Exporting dolomite refractories from India to Malaysia: marketing strategies for success

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Southern Cross University

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Exporting Dolomite Refractories from India to Malaysia: Marketing Strategies for Success

PK Santhakumar

A Research Thesis submitted in Partial Fulfilment of the Requirements for the Degree of Doctor of Business Administration

Southern Cross University
Australia
December 2015
DECLARATION

I certify that the work presented in this thesis is, to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other university.

I acknowledge that I have read and understood the University’s rules, requirements, procedures and policy for higher degree research award to my thesis. I certify that I have complied with the rules, requirements, procedures and policy of the University.

PK Santhakumar
31 December 2015
ACKNOWLEDGEMENTS

Diving into the academic world of research has been a challenging adventure for me, a real channel of discovery. Overall, it was a positive educational experience. Sometimes, though, it was difficult to navigate through the ups and downs of the thesis writing process. The challenge was to fuel the downs with the ups. I have managed this because I was fortunate enough to have the support and care of many individuals throughout this project.

My deepest respect to my late father, Kumarasamy, who believed in education regardless of age and gender and to my mother, Madam Paapathi, my brother, sisters, their families and their siblings who have always loved me and wished me well.

In addition, I would like to thank my supervisor, Dr Andy Woo for guiding me through this research process. His advice and support were immensely valuable.

A special thanks to Professor A. Selvanathan but for whom I would not have enrolled in this DBA research programme. I thank Professor Selvanathan for his support, encouragement and belief in me.

My appreciation and thanks to Dr James Nga for his support and help in sourcing reference books and journals whenever I needed.

I must also thank the Staff of both the Graduate College of Management at Southern Cross University, Australia and City University College of Science and Technology, Malaysia for their helpful assistance.

To the many close friends, near and far, who supported me through this endeavour with their prayers, care and understanding, I am grateful.

Above all, I must thank my wife and children for their support, patience and understanding, and in sacrificing many family holidays as I did not spend enough time with them during my thesis preparation.
ABSTRACT

This exploratory research focused on exporting of dolomite refractories from India to Malaysia for application in steel mills. The research problem is ‘What is an effective strategic marketing program for the export of Indian dolomite refractories to steel mills in Malaysia?’ This study examines the challenges that Indian refractory firms faced in their efforts to export to Malaysia.

The research reviewed the key pertinent theories of international marketing and trade, internationalisation, the cultural relevance and the industry context. It also examined the government’s support policies for export growth of the Indian refractory industry. The literature review identified the gaps in the existing body of knowledge and these permitted the formulation of four research propositions for testing this research through a mixed methodology involving both qualitative and quantitative approaches with the former being the dominant methodology. Primary data was collected through personal interviews of an expert panel, a focus group meeting and a questionnaire survey.

The research findings highlighted the lack of clear directives, and the ineffective Indian government policies and regulatory framework for the development of the refractory industry to enter and compete successfully in the international market. The recommendations included enough participation by the industry firms and the need for seamless working procedures and strict implementation of policy guidelines.

The findings of the study also confirmed the need for policy framework to support the export initiatives of the Indian refractory industry. This includes creating a ‘single window clearance’ otherwise known as the ‘one stop agency’ to have the complete responsibility to critically review the present problems faced by the exporters and formulate the appropriate strategies and ensure implementation of all export support programmes.

The market for dolomite refractories in Malaysia is unique because of the type of ownership of the steel mills, the influence of the controlling stakeholders, government policies and the cultural environment. The research led to the following recommendations for the Indian dolomite refractory industry:
• Adapt to local business culture and think from the customer’s perspective and try not forcing things;
• Create a superior corporate image as an essential strategy in Malaysia;
• Create a unique differentiation strategy through Total Refractory Management (TRM) concept to demonstrate their commitment to business and also to win the confidence and loyalty of their customers;
• Enhance their competitive advantage through synergic partnership with steel mills and or the intermediaries; and
• Transform to be more competitive and sustainable in the global market.

In line with the research objectives, the research findings extended the body of knowledge on the research topic and contributed to new theory building. Finally, the study also offered recommendations for further research by undertaking a positivist and quantitative approach to test the Modified Export Strategy Framework developed by this research for the Indian refractory firms.

**Key words:**

Dolomite Refractories  Indian Refractory Firms
Malaysian Steel Industries  International Marketing
Strategies  Industrial Marketing
Exporting firms  Resources
Entry Modes  Policy Implications
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<tr>
<td>AFTA</td>
<td>ASEAN Free Trade Area</td>
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<tr>
<td>AP</td>
<td>Approved Permit</td>
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<td>APEC</td>
<td>Asia Pacific Economic Cooperation</td>
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<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
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<td>CAPEXIL</td>
<td>Chemical and Allied Export Promotion Council</td>
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<td>CCM</td>
<td>Continuous Casting Machine</td>
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<td>CECA</td>
<td>Comprehensive Economic Cooperation Agreement</td>
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<td>CEPT</td>
<td>Common Effective Preferential Tariff</td>
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<td>CRC</td>
<td>Cold Rolled Coil</td>
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<td>DBA</td>
<td>Doctor of Business Administration</td>
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<tr>
<td>DRI</td>
<td>Direct Reduced Iron</td>
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<tr>
<td>DEPB</td>
<td>Duty Exempted Pass Book</td>
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<tr>
<td>DGFT</td>
<td>Director General of Foreign Trade</td>
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<td>EAF</td>
<td>Electric Arc Furnace</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>FMMA</td>
<td>Federation of Malaysian Manufacturers Association</td>
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<td>FTA</td>
<td>Free Trade Agreement</td>
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<td>GATT</td>
<td>General Agreement on Tariff and Trade</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GOI</td>
<td>Government of India</td>
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<td>GOM</td>
<td>Government of Malaysia</td>
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<tr>
<td>HBI</td>
<td>Hot Briquetted Iron</td>
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<td>Hot Rolled Coil</td>
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<tr>
<td>IB</td>
<td>International Business</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IMP3</td>
<td>Third Industrial Master Plan</td>
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<td>IRMA</td>
<td>Indian Refractory Makers Association</td>
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<td>ISO</td>
<td>Indian Standard Organisation</td>
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<tr>
<td>LCPT</td>
<td>Lowest Cost per Ton</td>
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<td>LF/LRF</td>
<td>Ladle Furnace/ Ladle Refining Furnace</td>
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<td>Acronym</td>
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<tr>
<td>MATRADE</td>
<td>Malaysian External Trade Development Corporation</td>
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<td>MBA</td>
<td>Malaysian Builders Association</td>
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<tr>
<td>MBF</td>
<td>Mini Blast Furnace</td>
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<tr>
<td>M&amp;A’s</td>
<td>Mergers and Acquisitions</td>
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<td>MDA</td>
<td>Market Development Authority</td>
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<td>MIDA</td>
<td>Malaysian Industrial Development Authority</td>
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<td>MISIF</td>
<td>Malaysian Iron and Steel Federation</td>
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<td>MITI</td>
<td>Ministry of International Trade and Investment</td>
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<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
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<td>NTB</td>
<td>Non-Tariff Barriers</td>
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<td>PH VALUE</td>
<td>Negative Logarithm of Hydrogen Ion Concentration</td>
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<td>RBV</td>
<td>Resource Based View</td>
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<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
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<td>RM</td>
<td>Ringgit Malaysia</td>
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<tr>
<td>Rs</td>
<td>Indian Rupees</td>
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<tr>
<td>SCA</td>
<td>Sustainable Competitive Advantage</td>
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<td>SCU</td>
<td>Southern Cross University</td>
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<tr>
<td>SEAISI</td>
<td>South East Asia Iron and Steel Institute</td>
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<td>SGR</td>
<td>Slide Gate Refractories</td>
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<td>SPSS</td>
<td>Statistical Package for Social Studies</td>
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<tr>
<td>TRM</td>
<td>Total Refractory Management</td>
</tr>
<tr>
<td>US$</td>
<td>United States Dollar</td>
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<tr>
<td>WTO</td>
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CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter provides an overview of this thesis and establishes the context of the study by outlining the broad field of interest and narrowing it down to the research problem. It discusses the background to this research, defines the research problem, identifies the research gaps that provide justification for the research, articulates the research questions, explains the research methodology and gives definitions for key terms.

1.1.1 Chapter Structure

Chapter 1 is organised in eleven sections. A brief introduction to the various sections is provided below:

• Section 1.1 introduces the Chapter and presents its structure.
• Section 1.2 presents the background to the research which is based on the literature reviewed and focuses on the area of the research problem.
• Section 1.3 outlines the core idea of this research, i.e. the challenges faced by the Indian refractory firms within an increasingly liberalised global market in general and the issues confronted by them while venturing to export to Malaysia.
• Section 1.4 covers the research problem, the research questions, the research propositions and its objectives.
• Section 1.5 presents the unit of analysis for the research.
• Section 1.6 provides an overview of the research design and the methodology. It also outlines how primary and secondary data were collected and analysed.
• Section 1.7 addresses the ethical issues involved in the conduct of the research.
• Section 1.8 defines the key terms used in the research.
• Section 1.9 outlines the limitations and delimitations of the research.
• Section 1.10 depicts the structure of the thesis and briefly discusses each chapter.
• Section 1.11 presents the conclusion of the chapter.
1.2 Background to the Research

Steel is the world’s most important engineering material (WSA 2012) and it is everywhere in our daily lives, from buildings to vehicles, to the cans that enable us to store foods safely for months or years (Basson & Zhang 2012). This is one material that affects society the most, simply because it is so prevalent in everyday life. It is hard to imagine a day without the use of steel in some shape or form (SAAB 2010). It is central to our current transport systems, infrastructure, housing, manufacturing, agriculture, and water and energy supply (Basson & Zhang 2012). Depending on the availability of feed raw material, steel is made through various processes. The use of refractories as the core lining material is an integral part of any steel-making process (Shinokara 1998).

Although the Indian refractory industry took off in the late 19th century, its growth started in the 1950s when the public sector steel plants were set up, and Tata Steel started its expansion (Raja 2006). The Indian refractory industry, with an annual capacity of over 2 million tons, surpassed a turnover of Rs4,500 crore (approximately US$1 billion) in 2010 registering a growth of 21 percent as compared to Rs3,650 crore (approximately US$830 million) in 2009 (Steelworld Research Team 2010).

The available literature on the export performance of the Indian refractory firms indicates that the actual exports both in terms of volume and value were insignificant (Steelworld Research Team 2010). This could be due to the preference of Indian firms to do business within their comfort zones and that is, their domestic market rather than in unfamiliar and more competitive international markets (Pendse & Choubey 2009). With the opening of the Indian economy, Indian firms have been subject to stiffer competition in their domestic markets and become aware of the opportunities for supplying dolomite refractories to the world market including the neighbouring ASEAN countries like Malaysia (IRMA 2010).

With high-quality products and competitive offering as a result of cheap labour and lower cost of manufacturing, it becomes possible to access world markets (Chattopadhyay 2011). Conventional approaches to export strategy must be
accompanied by the new paradigms of marketing that have emphasis on agility, flexibility and speed as the source of competitive advantage (Gillespie et al. 2008). To achieve this, it is important to formulate a marketing strategy aligned with market needs.

With the advantages of lower cost manufacturing and niche products, it is possible for Indian manufacturers to access the world market (Chattopadhyay 2011). It expands the ‘pie’ that earns money for the firm; otherwise, the firm can become stuck trying to increase the sales and profits only out of the local market. It is one way of expanding sales, especially if the identified export market represents enough sales potential. It is even more important if the home market is saturated. Increased sales also impact upon a firm’s profitability and productivity by lowering unit costs, and may increase the firm’s size and stature, thereby enhancing its competitive position. What is more, research and development and other costs can also be offset against a larger sales base, or the move may contribute to the company’s general expansion. Exporting to a familiar, nearby and less risky country is a great way to ‘practice’ one’s exporting skills (Light 2013).

Exports lead to increasing sales and profits. They also help to reduce risk and balance growth, lowers unit costs, minimise the effect of fluctuations in sales in the home market, and overcome a small or saturated domestic market. Other benefits include extending the product life cycle, improving efficiency and product quality and gaining entry into untapped markets (Light 2013).

1.3 Justification for the Research

Ever since India departed from its policy of self-reliance and started its liberalisation policy for creating a transition into a market economy in 1991, foreign investments have increased from US$103 million in 1990-91 to US$9.12 billion in 2000-2010 (GOI 2011). The annual growth rate of its GDP increased from 5.4 percent in 1980-1981 to 7.5 percent in 2010 (GOI 2011). With the liberalisation of trade in the global market and the implementation of the General Agreement on Tariff and Trade (GATT) under the World Trade Organization (WTO) and the emergence of a number of
regional Free Trade Agreements (FTA), competition has become intense and companies no longer have their domestic market to themselves (Tiwari & Sethi 2011).

India’s Foreign Trade Policy (FTP) for the period 2009-2014 sets out a goal of doubling its exports of goods and services by the year 2014 from the current level of US$ 200 billion that was achieved in 2010-2011 through appropriate policy support (GOI 2010). However, the effectiveness of the government export support programmes and initiatives are still ineffective (Kalra 2009).

Indian refractory firms are just starting to export dolomite refractories and, owing to their close proximity, South-east Asian countries are the focus area. However, the export positioning of the Indian refractory firms and the effectiveness of the Indian government’s export policies and programmes for the promotion of exports are unclear (IRMA 2012).

This research therefore, justified on the grounds that the findings will:

i. Extend the scholarship on issues relating to the Indian dolomite refractory industries

ii. Offer recommendations for improving the export policies and support programmes of the Indian government to encourage more exports of manufactured products

iii. Offer recommendations for improving the export strategies of Indian refractory firms.

1.4 Research Problem

A research problem can be stated as an overall objective or as a research question (Jennings 2010; Neuman 2006). Accordingly, the research problem requires an investigation which underpins the entire process of the literature review, data collection and data analysis. The research problem for this thesis is:

‘What is an effective strategic marketing program for the export of Indian dolomite refractories to steel mills in Malaysia?’
1.4.1 Research Questions

Research questions drive empirical research (Punch 2005) and are the translations of the research problem into specific enquiries (Zikmund et al. 2010). They are ‘refined statements of the specific components of the problem’ (Malhotra 2010, p.84). Well-stated research questions guide the researcher to stay on track and indicate what data to be collected in order to answer the questions. Accordingly, four research questions have been developed in Chapter 2 on the basis of review of the research issues and the gaps identified in the existing body of knowledge. They are:

**Research Question 1**
Why are the Malaysian Steel Manufacturers reluctant to use Indian dolomite refractories?

**Research Question 2**
How adequate and effective are the Indian government’s existing support programmes for the export of dolomite refractories from India?

**Research Question 3**
How can the Indian dolomite refractory manufacturers enhance their competitive advantage for entering the Malaysian market?

**Research Question 4**
What are the long-term competitive marketing strategies that are applicable to the export of Indian dolomite refractories to Malaysia?

1.4.2 Research Objectives

The research objectives explain the purpose of the research and define what the research tries to achieve (Zikmund et al. 2010). From the identified four research questions and the corresponding propositions, four objectives were established. They are:

**Research Objective 1**
To examine the reasons for the Malaysian steel manufacturers’ reluctance in using Indian dolomite refractories.

**Research Objective 2**
To determine the adequacy and effectiveness of the existing Indian government support programmes for its dolomite refractories exporting manufacturers.

**Research Objective 3**
To evaluate the competitive advantages of the Indian refractory manufacturers in the context of the forces of market liberalisation including FTA.

**Research Objective 4**
To recommend the appropriate marketing strategies for adoption by the Indian refractory manufacturers to build a long-term Sustainable Competitive Advantage (SCA) to enter international markets such as Malaysia successfully.

1.4.3 **Research Propositions**

Research propositions are ‘the statements that make up theories’ (Berg 2009, p.17). They are statements of relationships among concepts (Maxfield & Babbie 2007). The truthfulness of a research proposition can be obtained by the researcher by evaluating whether it is sourced from empirical evidence or data (Neuman 2006, p.38). Guided by these authorities, the four research questions are translated into corresponding propositions for empirically testing this research. These research propositions are:

**Research Proposition 1**
The Malaysian steel manufacturers are reluctant to use the Indian dolomite refractories.

**Research Proposition 2**
The Indian government’s support policies and programmes to assist Indian exporting dolomite refractory manufacturers to enter and successfully compete in the international market are ineffective.
Research Proposition 3

The Indian dolomite refractories are less competitive as compared to other sources that are regularly exporting to Malaysia.

Research Proposition 4

The marketing strategies adopted by the Indian refractory manufacturers for entering new international markets like Malaysia lack focus and commitment and are thus inappropriate.

1.5 Unit of Analysis

The unit of analysis can be defined as ‘the primary empirical object, individual or group under investigation’ (Davies 2005, p.175). The unit of analysis for the research indicates ‘who should provide the data and at what level of aggregation’ (Zikmund et al. 2010, p.119). The research objectives determine the unit of analysis (Cavana et al. 2001). Guided by the research problem and the objectives set for this research, the researcher designated as the unit of analysis the steel manufacturing firms located in Klang (State of Selangor) and Kemaman (State of Terengganu) of Malaysia. Members of export oriented dolomite refractory manufacturing firms are also included to enhance validity.

1.6 Research Methodology

This section provides an introduction to the research methodology which is provided in Chapter 4. As with every scientific discipline, this research was guided by a research perspective or paradigm. Patton (2002) declares that the issues of paradigm are important and research should not commence without being clear regarding the paradigm that provides guidance for the proposed research.

Guided by the research model in Figure 1.1, the researcher examined the qualitative and quantitative paradigms and adopted the mixed methodology for conducting this research (Cameron & Molina-Azorin 2010; Creswell 2003; Gill & Johnson 2010). It is a combination of both inductive (qualitative) and deductive (quantitative) approaches that build on each other’s strengths and reduces the weaknesses (Robson
2002). This study is predominantly qualitative and supported by quantitative in order to extract important results (Greene & Caracelli 1997; Johnson & Onwuegbuzie 2004).

Figure 1.1: Research Model

As recommended by Creswell and Plano Clark (2007), the data collection process involves two stages. The first is qualitative and exploratory, and findings are supported by the second stage, which is quantitative and descriptive in nature to generalise the findings (Perry 2002). The mixed method approach is important for providing a clear and complete picture of the issues that are being addressed in the research study (Johnson and Onwuegbuzie 2004).

1.6.1 Data Collection

Figure 1.1 depicts the dimensions of the research, the selected data collection instruments, the sources of secondary and primary data and the procedures for the analysis of collected data before arriving at the research findings and offering recommendations.

The secondary data were collected through a comprehensive literature review which is detailed in Chapters 2 and 3. Chapter 2 explores the industry context, and Chapter 3 is
dedicated to a review of the relevant literature with the aim of building a theoretical foundation to serve as a basis for the research (Perry 1995). The literature review includes the wider literature that relates to the parent disciplines of the dolomite refractory industry, the Malaysian steel industry contextual setting and international marketing (Aaker 2005). The immediate disciplines of this research are the Indian dolomite refractory manufacturers and the Indian government policies governing the exports of manufactured goods from India.

The primary data collection techniques are discussed in Chapter 4. The instruments used for the primary data collection include expert panel (interviews) and focus group (discussions) to generate qualitative data and a questionnaire survey to generate quantifiable descriptive data. A combination of all these data collection techniques provided for the triangulation of the findings of the research, which improved its validity and trustworthiness. These three primary data collection methods are discussed in turn as follows.

**Expert Panel** - A panel of experts comprises individuals possessing expert knowledge and information in the area of their study (Robson 2002). An expert panel comprising eight knowledgeable persons was drawn from the industry as discussed in Sub-Section 4.4.3.1. Their views were obtained through personal interviews on the selected key research issues. The collected data was used for the exploratory stage of this research.

**Focus Group** - A special qualitative research technique to gather data through dialogue and group discussions (Neuman 2006). In particular, it is used for exploring the experiences and knowledge of people (Robson 2002). For this reason and, as discussed in Sub-Section 4.4.4.1, a focus group comprising nine members was selected as a data collection technique for the exploratory stage of this research. The focus group session was aimed at obtaining the respondents’ impressions, interpretations and opinions, as members talked about certain defined research issues (Sekaran 2008).
**Questionnaire Survey** - The questionnaire survey included 150 respondents using a structured questionnaire, which allowed the participants to express their feelings on every statement that they are required to respond to (Churchill 1997). The use of five-point Likert rating scale permitted the measurement of the attitude and responses to the survey questions. Accordingly, the use of a structured questionnaire ensured ‘comparability of the data, increased speed and accuracy of recording, and facilitate data processing’ (Malhotra 2010, p. 335). The questionnaires were self-completed by the respondents (Zikmund et al. 2010).

The target population included members of the Malaysian steel firms who are the primary consumers, the members of the dolomite refractory manufacturers in India, and the regulatory authorities. Based on judgemental and quota sampling, a sample of 150 persons was identified from the target population to participate in the questionnaire survey as discussed in Sub-Section 4.4.5.4.

### 1.6.2 Data Analysis

The data analysis provided in Chapter 5 relied heavily on the procedures proposed by Patton (2002). The secondary data collected through the review of literature in Chapter 2 and 3 was analysed to identify gaps in the existing body of knowledge on the pertinent issues of the research topic. The identified research gaps reaffirmed the relevance of the research problem, the development of four research questions and crafting of four research propositions for testing by this research.

The primary qualitative data analysis commenced with summaries of the interviews of the Expert Panel and the Focus Group discussions. Content analysis was used for the data which emerged from the open-ended questions in the interviews. Through the use of coding, a large amount of collected textual data was reduced into analytical categories on the basis of themes or concepts. The extracted data was displayed in terms of graphs, matrices, networks and charts in order to facilitate the interpretations of the data and for the drawing of conclusions (Miles & Huberman 1994).

The quantitative data, collected through the questionnaire survey, were tabulated and analysed using the Statistical Package for the Social Sciences (SPSS). The findings
are displayed in tables and graphs in Chapter 5 which permitted the drawing of the conclusions (Manning & Munro 2007). These also formed the basis for offering recommendations on the new government policies for the growth of exports from India and practices for consideration by the Indian dolomite refractory manufacturers and implications for further research, as discussed in Chapter 6.

