is on acquiring client information	-.071	.659
C3.3 When dealing with our market(s), our focus is on building long-term relationships with specific client(s)	-.178	.266
C3.4 When dealing with our market(s), our focus is on forming strong relationships with a number of firms in our market(s)	-.058	.716
C4.1 Our firm's contact with our primary client is impersonal (e.g., no individual or personal contact)	-	-
C4.2 Our firm's contact with our primary client is somewhat personal (e.g. by direct mail)	.002	.992
C4.3 Our firm's contact with our primary client is interpersonal (e.g. involving one-to-one interaction between people)	-.039	.810

Table 4.18a: The effect of technology change on marketing services

Marketing Practice	D14. Technological changes provide great opportunities in our industry.	
	Correlation	p-value
C5.1 When a client buys our services we believe they expect no future personal contact with us	-	-
C5.2 When a client buys our services we believe they expect some future personal contact with us	-.099	.537
C5.3 When a client buys our services we believe they expect one-to-one personal contact with us	-.185	.246
C5.4 When a client buys our services we believe they expect ongoing, one-to-one personal contact with people in our firm	.223	.161
C6.1 Our marketing resources (i.e., people, time, and money) are invested in product, promotion, price, and distribution activities (or some combination of these)	.111	.489
C6.2 Our marketing resources (i.e., people, time, and money) are invested in technology which improves communication with our clients	-.002	.992
C6.3 Our marketing resources (i.e., people, time, and money) are invested in establishing and building personal relationships with individual clients	-.011	.947
C6.4 Our marketing resources (i.e., people, time, and money) are invested in developing our firm's network relationships within our market(s)	.106	.511
C7.1 In our firm, marketing activities are carried out by functional/specialist marketers (e.g., marketing manager, sales manager, major account manager)	-.205	.198
C7.2 In our firm, marketing activities are carried out by non-marketers who have the responsibility for marketing as well as other aspects of the business	-.161	.314
C7.3 In our firm, marketing activities are carried out by the Managing Director or CEO	.121	.453

Table 4.18b: The effect of technology change on marketing services

Marketing Practice	D14. Technological changes provide great opportunities in our industry.	
	Correlation	p-value
C8.1 Our market communication involves our firm communicating with the mass market	-.042	.796
C8.2. Our market communication involves our firm targeting a specifically identified segment (s) or client(s)	-.149	.351
C8.3 Our market communication involves individuals at various levels in our firm personally interacting with their individual clients	.193	.227
C8.4 Our market communication involves senior managers networking with other managers from a variety of firms in our market(s) or wider marketing system(s)	-.079	.624
C9.1 When people from our firm meet with our primary clients, this is mainly at a formal, business level	.027	.866
C9.2 When people from our firm meet with our primary clients, this is mainly at an informal, social level	.080	.618
C9.3 When people from our firm meet with our primary clients, this is at both a formal, business; and informal, social level	.021	.897
C10.1 Overall, our firm's general approach to our primary clients involves managing the marketing mix so as to attract and satisfy clients in a broad market	-.022	.892
C10.2 Overall, our firm's general approach to our primary clients involves using technology-based tools in targeting and retaining clients in a specific segment of the market	-.235	.139
C10.3 Overall, our firm's general approach to our primary clients involves developing personal interaction between employees and individual clients	.255	.107
C10.4 Overall, our firm's general approach to our primary clients involves positioning the firm in a wider organizational system/network	-.196	.220

Table 4.18c: The effect of technology change on marketing services

## 4.8 Summary

This chapter presented all the findings of the research. Comments were made in this chapter about the reliability value and the implication of the magnitude of the value. Key characteristics of the research sample were summarized and presented. Key variables

identified in the literature review were analysed using methods detailed in the research-methodology chapter. If marketing is to be correctly conducted in firms, proper resources should be made available. The study indicates that most companies do not have marketing departments. The most senior marketing position in engineering firms is not held by a marketing person. This practise of not employing marketing staff could be as a result of organizational structures which are restricted by capital resources. Resources required for conducting proper marketing include staffing, time, budgets for client-relationship management, training, and market research. Major findings of this research were that firm size did not have an impact on how marketing was practised or on how performance in these organizations was measured. Secondly, networking and interaction marketing are the most frequently used marketing practices as predicted by previous studies. Thirdly, technology advancements have not affected how marketing is practiced. Lastly, market environment do affect marketing practices of engineering firms. The next chapter will conclude the study and give recommendations for practical implication and future studies.