Good research findings must be free from bias and should be trustworthy (Bryman & Bell 2007; Neuman 2006). Neuman (2006) addressed four issues from the perspectives of internal validity, external validity, reliability and objectivity. In line with Robson (2002), these include the use of triangulation in data collection and pattern matching in the data analysis stage as detailed in Chapter 4 (see Section 4.5).

1.7 Ethical Issues

Research ethics ensure that research actions do not cause harm to participants or have any adverse consequences (Cooper & Schindler 2006; Zikmund et al. 2010). George (2005) focuses on the ethics of the research which comprises four major areas: (1) privacy (2) deception (3) informed consent and (4) harm to participants.

This research was conducted in compliance with the National Statement on Ethical Conduct in Human Research (2007) and was approved by the Human Research Ethics Committee (HREC) of Southern Cross University (Approval Number: ECN-10-035). Details of ethical issues considered in this research are shown in Section 4.7.

1.8 Definitions of Key Terms

This Section provides the definitions of some of the key terms used in this research. More detailed description of other important terms appears in various Chapters.

Export is defined as the supply of a company’s products to overseas market in order to earn foreign exchange (Kotler 2000).

Refractory is defined as ‘non-metallic material that is hard to melt at high temperatures’ (Mishra 1995).
**Dolomite refractory** is a mixed aggregate of CaO-MgO combination by high temperature firing of natural dolomite. It is a double carbonate of Calcium and Magnesium, basic in nature, does not react with basic slags and is of considerable importance for furnace linings, where basic slags are encountered (Chesters 2008).

### 1.9 Limitations of the Research

This research was limited in three respects. First, cost constraints made it necessary to limit the study primarily with steel mills located in Klang (State of Selangor) and Kemaman (State of Terengganu) of Malaysia only. Therefore, the findings of the study may not be generalisable across the country.

Second, the researcher relied on judgemental and quota sampling for the selection of the participants in the questionnaire survey. While this was necessary, given the limited number of steel making firms in the country and knowledgeable participants available, the researcher acknowledges that the selection process could have created an element of ‘survey bias’.

Third, the research was largely exploratory and qualitative in nature. Even though it was complemented with quantifiable data through a questionnaire survey, the findings, being mainly inductive, might not be appropriate for generalisation.

### 1.10 Structure of the Thesis

Chapter 1 introduces the research problem. It sets out the background, justification for the conducting the research and its contributions, describes the research problem, the research questions and identifies the research propositions. It also outlines the unit of analysis, research methodology, ethical issues, definitions of key terms, limitations of study and briefly outlines the chapter structures for the thesis.

Chapter 2 provides the context of the steel industry in Malaysia and dolomite refractory manufacturers in India. It examines the market characteristics, the market players, competition within the industry and the industry trends and reviews the
structure and development of the Indian dolomite refractory industry, their core competencies, their strategic positions, practices, challenges, the industry players and their marketing efforts to enter new international markets. It also discusses the trends in the global dolomite refractory industry. It focuses on the preparation of the Indian dolomite refractory firms venturing to export and the Indian government policies supporting the efforts of these firms. The current state of Malaysian Steel Industry, its future perspective and demand potential for dolomite refractories among the Steel Making Plants in Malaysia are explored.

Chapter 3 reviews the literature from the theoretical perspective. It is aimed at developing the theoretical foundation for this research, identifying the key research issues and determining the research gaps for crafting and testing of the four research propositions. This chapter therefore reviews the available pertinent literature related to the research topic.

Chapter 4 outlines the research methodology. It examines the various research paradigms and justifies the use of mixed methodology. It also justifies the use of the two-stage research design approach. The first and dominant stage is qualitative (inductive) and exploratory with the second, complementary stage being quantitative (deductive) and descriptive. It then details the data collection entrustments - these are expert panel, focus group and questionnaire survey. The process of data analysis and the ethical issues pertinent to the research are also discussed.

Chapter 5 presents the analysis of the collected primary qualitative data from the expert panel interview and focus group meeting, and the quantitative data from the questionnaire survey. These relate to the four research propositions and twelve statements that were in the survey questionnaire. A section is also devoted to the unplanned data that emerged from the expert panel and focus group meetings.

Chapter 6 details the conclusions, implications and the impact of the research. It presents a comparative analysis of the research findings emerging from the analysed primary data with the findings of the literature reviewed in Chapter 2. It then offers recommendations for successfully exporting dolomite refractories from India to
Malaysia, proposes a new theory development and synopsis of the opportunities for further research.

1.11 Conclusion

This chapter lays the foundations for the research. It introduces the research topic, problem, questions and the propositions. It provides the justification, identifies the preferred research methodology and also outlines the data collection instruments. It then defines the key terms and the measures taken to address the ethical issues. The next chapter presents the literature review by means of which the key research issues and the gaps in the existing body of knowledge were identified.
CHAPTER 2: LITERATURE REVIEW – INDUSTRY CONTEXT

2.1 Introduction

Chapter 1 provided an overview of the research topic: Exporting dolomite refractories from India to Malaysia: Marketing strategies for success, and the justification for the research. The literature review consists of two Chapters – Chapters 2 and 3. Reviewing the accumulated knowledge about a problem area is an essential early step in the research process (Neuman 2006). Chapter 2 reviews the available literature and information related to industries specific to the research topic. Chapter 3 explores the theoretical framework applicable to this research. The overall secondary research plan is provided in the Conceptual Framework (See Figure 2.1).

2.1.1 Conceptual Framework

A conceptual framework is a written or visual presentation that explains either graphically or in narrative form, the main things to be studied, the key factors, concepts or variables and the presumed relationship among them (Miles & Huberman 1994). It sets out the focus and content and acts as link between the literature, the methodology and the results (Hart 1998). This chapter, therefore, provides the structure and the content for the study based on literature and personal experience.

Figure 2.1, Conceptual Framework, shows how the findings from the literature review chapters support, inform and assist with the development of the study. It identifies conceptual and theoretical issues pertinent to the research problem and charts the boundaries of the research (Perry 2002). The literature review covers the parent and immediate disciplines. The former comprises the dolomite refractory industry and their marketing efforts to enter new international markets. The immediate disciplines focus on the preparation of the Indian dolomite refractory firms venturing to export, the Indian government policies supporting the efforts of these firms together with the applicable theories.
2.1.2 Chapter Structure

This chapter explores the context of the dolomite refractory industry as well as the related steel industry. The structure of this chapter consists of six sections as follows:

- Section 2.1 introduces the conceptual framework and the chapter structure.
- Section 2.2 reviews the global refractory firm’s competing in the Malaysian market. It examines the market characteristics, the market players, competition within the industry and the industry trends.
- Section 2.3 discusses the structure and development of the Indian dolomite refractory industries, their core competencies, their strategic positions, practices, challenges and the industry players.
- Section 2.4 discusses the Indian government policies and support programmes of export development and it also examines its delivery and adequacy to meet the demands of the exporters.
• Section 2.5 discusses the brief history and development of the Malaysian steel industries, the future prospects and the potential for dolomite refractories within the steel sector in Malaysia to provide the contextual setting for the review.

• Section 2.6 summarises the chapter.

2.2 The Dolomite Refractory Industry

The discussion on this parent discipline starts with an introduction to the dolomite refractory industry. This section examines the market for dolomite refractories within the steel sector in Malaysia, key exporters, their competitive advantages and the market trends.

2.2.1 Introduction to Refractories

Refractories are non-metallic materials that are difficult to work with and are resistant to heat and pressure at high temperatures (IRMA 2010). Refractories are hard to melt at high temperature (Mishra 1995). They can be of shaped and unshaped forms. The Japanese Industrial Standard (JIS) R 2001-1985 defines refractories as shaped materials like bricks, blocks, tap holes, etc., that are durable at high temperatures (>1500°C), and unshaped materials like mortars, castables, plastics, etc. with a service temperature of more than 800°C. Refractories possess mechanical strength, and are resistant to heat in order to withstand the frequent changes in the temperature, including repetitive cooling and heating, and are also resistant to erosion and corrosion by slag, hot gas, molten metal, etc. (Shinohara et al. 1994).

Refractories have good thermal stability. For this reason, they are used in industries like iron and steel, cement, glass, copper, aluminium, ceramic, kilns, furnaces and boilers (Laha 2006). The range of exposure conditions in many applications is quite varied, so there are different qualities, shapes and forms available. In selecting the most appropriate refractory for each application, it is necessary to consider the many factors involved, such as raw materials, fuels and very importantly, operating conditions. It is also necessary to carefully determine the lining design based on the evaluation of the thermal profile and stress analysis (Yamada et al. 1995).
Refractories are first classified based on the physical classification of different forms of products, and secondly, on chemical composition. (Mishra 1995). The chemical classifications include acid, basic and neutral, although they are not actually distinguished by PH value (Mishra 1995). In the case of classification of dolomite refractories, the raw material for making dolomite bricks is dolomite itself. As regards chemical composition, dolomite refractories are made of CaO and MgO, based on the natural mineral, dolomite, which is a double carbonate of Calcium and Magnesium (CaCO3MgCO3).

2.2.2 Characteristics of Dolomite Refractories

Dolomite refractories are meant for specific applications in primary steel making units such as electric arc furnaces, and in secondary refining units such as ladles and converters for making special grades of alloy steels, including stainless steel. The selection of dolomite refractories for steel making applications is based on customers’ specific requirements, in order to meet the stringent operational conditions in steel making process. Though there are different types of products, the selection of a specific grade for a specific application is entirely dependent upon the operating parameters. The service conditions are bound to vary, depending on the feed of raw material and the grade of steel being made (Watanabe 1998).

Dolomite bricks are primarily used for secondary steel making applications such as Ladle Refining Furnace (LRF) and casting ladles. Dolomite monolithics, like fettling and gunning material are used in primary steel making units such as Electric Arc Furnaces (EAF). Dolomite lining does not react with basic slags, and because of its low oxygen potential, oxygen does not diffuse into the steel. The benefits of dolomite lining ensure better desulphurisation, reduced non-metallic impurities and reduced clogging of the casting nozzle and ladle shroud, and improved yield of ferroalloys (Chesters 2007).

Demand for dolomite refractories - The fortunes of dolomite refractories, as the core lining material for the steel making and refining units, are strongly linked with the growth and development of the steel industry. The market for dolomite...
refractories always fluctuate in tandem with cycles of growth and consolidation of the steel market to adjust to the development of heavy industries, and public spending such as transportation and other infrastructural development facilities (IRMA 2010). The overall market for dolomite refractories is characterised by a competitive environment with low entry and exit barriers, but with strong influence on suppliers’ reputation and the image of their country of origin.

The demand for dolomite refractories is price driven even though the outcome is based on the actual performance achieved but not on the initial cost of purchase. The main threats to the industry are the scarcity of good quality raw materials and high energy cost for processing these raw materials. Other threats include slowdown in the steel industry owing to various reasons, including a drop in the demand for steel and economic downturns from time to time, which are external factors. The greatest opportunity for dolomite refractories is that there is as yet no comparable substitute, although there are costly substitutes like mag-carbon but these have less metallurgical benefits (Mishra 1995).

The global market for dolomite refractories is dominated by the Steel sector with a 70 per cent share, followed by the cement sector at 10 per cent (IRMA 2010). (See Figure 2.2.)
Steel making plants which adopt a typical EAF-LF-CCM route for producing construction grade billets, bars and wire rods, dolomite refractories account for over 50% of the total refractories consumption as lining bricks for ladle furnaces and electric arc furnaces (EAF) and as monolithics for bottom ramming, fettling and gunning material, as shown in Figure 2.3.

**Dolomite refractories market size** - The size of the world market for refractories is estimated to reach US$30 billion by 2030 (WSA 2011). From the consumption trend
in the steel industry the share of dolomite refractories alone is around US$10 billion. (IRMA 2011). The actual consumption varies from one plant to another. This is dependent upon the area of applications and the outcome of actual performance as dictated by the operating conditions. These conditions are a result from the use of various feed raw materials such as scrap or direct reduced iron, or hot metal transferred from the mini blast furnace into primary steel making units such as electric arc furnaces, and the desired grades of steel being made in the secondary refining units such as ladle furnaces or converters.

**Dolomite refractory firms** - In general, dolomite refractory firms are medium and large sized firms with manufacturing facilities spread in various geographic locations, based on the availability of key raw materials. Some firms exclusively manufacture dolomite bricks and monolithics for the steel and cement industries, while others are full-range producers (IRMA 2010). All refractory firms compete on a stand-alone basis for the same market and achieve their growth strategies through increased market share.

Unlike other basic refractories like mag-carbon, mag-chrome, chrome-mag, of which there are several manufacturers worldwide, there are very few manufacturers of dolomite refractories. The deterrents for putting up a new dolomite brick making plant are the lack of refractory grade dolomite, high capital requirements, high energy consumption and stringent requirements for special aluvac packaging to avoid the problem of dusting or hydration (Mishra 1995). Given that these firms compete for the same market with almost similar products, technical back-ups and after sales service become the source of competition and calls for other value added service like Total Refractory Management (TRM) as the source of strategic selling point. That is the new trend developing in the industry (Appa Rao 2002).

Around the globe, irrespective of their size and turnover, these firms form their own national associations. Their common objective is to promote the sale of their refractories both domestically and internationally. Through these associations, they could voice any grievances to the government bodies or seek assistance for the growth of the industry.
Global players - Most dolomite refractory producing companies are medium to large scale because of high capital investment (IRMA 2010) and requirements of over 250 employees even for a plant of 40,000 MT per annum. Against this backdrop, it may be noted that there are only a few dolomite refractory producers in the world and most of them are located in Europe and America. Table 2.1 lists the top 9 manufacturers of dolomite refractories in the world.

Table 2.1: Top Global Manufacturers of Dolomite Refractories

<table>
<thead>
<tr>
<th>No</th>
<th>Firms</th>
<th>Country/Origin</th>
<th>Capacity (MT/Annum)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Refractories made from Natural Dolomite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>LWB-Lhosit (2 units)</td>
<td>France</td>
<td>200,000</td>
</tr>
<tr>
<td>2</td>
<td>LWB-Wulfrather (3 units)</td>
<td>Germany</td>
<td>330,000</td>
</tr>
<tr>
<td>3</td>
<td>LWB-Baker (2 units)</td>
<td>USA</td>
<td>150,000</td>
</tr>
<tr>
<td>4</td>
<td>TRL-Krosaki</td>
<td>India</td>
<td>85,000</td>
</tr>
<tr>
<td>5</td>
<td>Dolomite Franchi</td>
<td>Italy</td>
<td>65,000</td>
</tr>
<tr>
<td>6</td>
<td>Kelson</td>
<td>Spain</td>
<td>65,000</td>
</tr>
<tr>
<td>7</td>
<td>Kumas</td>
<td>Turkey</td>
<td>40,000</td>
</tr>
<tr>
<td></td>
<td>Refractories made from Synthetic Dolomite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LWB-China (1 unit)</td>
<td>China</td>
<td>60,000</td>
</tr>
<tr>
<td>9</td>
<td>Qing Hua</td>
<td>China</td>
<td>150,000</td>
</tr>
</tbody>
</table>

Source: IRMA (2010)

2.2.3 Dolomite refractory industry market trends

There are a number of global market trends that are reshaping the dolomite refractory industry and the business model as a whole (IRMA 2010). They are discussed below:

1. From suppliers to partners - A dolomite refractory is used for a specific application in a particular industry. It is traditionally a seller’s market, but owing to advances in steel-making technology, the requirement for dolomite refractories has become stringent. The dolomite refractory manufacturers realise that the business is no longer assured unless they keep pace with market trends.
The market has moved away from the traditional seller and buyer concept. The need to form a partnership to work hand-in-hand with steel firms to better understand their operating conditions and service requirements for designing products that are suitable to meet those conditions is eminent. This is the factor that has brought the industries closer (IRMA 2010).

2. From suppliers to solution providers - Steel making procedures, in modern times, need to be continuously improved by working on the physical characteristics of the dolomite refractories. Dolomite ladle remains the most cost effective choice for secondary steel making application, such as treatment of ladles and converters (Ghosh 2004). This is mainly because of these procedures’ idiosyncratic stability in thermodynamics and the capability of being suitable for the metallurgical requirements (Raja 2006).

Cooperation between dolomite refractory manufacturers and the end-user in order to fully appreciate the wear patterns of the dolomite refractories has led to close interactions among the engineers of the firms. The goal is to create a new lining design, based on the wear profile for optimizing the overall dolomite refractories’ performance with minimum costs, taking the metallurgical requirements into consideration. This is an additional responsibility on the part of the supplier (Raja 2006).

3. Concept of performance linked payment at cost per ton (LCPT) - The selection of dolomite refractory material is mainly dependent on the steel making treatment carried out on the ladle, ranging from the simple gas stirring to more sophisticated ladle furnace operations with VD/VAD/VOD, etc. Each particular process has special characteristics, which makes the selection of the dolomite refractory material a critical area, thus requiring intense cooperation between the dolomite refractory suppliers and the steel makers in two ways. One was the proper selection and recommendation of the refractory materials by the suppliers to meet the service conditions, and the other was the proper installation and monitoring to maximise the performance which fell under the scope of the steel makers.
That was the trend in the past. Today, the responsibility for achieving the targeted performance level also lies with the suppliers themselves, thereby linking the payment in proportion to the level of performance achieved. Dolomite refractory suppliers get paid based on the actual performance output and not on the actual cost and quantity supplied. They are also held accountable even when the steel plants do not run smoothly. This represents an added pressure on the suppliers to perform (TRL 2011).

4. **Evolution of total refractory management (TRM)** - It becomes more difficult for the engineers and suppliers to make firm proposals for the supply of dolomite refractories to meet the service conditions of different steel making processes. This is because these processes are based on the availability of different raw materials and the desired grades of steel being made, or because of a need to study the variations in operating conditions within those established processes from time to time. Nor do the steel makers want to be faced with this unavoidable practical dilemma in their day-to-day operations and engage themselves in a blame game with the suppliers. The whole responsibility now has shifted to the suppliers, and this new concept is called Total Refractory Management (TRM). This is based on long-term partnership that strives to create a new win-win situation by maximizing the value of products for mutual benefits. The scope of TRM includes (TRL 2011):

i) Selection of refractories and lining designs based on wear profile
ii) Supply and manage inventory at customers’ premises based on consumption
iii) Effective lining and supervision by the suppliers themselves
iv) Complete monitoring of performance with full accountability

The advantages of TRM concept to the steel makers are:

i) Reliability
ii) Value for money
iii) Focus on core business
iv) Enhanced refractories performance
v) Lower downtime and higher equipment availability
vi) Single point of contact for refractories and allied services

This is a major shift in focus, and the way in which the dolomite refractory business is conducted is changing. The initial concept of just supplying dolomite refractories according to the customers’ requirements or their own assessment has been done away with. Now they need to have complete accountability for selection, design, supply, lining, performance monitoring and control of inventory at the customer’s end. There is no doubt that this has resulted in putting enormous pressure on the dolomite refractory suppliers as they have to develop additional infrastructure to handle the associated jobs, which has resulted in a further squeeze in their margins (TRL 2011).

2.2.4 Public Policy Support for Export

Export enables firms to survive and grow, develop competitive advantages and capability, improve financial performance, increase capacity utilisation, and raise technological standards (Leonidou et al. 2007). Export development is high on the agenda of both public and private sector policy makers, as there are numerous economic benefits to be gained (Czinkota & Ronkainen 2006). Many firms face barriers and difficulties in exporting and require governmental assistance and promotion programmes (Genceturk & Kotabe 2001). Normally, export promotion and assistance refer to all the measures of public policy that seek to enhance the exporting activities at the company, industry or national level (Seringhaus & Rosson 1991).

Most export assistance programmes include financial assistance by way of tax incentives, export financing and insurance, export grants, multilateral and bilateral trade aids, technical assistance by way of technology innovation support, research and development support and marketing assistance, which includes the provision of market information, guidance on exporting and export marketing, marketing research on specific foreign markets, trade missions, market visits and trade fairs (Morgan & Katsikeas 1997). The efficiency of the government programmes of export promotion indicates that they can lead to increased exports that are successful (Bilkey 1998). However, a number of studies have found that the government export programmes for
assistance are viewed unfavourably, rated low by firms (Porter 2008) and have a limited effect on the growth of exports (Kumcu et al. 1995). One finding was that most small and non-interested firms were unaware of the government promotion programmes and services on offer on account of the lack of communication (Ahmed et al. 2002). Gencturk & Kotabe (2001) emphasised that the use of export assistance programmes have increased the profitability of the experienced exporters rather than the new ones.

It has been noted that export programmes focused mainly on financial incentives are not having the impact that has been desired (Welch & Wiedersheim-Paul 1992). They ‘have a limited effect on enhancing the firms exporting capabilities’ (Ahmed et al. 2002, p.841). Financial incentives are also insufficient for providing export stimulation, particularly for new non-exporters and exporters (Barrett & Wilkinson 1986). Financial benefits do not sustain the exports because the firms will not be interested in the usage of the financial incentives and compensating for the inefficiency in the managerial level, high cost production and non-competitive products (Karafakioglu 1986). Firms of this sort may cease to export once the incentives are withdrawn or reduced (Christensen et al. 1987).

Some researchers suggest that technical support programmes are more desirable. They are considered to be more effective in enabling the firms to achieve a competitive advantage, improve productive and managerial systems, increase handling of information capacity, gain expertise in exports and foster foreign contacts and networking (Porter 2008). All of these are important for the sustainability and continuity of the exporting firms (Drury & Tayles 2005).

### 2.2.5 Summary

This section discussed the global dolomite refractory industry in terms of application in steel industries, global dolomite refractory firms, their competitive advantage, current market size and trends. It also reviewed the public policy supporting the export dolomite refractories. The next section reviews the Indian dolomite refractory industry.
2.3 Indian Dolomite Refractory Industry

This section discusses the state of the Indian dolomite refractory industry. The opportunities and challenges, the major producers and their core competencies are explored. It also examines the roles played by the Indian Refractory Manufacturers Association and the assistance offered by other advisory bodies under the Ministry of Commerce.

2.3.1 Brief History of the Indian Dolomite Refractory Industry

The Indian dolomite refractory industry commenced its journey with its first plant in Kolkata in 1874. Since then, there have been huge reforms in the industry. Today, the industry comprises of over 150 established factories, with 11 large plants, 24 medium-scale plants and the rest are operated through the small-scale sector (IRMA 2011). Though the Indian dolomite refractory industry took off in the late 19th century, the real growth came in the 1950s when the public sector steel plants were set up and Tata Steel started its expansion plans (Raja 2006). At present, the Indian dolomite refractory industry production capacity is 2 million tons per annum. Dolomite refractories were traditionally made from naturally-occurring minerals like fireclay, bauxite, kyanite, magnesite, etc., but now are using synthetic raw materials, such as fused alumina, etc. (Sahoo & Jha 2001).

The Indian dolomite refractory industry has grossed a turnover of Rs4,500 crore (approximately US$1.00 billion) in 2009-2010. This is an impressive growth of 21 percent as compared with Rs3,650 crore (approximately US$830 million) in 2008-2009 and is growing at over 10 percent per annum (Steelworld Research Team 2010). Although the specific consumption of dolomite refractories has decreased from 30 kg per ton of steel, (about 20 years ago), to 12-13 kg on an average for the steel industry, and as low as 7-8 kg for some of the more efficient steel units, the scope for growth is still excellent in view of the continuing growth in the global steel industry. Despite the downturn in the steel sector, the Indian dolomite refractory industry posted a double-digit growth (Raja 2006).
2.3.2 Growth Opportunities and Major Producers

The iron and steel industries still remain the major end-user market for dolomite refractories. The increasing level of industrialisation globally is fuelling growth providing ample opportunities for the Indian dolomite refractories. The growth of non-ferrous sectors like cement, glass, copper etc. provides a great opportunity for the growth of dolomite refractory industry. An upsurge in the use of dolomite refractories in metal and non-metallic mineral products and its manufacturing is expected to increase in demand. Thus, the future augurs well for the Indian Dolomite Refractory Industry (Chattopadhyay 2012). Following the economic crisis of 2008 with the declining consumption of steel which is the largest end-user market for dolomite refractories, the global steel production is beginning to recoup. The demand for dolomite refractories is therefore, forecasted to increase in the coming few years. Asia Pacific today constitutes the largest and fastest growing regional market for dolomite refractories, accounting for more than 70 percent of the total volume (Steelworld Research Team 2010).

2.3.3 Challenges Faced by the Indian Dolomite Refractory Industry

As stated in a speech at the CeraGlass India 2010 conference in Jaipur, India on 11 November 2010, the Indian dolomite refractory industry has been upgraded in order to take advantage of the increased business from the steel industry (Every China 2010). They need to keep pace with the steel industry in order to meet the demand of both quality and quantity (Raja 2006). The consumption is reduced through the process of prolonging the life of the furnace lining and the manufacturers in India have to rise to the occasion by providing ready, regular, speedy and consistent supplies (Every China 2010).

The Indian dolomite refractory manufacturers are adding capacity with an expectation that the demand from the steel sector will increase. However, the major Greenfield projects announced are yet to be processed. On account of the current situation, there is an excess of installed capacity as the dolomite refractory manufacturers keep on adding capacities while steel producers have not yet complied to implement their expansion plans. Fortunately, there is an increased demand from other sectors like
sponge iron and cement which has resulted in about 7 percent increase in sales. But this increase in sales did not correspondingly lead to an increase in dolomite refractory prices (IRMA 2011).

The main concern of the Indian dolomite refractory manufacturers is the raw materials availability and rising price of crude oil. Industry insiders also acknowledge that raw materials availability is a major concern, especially with China imposing quantitative restrictions on the export of raw materials. The rising crude oil price has contributed in reducing the margins (IRMA 2011).

Apart from China, other global leaders in the dolomite refractory industry, like RHI from Austria, Vesuvius from Belgium, French giant Calderys also made their investments in India. As a result of these foreign investments, the customers’ bargaining power has also increased. Most of the customers are no longer interested in just buying the dolomite refractories but opt for value creation propositions through the solution called Total Refractory Management (TRM). Some major firms offer very low prices and lucrative credit terms to penetrate the Indian market which will be very hard to sustain in the long term (TRL 2011). The Indian dolomite refractory manufacturers have two options. One is to go in for a price war with the Chinese producers, further reducing the diminutive profit margins, and the other is that they should focus more on exports (Raja 2006).

2.3.4 The Steel Industry as the Major Consumer of Refractories

Worldwide, about 70 percent of refractory products are consumed by the steel industry and 12 percent by cement, 6 percent by non-ferrous, and 3 percent glass, copper, ceramics and chemical industries (Raja 2006), as depicted in Figure 2.4. Therefore, the steel industry is the leading player in giving the direction to the dolomite refractory industry.
The steel industry has been steadily growing during the past few decades. It is predicted that the global dolomite refractory market will reach 59 million metric tons and US$31 billion by 2015 (Steelworld Research Team 2010, p.26). Steel production and global demand for dolomite refractory products have declined during the economic crisis of 2008-2009. Today, the dolomite refractory technology has been introduced in many areas with the aim of raising the quality and reducing the production cost of steel. The main approaches to these goals are:

**Approach to steel quality improvement** - The ever-growing need for higher grade steel makes it imperative to use the dolomite refractory materials which do not contaminate the molten steel and are thermodynamically stable (IRMA 2010). Demands are now being raised for basic materials like magcarbon and dolomite refractory products, which are not only stable at high temperatures, but are even better for desulphurisation and dephosphorisation, thus improving the quality of the steel and making it more economical as well (Magnesita 2010).

**Approach to cost reduction** - With the recent development of high quality dolomite refractories, there is a strong market orientation of value-based growth instead of production-based growth. The dolomite refractory industry has been consistently providing new and improved products to the consuming industries such that it has
resulted in the reduction of the dolomite refractory consumption rate in the steel industry (Swaminathan 1991). Currently, increasing changes in the dynamics of the steelmaking industry are shaping the diversification and sophistication for dolomite refractory products. Dolomite refractory engineers are making efforts to reduce the cost and improve the steel quality by developing new dolomite refractory products with a longer service without contaminating the molten steel. The target of development includes mechanisation and automation technologies that can reduce the bricklaying costs (Firoz 2007).

The dolomite refractory cost constitutes about 8-10 percent in the total cost of steel production. With the development in technologies for manufacturers of dolomite refractories and for steel making, there is a greater possibility of further cost reduction (Richmond & Chaille 1999). In order to reduce the dolomite refractory cost, the furnace life has to be extended and the dolomite refractory consumption rate reduced. The need for high quality dolomite refractory has consequently increased. The development of carbon containing bricks like magnesia-carbon with high resistance towards spalling and slag attack, are an outstanding example. Other bricks include alumina-silicon carbide, mag-chrome and dolomite bricks (Raja 2006).

2.3.5 Indian Dolomite Refractory Manufacturers’ Strengths

Some of the strengths of Indian firms are: (1) state of the art facilities; (2) broad range of product lines; (3) wide customer base and exceptional technical support and service; and (4) dynamic and technology-oriented market leaders. These strengths are discussed as follows.

**State of the art facilities** - Best source of dolomite refractory manufacturing plants in Asia, with most plants comparable to world standards with its quality management system certified to ISO 9001. The expertise in both raw materials extraction and dolomite refractory production has led to a consistent, reliable, high-quality product line manufacture in very modern dolomite refractory plants. India’s commitment to quality management systems in accordance with the ISO 9001:2000 standards ensure the continual improvements in the various processes, products and customer
satisfaction (Mehta 2008). This has also added to the image of the host industry in the international market.

**Broad range of product line** - Comprehensive product range and larger production capacity, with well-developed infrastructure, including modern research and development facilities. Indian manufacturers’ product lines include a complete range of silica, alumina, alumina-spinel, alumina carbon, alumina silicon-carbide, magnesia carbon and dolomite refractory, which deliver significant metallurgical and performance advantages. India is fast emerging as one of the world’s leading manufacturers and suppliers of dolomite refractories for various steel applications. Today’s demanding steel industry requires quality, technological advancement, and cost efficiency (IRMA 2010).

**Sales network and exceptional technical support and service** - Wide customer base including integrated steel plants, mini steel plants, cement, etc., and well-established countrywide and international marketing networks with capabilities to provide after sales service. Indian dolomite refractory exporters are close to their customers and have wide sales network both in India and in the international market. Sales and technical support staff are usually located in closer peripheries to major producers of steel, cement, glass, etc. Technical support has a human face and the sales engineers, metallurgists and operators work with each of their industrial customers to identify their unique requirements and provide technical and sales support in recommending engineering solutions like cost-effective lining designs, installation, thermal handling practices and monitoring performance, otherwise known as Total Refractory Management solutions (Firoz 2008).

**Dynamic, technology-oriented and market leaders** – Enjoy a number of global alliances with world leaders in the latest technology and products. The technical professionals in this sector, especially in India, include experts such as ceramic engineers, metallurgists, chemists, mineralogists, etc., who provide global research and development services and maintain close relationships with industrial customers. The production and technical services teams are responsible for innovations and maintaining and improving the quality of products already in the market (TRL 2011). To meet the different needs of industrial buyers, strong marketing programmes for the
products are required. In the domestic market, the local manufacturers catered to 95 percent of the requirements. With capacity augmentation, the industry is poised for tremendous growth (IRMA 2010).

2.3.6 Competitive Analysis of the Indian Dolomite Refractory Industry

Based on the context of the industry reviewed, this section assesses the global competitiveness of Indian dolomite refractory manufacturers. Porter’s (1979) Five Forces model is used, as it is an appropriate framework to analyse level of competition within an industry for determining the industry’s competitive intensity and attractiveness.

According to Porter (1979), there are five forces that determine the attractiveness of an industry. They are: (1) entry of new competitors; (2) threat of substitutes; (3) bargaining power of buyers; (4) bargaining power of suppliers; and (5) rivalry among competitors. Porter’s five forces framework is illustrated in Figure 2.5. These five forces are used to understand the opportunities and threats for the Indian dolomite refractory firms.

**Threat of new competitors** - New entrants to an industry can raise the level of competition thereby reducing the market share for the existing players. This influences the firm’s profitability and overall performance. Though new entrants always bring new capacity, products and resources, the threat of new entrants largely depends on the entry barriers in different forms: physical, legal or financial in nature (Porter 1979). There is a barrier to the entry of new players to the dolomite refractory industry due to the difficulties in obtaining suitable refractory grade of dolomite and the high cost of capital required. This adds to the competitive advantage of the Indian refractory manufacturers.

**Threat of substitutes** - The threat of substitute products depends on buyers’ willingness to substitute, the relative price and performance of substitutes, and the costs of switching to substitutes. Because of its inherent properties, like stable phases at high temperatures and its reputation of being the most cost effective lining material for production of cleaner steel, it is difficult to substitute it by using expensive
magnesia-carbon or other basic lining material. Thus, substitutes are not a serious threat to dolomite refractories.

**Bargaining power of buyers** - Buyers are the organisations that generate the demands of an industry (Porter 1979). In this instance, they are lower prices, higher quality and better services. Price has a direct impact on the industry profitability. Buyers become powerful when: (1) there are few buyers and many sellers in the industry; (2) their purchase sizes are large; (3) switching cost is low; (4) products are standardised or undifferentiated; and (5) competition in the industry is intense. Even though dolomite refractories are essential consumables for steel production, they are neither highly undifferentiated nor highly value added. As the buyers for dolomite refractories are restricted to steel mills, resulting in few buyers in the market and the switching cost is low, their bargaining powers are deemed to be high (Selvanathan 1999; Keegan & Green 2005; Porter 1979).

**Bargaining power of suppliers** - Power of suppliers is opposite to the power of buyers. If suppliers have high bargaining power over a company, then in theory the industry is less attractive (Rugman et al. 2006). The bargaining power of suppliers will be high when: (1) there are few dominant suppliers and many buyers; (2) products are highly differentiated and value added; (3) the customer or industry is not a key customer of the suppliers; and (4) the switching cost is high. On account of the rarity of dolomite in the market with only a few suppliers, the bargaining power of the dolomite refractory suppliers is relatively high. However, this is partially compensated by the fact that there are not many dolomite refractory manufacturers.

**Rivalry among competitors** - This refers to the competition in the market (Porter 2008). The intensity of rivalry between competitors will depend on the following variables: (1) rivalry is more intense where there are many small or equally sized competitors, and less when an industry has a clear market leader; (2) rivalry is reduced where buyers have high switching costs where there is a significant cost associated with the decision to buy from an alternative supplier; (3) when competitors are pursuing aggressive growth strategies, rivalry is more intense and, where competitors are ‘milking’ profits in a mature industry, the degree of rivalry is less; and
(4) when barriers to leaving an industry are high, that is, when the cost of closing down factories is high, competitors tend to exhibit greater rivalry.

In addition, there is considerable rivalry and competition in the form of price competition, service positioning and differentiation. Price competition results in reduced prices, less revenue and profitability, and creates instability. Intense rivalry is due to a number of factors, including maturity of the industry where market share can only be gained at the expense of rivals. Indian dolomite refractory firms do not face the prospect of being challenged by low-cost rivals because their competitors are from the Europe and America which are adopting advanced technology and know-how that demand constant technological and skills levels upgrading. This is followed by added cost to the organisation.

**Figure 2.5: Porter’s Five Competitive Forces Model**

![Porter's Five Competitive Forces Model](image)

Source: Adapted from Porter (1985)

### 2.3.7 Summary

This section reviewed the development of the Indian dolomite refractory industry and the challenges faced by them. It also assessed the strengths of the Indian firms and provided the competitive analysis of the Indian dolomite refractory industry in the
global market using Porter’s five forces competitive model. From the above analysis, it can be surmised that the Indian dolomite refractory industry remains attractive for the various firms operating within it. The next section reviews the policies of the Indian government for promoting the export of Indian dolomite refractories.

2.4 Indian Government Policies

This section explores the Indian government’s policies, its support programmes to Indian exporters as a trade facilitator, trade agreements between countries, and implementation of support delivery framework for manufacturing exports. It further discusses the effectiveness of the Indian government’s export support programmes.

2.4.1 Trade Liberalisation Policy for Transition into Market Economy

According to Stiglitz and Yusuf and (2001), globalisation is characterised by four major developments: fast growth in trade, the emergence of global markets, a surge in foreign direct investments (FDI), largely attributed to transnational corporations, and the diffusion of technologies and ideas through rapid expansion of a globalised transportation and communication systems. The increase in trade, and movement of capital, investments and people across borders has enhanced opportunities and challenges, not only for developed states, but also the developing ones (Tseng 2006).

Prior to the liberalisation of 1991, India’s development strategy was based on increasing the importance of self-reliance and rapid industrialization. This emphasis has led to a highly restricted import policy, thereby alienating the policy of competitiveness for a considerable length of time (Joshi & Little 1996). More importance was attached to the public sector and foreign investment was kept at bay. Mobilization of domestic resources was considered as a viable alternative than relying on foreign investment. This self-reliance strategy did not meet the expected levels, and subsequent political instability has greatly hampered India’s economic growth (Stiglitz 2003).

In contrast, the acceleration of transition towards market-oriented and export-led growth strategies has been significant. The opening up of the economy provided an
immense scope to redefine India’s relations with its neighbours, particularly with ASEAN, via the Look East Policy. India tended to develop closer economic relations with the region to make up for the lost time and missed opportunities, thus resulting in development and growth (Stiglitz 2003).

2.4.2 India and ASEAN

The re-orientation of India’s economic relations with its Asian neighbours is another important step towards accelerating the pace of its economic reforms. By virtue of its close historical and cultural linkage with the Association of Southeast Asia Nations (ASEAN), India became a sectored dialogue partner in 1992, a full dialogue partner in 1995 and a member of the ASEAN Regional Forum (ARF) in 1996 (Singh 2012). This position clearly demonstrated interests exhibited by both sides in order to tap mutual capabilities and resources.

This partnership with India has been conceived as an on-going effort to create interdependence and linkage with a country together with a large liberalised market. India’s proposal to collaborate with ASEAN Free Trade Area (AFTA) reflects its desire towards deeper regional economic linkages by initiating bilateral and sub-regional dialogues through the ASEAN-India Comprehensive Economic Cooperation Agreement. (ASEAN-India CECA). The following sums up an overview of the partnership areas:

i) Trade and investment - Removal of non-tariff barriers, customs co-operation
ii) Financial and monetary cooperation - Enhance capital flows, funding of projects
iii) Infrastructure – Promote transport links through air, rail, road and shipping
iv) Science and Technology Cooperation - Co-operation in science and technology
v) Exchange of Entrepreneur Expertise - Developing entrepreneurial capabilities
vi) Other areas of co-operation - Includes health, primary education, tourism

An ambitious target was set by India to increase trade with ASEAN member countries from US$12.5 billion in 2003 to almost US$50 billion in 2015. In this context,
increasing India’s trade competitiveness will remain a strategic policy challenge and to transform its improved economic performance (Eximguru 2011). One of the objectives of the Framework Agreement on Comprehensive Economic Cooperation Agreement signed between ASEAN and India is to facilitate the more effective economic integration of the new ASEAN member states and the bridging of the development gap among the parties.

A free trade agreement in goods, services, trade and investment was envisaged in the Framework Agreement on Comprehensive Economic Cooperation Agreement (CECA) in order to help to forge significant ties between India and the ASEAN countries (NST2011, p. B6). On August 2009, India signed a Free Trade Agreement (FTA) with the 10 members of ASEAN, with Malaysia as a member. It became effective from 1st January, 2010. ASEAN has become India's fourth-largest trading partner after the European Union, the United States and China (NST 2011). India is taking serious steps to further its ‘Look East Policy’ toward Southeast Asia. The signing of the FTA with ASEAN marks India’s first major multilateral FTA. This is an aggressive move by India in competing with China for influence with ASEAN. The ASEAN-India FTA also gives ASEAN countries another reason to promote themselves to India’s lucrative market of nearly 1.4 billion people (India Business, December 23, 2004).

The Free Trade Agreement with ASEAN is an important contributor to India’s economic growth and development. India’s trade policy is based on the agenda to pursue efforts, creating a more liberalizing and fair global trading environment. Free Trade Agreements (FTA) are agreements between two or more countries under which they accord preferential market access to each other. FTAs are not confined to liberalisation and market opening measures alone. They are comprehensive and include trade, investments, economic cooperation in the areas such as competition policy, standards and conformity assessments. Information and Communication Technology, Science and Technology, Education and Training, Research and Development, financial cooperation, development of Small and Medium Enterprise and Paperless trading are also included (Srinivasan 1998). With the establishment of World Trade Organisation (WTO), the trade service became integral part of many FTAs (Tiwari & Sethi 2011). Both bilateral and regional trade agreements are
monitored by WTO, provided the tariffs and duties are eliminated substantially on all trade according to mutually agreed rules and time frames.

2.4.3 **India and Malaysia**

Malaysia adopts a very open policy on imports. India currently enjoys a special privilege through the establishment of the Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA) covering trade in goods, trade in services, investments and movement of natural persons. The MICECA was signed by the Commerce and Industry Minister of India and the International Trade and Industry Minister of Malaysia on 18, February 2011 in Kuala Lumpur. It is regarded as an improvement over the ASEAN – India Trade in Goods Agreement (NST 2011) and will further facilitate and enhance two-way trade, services, investment and economic relations in general.

This bilateral agreement provided an advantageous position for the Indian dolomite refractory manufacturers in the context of exports to Malaysia as it will provide better access to the goods and services sector between the two countries. Malaysia is India’s second most important trading partner among ASEAN countries next to Singapore, while India is Malaysia’s largest trading partner in the South Asia Region (NST February 12, 2011, p.B2). The Malaysia-India bilateral agreement is now more extensive and covers investments, services and other areas that were excluded in the regional pact resulting in a better tariff concession. As a result, trade is expected to grow by 50 percent to US$15 billion from the current level of US$10 billion by 2015 (MIDA 2010). Trade between India and Malaysia has been steadily growing as shown in Figure 2.6.

Key features of the tariff liberalisation package under the Malaysia – India Comprehensive Economic Cooperation Agreement (MICECA) include elimination of tariffs for more than 75 percent of the items by 30th June 2016. Tariffs for another 15 percent of the items will be removed within 2016 to 2019 with the remaining 10 percent of the items to be placed under an exclusion list. On the basis of trade volumes, more than 95 percent of India-Malaysia trade is covered by these tariff...
concessions effective from 1st July 2011 (Eximguru 2011). These tariff liberalisations will further facilitate bilateral trade between India and Malaysia.

Figure 2.6: Trade between India and Malaysia

![Trade between India and Malaysia](image)

*2015 forecast  
Source: Ministry of Commerce, India (2010)

2.4.4 Agencies for Export Assistance and Promotion Programs

The Indian government through 27 Export Promotion Councils (EPC) has implemented firm policies and support programmes for the growth of exports. Out of these 27 EPCs, three of them are directly related to the interests of the refractory industry, and they are: The Director General of Foreign Trade (DGFT), the Chemical and Allied Products Export Council (CAPEXIL) and the Indian Refractory Makers Association (IRMA), which represent the interests of the refractory industry for policy and decisions making, including export and promotional activities (GOI 2011).

1. The Directorate General of Foreign Trade (DGFT) is aligned with the Ministry of Commerce and Industry of the Government of India. The primary role of DGFT is to promote India’s Foreign Trade by implementing various export promotion schemes. DGFT is responsible for the issuance of licenses for export. It is also responsible for imports and administering laws regarding Foreign Trade in India. For this purpose, DGFT issues various notifications, circulars, and public notices and updates them from time to time with changes to the domestic and international economic scenarios (GOI 2011).
2. **Chemical & Allied Product Export Promotion Council (CAPEXIL)** is an Export Promotion Council in India under the Ministry of Commerce. This council is entirely dedicated to the promotion of Chemical and Allied Products, which includes refractory products and industries. Its primary focus is to provide export assistance to its member exporters. The vision of the organisation is to develop and promote India’s export of chemical based and allied products, including refractory products and industries (CAPEXIL 2002).