## **CHAPTER FIVE**

### **Conclusion and Recommendations**

#### **5.1 Introduction**

This chapter discusses and summarizes key findings of the study, making recommendations for future studies. This study undertook to achieve five objectives; these were listed in the first chapter. The following are outcomes or study findings based on the five objectives set at the beginning of the study.

- a. The utilized marketing practices by engineering firms do not differ significantly for different sizes of firms.
- b. Marketing practices of firms seem to more inclined towards relational practices; the more predominantly used practices being networking and interactive marketing. Even though it was less frequently used, indications are that transactional marketing was preferred over database marketing in some firms.
- c. Marketing practices seem to be affected more by certain factors within the market environment more often than others. There were significant correlations between marketing practice and the threat posed by new competition; price being a hallmark of the industry; clients becoming price-sensitive; demand conditions being irregular; and the need to grow resources in gearing up to client expectations.
- d. The majority of respondents did not perceive their firms to be technology-driven. The study found that technology does not affect the way in which engineering firms conduct marketing practices. Database marketing seems to be the least preferred method of practising marketing.

#### **5.2 Implications of this Research**

The research has important implications for practitioners. Organizations should not only focus on conducting marketing practices; they should also consider how well they can fulfil these practices compared with their competitors. In other words, it is the combination

of how often and how well an organization conducts a practice that maximizes organizational performance. The engineering industry, CESA as body representing engineering consultants, participants in the research, and researcher's firms may use the research as a foundation for aligning their marketing approach and drafting their strategies. The research may be used as an awareness tool by all industry players of the changing environment needing to leverage from the long relationships professionals make with their clients.

Depending on market conditions and client expectations, it is evident that pressure experienced by today's consulting engineers will propel these professional firms into practising a range of marketing activities, some of which they still need to adopt and understand. The results of this study suggest that engineers are practising relational marketing; however, they will require more dynamic solutions in solving the ever-changing market environment. These solutions may include enhanced relationship management and the developing of strategic relationships with other service providers, together with government bodies. Companies will need to integrate their technical capabilities into their marketing activities, becoming more clients focused/eccentric. The research findings will add to the literature on the CMP framework.

This research introduced the concept of a resource efficient marketing framework. This framework proposes the engineering firms should base their marketing activities and strategies on client expectations. Firms should use their existing relationships to understand client needs and expectations. Their marketing practices should then be focused on addressing the identified needs. This conceptual framework says the client should be at the heart of marketing strategy selection, with the client needs being influenced by factors of the market environment.

### **5.3 Some recommendations for practice**

1. The professional engineers must unite against price wars. Professionals must challenge the growing habit of undercutting fees. Professional bodies such as

CESA must act as the voice of consulting firms in halting abuse by clients who have benefited from cheap services' costs;

2. Engineering professionals must learn how to market their services, based on value and not on price. There is a need to strengthening their experience and project profiles so as to gain competitive advantage;
3. Through conferences and journals, professional engineering firms should encourage the use of standard rates, guided by the professional bodies for engineers, such as the Engineering Council of South Africa;
4. Engineers must strengthen client relationships, leveraging from these relationships in securing future work. With the closer relationships, engineers will be better able to diagnose their client's problems. With clearer diagnosis, the engineering firms can supply tailor-made services-offerings to their clients. Engineers can create the best opportunities for selling their services, without having to go through a competitive-bid process; and
5. Firms facing increasing customer demand and competition must consider forming relationships and networks with government bodies and other industry players, in order to stay ahead of the challenges.

#### **5.4 Limitations of the study**

The following were some the limitations of the study:

- A low response rate from mailed questionnaires. This limits the robustness of some of the statistical tests, such as the chi-square test.
- The study was confined to the province of KwaZulu-Natal owing to limitations of time and costs. Further research in all parts of the country is required before results may be generalized.
- The online database provided by CESA was incomplete. This limited the researcher from reaching the intended respondents within firms. Some of the email addresses on the database were to administration departments. This posed the threat of an unsuitable person completing the research instrument.

- Use of self-administered questionnaires. One of the disadvantages of this type of survey is bias, should the researcher become involved in the process of completing the questionnaire. Owing to the nature of the subject (marketing), most of the engineer respondents required assistance in the understanding of some concepts. The researcher's knowledge and explanation of certain concepts could have influenced the respondents' selection of answers.