The mission of the council is to understand the role of industries to support international trade. It also guides and assists exporters to increase their exports in order to attain and sustain a pre-eminent global standing. As an intermediary between the exporters from India and the overseas importers, it also provides a two-way service as global trade facilitator (CAPEXIL 2002).

CAPEXIL offers a full range of services to Indian exporters, which include the following:

- Provide export assistance to its member exporters.
- Act as an information gateway and helping hand for exporters.
- Being an ardent advocate of member exporters and act as a forum for representation of trade related issues between them and the government policy planners
- Stimulate and diversify the country’s export and to support specific activities through Market Development Assistance (MDA) with the support of Ministry of Commerce, Government of India.
- Disbursement of grants through various market assistance programmes.

3. **Indian Refractory Makers Association (IRMA)** - The Indian Refractory Makers Association (IRMA) is a national organisation for the refractory manufacturing companies in India and is a private body. There are currently seventy-five manufacturing units in the membership of IRMA. These units produce a wide range of refractory products, including silica, fireclay, high alumina, magnetite, direct bonded and normal bonded magchrome, chromemag,
dolomite, slide gate, fusion cast and monolithic refractory products. In addition, there are twenty-six associate member companies producing raw materials used in the refractory industry (IRMA website).

The principal objectives of the IRMA are to: (1) work for the healthy growth of the refractory industry in India; and (2) provide trade information to its members. Advisory Services are provided to its members on rules and regulations governing export and import policies, tax matters and pollution control. It provides services such as representing common problems to government bodies and other agencies for policy review and implementation. It also deals with issues related to custom duties, central excise, development of infrastructural facilities, issues regarding availability and quality of raw materials and technical issues of specifications. In short, it manages and controls the issues that are related to refractory products compliance. IRMA is the voice of the members to the government on various issues, including exports (IRMA 2011).

2.4.5 Indian Government’s Support for Manufacturing Exports

India is dependent on exports and the foreign exchange earned to meet its growing import needs and to sustain its growth and development which is one of the highest in the Asia Pacific region. The percentage of export of manufacturing sector has increased from 17 percent in 2000 to 23 percent in 2010 (GOI 2011). Though refractory exports constitute the smallest percentage, there is a tremendous growth opportunity for the export of dolomite refractories.

The Indian government continues to support the development and growth of the manufacturing sector; therefore, all the necessary measures are being taken to enhance the its competitiveness in order to meet the targeted average GDP growth of 9 percent during the Twelfth Five-Year Plan from 2012 to 2017. Increasing the earnings of manufacturing exports in highly competitive international markets is one of the strategic thrust areas for the Indian government (GOI 2011).
The various measures taken to meet this objective include:

- Increase market access through bilateral, regional and multilateral agreements
- Through the Duty Draw Back scheme (DDB) and allow tax-free import of raw materials meant for export
- Extend packing credit for export
- Award a 1% incentive for star trading houses
- Extend Modified Value Added Tax (Modvat) benefits for export of manufactured goods without excise duty
- Under the Modvat scheme, allow goods to be exported without central excise duty
- Provide cash incentives for market development

2.4.6 Indian Government’s Support Delivery Framework

As discussed in Section 2.4.4 above, the central government has two agencies (DGFT and CAPEXIL) under the Ministry of Commerce providing support to the refractory industry. The private body, IRMA is involved with export assistance and promotional programmes. At the state level, local governments encourage exports by offering subsidised land for the setting up of export-oriented units, thereby providing preferential tariff for electricity while ensuring undisturbed power supply, extending tax holidays and offering export incentives for a fixed number of years. This has increased the competitiveness for the export of dolomite refractories (GOI 2011).

2.4.7 Effectiveness of Government’s Export Support Programmes

The Indian government and its agencies have a range of export promotion programmes and incentives to assist firms to export their products and services. However, the effectiveness of these programmes and incentives for the promotion of export of dolomite refractories cannot be verified due to the lack of prior research. There is a lack of information and awareness among the Indian firms on the export promotion programmes and incentives offered to assist them. The bureaucracy and red tapes involved in obtaining such benefits is massive and is considered a de-
motivation factor to venture into the competitive export business (Singh 2008; Ling 1992). There is the general belief among the Indian firms that such benefits and incentives offered are difficult to get and are not practical on a full-scale basis (Mahajar 2005).

Agencies from the federal and state governments, including IRMA as a private entity, are responsible for providing assistance and ensure delivering support programmes and incentives for the promotion of exports. The problems of duplication and cross-functional responsibilities arise among the various agencies leading to red tapes. Hence, there is a need to streamline the delivery systems of the various government programmes by making them more focused and effective (Selvanathan 2007).

The incentives that are provided for export are simply not sufficient to encourage more exporters. Another problem is the frequent change of export incentive schemes together with ownership. This is a real cause of bottlenecks as the firms are made to run from one agency to another, thereby resulting in inordinate delays in securing export benefits. All these certainly call for a master plan custodian (IRMA 2011). Contrary to general belief, it has been found that the assistance offered by the Indian government for export development has encouraged exporters. The liberalisation of tariffs, the various Free Trade and Economic Co-operation agreements with ASEAN and other foreign countries has opened export market opportunities for the dolomite refractory manufacturing firms. India and Malaysia have signed the CECA bilateral trade agreement for supply of goods and services, effective July 1, 2011, which will further add to the competitive advantage of the Indian producers (Eximguru 2011). Some tangible benefits include increased productivity, increased market growth, new market penetration, improved international networking, increased export sales, increased profitability and more customers on international forum and market (Mahajar 2005).

2.4.8 Summary

This section reviewed the Indian government’s policies on manufacturing exports and the delivery and support frameworks through DGFT, CAPAXIL and IRMA. It assessed the effectiveness of the Indian government’s export development
programmes and the incentives offered. The next part of the literature will review the status, outlook and opportunities of the Malaysian Steel Industry.

2.5 The Malaysian Steel Industry

This section outlines the current status of the Malaysian Steel industry and its role as the driver of industrialization towards nation building, future prospects and its impact on the research topic. It explores the opportunities available to the dolomite refractory manufacturing exporters from India. It helps to provide the contextual setting for the study (C 2002).

2.5.1 Outlook of the Malaysian Steel Industry

The importance of the steel industry cannot be over emphasised; it lays the foundation for a developed, industrialised economy. Although the industry is highly capital-intensive, most developing countries have continued to install steel-making capacities for the development of their nation, in order to add value to natural resources, to ensure ready supply for the development of the manufacturing and construction sectors, to substitute for imports, to save on foreign exchange, and to generate further linkages with the rest of the economy. Most developed countries emerging as industrialised economies over the past five decades regard the development of a strong domestic steel industry as a key factor for their success (MIDA 2010).

In the 1960s, Malaysia embarked on its industrialization programme in order to reduce over-dependence on rubber and tin, and to curb the outflow of foreign exchange through imports. The focus of the country shifted to the establishment of import-substitution industries and the construction of domestic infrastructure. The 1960s also witnessed the installation of the first steel-making plant in the country as a joint venture between Malayawata Steel (now known as Ann Joo Steel) and a Japanese firm. It consisted of two charcoal based blast furnaces, which were discontinued in the 1980s and replaced with DC electric arc furnaces. At the same time, several small rolling mills were set up to produce steel bars for the growing housing and construction sectors, and also to keep pace with the accelerated
industrialization process. In 1978, the first wire rod-cum-bar mill was built by Amalgamated Steel Mill (ASM) (now known as Amsteel). Its purpose was to cater to the housing and construction industries, as well as for the downstream manufacturing of such user groups as wire drawers, mesh makers and nail makers. (MISIF 2009-10).

In 1981, ASM commissioned the first large-scale electric arc furnace (EAF) to produce billets locally and to replace the more expensive imports. In the same year, Antara Steel (now a part of Amsteel) started its rolling mills in Johor to produce bars. In 1982, Perwaja Terengganu Sdn. Bhd. (now known as Perwaja Steel) was launched to produce direct reduced iron (DRI) as a feed raw material for electric arc furnaces and for making billets to fulfil local requirements. In 1984, Sabah Gas Industries Sdn. Bhd. was established to produce hot briquetted iron (HBI) using Midrex technology under the Gas Utilization Project in Sabah. It continues to supply HBI for export and as a raw material for Megasteel’s EAF. All these mills were exclusively making long products like billets, bars, wire rods and sections (MISIF 2009-10).

As Malaysia became self-sufficient in long products, Maruichi of Japan and Ornasteel of Taiwan started production of cooled rolled sheets in Malaysia in 1990 and 1994 respectively using imported mother coils. In 1995, Megasteel commenced production of Malaysia’s first flat mill to produce hot rolled coils from its 2.5 million metric tons capacity plant in Banting (SEAISI 2011). By 2002, Perwaja was functioning at its full capacity in manufacturing billets, primarily for the export market. (SEAISI 2011).

In the years 2003-2004, billet and bar producers faced difficult times owing to the shortage of scrap and the rise in prices (up to US$350 per metric ton) as they were forced to sell billets and bars at a government-controlled price. In 2004, the government maintained the price controlled regime and reintroduced import and export price controls on steel billets and bars. In 2005, steel consumption dropped to 6 percent, or 7.4 million metric tons (MMT). In the following year, the steel consumption recovered somewhat, growing by 5 percent to register 7.8 million metric tons. In 2006, the third Industrial Master Plant (IMP3) was launched outlining industrial strategies and policies as part of the country’s continuous efforts of becoming a developed nation by 2020. Pertaining to the issues relating to material
supply and escalating global scrap prices, Malaysian steel mills were actively seeking alternatives to scrap. Efforts to address these issues included:

- Lion Group commissioned a 1.5 million metric ton DRI plant
- Melawar Group announced a plan to build a DRI plant by 2010 in Lumut, Perak
- Ann Joo announced plans for making 500,000 metric tons of iron through MBF by 2011
- Leader Steel considered plans for installation of 200,000 metric tons through MBF

In 2008, China consumed 35 percent of the world’s steel as compared to 13 percent in 1995 (WSA 2011). During this period, steel companies faced difficulties dealing with fluctuating prices and the Malaysian mills were much affected by scrap prices and supply. With China’s surge, the global steel industry went into a period of high demand and escalation in price. In late 2008, this boom was over as the global economic crisis debilitated the economies of many countries. As a consequence, steel price tumbled and demand dropped from 2008 onwards. The years 2007-2009 were a challenging and trying period for the steel industry in Malaysia.

**Structure of the steel industry in Malaysia** - The Malaysian steel industry can be categorically subdivided into two main segments: the long products and the flat products. The long products are billets, bars, wire rods, sections etc. which are predominantly used in the construction industry. The flat products are plates, sheets, hot and cold-rolled coils, tubes and pipes, consumed mostly by the automobile, manufacturing and oil and gas sectors (MIDA 1995). In its formative years, the Malaysian steel industry was regulated and highly capital intensive, focusing mainly on the country’s construction and infra-structure needs. The production of long products like bars and wire rods dominated the domestic scene. In recent years, the emphasis was on the manufacturing sector, assumed to be the next engine of growth for the economy and has spurred the demand for higher value-added products, especially in the flats segment. Megasteel, as the only producer of hot-rolled products in Malaysia, embodies the government’s intention to ensure a ready and smooth
supply for the development of the manufacturing sectors (MITI 2010). The Malaysian steel industry, fully diversified with both upstream and downstream industries, has been categorised into distinct product and grouped as shown in Table 2.2.

The current investment status of the Steel Industry in Malaysia and the structure in terms of product type and number of establishments are shown in Table 2.3. Malaysia has continued to attract investments in the steel industry, with 29 projects having an investment value of RM11.5 billion being approved. Of this total, domestic investments amounted to RM4.7 billion, while foreign investments contributed RM6.8 billion. Investments in iron and steel have been increasing, thereby reflecting the significance of the industry to the economy (MIDA 2010). Investment in domestic steel is growing at a positive rate of approximately 11 million tons, as shown in Table 2.3, buoyed by the demand from the construction and manufacturing sectors (MISIF 2009-10).
Table 2.2: Structure of the Steel Industry in Malaysia

<table>
<thead>
<tr>
<th>Category</th>
<th>Products</th>
<th>No. of Firms</th>
<th>Capacity('000T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Products</td>
<td>Billets</td>
<td>6</td>
<td>4,400</td>
</tr>
<tr>
<td></td>
<td>Blooms</td>
<td>1</td>
<td>750</td>
</tr>
<tr>
<td></td>
<td>Slabs</td>
<td>1</td>
<td>2,500</td>
</tr>
<tr>
<td></td>
<td>Direct reduced Iron</td>
<td>1</td>
<td>1,200</td>
</tr>
<tr>
<td></td>
<td>Hot Briquette Iron</td>
<td>1</td>
<td>720</td>
</tr>
<tr>
<td>Rolling / Finished Products</td>
<td>Rolled Products</td>
<td>51</td>
<td>7,180</td>
</tr>
<tr>
<td></td>
<td>Light Sections</td>
<td>5</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Medium to Heavy</td>
<td>1</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td>Hot-Rolled Coils</td>
<td>1</td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td>Cold-Rolled Coils</td>
<td>2</td>
<td>680</td>
</tr>
<tr>
<td></td>
<td>Plates</td>
<td>1</td>
<td>200</td>
</tr>
<tr>
<td>Secondary Product –Longs</td>
<td>Wire Mesh</td>
<td>40</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>Galvanised Wire</td>
<td>6</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Hard Drawn Wire</td>
<td>40</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Bolts and Nuts</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Nails</td>
<td>14</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Welding Electrodes</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>High Carbon</td>
<td>4</td>
<td>154</td>
</tr>
<tr>
<td></td>
<td>Shafting Bars</td>
<td>7</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>6</td>
<td>120</td>
</tr>
<tr>
<td>Secondary Product –Flats</td>
<td>Steel/Cement Pipes</td>
<td>31</td>
<td>2,300</td>
</tr>
<tr>
<td></td>
<td>Pipe Fittings</td>
<td>4</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Tin Plates</td>
<td>1</td>
<td>250</td>
</tr>
</tbody>
</table>

Source: MISIF (2009-10)
Table 2.3: Approved Investments in the Steel Industry in 2010

<table>
<thead>
<tr>
<th>No. of Projects– 29</th>
<th>Value (in RM billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Investments</strong></td>
<td>11.5 billion</td>
</tr>
<tr>
<td>- Foreign Investment</td>
<td>6.8 billion</td>
</tr>
<tr>
<td>- Domestic Investment</td>
<td>4.7 billion</td>
</tr>
<tr>
<td><strong>New Projects- 10</strong></td>
<td>2.9 billion</td>
</tr>
<tr>
<td><strong>Expansion/Diversification Projects- 6</strong></td>
<td>0.4 billion</td>
</tr>
</tbody>
</table>

Source: MISIF (2009-10)

**Domestic steel consumption** - The steel consumption in Malaysia grew very rapidly from the late-1980s to mid-1990s, fuelled by a strong growth in both the construction and manufacturing sectors and also driven by public and private sector infrastructure projects (SEAISI 2011). The steel consumption peaked in the year 1997 at 8.30 MMT. The economic crisis of 1997-1998 caused the growth of steel consumption to grind to a virtual standstill (Alavi 2008). Recovering from the industry’s worst recession, the aggregate steel consumption rebounded from 4.60 MMT in 1998 to register 7.30 MMT in the year 2002. As shown in Table 2.4 and Figure 2.7, there is a positive increase and once again the demand for steel has shown encouraging results. Therefore, the steel mills are optimistic that this trend will continue for a longer period of time (SEAISI 2012).

Steel consumption in Malaysia is projected to grow at an annual rate of 6 percent, with the ratio of longs to flats falling to about 40:60 by 2011. As the country continues to industrialise, the industrial consumption pattern will progressively favour flats. This pattern is similar to that of other newly industrialised countries. The anticipated increase in flats consumption will be due to the expanding manufacturing sector, which is regarded as the main driver of industrial development (MISIF 2009-10).

The long products segment will depend on the construction sector, primarily the residential sub-sector, as the large infrastructure projects are progressively scaled down.
Table 2.4: Malaysian Steel Highlights

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude steel</td>
<td>5.83</td>
<td>6.89</td>
<td>6.42</td>
<td>5.35</td>
<td>5.69</td>
</tr>
<tr>
<td>Finished steel</td>
<td>7.71</td>
<td>8.13</td>
<td>7.96</td>
<td>5.69</td>
<td>5.67</td>
</tr>
<tr>
<td>Imports:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel products</td>
<td>5.13</td>
<td>6.25</td>
<td>5.47</td>
<td>4.04</td>
<td>5.23</td>
</tr>
<tr>
<td>Exports:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel products</td>
<td>3.37</td>
<td>4.44</td>
<td>2.79</td>
<td>3.02</td>
<td>2.79</td>
</tr>
<tr>
<td>Apparent steel consumption</td>
<td>7.82</td>
<td>8.59</td>
<td>8.18</td>
<td>6.65</td>
<td>8.29</td>
</tr>
</tbody>
</table>

Source: MISIF (2011)

Figure 2.7: Malaysia’s Steel Consumption

Steel consumption per capita is expected to increase to about 384 kg in 2012 from 294 kg in 2009 (SEAISI 2011). The steel industry is making greater efforts to strengthen its position in the market by growing the downstream sector to support the upstream
sector. This growth will come from the long products sector such as steel bars and wire rods as a consequence of the anticipated infrastructural projects (Kok 2011).

The flat products such as hot-rolled sheets, plates and cold-rolled sheets have yet to experience high growth rates as compared to the demand from the key market sectors, such as manufacturing, electrical and electronic and packaging. The Malaysian steel industry needs to look beyond the national boundary and maintain the growth momentum (PEMANDU 2010).

**Key industry players and steel output** - The bulk of the Malaysian steel is produced using electric-arc-furnaces (EAF), re-melting the scrap iron, or scrap-substitutes like DRI and HBI to produce the molten steel. The molten steel is then cast to form the semi-finished steel products like billets, bloom and slabs. The billets and blooms are then rolled to produce bars, wire rods and steel sections while the slabs are rolled to produce plates, hot-rolled coils and sheets. In downstream activities, the wire rods are drawn to fabricate products like bolts, nuts, screws and nails, while hot-rolled coils are used to produce the cold-rolled coils that become tinplates, galvanised sheets, pipes and drums (Bhattacharya 2010)

The scrap, which is the main ingredient in this process, is mainly imported from the European Union and the United States of America as the domestic supply is insufficient for meeting the needs of the local industry. At present, only Perwaja Steel and Amsteel Mills produce both DRI and HBI at their plants in Kemaman and Labuan respectively. As DRI and HBI command a premium price owing to their cleaner content, a large proportion is exported to countries like Taiwan, Vietnam and China (Steelworld Research Team 2010).

There are now six (6) billet producers in Malaysia, namely Perwaja Steel, Antara Steel Mills, Amsteel Mills, Malaysia Steel Works, Southern Steel and Anjoo Steel with a combined capacity of 6.40 MMT per annum. As the billet production is targeted mainly for domestic usage, exports are relatively small and these billets are used in the rolling mills to produce bars, wire rods and steel sections.
In the year 2010, the country’s total rolling capacity for finished long products was about 8.70 million metric tons, with bars and wire rods contributing 6.40 MMT. The major rolling mills now are Amsteel, Klang and Antara Steel (now under Lion Industries), Perwaja Steel, Southern Steel and An Joo Steel. On account of its huge size, Lion Industries now controls about 30-35 percent of the domestic steel bars market and 30-40 percent of the domestic wire rods market (SEAISI 2010, p.11).

With respect to the flats segment, Megasteel, with a rated annual capacity of 2.50 MMT, is the only producer of hot-rolled coils (HRC) and plates in the country. With this monopoly, it has a stranglehold on the local flats business. With Megasteel’s imminent entry to this segment, it is expected to shake-up the present dynamics of the market. The supply of HRC and CRC is very crucial to the downstream manufacturers of boiler, pressure vessels, tubes, pipes, and steel servicing centres like Hiap Teck, Choo Bee, Maruichi (currently known as Melewar Industrial Group), Wah Seong and Southern Pipes (Nor et al. 2010).

**Malaysia’s export and import of steel** - Malaysian steel is now acquiring a reputable name in the Asian steel industry and the country’s domestic steel industry is expanding at a high rate. The industry has gained much strength from the vibrant economy over the years with the support from the strong sectors like infrastructure, construction and automobile industry (MITI 2010).

Malaysia is still the most integrated steel maker in the Association of Southeast Asian Nations (ASEAN) region, with both HBI and DRI as the primary feedstock for steel making through the electric arc furnace route. The ASEAN countries have become the largest export market for Malaysia, especially its billets (MISIF 2009-10). The total export of steel grew from 4.57 MMT in 2007 to 5.80 MMT in 2010 and half of these volumes were exported to ASEAN countries (SEASI 2011). This scenario in the steel industry is changing with the threat of cheap imports from China within the context of globalisation. To meet the challenges, the industry needs to roll out a series of urgent as well as important activities. According to Mizuno (2012), the Malaysian steel industry will continue to meet the strategic thrusts of Malaysia’s Third Industrial Master Plan (IMP 3) by:
• Enhancing the competitiveness of the industry to support the growth of manufacturing and construction sectors.
• Sustaining and expanding the exports of iron and steel products for existing and new markets.
• Promoting new application of steel in selected industries.
• Encouraging collaboration between producers and users of steel, and upstream and downstream manufacturers.
• Attracting new investments in niche areas in the sub-sector.

2.5.2 Role of Steel in Socio-economic Development

In the case of both society and business, development is defined as an upward directional movement from lower to higher levels of efficiency, energy, productivity, quality, creativity, complexity, enjoyment, accomplishment and mastery (Yusof & Bhattasali 2008). As shown in Figure 2.8, steel is the backbone of all industries and the development of a nation is dependent on how well its infrastructure is built.

Steel is still at the heart of every economy, and contributes to the lifestyle of a nation’s people, both at work and at home. It plays an important role in providing citizens with energy, transport, infrastructure, home appliances, construction and various other product services (Silvestre 2011). More than 2,500 different steel grades have been registered, which demonstrates the versatility of this material known as ‘steel’, with the metal constantly developing to meet the ever changing and ever more stringent requirements of the modern world. Within the last five years, about half of these steel products were further developed by changes to the production processes or had been newly developed to meet newer applications. Note that about 70 percent of the steel used in the auto industry today did not exist 10 years ago (Firoz 2007).
2.5.3 Third Industrial Master Plan (IMP3) Strategic Thrust

Under the Third Industrial Master Plan 2006-2020 (IMP3), six strategic thrusts areas have been identified to further enhance the development of the steel industry in the country (MIDA 2010). They are:

i) Enhancing the competitiveness of the steel industry to provide the necessary support for the growth of the manufacturing and construction sectors.

ii) Sustaining and expanding the exports of iron and steel products for the existing and new competitive markets.

iii) Promoting new applications of steel in the selected industries.

iv) Attracting new investments in few niche areas in the iron and steel industry.

v) Encouraging collaborations between the various producers and users of steel, and with the upstream and downstream manufacturers.

vi) Developing a skilled and qualified workforce required for the steel industry.

Source: Adapted from Yusof & Bhattasali (2008)
Malaysia’s basic metal industries are made up of iron and steel industry and non-ferrous metal industry. These have seen momentous developments since the last four decades in tandem with the country’s industrial development (MIDA 2010). The iron and steel industry, as the drivers of industrialisation, provide a very essential linkage for the supply of basic raw materials and components to the other sectors of the Malaysian economy. These sectors include the construction industry, machinery industry, the electrical and electronic industry, the automotive industry, furniture industry and engineering fabrication industry (Bhattacharya 2010).

At present, there are nine mills in the country directly engaged in primary steel production through the electric arc furnace (EAF) routes using scrap and direct reduced iron (DRI) as the feed material. It accounts for 7.0 MMT per annum. There are two hundred and thirty companies engaged in manufacturing downstream products, with an annual output of RM32.20 billion and employ about 30,100 staff directly (MISIF 2010).

2.5.4 Prospects for the Steel Industry in Malaysia

As the dolomite refractories are primarily used for steel making, the steel industry is therefore the key to the growth of these products. Their demand potentials are based on Malaysia’s rapid industrialisation, boom in the construction sector and other infrastructure development projects. In addition to these, Malaysia has the objective to realise its vision of being a developed nation by 2020. Other factors influencing growth are:

1. **Rising global demand for steel** - Global steel demand is rising on the back of accelerated infrastructure activity in China, Russia and India, a housing boom in the United States and a white good resurgence in Europe. In India, China and ASEAN countries like Vietnam and Thailand, the demand is led by capital investment activities in infrastructure, while strong internal demand is seen in countries like Russia, and Eastern Europe (Bhattacharya 2010).
2. **Increase in global steel prices** - The record production of 1,580 MMT of global steel in 2010 has drained all available supplies of ferrous raw materials, thus pushing steel prices up dramatically. The cost of raw materials such as iron ore increased by 21 percent, coking coal by 23 percent and scraps prices rose by 80 percent (from US$180 to about US$325 per metric ton) in 2010. As a result, international prices of HRCs, CRCs and wire rods also increased (Nor et al. 2010).

3. **Revision of domestic ceiling prices to boost steel production** - The Malaysian Steel Producers request to the Domestic Trade and Consumer Affairs Ministry in 2010 seeking a possible increase of RM600 per metric ton for steel bars will significantly enhance the prospects of local producers like Lion Industries, An Joo Steel and Southern Steel (MITI 2010). At present, they have to suffer losses stemming from escalating input costs, and the fact that they are unable to pass on these costs to the consumers owing to the ceiling prices imposed by the Finance Ministry (MISIF 2009).

4. **Removal of anti-dumping duties and the new steel policy** - In 2009, the United States removed its tariffs on steel imports (Section 201). This was reciprocated by the European Union, which also lifted its import duties on steel products, with China following suit by abolishing its 13-month run of tariffs on steel imports. These moves have created much optimism among the global steel companies with respect to further boosting their sales in these large steel-consuming nations (MITI 2010). On the domestic and regional fronts, the import duties on flat steel products remain with no specific date for their removal. It is likely that local safeguard measures must be maintained to provide Megasteel with some initial protection (StarBiz, July 28, 2011, p.3)

5. **Malaysian government policies on steel imports** - For the protection of the local steel industry, the Malaysian government has raised the import duties to a maximum of fifty per cent on 199 flat steel products like hot rolled Coils (HRC), cold rolled coils (CRC), galvanised iron (GI) and steel pipes at the end of 2009. Those wishing to import these products are required to seek special import licenses or approved permits (AP). Exemptions are given to those
industries located in free-trade zones and those export-based companies. For the long products’ segment, the government has also placed some restrictions by imposing ceiling prices for retail purchases of steel bars at RM1,905 per ton and billets at RM1,242 per metric ton (MIDA 2011).

Many of the Malaysian steel producers have defended the new policy of the iron and steel industry of 2009, which was declared in August 2010, by saying that it augurs well for the local industry (MIDA 2010). According to them, this will prevent the foreign steel mills from dumping into Malaysia. The policy review also encourages the use of locally produced goods, while allowing the importation of those products that are not available domestically. It also includes the introduction of mandatory standards for iron and steel imports in order to prevent sub-standard and poor quality products from entering the country.

An encouraging factor is that the local steel mills will always support the downstream industries in order to fulfil the local demand and also to export. Local production is especially important during shortages of billets given that downstream manufacturers are assured of supply. Both the upstream and downstream must be viable in order to contribute towards the development of the industry and the local economy (SEASI 2010).

2.5.5 Market Share of Indian Dolomite Refractories in Malaysia

Indian dolomite refractory firms have a 7 per cent share of the market in Malaysia as shown in Figure 2.9. There is no doubt that the Indian government, as a promoter and facilitator of trade, has policies and programmes in place to support the efforts of the Indian exporters of dolomite refractories through CECA trade agreements with Malaysia and the implementation of support delivery framework for manufacturing exports largely through DGFT, CAPEXIL and IRMA. However, it is not effective owing to the existence of red tape and bureaucracy. To improve this situation, there must be an effort to make these support programmes timelier, relevant and more effective. The Indian government has to come up with seamless procedure and implement systems to streamline incentive programmes.
Figure 2.9: Market Share of Dolomite Refractory Firms in Malaysia

Source: IRMA (2010)

2.6 Overall Summary

The Malaysian steel industry as the nation’s backbone for maintaining its economic growth momentum has the potential to be one of the largest steel producers in the ASEAN region. With all these developments, it is obvious that the Malaysian steel industry is making all efforts to maintain its steady growth. This would mean that there is a great opportunity in Malaysia for the Indian dolomite refractory exporters to play a complementary role to the Malaysian steel industry.

From the above review, it is evident that the demand for dolomite refractories in Malaysia for steel production is attractive considering the following factors:

i. ASEAN is emerging as a lucrative market for steel among its members. Malaysia has a large captive market and the steel industry is already expanding, with more investments coming into this sector.

ii. Demand for steel in the domestic market is already showing a revival with the economy on the upswing as the manufacturing and construction sectors are gaining momentum.

iii. A growing export market for Malaysian Steel is another incentive to boost steel production requiring higher imports of dolomite refractories to cope with the expected increase in steel production of the country.
iv. China has emerged as the cheap producer and exporter of billets and this has become a threat to Malaysian domestic steel producers. The Malaysian steel manufacturers need to make local production more competitive. Hence, it is expected that the Malaysian steel manufacturers will need to look into the competitive Indian dolomite refractories as an alternative.

v. In view of the current output and the heavy investments being made in the steel industry in Malaysia, there is strong evidence that a greater need for dolomite refractories is inevitable as steel production is increasing.

At present, Malaysia’s requirement for dolomite refractories is met through imports, as there are no local producers in the country. This is an opportunity for the Indian dolomite refractory producers. The lack of understanding of the Malaysian market has made it difficult for them to penetrate and establish themselves as a notable force. Based on the above and together with the trade agreements with India, there is potential for the Indian dolomite refractory manufacturers to take advantage of this favourable situation. Additionally, the Malaysian market can serve as a gateway for the Indian exporters to enter other countries within the ASEAN Region.

2.7 Conclusion

If one considers the demand potential for dolomite refractories among the steel making plants in Malaysia, the competitive advantages of the Indian firms over their global competitors and the role of Indian government to provide adequate infrastructure facilities to promote export of dolomite refractories, it is evident that there is a huge gap between the capabilities of the Indian firms and what has been achieved so far. This research attempts to address this gap. The next chapter outlines and explores the applicable theoretical framework for the study.
CHAPTER 3: LITERATURE REVIEW - THEORETICAL FRAMEWORK

3.1 Introduction

The previous chapter reviewed the status and dynamics of the dolomite refractory industry, the Indian government intricacies, the Malaysian Steel Industry, and its potential for the dolomite refractory industry. It also provided the status of Indian dolomite refractory firms in exporting to Malaysian steel mills. This chapter reviews the literature from the theoretical perspective to provide an intrinsic element of problem solving in developing the strategic marketing program for the export of dolomite refractories to the Malaysian steel mills (Baker 2000).

The literature reviewed in this chapter enabled the researcher to identify the pertinent research issues and conceptualise the research with precision and clarity (Neuman 2006). Guided by Sekaran (2003), the review of the following body of literature served to achieve the following interrelated objectives:

i. Establishing the context for the topic
ii. Determining the key research issues
iii. Developing the theoretical foundation for this research
iv. Identifying gaps in the existing body of knowledge
v. Developing the research questions and the research propositions

3.1.1 Theoretical Framework

This research starts with a preliminary literature search to identify key research issues. A theoretical framework, displayed in Figure 3.1 below, was developed to show the linkages between the key research issues, and the parent and the immediate disciplines.
3.1.2 Chapter Structure

This chapter consists of six sections as follows:

- Section 3.1 introduces the theoretical framework and the chapter structure.
- Section 3.2 reviews firm’s internationalisation theories and provide the theoretical foundation for the study.
- Section 3.3 reviews ‘International marketing’, with emphasis on export marketing, market entry modes, trade barriers, regionalism and WTO. It also examines the competitive advantage of India using Porter’s diamond model.
- Section 3.4 examines the relevance and importance of cultural issues in international trade. Section 3.5 identifies the research gaps, which are the basis for developing the research questions and crafting the research propositions for testing by this research.
- Section 3.6 is the overall summary of this chapter.

3.2 Internationalisation

Internationalisation is a very popular topic in academic discourses, but different definitions of internationalisation give rise to different understandings owing to
different perspectives, contexts, emphasis, approaches and viewpoints (Andersson & Wictor 2003; Coviello & McAuley 1999; Firoz 2008; Welch & Luostarinen 1993).

3.2.1 Definition of Internationalism

From the international business perspective, internationalisation is widely used to describe the outward movement of a firm’s business activities from its domestic market to international markets (Buckley & Casson 1998; Javagil et al. 2003). It can be described as ‘a synonym for geographical expansion of economic activities, over the borders of a national country’ (Ruzzier et al. 2006, p.477).

Calof and Beamish (1995) offered a more specific definition of internationalisation, defining it as the process adapting to the firms operations (structure, resource, strategy) in the global environment. Internationalisation can also be defined from a network perspective in line with Johanson and Mattsson (1993, p.306) as a ‘cumulative process, where the relationships are continually developed, maintained, established, broken and dissolved for achieving the objectives of the firms’. Johanson and Vahlne (2003) expanded further and treated internationalisation as the procedure for developing the networks of the business relationships in other countries through the penetration, integration and extension.

The internationalisation process is a multidimensional phenomenon, as it goes beyond a firm’s operations to business network development by the firm (Andersen 1993). In this context, internationalisation is defined as a process by which the firms both increase the awareness of the indirect and the direct influences of the global transactions on their future and conduct transactions with rest of the world (Porter 2008). One of the major processes of internationalisation is ‘international commitment’ (Andersson & Wictor 2003), which is the measure of the perceived difference between home and foreign market along political, economic, and cultural and market strategic dimensions.
3.2.2 Selected Theories of Internationalisation

Review of the literature revealed four principal schools of thought on internationalisation, namely:

i. Foreign direct investment theory (FDI)
ii. Stage theories (‘U’ Model and ‘I’ Model)
iii. Network theories
iv. Strategic Management Approach to Internationalisation (RBV)

This discussion following summarises the characteristics of each, and justifies selection of the RBV model for this research.

Foreign direct investment - FDI theories originated in the late 1950s. Since they focus on the international production operation, the researcher does not consider the foreign direct investment theories being pertinent to the research topic. Accordingly, the review confined itself to stage theories, the network theories and the strategic marketing management approach to internationalisation as they are more relevant to the research topic.

Stage Theories (‘U’ Model and ‘I’ Model) - Stage theory suggests that the process of internationalisation is a steady development that arises in distinctive stages for an organisation to increase its involvement in the international markets (Melin 1992; Tseng 2006). There are two stage models. The first is the Uppsala Internationalisation Model (U-Model) developed in Nordic countries. The other is often referred to as the Innovation-Related Internationalisation Models (I-Models), and was developed in the United States (Axinn & Matthyssens 2001).

(i) Uppsala Model of Internationalisation (U-Model) - The stage theory or the Uppsala model was introduced by Wiedersheim-Paul & Johanson in 1975 (Wiedersheim-Paul et al. 1978) and was expanded further and refined by Johanson & Vahlne (1977), and was again modified in 2009. The modified model of 2009 emphasises the key variables of relationship, trust, commitment and the new knowledge that is created through exchanges in a firm’s network of interconnected relationships with customers and
intermediaries in foreign countries. However, the researcher had to take into account that the issues of trust, knowledge and commitment to business partners at this early stage of developing a model for export are not sufficiently emphasised. Hence, the researcher regarded this model as inappropriate at this early stage of development.

(ii) **Innovation Related Model of Internationalisation (I-Models)** - The contention of the innovation model is that a move into international market is linear and orderly and treats every subsequent stage of the internationalisation as innovation for the organisations (Morgan & Katsikeas 1997) as the development of a specific stage has an impact on the succeeding stage (van de Ven 1992). The number of stages, therefore, varies considerably between the models, which range from two to six stages (Andersen 1993).

However, critical views of the Stage Model have been put forward. Some authorities contend that there is inadequate research to support the notion that firms increase their commitment to markets through a sequence of incremental steps as advocated by the stage theories (Reid 1981; Bell 1995). On account of the differences in the opportunities prevailing in the market, capabilities of the managers and the resources availability (Axinn & Matthyssens 2001), the development is not always linear and orderly. A key counter argument is that not all firms internationalise in stages as suggested by stage models as some firms have exported since inception without going through the sequential stages (Andersson & Wictor 2003). The researcher agrees with Andersson & Wictor (2003) that stage models might not be appropriate for the firms that adopt aggressive approaches for growth in international markets. As a result, it would appear that a stage model is inappropriate for the research.

**Network Theories** - Johanson and Vahlne (1997) extended the U-Model by incorporating investments in networks that are new to firms. Organisations within a particular industrial system are dependent on each other owing to their specialization. There are certain industries that are best suited for the approaches of networking and are therefore better placed when internationalised (Andersen 1993). The model of
network postulates a firm is embedded in a complex and evolving web of the interdependent business, industrial and social relationships (Johanson & Vahlne 1997).

Johanson and Mattsson (1993) discussed the systems of industrialization as the networks of the relations among different firms. The markets that are structured as networks with the firm under focus are connected to the networks and actors that are affected by the interplay that prevails between actors and actors’ interaction (Blankenburg-Holm 1995; Axelsson & Johanson 1992). The network of a business consists of three components which include resources, actors and activities (Johanson & Mattsson 1993). Networks are related to each other through a number of different bonds and ties that are also important forces acting in the networks. The resources are controlled by actors who developed relationships through an exchange process and aim to increase their control over the network (Brito 2001). The actors can be at different levels such as an individual, departmental or organizational level, including customers, suppliers, competitors, agents and distributors, regulatory and other public agencies. An activity takes place when one or several actors combine, develop, exchange or create resources by using other resources. A change in one activity will affect other activities in the network. Coordination is essential because of various dependency relationships between the activities (Andersen 1993).

The network process has an emphasis on the complementarities, coordination and cooperation (Easton 1992). It takes into account the time, resources, and efforts in order to establish, build and develop relationships (Johanson & Mattsson 1993). Relationships are built on using strong bonds of mutuality and trust, whereas, the weak relationships are the informal bonds (Bjorkman & Kock 1995). The network model for internationalisation implies that the success of a firm in entering new international markets is dependent on the network relationships within the current market, that is, both the local and the international market, rather than on the market that is chosen, its cultural characteristics and advantages that are firm-specific (Leonidou 2004). The choice of a foreign market and mode of entry, together with consequences for the business opportunities, are often a result of the network relationships rather than basing on the comparisons and choices of numerous markets (Johanson & Mattsson 1993).
Although the theory of network was found to be the most suitable for service industries (Andersson 2000), the researcher regards this model as inappropriate for this study as the dolomite refractory industry involves the manufacturing and exporting of specific products for a specific application in a specific industry. Apart from networking, resource allocation and strategic perspective of the firm is equally important (Keller 2007).

**Strategic Management Approach to Internationalisation (RBV) -** Strategic management approach to internationalisation is centred on the resource-based view (RBV) of the firm (Porter 1985). Questions of international marketing strategies are likely to be particularly enriched by perspectives based on the resource-based view (RBV) of the firm. A focus on aspects of international competition highlights the important difference between country-specific resources (CSRs) and firm specific resources (Fahy 1996; Porter 1990; Tallmand & Lindquist 1997). The nature and role of country-specific resources are examined in early trade theories that focussed their analysis on basic inputs such as land, labour and capital.

From a competitive viewpoint, the focus of attention was on the basic inputs into the production process and how endowments of these factors varied from country to country. Attention was paid to geographic location as a country specific resource. Geographic proximity to markets was found to influence investment decisions (Davidson 1980), while the role of cultural proximity or psychic distance was proposed as a key variable by ‘stage model’ theorists (Johanson & Vahlne 1997) in their examination of international expansion. More recent work on CSRs has included not only inherited sources but also those that are created by a country like technology (Kogut 1991), research, communication and marketing infrastructure (Porter 1990).

In short, the RBV of the firm also promises to greatly inform issues relating to international marketing strategy. In addition, the focus of much international marketing literature has been on the economic, cultural and business characteristics of markets and how they influence international market selection and market growth decisions – a very pertinent topic for the current research topic. The RBV holds that the Sustainable Competitive Advantage (SCA) of a firm depends on the resources and
capabilities (Grant 1991) that a firm controls and that are not only valuable but also rare, imperfectly imitable, and non-substitutable (Tinell 2004). The Dynamic Capabilities perspective (Eisenhardt & Martin 2000; Teece et al. 2011) refers to drivers behind managers abilities to recombine resources into new source of competitive advantage (Teece et al. 1997). This has resulted in the better understanding of internationalisation and exporting as one of the diversification strategies of the firm (Blankenburg-Holm 1995).

The application of this model of resource adjustment is that over time, firms have the flexibility to adopt different internationalisation strategies with different activities. They could be firm or network oriented resource development strategies or a combination of internal and external resources as depicted in Figure 3.2. This model acknowledges that the available internal and external resources are the total resources of the firm.

It is through networks that firms can obtain access to external resources and information for their actions (Ruzzier et al. 2006). The RBV theory has strengths and has identified the linkage between resources and outcomes (Barney et al. 2001). The researcher adopts the position that a suitable model should assist firms in integrating both the internal and the external resources. Attaining a SCA will result in improved sales and growth. Yip’s (1992) model is of significance as depicted in Figure 3.3.

**Figure 3.2: Modes of Resource Adjustment**

![Figure 3.2: Modes of Resource Adjustment](Source: Ahokangas (1998))
The RBV theory has practical applications and well suited for firms venturing into international arena through exports as the effort is both industry and firm specific especially for manufactured industrial goods like dolomite refractories. It combines the firm’s resources and technological capabilities in terms of product features and offerings and capabilities through invisible assets and skills to enhance the competitive advantage. The RBV model merges the firm’s strategic and network perspectives (Keller 2007).

The model also emphasises the importance of the intangible knowledge based resources for competitive advantage. This model combines the strategic and network perspectives of the firm and is dependent on the development of key internal and external resources (Leonidou 2004). This framework takes into account both internal and external factors affecting the manufacturing firms. After critical evaluation, the
RBV model of strategic management has been chosen as the preferred framework for this research.

3.3 International Marketing

This section starts with the introduction to Export Marketing. It also discusses export entry modes, product strategies, pricing strategies, barriers of international trade and also examines the competitive advantage of nations using Porter’s five forces analysis.

3.3.1 Export Marketing

International marketing is ‘the performance of business activities that directs the flow of goods and services to consumer or users in more than one nation’ (Paul & Kapoor 2008), while Bradley (2004, pp.67-68) refers to it as ‘exchanges across national boundaries for satisfaction of human needs and wants’. Export marketing, inter-regional trade, international trade and global trade are some terms that are to some extent identical with the term international marketing. However, export marketing is also understood as a major aspect or area of international marketing. Export marketing is a systematic process of developing and distributing goods and services in overseas markets (Kotler & Keller 2009). While export marketing is related to exports, international marketing is broader in scope, and deals with both imports and exports (Douglas & Craig 1992).

Export marketing has wider economic significance as it offers various advantages to exporting firms to earn foreign exchange, as well as to the country for the development of economic, business and industrial development. Every country makes policy initiatives and promotional efforts for promoting exports and for meaningful participation in global marketing. The normal rule of global marketing for every country is to open up its market to other countries and also try to enter the markets of other countries in the best possible manner. In the absence of such participation in global marketing, the process of economic development of the country becomes endangered. Every country has to be involved in global business for mutual benefits, and likewise, for every business organisation that intends to export for achieving its potential growth target. Adapting to the global market place is no longer an option,
but is an increasingly a requirement (Kotler 2000; Kotler & Armstrong 2010; Winer 2009).