## **5.5 Recommendations for Future Studies**

- The study results might have been more significant had the response rate been more positive. A back up strategy of hand delivering questionnaires was used in collecting data from the sample populations after initial distribution. Future census studies should aim to collect data from the whole population, rather than from a fraction thereof. Future studies must find innovative ways of increasing study participants.
- A more broad research study into consulting engineering firms in South Africa could assist in achieving findings which are more conclusive. These results could be generalizable for the whole industry.
- There are a number of consulting firms are not members of CESA, as result of them not being able to meet the body's membership requirements. Future researchers will have to find ways of forming a reliable database of all existing and emerging consulting firms.
- Online surveys should be used and distributed through the membership body CESA to minimise bias in data collected.
- The study found that there were a certain number of internationally owned engineering firms. The researchers must consider whether culture has any effect on the defining of marketing practices, South Africa already boasting diverse cultural differences. A study of the way in which the culture change brought by these multinational companies affects marketing practices of locally based companies, would be of benefit to the industry.

- Because clients' behaviour and technology is constantly evolving, future research could involve repeating this research, checking whether the results change or stay the same, using the current results as a hypothesis.

## **5.6 Summary**

This study analysed the contemporary marketing practices of the engineering sector in the context of both transactional and relationship marketing; as well as the application of technology and the performance measures used by engineering firms, in providing a holistic view of this sector. It also examined the way in which the market environment affects marketing practices. The objectives were met; these were addressed through the data analysis focussed on each research question. However, owing to a low sample data, as well as to the low reliability alpha value, caution must be taken when generalizing these results. The results are specifically posited for engineering firms within KwaZulu-Natal. The resource efficient marketing framework is a unique contribution of this study to the management field. The framework, findings and recommendations of this study can be applied by potential marketers in the engineering firms and adopted to suite their prevailing circumstances.

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## APPENDIX A Letter of consent

**UNIVERSITY OF KWAZULU-NATAL  
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP**

**MBA Research Project**

**Researcher:** Siyanda Mwelase (0835373755)

**Supervisor:** Professor Shahida Cassim (0312601471)

**Research Office:** Ms P Ximba 031-2603587

**CONSENT**

I..... (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

**This page is to be retained by researcher**

## APPENDIX B The Distributed Questionnaire

**Informed Consent Letter 3C**

**UNIVERSITY OF KWAZULU-NATAL  
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP**

Dear Respondent,

**MBA Research Project**

**Researcher:** Siyanda Mwelase (0835373755)

**Supervisor:** Professor Shahida Cassim (0312601471)

**Research Office:** Ms P Ximba 031-2603587

I am **Manqoba Siyanda Mwelase**, an MBA student, at the Graduate School of Business and Leadership, of the University of KwaZulu Natal. You are invited to participate in a research project entitled **Marketing Practices of civil engineering consulting firms registered with CESA in KwaZulu-Natal**. The aim of this study is to examine contemporary marketing practices and the performance measurements used by civil engineering firms.

Through your participation I hope to understand latest contemporary marketing practices. The results of the study are intended to contribute to the development of marketing strategies in the consulting engineering sector.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey/focus group. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take you about **20-30** minutes to complete. I hope you will take the time to complete this survey.

Sincerely

Manqoba Siyanda Mwelase

Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_

**This page is to be retained by participant**

## MARKETING PRACTICES OF CIVIL ENGINEERING CONSULTING FIRMS IN KWAZULU-NATAL

Please answer these questions about the firm you work for. Take as much time as necessary to read and answer the questions.

### Section A – About You!

1. What is the title of your current position? \_\_\_\_\_
2. How long have you held this position?
  - ☐ Less than 1 year
  - ☐ 1 - 3 years
  - ☐ More than 3 years
3. How long have you worked in your firm?
  - ☐ Less than 1 year
  - ☐ 1 – 3 years
  - ☐ 4 – 5 years
  - ☐ More than 5 years
4. What is the title of the position you report to? \_\_\_\_\_
5. What is the title of the most senior marketing position in your firm?  
\_\_\_\_\_
6. What is the highest level of education you have completed?
  - ☐ High School Diploma
  - ☐ Undergraduate Degree
  - ☐ Technical Qualification
  - ☐ Postgraduate Degree
  - ☐ Other \_\_\_\_\_
7. Do you have any formal marketing qualification or marketing training?
  - ☐ Yes
  - ☐ No
8. Are you:
  - ☐ Less than 25 years old?
  - ☐ 26-25 years old?
  - ☐ 36-45 years old?
  - ☐ 46-55 years old?
  - ☐ Older than 55?
9. In which city are you located? (Please name the city)  
\_\_\_\_\_

## Section B- About Your Firm

In this section we ask you for details about your firm. By "your firm" we mean the legally constituted entity where you are employed. This may be a division of a larger firm.