It has already been established that exporters will choose to export first to those markets that are physically close to their own domestic market, before venturing into those markets which may be deemed more foreign. That is what the Indian firms are intending to do on account of Malaysia’s close proximity to India. Porter (2008) was of the view that exports should be made on the basis of some domestic advantage and stressed that exporters should first be successful in their local markets. Baker (2000) stressed the borderless economy in global marketing. International marketing is not a luxury to be considered as a bonus on top of domestic sales, but is a necessary part of the portfolio of every company seeking to sustain its own economic future (Akanbi 2002). To be successful in international marketing, skills are required, homework must be done and constraints overcome (Winer 1990). These are the challenges being faced by the Indian firms venturing to export to Malaysia.

Firms that have engaged in the production of dolomite refractories primarily for application in the steel-making industry, and have established themselves as market leaders in the domestic market in India, will reap the benefits of improved sales and increased profits. This enables the firms to decide what, where and when to produce or sell. It also helps the firms in distribution, and achieving maximum sales with minimum cost, and also serves as a source of new ideas and market information for future planning.

It is in this context that Indian firms are justified to enter the export market aggressively and Malaysia in particular owing to its close proximity. Success in this market will be a stepping stone for entering other international markets. Hence, this research explores suitable marketing strategies that can be used by Indian firms producing dolomite refractories.

outside its domestic market is the lack of knowledge of foreign markets. This knowledge can only be acquired by being active in the target market. The firm could therefore gradually expand in the international market and reach a level of full commitment, regardless of whether it has made a foreign direct investment or not. Figure 3.4 shows the simplified illustration of this model (Cavusgil & Zou 1994).

**Figure 3.4: Stages in the Internationalisation Process of the Firm**

![Stages in the Internationalisation Process of the Firm](image)


As shown, each stage is an incremental foray leading to a stage of full commitment towards the target international market. The model is based on the relationship that prevails between the time required for the organisation to reach from the domestic market to the last stage in the global market (Doyle & Stern 2004).

### 3.3.2 Foreign Entry Mode

Winer (2009) shows a strong positive relation between the performance and planning of exports. He was of the opinion that implementing a process for systematically analysing, planning and exploring exports is the major discriminator between the unsuccessful and successful exporters. This implies that export strategy has a major impact on export performance, and that gaining an understanding of the strategy is crucial (Tseng 2006). Business strategy is a series of actions by the firms that are chosen according to a specific situation (Shoham 2005). Drucker (1985) asserted that the strategy of business requires the managers to analyse the present situation and make changes to it if they are required.

Porter (2008) stated that strategy is a basic goal for an enterprise and that adapting to a course of action and the allocation of the resources is important for successfully carrying out these goals. Leonidou (2004) provided a similar definition for business strategy, while Keller (2007) viewed strategy as a thread that prevails among the
activities of the firms that focus on planning and achieving a set of objectives. Firms should be able to exploit quickly the opportunities that are presented to them from all over the world. They should be able to respond to the changes that are taking place in the domestic as well as the foreign markets when they succeed in the international market place (Hamel 1994). A timely, honest and a broad examination from various perspectives are regarded as a reliable assessment that is helpful in the identification of the strategies (Greenley 2006). The strategies that can follow from a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis are depicted in Figure 3.5.

**Figure 3.5: Strategies from a SWOT Analysis**

<table>
<thead>
<tr>
<th>Weaknesses (W)</th>
<th>Strengths (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WO Strategies</strong></td>
<td>Use of strengths to take advantage of Opportunities</td>
</tr>
<tr>
<td><strong>ST Strategies</strong></td>
<td>Use strengths to avoid Threats</td>
</tr>
</tbody>
</table>

Source: ten Have et al. (2003)

WO strategies are more daring since the organisation takes on an opportunity despite not possessing the requisite strengths. ST strategies are generally used by large organisations in order to fend off the smaller ones by the use of price wars, increased budgets for marketing or promotions through multiple channels among one another. They are deemed to be of high risk and are normally adopted by large firms in matured industries (Dutta & Bergen 2003).
SO and WT strategies call for an organisation to do what it is good at. Strategies that take advantage of the firm’s strength and the opportunities available, and at the same time address the weaknesses and counter the threats are clearly relevant to the exporters of dolomite refractories from India as they are just venturing to export their products in a substantial way. Gabor (2002) suggested that in responding, identifying and having an influence on the organisations’ strengths and opportunities, and weaknesses and threats, they should be able to select their positions in the market or the industry. According to Porter (1980), positioning is a sustainable competitive advantage and, in the long term, the firm succeeds in comparison to its competitors (Dutta & Bergen 2003).

Porter (2008) suggests that firms can only possess two kinds of competitive advantages: differentiation or lower cost. The combination of these, together with the scope or range of market segments, is targeted to produce three generic strategies (cost leadership, differentiation and focus) for achieving above average performance in an industry. He also suggests that an organisation, in trying to gain competitive advantage, should choose one of the three strategies, otherwise they may face the danger of being ‘stuck in the middle’, a recipe for strategic mediocrity, below average performance, and/or a possible failure (Keller 2007).

There are two perspectives that have shaped the literature on competitive strategies (Barney 1991). The first is the holistic approach encompassing different dimensions of competitiveness. Kazem and Heijden (2006), well-known exponents of this approach, are of the view that the advantages resulting from the ability of the firm to create a suitable position in the segments of the market that are most attractive in nature, are based on either differentiation or cost, or both. The second is the resource-based view, which focuses on the core competency of the firm, a distinctive and hard to duplicate resource. In this research, the two views are considered to be complementary.

Aakar (2001) further highlights that the key to a successful differentiation strategy is to develop a point of differentiation from the customer’s perspective, rather than from the perspective of business operations. Kazem and Heijden (2006) argue that the
assets of a firm or its competencies are the basis for its competitive advantage. Core competence represents the consolidation of firm-wide technologies and skills into a coherent thrust. Core competencies are considered to be the human capital of the firms, their shared knowledge, their corporate history, traditions and networks of communication, organizational structure and collective learning (Ghemavat 1996).

**Entry Strategies** - The entry of the firm’s products and/or services, be they human capital or technology into a foreign market is an organisational arrangement. It is one of the international market entry modes (Julian 2006). According to Gillespie et al. (2004), any enterprise that follows a global market strategy must determine the type of presence and maintain this presence in every market where it competes. The entry strategy for international markets is a very comprehensive plan with objectives and goals that guide the firm’s international business operations over the future to achieve sustainable growth in the world markets (Porter 2008). The classification of market entry modes is not easy, as there are many relevant criteria that need to be considered.

The decisions of market entry are dependent upon the adoption of a specific mode in a market. Furthermore, they are influenced by three major issues (Greenley 2006): (1) how much resource and what investments are necessary to enter the market; (2) to what extent can the manufacturer control activities in the foreign market; and, (3) how much knowledge can the manufacturer gain about the foreign market by this market entry.

An organisation wishing to ‘go international’ faces three major issues (Keegan & Green 2005). These are: (1) marketing - which countries, which segments, how to manage and implement marketing efforts, how to enter, with intermediaries or directly, with what information; (2) sourcing - whether to make or buy products; and (3) investment and control - joint venture, global partner, acquisition.

**Types of Global Market Entry** - There are a variety of ways in which organizations can enter foreign markets. The three main ways are by direct or indirect export or production in a foreign country (Cateora & Graham 2007) as illustrated in Figure 3.6.
Exporting is defined as the marketing of goods produced in one country into another. It includes both direct and indirect exports and also stresses the need for having a detailed marketing plan (Piercy 1982). The advantage of exporting is that the manufacturing is home based, thus, it is less risky than overseas based. It gives an opportunity to ‘learn’ about overseas markets before investing in bricks and mortar. It also reduces the potential risks of operating overseas. A major disadvantage is that one can be at the mercy of overseas agents as there is little or no control when weighed against the advantages (Limerick & Cunnington 1993).

**Figure 3.6: Entry Strategies**

![Diagram of Entry Strategies]

Source: Keegan & Green (2005)

Exporting can be very lucrative, especially if it is of high value-added products. But the selection of a market entry mode is a critical decision because the success of the firm is dependent on it. It affects future decisions because each mode entails an accompanying level of resource commitment. Furthermore, it is not easy to change from one mode of entry to another without substantial loss of money and time (Shoham 1999). A comparison of the advantages and disadvantages of different entry
modes is presented in Table 3.1. This helps to provide a better understanding for the choice of exporting as the relevant mode of entry chosen for this research.

**Product Strategies** - A company’s approach to global marketing depends on its overall business strategy. The company headquarters often control manufacturing, finance and research and development. The local managers make the marketing decisions (Katsikeas et al. 2000). Products that are not highly bound to the culture or enjoy high scale efficiencies or economies are easier to market in comparison to others (Wedel & Kamakura 2000).

### Table 3.1: Different Market Entry Modes

<table>
<thead>
<tr>
<th>Modes</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Best Suited To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Exporting</td>
<td>Fewer complexities than direct exporting. Less risk involved. Readily available expertise.</td>
<td>Loss of control over 4Ps. Poor supporting services. Little promotion. Minimal experience gained within the firm. Less profit potential.</td>
<td>Firms getting rid of excess capacity. Small firms with limited resources.</td>
</tr>
<tr>
<td>Direct Exporting</td>
<td>Greater control over marketing mix. Closer to marketplace. Closer relationship with buyers. In-house experience and knowledge gained</td>
<td>High risk. More time, personnel and corporate resources committed. Substantial Investment, Distribution, administrative and marketing costs faced by the firm.</td>
<td>Firms that wish to establish a more permanent role in international markets.</td>
</tr>
<tr>
<td>Licensing</td>
<td>Inexpensive way of achieving foreign market entry. Licensor takes minimal risks.</td>
<td>Limited participation in international markets. Licensor passes technology know-how onto other party. Lack of control over operations.</td>
<td>Companies switch complementary products and capabilities. Companies with a good ‘fit’.</td>
</tr>
<tr>
<td>Joint Ventures</td>
<td>May be only way of gaining access to markets. Improved access to financial resources Economies of scale. Access to new technologies and management practices.</td>
<td>Significant costs. JV vulnerable as it is reliant on relationship between two parties. Cultural differences prominent. JV partner may become dynamic competitor.</td>
<td>Firms that recognise the necessity to internationalise but feel the need for foreign help.</td>
</tr>
<tr>
<td>Strategic Alliances</td>
<td>Can rapidly expand into new markets. May offer efficient marketing and production. Access to additional sources of capital.</td>
<td>Not a separate legal entity. Reliant on positive relationship between parties involved.</td>
<td></td>
</tr>
<tr>
<td>Acquisitions</td>
<td>Swift access into market. Access to distribution channels. Existing customer base High control.</td>
<td>High costs. Difficult to find suitable company for acquisition. Compatibility problems with companies’ products.</td>
<td>Large, heavily resourced firms that can identify a suitable firm for acquisition.</td>
</tr>
</tbody>
</table>

Source: Malhotra et al. (2003)
Global product development is the decision to introduce or not to introduce the products in every market under consideration. Successful product innovations introduced into diverse markets require constant monitoring, if a firm hopes to maximise the product’s contribution to the overall performance of the firm. It becomes necessary to follow the new market with improvements in distribution and the production processes (Solberg 2002). This is especially true for industrial products such as dolomite refractories, which are meant for specific application in the steel-making industry.

**Pricing Strategies** - Price includes the cost of producing the product, the cost of providing any services that may accompany the product, and the amount of profit that the firms need to make in order to stay in business. The price can directly reflect the quality or the perceived quality of a product (Robinson 2007). If an international market is serviced by most of its competitors, an organisation may have to match the ongoing price or stay below it, in order to get the market share. Pricing for the international market requires companies to define their pricing strategies, know their products and understand the host country’s environmental factors (Anderson & Duncan 2001). Thus, Indian firms venturing to export to Malaysia are no exception.

### 3.3.3 Porter’s National Competitive Advantage Theory

In the continuing evolution of international trade theories, Porter (1990) developed a new model to explain national competitive advantage. Porter’s theory stated that a nation’s competitiveness in an industry depends on the capacity of the industry to innovate and upgrade. His theory focused on explaining why some nations are more competitive in certain industries and identified four determinants: (1) factor conditions (local market resources and capabilities); (2) local market demand conditions; (3) local firm characteristics (structure and rivalry); and (4) local suppliers and complimentary industries. An important point of Porter’s model is that the interaction among all those factors is critical.

India is now emerging as the source of quality producer and exporter of dolomite refractories (TRL 2011). Using Porter’s Diamond Model, the primary causes of
India’s competitive advantages and the emergence of India in today’s global market in the dolomite refractory industry is examined:

1) India is endowed with the best quality dolomite refractories in the world. These reserves are found both in India and neighbouring Bhutan, for which Indian firms have a long-term mining lease. In addition to this, India has a very large pool of qualified engineers and technicians who are well versed in steel technology. This is the Factor Condition in the Porter’s Diamond Model where India can thus provide good-quality dolomite refractories at very competitive prices (Industrial Survey of India 2011).

2) The infrastructure in transportation, port facilities, electricity and communication in India are acceptable and support the industry and country in the global competition albeit improvements can be made. The Government support delivery framework as discussed in Section 2.4.6 has increased the competitiveness for the export of dolomite refractories (GOI 2011).

3) As reviewed in Section 2.3.2, the growth of non-ferrous sectors like cement, glass, copper etc. provides a great opportunity for the growth of dolomite refractory industry. An upsurge in the use of dolomite refractories in metal and non-metallic mineral products and its manufacturing is expected to increase in demand. The future augurs well for the Indian Dolomite Refractory Industry (Chattopadhyay 2012). The opportunities in and growth of the dolomite refractory and its related industries in India is therefore on an upward trend.

4) From the study provided in Section 2.3.1, the dolomite refractory industry in India is dynamic and has experienced significant growth providing healthy development in the structure, strategy and rivalry within the industry. This provided a catapult for further growth in the export of the dolomite refractories to other countries (IRMA 2010).

It can be concluded that India’s factor conditions provide the impetus for the export of dolomite refractories. It does seem fit with Porter’s Diamond Model as Porter explains
that competitive advantage based on only one or two determinants is possible in natural resource-dependent industries (Porter 1990).

### 3.3.4 International Trade Barriers

Trade barriers are government-placed restrictions on trade between nations and they can be tariff, non-tariff or both. The most common trade barriers are tariffs, subsidies, quotas, duties and embargoes. The term free trade refers to the theoretical removal of trade barriers, thus allowing for completely free and unfettered trade. In practice, therefore, no nation can fully embrace free trade, as all nations utilise some form of barriers to trade for their personal benefit (Ethier 1984).

**Tariff and Non-Tariff Barriers** - Tariff is a duty or a tax that is placed on the import of products by a local government (Akanbi 2002). Tariff rates are often different for different goods. Hence, tariffs have an effect on the economy and can change the producers and consumers’ behaviours (Suarez-Ortega 2003). There are different kinds of tariffs:

- A ‘revenue tariff’ is a set of rates designed to raise money for the government.
- A ‘protective tariff’ is intended to artificially inflate prices of imports and protect domestic industries from foreign competition.
- A ‘prohibitive tariff’ is one so high that no one imports any of those items.

One of the primary goals of imposing a tariff is to protect the domestic industry and local markets. There has been an argument about whether imports affect domestic industry by decreasing the employment rate, since the productivity level also goes down when people consume fewer local goods. It has been shown that tariffs may well benefit the country that imposes them, thereby resulting in earnings taxes for the government (Ethier 1984). Therefore, the benefit to the taxing country is at the cost to the exporting countries (Andersson & Wictor 2003).

Non-tariff barriers (NTB) take many different forms and are often not transparent. Under the broadest definition, non-tariff barriers comprise all measures other than
tariffs that restrict or otherwise distort trading patterns. Another problem is that they are not, in fact, readily measurable, so it is difficult to evaluate their effects on trade and economic welfare. Not all non-tariff barriers may be transparent or presented as such, and may be linked to non-trade policy objectives such as consumer protection (Baker 2000). Some of these non-tariff barriers are outlined below:

- Prohibitions and quotas are the simplest ways to discourage trade. They are one form of non-tariff barriers. Their use appears to be on the rise in developed countries (Suarez-Ortega 2003).
- Procedural barriers are those that are applied behind the border policies and can become a ‘barrier to trade’. Trade can be influenced by the specific ways in which customs classification, valuation and clearance procedures are handled (Guilding et al. 2005).
- Customs fees are frequently imposed on imported goods. On a larger scale, customs fees with tariffs add significantly to the trading cost (Suarez-Ortega 2003).
- Technical barriers refer to technical regulations and standards that set out specific characteristics of a product such as its size, shape, design, functions and performance or stipulate the way in which a product is labelled or packaged before it enters the marketplace. Most of the measures serve public policies, which include providing protection to the environment, human safety and health (Doyle & Stern 2004).
- Marketing barriers arise from either the government or the operating environment of the businesses, such as from competitors (Keller 2007). They are major impediment to the growth of businesses and the economy at large.
- Financial barriers are impediments when some firms require a higher amount of start-up capital, high licensing fees and difficulty in obtaining loans to manage the business operation as a result of lack of capital (Andrews 1987).
- Economies of scale barrier is a disadvantage for not able to produce at a large scale and therefore, not achieving the economies of scale. When
businesses achieve large-scale manufacturing at a lower unit cost, the smaller manufacturers may suffer financial losses and be placed in a less-competitive position (Suarez-Ortega 2003).

- Customer barriers can also be a problem to businesses. Some firms are capable of attracting more customers than others as they have a larger brand base and popularity than their competitors (Keller 2007).

- Distribution barriers represent another problem experienced by the firms that deal in bulky products that cannot be transported from one place to other easily (Akanbi 2002).

- Copyright barriers refer to the barrier that mainly affects intellectual property marketers. The fear to produce a product, which is an imitation of another firm, may attract copyright infringement creating hindrances for the organisation and manufacturers (Reid 1981).

- Language and cultural barriers is an obstruction in international business. Because of the nature of the problem, much time is consumed by the organisation to overcome the barrier when the product is marketed across international borders (Ramamurti & Jitendra 2007).

The above are many of the barriers to trade encountered when exporting goods to another country. These barriers are the main impediment to export business and overcoming these hindrances and barriers becomes essential for the government and the organisation for economic development (Doyle & Stern 2004).

3.3.5 Cultural Dimension

Culture plays a vital part in international marketing and in the process of internationalisation (Håkansson et al. 2009). Cultural values are widely held beliefs that affirm what is desirable and have an impact on activities (Ferraro 1990). These values affect norms, which specify an acceptable range of responses to specific situations. Beliefs, cultural values and norms vary greatly in different countries. While
a firm’s attributes are determined by cultural norms and the operating styles that prevail in the domestic market (Cavusgil 1984), it has also been pointed out that when a product is newly marketed into a foreign country, it is more likely to be accepted if there are similarities between the two cultures (Porter 2008). Also, language serves as a vehicle of culture, and a communication tool that drives a person’s behaviour. Therefore, in order to make a consumer accept a product, language is used to promote the product. Multinational companies incorporate these factors while venturing into other countries (Gamble et al. 2006).

According to many studies, one of the characteristics of a multinational firm is that it attempts to treat the various markets as one. It also responds to the market opportunities around the world and tries to pull together various elements of the enterprises to take maximum advantage of its managerial know-how, advanced techniques, and coordinated marketing (Keller 2007). Executives’ mind-sets has been widen by the globalising trend, increased the reach of firms geographically and moved international business research into new path. One such new path is the concern about national culture. This has its impacts on major business activities extended to group performance (Adekola & Sergi 2007).

Lack of cultural understanding can lead to huge losses especially in international business (Adler 2001) owing to distorted or misunderstood communications with foreign partners, agents, customers or even with the public. Therefore, it is an area of major concern in international business. Cultural differences in international business can affect all entry strategic decisions that may involve foreign entry markets, products and its adoption to foreign markets, the choice of an entry mode, the formulation of foreign marketing programmes and control of the entire operation. All the factors depend greatly on cross-cultural communication which is the backbone of international management (Ferraro 1990).

Thus, messages crossing cultural boundaries have a potential for misunderstandings, arising basically from unconscious cultural differences (Ferraro 1990). It is of supreme importance to develop cultural understanding in order to succeed in international business. Managers in international trade develop an understanding of
how to approach different cultures in different regions in order to accomplish their missions and goals in order to minimise misunderstanding and conflict originating from cultural differences. The sense of disorientation experienced by employees working in an organisation, or culture shock, can be minimised by learning about the new culture (Hampden-Turner et al. 2000; Papadopoulos & Heslop 1993). Before integrating into a new cultural environment or market, a firm should seek answers to the following questions:

- What do we know about the behaviour and the business culture of this country?
- What are our beliefs about and attitudes towards the host nation?
- How do these beliefs and attitudes relate to our own cultural assumptions?
- What understanding and skills do we need to communicate with host nationals?

It is argued that answers to these questions will support the objectives and missions in the host country. In any event, one must learn to design, execute, and control international market entry strategies across cultural differences, if a new company is to survive in a highly competitive global economy (Adler 2001). As high-growth market opportunities increasingly shift from industrial to developing countries, understanding of cultural differences by management will become even more critical in order to succeed in international business (Adler 2001). Finally, it is the task of the new entrants in the market to communicate with international business organisations (Wood 2003). Furthermore, a customer’s trust is of vital importance for relationship marketing. But it differs across cultures and countries when considering the same firm or business. While designing marketing activities or segmentations, the organisation should collect information regarding cultural values that are specific to particular countries (Schine 1990).

As explained by Gamble, Stone and Neil (2006), practicing negotiators tend to rely on the concept of ‘culture’ to explain behaviours that are usually encountered at the international bargaining table. They further explained that scholars also found the existence of the relationship of culture to negotiation and its impact on behaviours of
the consumers and marketers during negotiations. He identified four distinct approaches which imply a connection between culture and behaviour. These are explained as a learned behaviour (through experience), shared value, dialectics, and in-context of a particular region (Gamble et al. 2006).

Today, international trade faces glut problems and issues directly attributed to the fact that they are operating in international contexts and regions. Customers from different cultures, representing a vast spectrum of cultural differences, are the norm with international trade and globalisation. This contributes to a new dilemma for the exporting firms to deal with (Tomlinson 1999). In international business, there is a need to integrate specific marketing strategies for particular situations due to the influence of various cultural factors. However, there is a need for the corporations to be involved and move beyond their own cultural frame of reference to multicultural frames to grow as a market leader and overcome the barriers in the international market (Gupta & Govindrajian 2002).

3.3.6 Summary of Theoretical Framework

This summarises the scholarship on internationalisation specific to the manufacturing industry. It identifies the pertinent theory including stage theory, network theory and the Strategic Management Approach (RBV) theory as the most relevant and chosen model to provide a theoretical framework for the study. It discussed the competitive advantage of Indian dolomite refractory firms using Porter’s Diamond Model. It also discussed international marketing including the barriers to trade and addressed the cultural issues involved.

As identified in Sections 2.5.1 to 2.5.4, the Malaysian steel industry is poised for potential growth, which means that the demand for dolomite refractories for making cleaner steel is also set to increase. When one considers the market demand and growth potential for dolomite refractories among steel makers in Malaysia, the Indian dolomite refractory manufacturers’ current market share of around 7 percent could be significantly increased. There is a huge gap between the market requirements and what is being catered for by Indian firms. This is despite the fact that Indian dolomite
refractories are being used and accepted in this market and that their quality is of international standard.

It is up to Indian firms to take advantage of the situation. There is a need to formulate ideas and strategies in accordance with the theoretical framework discussed in this chapter to enhance their competitiveness. Indian refractory firms should overcome the self-imposed constraints and seek assistance from their government to improve their competitive offering in international markets so as to increase their market share. Indian firms must prove themselves to be a reliable and long-term supplier to the steel mills in Malaysia. After having established a strong relationship with the steel mills, they could consider the next step of setting up a manufacturing plant there. This will enable them to build a base to export to other ASEAN member countries so as to take advantage of the Common Effective Preferential Tariff (CEPT) scheme under the ASEAN Free Trade Area (AFTA) Agreement.

### 3.4 Research Gaps, Questions, Objectives and Propositions

Chapter 2 provided the review on the Dolomite Refractory Industry, and Chapter 3 has discussed the theoretical framework where the research gaps in the existing body of knowledge are identified. This culminates into the formulation of the research questions, objectives and propositions.

#### 3.4.1 Research Gaps and Research Problem

The literature review revealed adequate information on the parent disciplines of international marketing management and the global dolomite refractory industry. There has been much literature on the immediate discipline of the Indian government’s support policies regarding the export of manufactured goods. However, as depicted in Table 3.3, there are gaps in the existing body of knowledge with respect to three key research issues:

i. The competitive positioning of Indian refractory firms for international trade
ii. The effectiveness and delivery systems of the Indian government’s export promotion policies and programmes

iii. The appropriate marketing strategies for exporting Indian dolomite refractories to Malaysia

These gaps in the literature show that there is a limited body of knowledge on these issues, despite their importance to the Indian manufacturers, the Indian government and the steel mills in Malaysia. This further confirms the relevance of the research problem as stated in Section 1.4:

What is an effective Strategic Marketing Program for the export of Indian Dolomite Refractories to Steel Mills in Malaysia?

The research gaps are summarised in Table 3.2.

### 3.4.2 Development of Research Questions

According to Punch (2005, p.34), research questions drive empirical research. They are the translations of the research problem into specific enquiries (Zikmund et al. 2010). They are ‘refined statements to the specific components of the problem’ (Malhotra 2010, p.84). Well-stated research questions guide the researcher to stay on track and provide the direction on what data needs to be collected in order to answer the questions. As a result, four research questions have been developed on the basis of a review of the research issues and the gaps identified in the existing body of knowledge.
Table 3.2: Identification of Research Gaps

<table>
<thead>
<tr>
<th>Research Issues</th>
<th>Literature</th>
<th>Research gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Economic Development Policies of the Indian Government</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>Exporting of manufactured goods from India to Malaysia</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>The Indian Refractory Industry</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>International Marketing Strategies</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>The perception of the Malaysian steel makers on the use of Indian dolomite refractories</td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Awareness of such products in the market</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>• Accepting the products based on its technical evaluation to meet the service requirements</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>• Rejection of the Indian products on the notion it is inferior to their traditional source from West</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>Adequacy of Indian government policies and support programmes for export of dolomite refractories</td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Effective Policy Framework</td>
<td>Inadequate</td>
<td>Yes</td>
</tr>
<tr>
<td>• International Promotion and Support</td>
<td>Inadequate</td>
<td>Yes</td>
</tr>
<tr>
<td>• Collaboration with Malaysian Steel industry to form strategic partnership to offer solution</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>Competitive positioning of the Indian dolomite refractory industry emerging from FTA</td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Less competitive being a new entrant because the competitors are well established</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>• Less competitive because of better images of their competitors in the international market</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>• Indian firms do not commit to sincere marketing efforts and synergistic partnership</td>
<td>Unknown</td>
<td>Impact on Indian refractory firms sale and market share</td>
</tr>
<tr>
<td>The appropriate corporate and marketing strategies for entering the Malaysian Market</td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Indian firms did not find the true potential of the Malaysian steel market</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
<tr>
<td>• Indian firms lack commitment and dedication in developing strategies for market entry</td>
<td>Known</td>
<td>Active formulation and implementation of export strategies</td>
</tr>
<tr>
<td>• Openness to form a strategic partnership with customers and intermediaries to offer value added service rather than just selling</td>
<td>Unknown</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Developed for this research
The research questions are:

**Research Question 1** - The available literature on international marketing strategies for exporting manufactured goods largely relates to industrialised countries and mostly to specific industries (Sharma 1988; Sharma & Johanson 1987). The literature review in Chapter 2 revealed that the dolomite refractories manufactured and supplied by firms from India are still neglected by the Malaysian steel industry because of their preference for traditional suppliers from the western countries although the Indian suppliers are competitive. Therefore, the first research question is:

Why are Malaysian steel manufacturers reluctant to use Indian dolomite refractories?

**Research Question 2** - Section 2.6 reveals that the Indian government has a wide range of promotional and assistance programmes as well as different delivery systems to support manufacturing exporters from India. Assistance offered to exporters includes access to market development funds, establishing networks with foreign partners and brand development to enhance export competitiveness. Supporting activities include market intelligence, market development, brand promotion, trade missions, trade fairs, seminars and workshops. However, there are few studies that relate to the effectiveness of the government policies and their implementation. Therefore, the second research question is:

How adequate and effective are the Indian government’s existing support programmes for the export of dolomite refractories from India?

**Research Question 3** - Section 2.2 reveals that the Malaysian steel industry offers higher potential for Indian dolomite refractory manufacturers. Some Indian firms have ventured into China and other countries but neglected the Malaysian market, as discussed in Sub-section 2.2.2. A symbiotic relationship would reap rich dividends for the Indians as the ASEAN region is close by. Therefore, the third research question is:
How can Indian dolomite refractory manufacturers enhance their competitive advantage for entering the Malaysian market?

**Research Question 4** - The literature review reveals that Indian firms are still at the initial stages of supply to the Malaysian steel industry, while it is fully dominated by the firms from developed countries. Although Indian firms have strategic advantages with some of them have even started export to Malaysia, they face several challenges, as discussed in Sub-Section 2.5.5. The key issues that are addressed include whether the current export strategies of Indian exporting firms are appropriate for keeping abreast of the global competition. Therefore, the fourth research question is:

What are the long-term competitive marketing strategies that are applicable to the export of Indian dolomite refractories to Malaysia?

### 3.4.3 Research Objectives

Research objectives explain the purpose of the research and define what the research tries to achieve (Zikmund et al. 2010). These objectivities have to be precise, and the outcomes have to be observable (Saunders et al. 2003) and should be based on goals which are achievable (Emory & Cooper 1991). Guided by these authorities and based on the gaps revealed in the review of the literature and in line with the research questions, this research has four main objectives.

**Research Objective 1** - To examine the reasons for Malaysian steel manufacturers’ reluctance to use Indian dolomite refractories.

**Research Objective 2** - To determine the adequacy and effectiveness of the existing Indian government support programmes for its exporting firms.

**Research Objective 3** - To evaluate the competitive advantages of Indian refractory firms in the context of the forces of market liberalisation, including Free Trade Agreements (FTAs).
Research Objective 4 - To recommend appropriate marketing strategies for adoption by the Indian refractory firms to build a long term sustainable competitive advantage (SCA) to successfully enter the Malaysian market.

3.4.4 Research Propositions

The formulation of the research propositions for this study was guided by the following sources. First, propositions indicate the relationships between concepts, which, in turn, make up theories (Berg 2009; Maxfield & Babbie 2007). Then, the researcher should evaluate the suitability of a proposition by considering whether it conforms to empirical evidence or data (Neuman 2006). Thus, the four identified research questions were converted into corresponding propositions for empirical testing by this research. They are:

Research Proposition 1 - The Malaysian steel manufacturers are reluctant to use the Indian dolomite refractories.

Research Proposition 2 - The Indian government’s targeted support policies and programmes to assist Indian exporting firms to enter and successfully compete in the international market are ineffective.

Research Proposition 3 - The Indian dolomite refractory firms are less competitive compared to other sources that are regularly exporting to Malaysia.

Research Proposition 4 - The marketing strategies adopted by the Indian refractory firms for successfully entering new international markets like Malaysia lack focus and commitment and are inappropriate.

As stated in Section 1.4 and detailed in Sub-Section 3.2.2, this research relies on a mixed methodology as guided by Creswell and Plano Clark (2007) and Greene and Caracelli (1997). Although the research is largely qualitative in nature, the researcher regards it as necessary to collect and analyse some quantifiable data in order to strengthen the findings. As a result, this research adopts a two-stage approach (Creswell & Plano Clark 2007; Maxfield & Babbie 2007), with the second stage being
quantitative, thus requiring the collection of quantitative data through a questionnaire survey.

3.5 Conclusion

The chapter reviewed the literature pertinent to the parent and immediate disciplines on the research topic, international marketing, relevant theories and cultural dimension. The literature on the Indian firm’s status regarding their efforts to become successful exporters, their ability to adopt to different cultures for international trade, their strategic and sustainable competitive advantage over the global players were discussed in Chapter 2. The research gaps led to the development of four research questions, the setting of the research objectives and the crafting of the research propositions for testing by this research. The next chapter will discuss the research methodology selected for this study.
CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

The earlier chapter reviewed the literature on key research issues pertaining to this study. It then developed four research questions, from which four research propositions are crafted which are restated below:

- Research Proposition 1: The Malaysian steel manufacturers are reluctant to use the Indian dolomite refractories.

- Research Proposition 2: The Indian government’s targeted support policies and programmes to assist Indian exporting firms to enter and successfully compete in the international market are ineffective.

- Research Proposition 3: The Indian dolomite refractory firms are less competitive compared to other sources that are regularly exporting to Malaysia.

- Research Proposition 4: The marketing strategies adopted by the Indian refractory firms for successfully entering new international markets like Malaysia lack focus and commitment and are inappropriate.

Guided by Sekaran (2003), Neuman (2006), and Zikmund et al. (2010), this chapter describes the research methodology and design adopted for this research. It includes the research approach and the selection of the instruments for the data collection.

4.1.1 Chapter Structure

This chapter contains seven sections as follows:

- Section 4.1 introduces the chapter structure.
- Section 4.2 describes the principal research paradigms and justifies the combination of qualitative and quantitative approaches as the preferred methodology for this study.
• Section 4.3 sets out the research design and discusses the dimensions of the research, namely, exploratory, descriptive and explanatory, and justifies the use of a two-stage approach.

• Section 4.4 details the data collection instruments selected for the study. Qualitative data was collected through an expert panel interviews and a focus group discussion. Quantitative data was collected through a questionnaire survey, using a 5 point Likert scale for attitude measurement.

• Section 4.5 discusses the measures taken to improve the research quality by addressing the issues of reliability and validity.

• Section 4.6 outlines the data analysis procedures for both qualitative and quantitative data.

• Section 4.7 addresses ethical issues.

• Section 4.8 presents the conclusion for this chapter.

4.2 Research Approach and Methodology

In order to ensure that the methods and techniques used in this research were in sympathy with a particular set of philosophical beliefs about the nature of the world, steps were taken to consider advice from the literature (Ticehurst & Veal 2000). The selected approach, in turn, would determine the problems to be explored and how they are to be addressed (Deshpande 1983). The ontological, epistemological and methodological assumptions of a research model determine the methodology to be used and the nature of the researcher’s involvement (Seale et al. 2007; Kumar 2005). Figure 4.1 illustrates the linkages between ontology, epistemology, theoretical practice and actual practice and their importance in selecting a research model regarded as most appropriate for achieving the objectives of the research (Kumar 2005).
The objectives of the study were not only to identify the research problem in detail, but also to obtain a complete and accurate description of the Indian dolomite refractory industry, and its capability and preparedness for exporting to international markets. Accordingly, the merits of qualitative and quantitative research approaches were considered first (Parkhe 1993; Zikmund 2000). This study is primarily exploratory and descriptive in nature, and therefore, an inductive (qualitative) research model would be appropriate, rather than a deductive (quantitative) model. Table 4.1 summarises the characteristics of the two approaches.
Table 4.1: Features of Two Principal Research Approaches

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Qualitative</th>
<th>Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epistemology</td>
<td>Subjectivist and transactional</td>
<td>Objectivist and dualist</td>
</tr>
<tr>
<td>Ontology</td>
<td>Reality is socially constructed and arises out of social interaction</td>
<td>Social facts have an objective reality independent of the knower</td>
</tr>
<tr>
<td>Objective</td>
<td>Theory generating</td>
<td>Theory testing</td>
</tr>
<tr>
<td>Data</td>
<td>Words, images and pictures</td>
<td>Numerical</td>
</tr>
<tr>
<td>Concepts</td>
<td>Themes, patterns, categories, taxonomies</td>
<td>Constructs, variables</td>
</tr>
<tr>
<td>Logic</td>
<td>Inductive</td>
<td>Deductive</td>
</tr>
<tr>
<td>Sample size</td>
<td>Small and limited</td>
<td>Large numbers</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Interpretive</td>
<td>Statistical</td>
</tr>
<tr>
<td>Procedures</td>
<td>Specific and particular</td>
<td>Standard and replicable</td>
</tr>
<tr>
<td>Purpose</td>
<td>Contextualisation</td>
<td>Generalisability</td>
</tr>
<tr>
<td>Axiology</td>
<td>Value laden</td>
<td>Value free</td>
</tr>
<tr>
<td>Outcome</td>
<td>Greater understanding will lead to improvement</td>
<td>Accepts or rejects proposed theory</td>
</tr>
</tbody>
</table>

Sources: Adapted from Parke (1993); Guba & Lincoln (1994); Perry et al. (1997); McMurray (2007)

The inductive model (qualitative) is ‘more subjective, idiographic, insider in nature, qualitative and leads to new theory development’ (Parke 1993, p.235, p.237). In contrast, the deductive (quantitative) approach is ‘objective, focuses on value-free data and adopts experimental methods for the testing of theory’.

The following sub-sections discuss the characteristics of each approach in greater detail, and explain the research strategies and design used in this study.
4.2.1 **Qualitative Research Approach**

Qualitative research is basically interested in the lived experience of individuals, groups, communities or societies and focuses on exploration of little known phenomena, things about which nothing or little is known (Miles & Huberman 1994). The ontology of this research model is that reality is based on the individual’s perceptions of authenticity and the belief system held in a particular context. The beliefs inherent to qualitative research, and how they implicate the design of the research, include:

i. There is a great deal to be understood that may not be measurable.

ii. The qualitative researcher has to discard his/her own feelings and biases about the issue to be researched. Violating this premise means contaminating the data by infusing it with personal perspective versus obtaining the perspective of the population being studied.

iii. The qualitative researcher is only interested in understanding the meaning of some phenomenon or areas like life experience, custom, work experience, etc. of the participants involved in the study.

iv. The designs for qualitative research are often less structured but still contain the form, structure, and accepted processes and practices through which data is obtained.

v. The terminologies associated with the qualitative research include trustworthiness, credibility, goodness of fit, interpretive, authenticity, dialectic, etc.

vi. Data obtained in qualitative research are today analysed by using computerised software to aid in the process. But unlike the quantitative data, interpretation of the results may be less clear as this cannot be generally numeric as it relies much more on the researcher’s ability to conceptually locate and interpret the narrative or documented data.
vii. The primary sampling technique in qualitative research is usually purposeful sampling. The researcher selects the population to be studied on account of the abundance of information it can provide about the topic to be studied.

In the epistemology of this research model, the researcher adopts an insider approach by being close to those participants in the research (McDaniel & Gates 1991). The findings are created jointly by the researcher and his respondents. Data collection focuses on the full complexity of human experiences and values. Qualitative research method comprises ‘an array of interpretive techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world’ (Pawson & Tilley 1997). Hence, the results can vary much depending upon the researcher (Perry & Coote 1994).

The research procedures are unstructured and diverse, but are specific to each project (Patton 1990). The data from the qualitative research are basically in the form of information from the literature, other documented sources, observations and transcripts. Qualitative methods usually examine and study the people’s words and actions through an in-depth investigation of situations (Pawson & Tilley 1997). For objectivity, this research model depends on the triangulation of several perceptions to gain a better image of the phenomena (Greenbaum 1997).

Qualitative research is often suited for exploring the new topics which have not been previously addressed in specific studies or where the existing theory does not apply to a research topic under the investigation (Hakel et al. 1982). Qualitative research is helpful where there is a need to explore and describe a new phenomenon or to develop a theory (Layder 1997). However, one disadvantage is that the findings cannot be generalised for time and place.

4.2.2 Quantitative Research Approach

The ontology of positivism avows that only science can discover the true nature of reality where the reality composed of discrete elements can be known and characterised’ (Denzin & Lincoln 1994). From the viewpoint of epistemology, the
researcher is detached from the research process and looks at the research through a one-way mirror and, as a result, the findings are value-free and theory-free (Hussey & Hussey 1997). The quantitative research model is built on a situation that can be completely and objectively described and measured (Hair et al. 2010). Quantitative approaches are deductive and objective, with the researcher looking for a general cause-effect relationship that is logically derived from a possible causal law (Bonoma 1985). The philosophy of the quantitative researcher contains the following elements:

i. Remain objective in the role when conducting the research.

ii. Involved in observable phenomenon and collects objective data (i.e. things one can see, touch, smell, taste, or other tangibles).

iii. Focuses on measuring the effect of an independent variable on the dependent variable. Studies may have multiple variables of each type too but these are often more complicated.

iv. Designs for the quantitative research are clear, concise and bounded by specific beliefs about the phenomenon/phenomena to be studied.

v. Terminologies used in quantitative research include such things as reliability, hypotheses, constructs, variables, subjects, random sampling, validity, veracity, explanation, prediction, probability, variance, and covariance.

vi. The data that are acquired in quantitative studies are generally analysed using statistical packages like SPSS, SAS, etc. Interpretation of the findings of the analysis will allow the researcher to represent conclusions based on the data rather than hypothesise about themes which emerge from the results of data analysis.

vii. Sampling techniques in quantitative research should coincide with the premises of the research model, so that there is a logical scheme for accruing the
population to be studied. Some of these are random sampling, probability sampling, non-probability sampling and systematic sampling.

The collection and analysis of data in numeric forms is the basis of quantitative research, which tends to emphasise relatively large-scale and representative sets of data (Hakel et al. 1982). It is concerned with measuring the relationships between variables and the model is characterised by the use of theoretical propositions to be empirically tested to resolve if such propositions are true (Emory & Cooper 1991). The epistemological viewpoint is achieved through the use of experiments, surveys and theory testing.

The main advantages of quantitative research methodology are the replicability and generalisability of the research findings (Eisenhardt 1989). However, though the quantitative researcher is able to observe the behaviour, collect and measure value-free data, the researcher is not in a position to observe or understand through the use of judgment the reasons for such behaviour (Herriott & Firestone 1983).

4.2.3 Justification for Mixed Methodology

Since each of the research approaches discussed above has strengths and weaknesses, a combination of qualitative and quantitative methods provides a better understanding of the research problem (Creswell 2009). The literature suggests that there are concerns regarding the credibility of studies that are purely qualitative, with a small sample size and with the findings that are dependent mainly on the subjective interpretation of the data collected by the researcher (Creswell 2009). These sorts of findings are less valid and unreliable and cannot be generalised (Davies 2005). However, qualitative and quantitative methods of research are not mutually exclusive, and can be used in a complementary manner. They can also be applied in various phases of the research works (Zikmund 1991). This method permits an investigation of the underlying issues with the adoption of the alternatives that are creative enough to carry out the research study (Emory & Cooper 1991).

Business research is a mixture of research methods because it permits a complementary and a broader perspective on the research topic (Denzin & Lincoln,
According to Johnson and Turner (2003), research methods should be mixed in such a way that they have complementary strengths and non-overlapping weaknesses. A flaw of one method is usually the strength of another, and combining them can achieve the best of both, while overcoming their exclusive deficiencies (Davies 2005; Denzin & Lincoln 2008). The mixed methods approach is shown in Figure 4.2.

**Figure 4.2: Three Major Research Paradigms**

For the reasons discussed above, both qualitative and quantitative approaches have been used in a complementary manner for in this research to cross validate, triangulate and enhance the findings of the study.