Please answer the following questions about your firm.

1. Is your firm?

- ☐ A head office
- ☐ A branch
- ☐ An independent company
- ☐ Other (please specify) \_\_\_\_\_

2. When was your firm established?

- ☐ Less than five years ago
- ☐ 5-10 years ago
- ☐ 11-30 years ago
- ☐ More than 30 years ago

3. What proportion of your client base (in value) is International?

- ☐ None
- ☐ Less than 10%
- ☐ 11 – 25%
- ☐ 26 – 50%
- ☐ 51 – 80%
- ☐ Greater than 80%
- ☐ Information is not available

4a. What was your firm's **annual sales turnover**? (in Millions)

\_\_\_\_\_

- ☐ Information is not available

4b. Averaged over the last three years, what has been **annual rate of change** in your firm's sales turnover?

- ☐ No change
- ☐ Increased by 1 – 10%
- ☐ Increased by 11 – 20%
- ☐ Increased by 21 – 30%
- ☐ Increased by more than 30%
- ☐ Decreased

5a. Is your firm:

- ☐ Totally domestically owned?
- ☐ Domestic/foreign jointly owned?
- ☐ Totally foreign owned?

5b. Is your firm a division/subsidiary of a large firm?

- ☐ Yes
- ☐ No

6. How many employees does your firm employ?

- ☐ Less than 5
- ☐ 5 – 50
- ☐ 51 – 200
- ☐ More than 200

7a. How do you define success of your business? \_\_\_\_\_

7b. How do you measure success of your business? \_\_\_\_\_

7c. In the last five years how well do you measure in terms of the performance matrix identified above? \_\_\_\_\_

8. On a scale of 1 to 5 indicate to which extent to you agree with the following statement, by circling a number; where 1 = strongly disagree, 2 = disagree, 3=neutral, 4= agree, 5= strongly agree.

My company is a high technology firm                      1                      2                      3                      4                      5



## Section C- Marketing Practice in Your Firm

*This section has a number of questions about how marketing is practiced in **your firm**. Please answer **all parts** of each question by putting a cross (X) next to the sentence that best describes your firm's practice.*

IMPORTANT: Please answer the questions in the context of how you deal with the Primary clients served by your firm.

1. *Our marketing activities are intended to:*
  - ☐ attract new clients
  - ☐ retain existing clients
  - ☐ develop cooperative relationships with our clients
  - ☐ coordinate activities between ourselves, clients, and other parties in our wider marketing system (e.g., key suppliers, service providers and other firms)
2. *Our marketing planning is focused on issues related to:*
  - ☐ our product/service offering
  - ☐ clients in our market(s)
  - ☐ specific clients in our market(s), or individuals in firms we deal with
  - ☐ the network of relationships between individuals and firms in our wider marketing system
3. *When dealing with our market(s), our focus is on:*
  - ☐ generating a profit or other "financial" measure(s) of performance
  - ☐ acquiring client information
  - ☐ building a long-term relationships with a specific client(s)
  - ☐ forming strong relationships with a number of firms in our market(s)
4. *Our firm's contact with our primary client is:*
  - ☐ impersonal (e.g., no individuals or personal contact)
  - ☐ b) somewhat personalized (e.g., by direct mail)
  - ☐ c) interpersonal (e.g., involving one-to-one interaction between people)
5. *When a client buys our services we believe they expect:*
  - ☐ no future personalized contact with us
  - ☐ b) some future personalized contact with us
  - ☐ c) one-to-one personal contact with us
  - ☐ d) ongoing one-to-one personal contact with people in our firm
6. *Our marketing resources (i.e., people time and money) are invested in:*
  - ☐ product, promotion, price, and distribution activities (or some combination of these)
  - ☐ technology to improve communication with our clients
  - ☐ establishing and building personal relationships with individual clients
  - ☐ developing our firm's network relationships within our market(s)

7. *In our firm, marketing activities are carried out by:*

- ☐ functional/specialists marketers (e.g., marketing manager, sales manager, major account manager)
- ☐ non-marketers who have responsibility for marketing and other aspects of the business
- ☐ the Managing Director or CEO

8. *Our market communication involves:*

- ☐ our firm communicating to the mass market
- ☐ our firm targeting a specifically identified segment (s) or client(s)
- ☐ individuals at various levels in our firm personally interacting with their individual clients
- ☐ senior managers networking with other managers from a variety of firms in our market(s) or wider marketing system

9. *When people from our firm meet with our primary clients, it is:*

- ☐ mainly at a formal, business level
- ☐ mainly at an informal, social level
- ☐ at both a formal, business and informal social level

10. *Overall, our firm's general approach to our primary clients involves:*

- ☐ managing the marketing mix to attract and satisfy clients in a broad market
- ☐ using technology-based tools to target and retain clients in a specific segment of the market
- ☐ developing personal interactions between employees and individual clients
- ☐ positioning the firm in a wider organizational system/network

## Section D—Your Firm's Environment

*The following questions describe the current environment in the industry.* For each question, please read all parts. Then please answer all parts of each question by circling the number on each scale that best describes your position in your firm, where 1 = strongly disagree, 2 = disagree, 3=neutral, 4= agree, 5= strongly agree.

### ***My firm emphasizes:***

growth and acquiring new resources. Readiness to meet new challenges is important.

1      2      3      4      5

permanence and stability. Efficient, smooth operations are important.

1      2      3      4      5

competitive actions and achievement. Measurable goals are important.

1      2      3      4      5

The demand conditions for our supplier's product are very irregular.

1      2      3      4      5

### ***Demand Clients /Clients***

In our kind of business, clients' product preferences change quite a bit over time.

1      2      3      4      5

Sometimes our clients are very price-sensitive, but on other occasions, price is relatively unimportant.

1      2      3      4      5

We are witnessing demand for our products and services from clients who never bought them before.

1      2      3      4      5

New clients tend to have product-related needs that are different from those of our existing clients.

1      2      3      4      5

We cater to many of the same clients that we used to in the past.

1      2      3      4      5

### ***Competition***

Our most important competitors are regularly carrying out product adjustments and development of new products.

1      2      3      4      5

Anything that one competitor can offer, others can match readily.

1      2      3      4      5

Price competition is a hallmark of our industry. 1 2 3 4 5

One hears of a new competitive move almost every day. 1 2 3 4 5

### **Technology**

Technological changes provide big opportunities in our Industry. 1 2 3 4 5

It is very difficult to forecast where the technology in our Industry will be in the next 2 to 3 years. 1 2 3 4 5

A large number of new product ideas have been made possible through technological breakthroughs in our industry. 1 2 3 4 5

Technological developments in our industry are rather minor. 1 2 3 4 5

### **Section E- Views on Marketing**

*(If you wish to explain your answers in more detail, please do so on a separate page)*

1. Has your firm changed its marketing practices in the last few years? If so, how? Please describe in as much detail as possible.
2. Should your firm change its marketing practice? If so, how? Why? Please describe in as much detail as possible.
3. Based on your experience, what are the major trends in marketing practice currently affecting your industry? Please describe in as much detail as possible.
4. How will information technology development have an impact on your firm and industry over the next two-three years?

**Thank you for your time and effort!**

## APPENDIX C Ethical Clearance



UNIVERSITY OF  
**KWAZULU-NATAL**  
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**YAKWAZULU-NATALI**

7 May 2013

Mr Manqoba Siyanda Mwelase 9706545  
Graduate School of Business and Leadership  
Westville Campus

Protocol reference number: HSS/0283/013M

Project title: Marketing practices of civil engineering consulting firms registered with CESA in KwaZulu-Natal

Dear Mr Mwelase

**Expedited approval**

I wish to inform you that your application has been granted Full Approval through an expedited review process.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Steven Collings (Chair)

/px

cc Supervisor: Professor Shahida Cassim  
cc Academic leader research: Dr SA Bodhanya  
cc School Administrator: Ms W Clarke and Eillen Mohamed

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## APPENDIX D Proof of English Editing letter

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