### 4.2.4 Preferred Type of Mixed Methodology

For a mixed method approach, the question of how qualitative and quantitative methods integrate with each other must be addressed. Creswell and Plano Clark (2007) provide the typology shown in Table 4.2 to show the relationship between them according to the design type most appropriate for the intended research.
Table 4.2: The Creswell & Plano Clark Mixed Method Design Types

<table>
<thead>
<tr>
<th>Design Type</th>
<th>Timing</th>
<th>Mix</th>
<th>Weighting/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangulation</td>
<td>Concurrent: quantitative and qualitative at the same time</td>
<td>Merge the data during interpretation or analysis</td>
<td>QUAN + QUAL</td>
</tr>
<tr>
<td>Embedded</td>
<td>Concurrent and sequential</td>
<td>Embed one type of data within a larger design using the other type of data</td>
<td>QUAN (qual) Or QUAL (quan)</td>
</tr>
<tr>
<td>Explanatory</td>
<td>Sequential: Quantitative followed by qualitative</td>
<td>Connect the data between the two phases</td>
<td>QUAN → qual</td>
</tr>
<tr>
<td>Exploratory</td>
<td>Sequential: Qualitative followed by quantitative</td>
<td>Connect the data between the two phases</td>
<td>QUAL → quan</td>
</tr>
</tbody>
</table>

Source: Adapted from Creswell & Plano Clark (2007)

Given the objectives of this research, namely, to explore the strategies of key operators in the research field, and provide rich and deep descriptions from data collected from interviewing those associated and familiar with the issues associated with it, it was considered important to supplement analysis of qualitative data with analysis of quantitative data in order to enhance the reliability and validity of the findings overall (Creswell & Plano Clark 2007). The use of quantitative research methodology as a supplementary approach, was selected permits a better control for bias and greater objectivity in respect of the findings. Therefore, qualitative data collection and analysis for this research was considered dominant, with quantitative data collection and analysis considered complementary or supportive, as indicated in the bottom row of Table 4.3 above.
4.3 Research Design

The choice made by the researcher regarding the use of mixed methodology, with qualitative methods predominating, and quantitative methods supporting findings, had implications for the design of the research. The literature confirms the importance of the research design, which is literally the plan for how the study will be conducted (Berg 2009). The research design also determines the information needed, states the sampling method, and the data analysis procedures (Berg 2009; Davies 2005; Malhotra 1999; Zikmund et al. 2010). Table 4.3 depicts the objectives, characteristics, data collection methods and status of the research problem for each of the three main types of research designs, viz. exploratory, descriptive and explanatory.

4.3.1 Exploratory Research

An exploratory study is usually conducted when the researcher has little knowledge of the situation or when limited information is available on similar researches in the past. Exploratory research is suitable for providing clarity to the problems and issues that are ambiguous, crystallises them and identifies new information that is required for future research (Creswell 2009; Denzin & Lincoln 2008; Sekaran 2003). More specifically, exploratory research relies more on literature reviews, focus groups, personal interviews and case studies as its sources for data collection (Neuman 2006). For these reasons, an exploratory research design was chosen as appropriate for this study.
### Table 4.3: Basic Research Designs

<table>
<thead>
<tr>
<th>Objective</th>
<th>Exploratory</th>
<th>Descriptive</th>
<th>Explanatory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>Discover ideas and insights</td>
<td>Describe market characteristics or functions</td>
<td>Determine cause and effect relationships</td>
</tr>
<tr>
<td><strong>Characteristics</strong></td>
<td>Flexible</td>
<td>Marked by the prior formulation of specific hypotheses</td>
<td>Manipulation of one or more independent variables</td>
</tr>
<tr>
<td></td>
<td>Versatile</td>
<td>Pre-planned and structured design</td>
<td>Control of other mediating variables</td>
</tr>
<tr>
<td></td>
<td>Often the front end of total research design</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>Expert surveys</td>
<td>Secondary data</td>
<td>Experiments</td>
</tr>
<tr>
<td></td>
<td>Pilot surveys</td>
<td>Surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary data</td>
<td>Panels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Qualitative research</td>
<td>Observational and other data</td>
<td></td>
</tr>
<tr>
<td><strong>Research Problem Status</strong></td>
<td>Unknown or little is known</td>
<td>Known</td>
<td>Clear definition</td>
</tr>
</tbody>
</table>

Source: Emory & Cooper (1991); Easterby-Smith et al. (2008); Malhotra (2010); Neuman (2006).

#### 4.3.2 Descriptive Research

A descriptive study is undertaken to explain the characteristics of the various variables in a situation (Sekaran 2003). Its application requires some previous understanding of the research problems. Unlike the exploratory research that is characterised by flexibility, descriptive research has a formal description of the situation (Easterby et al. 2008). The outcomes of the descriptive research are to: (1) understand the characteristics of a group in a given situation, (2) think systematically about aspects in a given situation, and (3) offer ideas for further research (Cavana et al. 2001).
Therefore, descriptive research does not attempt to give an explanation for the cause of its findings. It only seeks ‘to find answers to who, what, when and how questions’ (Zikmund 2003, p.55). Descriptive research uses methods, such as secondary data, expert panels, case studies and surveys as the source of data collection (Malhotra 2010). These characteristics mean that a descriptive research approach was also suitable for this study.

4.3.3 Explanatory Research

Explanatory research builds on exploratory and descriptive research and proceeds to identify the reasons why something occurs. The explanatory research is formalised and structured with hypotheses testing or research questions to be answered. The main purpose of explanatory research is to explain a situation or a problem by establishing the casual relationships between the variables (Saunders et al. 2003). Since all the factors, except the independent variables, must be controlled and held constant in explanatory research, it is not suited for most business studies. For these reasons, an explanatory approach was not adopted for this research.

4.3.4 Combining Exploratory and Descriptive Research

The literature review in Chapter 2 and 3 revealed gaps in the existing body of knowledge relating to the research problem. It was necessary to use exploratory research to have a better understanding of the research problem. As discussed, it is acknowledged that exploratory research that is solely qualitative in nature is very subjective, and also that the small sample size used for this research makes it impossible to generalise the findings, or to meet the research criteria of validity and credibility. However, following the first phase of the study, designed to fulfil the objectives of the study, aimed to not only to identify the research problem in detail, but also to obtain a complete and accurate description of the Indian dolomite refractory industry capability and preparedness for exporting to international market. Data collection for this phase involved interviews and focus groups. The second and complementary/supportive stage was descriptive. As discussed in Sub-Section 4.4.5, quantifiable data was collected through a questionnaire survey using a five-point Likert scale for measurement of survey responses. This enhanced the validity of
findings, and contributed to their generalisability. A model for this two-phase design is provided in Figure 4.3.

Figure 4.3: Research Design

<table>
<thead>
<tr>
<th>Stage</th>
<th>Research Method</th>
<th>The Research Design</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Qualitative</td>
<td><strong>Exploratory</strong></td>
<td>Dominant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collect background information</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Quantitative</td>
<td><strong>Descriptive</strong></td>
<td>Complimentary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Obtain complete and accurate description</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Generalize the findings</td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed for this Research

4.3.5 Unit of Analysis

Taking the objectives of this study, to formulate the appropriate marketing strategies needed for the Indian dolomite refractory producers to enter the Malaysian steel industry, the researcher needed to identify the unit of analysis. For any study, the unit of analysis can be defined as the entity being investigated, whether it be an empirical object, an individual, or group (Davies 2005). Accordingly, the Malaysian steel industry, dolomite refractory producing firms, and an expert in the industry who is also involved in promotion of trade, constituted units of analysis for this study. Due to time and resource constraints, it was necessary to confine the study to the steel manufacturers located in Klang (State of Selangor) and Kemaman (State of Terengganu) of Malaysia only.
4.4 Data Collection

This section discusses the techniques for collecting secondary and primary data in order to test the research proposition that were developed in Chapter 3. The research design provided a two-stage approach, involving dominant qualitative approach followed by complementary quantitative approach.

4.4.1 Secondary Data Collection

Chapters 2 and 3 contained the secondary data that emerged from the literature review. The sources were written documents and published information such as books, journals, government publications, periodicals and newspapers and such data that can be accessed through the perusal of the recorder, published information or the internet (Saunders et al. 2003; Sekaran 2003). It was admitted that secondary data are generally accessible (Malhotra 2010) and are likely to have other advantages as compared to primary data, such as permanence (Easterby-Smith et al. 2008). Also, acquiring secondary data saves time and cost. However, the most important limitation of relying on secondary data is its potential for being obsolete, or not meeting the specific needs of a particular situation (Davies 2005; Sekaran 2003; Zikmund et al. 2010).

4.4.2 Primary Data Collection

Figure 4.4 illustrates the plan adopted for this study in order to collect primary data. Primary data are likely to be of greater quality as compared to secondary data (Easterby-Smith et al. 2008). The primary qualitative data was collected through Expert Panel Interviews and Focus Group Discussion. Quantifiable data was collected through questionnaire survey as discussed in the following sections.
Figure 4.4: Data Collection Plan and Instruments

The Expert Panel and Focus Group Protocol enables the researcher to probe more deeply into the ways in which it is perceived as value added. The open-ended format of the interview protocol brings out more information than that might be revealed through the structured questionnaire format (CCSSO 2010). For obtaining open-ended responses from expert panel individuals (interviews) or group (focus group), the researcher may use a number of interviewers or focus group leaders. What follows are sample scripts (protocols) for the interviewers or focus group leaders and also a set of expert panel and focus group questions to use in conducting the interviews or focus group sessions. The researcher acted as the moderator for the purpose.

The expert panel and focus group can: (1) gather information that will help interpret the questionnaire response if needed; and (2) pre-test a questionnaire, thereby enabling it to be revised before it is widely used (CCSSO 2010). The selection process for the eight-member expert panel is explained under subsection 4.4.3 and that for the nine member focus group is provided under subsection 4.4.4. These nominated key individuals for the expert panel and focus group were those that are familiar with the topic, known for their ability to respectfully share their opinions, and willing to
volunteer about two hours of their time. All eight members of the expert panel and nine members of the focus group signed their consent forms.

As described in subsection 4.4.5, even though the questionnaire survey was pre-tested by these knowledgeable persons for the purpose of assessing whether it is understood and appropriate for use, the purpose of discussing it with the expert panel and focus group was to confirm its suitability, enabling the researcher to revise it before sending it to all the 150 participants (CCSSO 2010). The process of developing the survey questionnaire from the research questions is explained in detail under Section 4.4.5.

4.4.3 Expert Panel

Panels are another source for collecting direct information for the purpose of a research. Expert panel consists of individual expert members with expert knowledge in the area of study (Eriksson & Kovalainen 2008; Wilson 1990). Focus groups meet for a one-time group session, whereas panels meet more than once, if required, in cases where the effect of certain intervention is to be studied over a period of time (Sekaran 2003). It can be either static (same members continue) or dynamic (panel members changed), especially when several aspects of the products are to be studied from time to time. The advantage of the panel is that it offers a sound and sensitive measurement of issues. The sole disadvantage is that it becomes time consuming and costly, if more than one meeting is required (Denzin & Lincoln 2008).

Selection and Composition of the Expert Panel - The researcher, using his contacts, identified several key persons in the steel industry in Klang and Pahang who have vast experience and knowledge in steel making. After approaching and discussing the research topic with a few of them, five persons agreed to participate and became the members of expert panel. Two representatives from the refractory manufacturing industry and a refractory marketing specialist also joined the panel.

Conducting the Interviews - Interviewing can be thought of as a conversation with the purpose of finding out what is in the mind of the interviewee (Cassell & Symon 1994; Wilson 1990). It is important to note that an interview used in research is only
conducted on the basis that the person is knowledgeable (Emory & Cooper 1991). For this study, face-to-face interviews were used as they were considered to be the most effective technique for the purposes of this research. This enabled the researcher to adapt the questions as required, and as necessary, clarify the doubts by repeating or re-phrasing the questions. The researcher could also gauge the non-verbal expressions from the respondents (Eriksson & Kovalainen 2008).

4.4.4 Focus Group

The focus group is a special qualitative research technique (Neuman 2006) that collects information through group interaction on a research topic. The researcher’s interest provides the focus, while the information comes from the group interaction. Focus group is a convenient and quick way of collecting data from a number of people at the same time (Davies 2005).

In a focus group, the participants are encouraged to talk to each other to share their views. This method is therefore useful for exploring the participants’ knowledge, viewpoints and experiences. It is well suited for the examination of what people think, how they think and why they think in a specific way (Creswell 2009). Focus groups can also help to minimise the potential difficulties, such as proficiency of language, of a few people in the group, and may also encourage the participation of the people who are tired of the interviewer and who are anxious about talking (Denzin & Lincoln 2008).

Selection and Composition of the Focus Group - Careful thought was given to the size and membership of the group in order to ensure that the group discussions were not dominated by one or two stronger participants (Denzin & Lincoln 2008). Another criterion for selection was the diversity of interests of the participants. For meeting the objectives of this study, it was important to formulate a focus group with substantial variations between the respondents in order to allow contrasting opinions to be heard (Davies 2005).

Guided by this, the focus group comprised nine participants deemed to be relevant for this research. They were:
i) Six representatives from the steel-making industry.

ii) Two representatives from the dolomite refractory manufacturing industry.

iii) A dolomite refractory marketing specialist

Planning the Focus Group Meeting - The focus group sessions must be relaxed and they should be conducted sitting in a circle as it helps to create the right atmosphere (Creswell 2005). A focus group meeting was held on 23 January, 2011 over tea in a meeting room of a respectable hotel in Kuala Lumpur.

Prior to the meeting, the researcher telephoned the identified members to reconfirm their interests and participations. An Information Sheet outlining the purpose of the research and the functions of the focus group was sent to each of them. The participants were also provided with the forms of informed consent that stated clearly the purpose of the research study (Robson 2002). It also reassured the members that:

- i) Their participation was voluntary and that they could withdraw at any time without giving a reason.
- ii) Their names would be kept confidential.
- iii) A record of the meeting would be given to them for their comments.
- iv) They could communicate directly with SCU if they had any grievances.

After receipt of the signed Informed Consent Form from each of the members, the researcher proceeded with the arrangements for the meeting.

Conducting the Focus Group Meeting – regardless of group dynamics which may vary, the group facilitator must not be involved with the content of the research (Cavana et al. 2001; Easterby-Smith & Jackson 2008). The researcher managed the process guided by this principle. Acting as a moderator and the facilitator, the researcher allowed members of the group to retain control of the discussions in order to gain the full benefits of their candid views. As some of the issues were sensitive, the discussions were not tape-recorded but detailed notes were taken during the meeting, which lasted for about ninety minutes.
Since this study is confined to a very specific product and geographic location and is not meant to be generalised (which is also one of the limitations of this study as acknowledged in Section 6.6), acting as a moderator and the facilitator allowed the researcher to act as a study designer (CCSSO 2010).

The representatives from the steel making industry were from three different firms. Three of them were from state of Pahang and the other three were from two different firms in Klang Valley. The rationale for having two representatives from the dolomite refractory manufacturing firms and a marketing specialist was to let them listen to the views from the user industry so that issues like quality or packaging of the dolomite refractories could be heard directly from the representatives the steel plants. The focus group participants were recruited through a nomination process, which is deemed as a proper way of recruiting the members. Key individuals nominated the participants whom they thought were familiar with the topic and willing to share their opinions (Eliot & Associates 2005).

The selection of the venue for the meeting was partly the choice of the participants. A respectable hotel in Kuala Lumpur was the first choice of the focus group members. The hotel was away from the downtown area and it was the felt that this particular hotel was the most convenient place to for the meeting. The members felt comfortable and the atmosphere was right.

There were twelve questions re-cast as statements for the focus group discussion (see Appendix E). The following discussion protocols were adhered to throughout:

i. The researcher did not do much of the talking, at the most speaking 5–15 per cent of the time.

ii. The researcher did not ask leading questions or questions that were too restrictive.

iii. The researcher did not let participants drift off the focus, which was more likely in a group than with an individual. But at the same time the researcher was flexible about their responses to questions and did not restrict them to answering the questions in the order that he had written them in.
iv. The researcher understood that there were no right or wrong answers, only the respondents’ opinions.

v. The researcher did not ever give the respondents his opinions on the topic as this may have encouraged them to give responses intended to please the researcher.

vi. The researcher had to ask questions that probed. If any respondent gave a vague response, the researcher asked them to qualify it (e.g. ‘What do you mean by that?’), but did not give them a response to agree to (e.g. ‘Do you mean this?’).

vii. The researcher did ask the respondents to qualify what they meant when they used any jargon.

viii. The researcher did not allow any dominant personality to control the discussion.

The expert panel interviews and focus group discussion were conducted at different times to ensure strict confidentiality.

4.4.5 Sample Survey

A sample survey is a method of primary data collection (Zikmund et al. 2010) from which information is collected from a population of interest based on communication and responses of a sample drawn from that population. Sample survey methodology was also used for primary data collection, because it is proven to be a quick, inexpensive, efficient and accurate means of data collection (Gay & Diehl 1992; Zikmund et al. 2010). For this study, cross-sectional data collection at a specific single point in time was clearly appropriate, rather than a longitudinal survey carried out at more than one point in time, which would have been impractical. Of the two main data collection methods used in sample surveys, namely questionnaire survey and structured interview, the questionnaire survey method was used for this research, as discussed in the following sub-sections.

Questionnaire Survey - This research instrument permitted the gathering of information through the use of a questionnaire. As shown in Figure 4.5, there are three essential steps relating to the conduct of a questionnaire survey.
Modality for Questionnaire Completion - Questionnaires can either be completed by the interviewer or by the respondent. In respect of the former, the interviewer presents the questions verbally to the respondents and records their responses (Eriksson & Kovalainen 2008). With regard to the latter, the respondents read and filled out the questionnaire by themselves. The advantages and disadvantages of interviewer and respondent completion are shown in Table 4.4.

In this study, the mode of respondent completion was selected as it was less expensive and easier to administer in comparison to the interviewer completion mode. The questionnaires were sent to the respondents either by email, fax or in some instances by personal delivery.

Choosing the preferred instrument of data is dependent on the context of the research study, resources and costs that are available for the purpose of gathering data (Easterby-Smith et al. 2008).
Table 4.4: Interviewer versus Respondent Completion

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Interviewer completion</th>
<th>Respondent completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>More accuracy</td>
<td></td>
<td>Cheaper</td>
</tr>
<tr>
<td>Higher response rates</td>
<td></td>
<td>Quicker</td>
</tr>
<tr>
<td>More complete answers</td>
<td></td>
<td>Relatively anonymous</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher cost</td>
<td></td>
<td>Patchy response</td>
</tr>
<tr>
<td>Less anonymity</td>
<td></td>
<td>Incomplete response</td>
</tr>
</tbody>
</table>

Source: Adapted from Ticehurst & Veal (2000)

Survey Sampling and Target Population - Although surveys are excellent tools for obtaining answers to research questions, they can be harmful to the research if they are not targeted correctly (Zikmund 1988). The researcher ensured that this was done properly and gave emphasis to the design of the survey sample. A full account was taken from the target population and the sampling method in order to decide on the size and composition of the sample.

The Target Population - A sample from a specified large group as the target population was selected and the results from this sample were generalised (Neuman 2006). The target population for this thesis comprised the key personnel employed in the steel industries. They were chosen from the top management, executives from the steel making department, personnel from material planning and procurement department and accountants from finance. The dolomite refractory manufacturers, their associates, support agencies, marketing experts and academia were also included.

The Sampling Method - There are two types of sampling methods. They are:

i. Probability
ii. Non-probability sampling
Considerations in choosing the most appropriate sampling method are set out in Table 4.5.

**Table 4.5: Sampling Methods**

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Design Type</th>
<th>Probability</th>
<th>Non-probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cost</td>
<td></td>
<td>More costly</td>
<td>Less costly</td>
</tr>
<tr>
<td>2. Accuracy</td>
<td></td>
<td>More accurate</td>
<td>Less accurate</td>
</tr>
<tr>
<td>3. Time</td>
<td></td>
<td>More time</td>
<td>Less time</td>
</tr>
<tr>
<td>4. Acceptance of results</td>
<td></td>
<td>Universal acceptance</td>
<td>Reasonable acceptance</td>
</tr>
<tr>
<td>5. Generalisability</td>
<td></td>
<td>Good</td>
<td>Poor</td>
</tr>
</tbody>
</table>

Source: Adapted from Davies (2005)

i) **Probability Sampling:**

In probability sampling, the elements in the population have some known chance or probability of being selected as sample subjects. This method has been used for studies that have a large sample size from which the results can be generalised (Eriksson & Kovalainen 2008). Probability sampling is more costly and difficult to administer. This sample design was therefore not used.

ii) **Non-probability Sampling:**

In non-probability sampling, the elements in the population have no probabilities attached for them being chosen as samples subjects. This provides an implication that the findings of the research cannot be generalised confidently to a population (Easterby-Smith & Jackson 2008). Non-probability sampling is generally used by qualitative researchers and not by their
representatives who decide the way people are to be selected. Non-probability sampling is relevant to the research topic (Cooper & Schindler 2006).

There are three broad categories of non-probability sampling, namely, convenience, quota and judgmental sampling.

i) **Convenience Sampling**

This involves collecting information from members of the population who are conveniently available. They can, therefore, be chosen quickly and inexpensively. Convenience samples are used in descriptive and exploratory research, where money and time are crucial constraints (Denzin & Lincoln 2008).

ii) **Judgemental Sampling**

It is sometimes important to get hold of the information from specific groups of targets possessing the type of information that is required for the research. They are often used because they are generally inexpensive and the procedures are less time consuming (Davies 2005).

iii) **Quota Sampling**

This is a sub-type of the judgmental sampling which ensures that certain groups are adequately represented in the study through the assignment of a quota. Quota sampling is important when a population sub-set is under represented in the target population (Eriksson & Kovalainen 2008).

**Chosen Sampling Method** - Steered by the advantages of the different types of non-probability sampling, the researcher adopted the combination of judgemental and quota sampling. Judgemental sampling was used as there were limited categories of people with the specific information required for this research. By using quota sampling, the researcher was able to include representatives of the target population who were under-represented.
The Sample Size - Sample sizes must be greater than 30 but less than 500 for most studies (Bazekly 2003). Guided by this, 150 respondents were selected for participation in the survey questionnaire. All the participants were chosen on the personal judgement of the researcher that they were best suited to present the views of the target population (Denzin & Lincoln 2008).

The researcher acknowledged that the small sample size may not permit the findings of the research to be generalised. It should be explained that many of the senior personnel in the steel mills were not forthcoming as they felt that divulging the information could be contrary to the policies of the company, as such information might be regarded as confidential.

Figure 4.6 represents the total number of survey participants (150) and the members from each group.

Figure 4.6: Composition of Survey Sample

Source: Developed for this Research

i) The first group, coded A, comprised 15 participants. They were from the dolomite refractory manufacturing firms that had just commenced exports or were already exporting.
ii) The second group, coded B, had 81 participants from the largest steel mill in Malaysia. They included 7 officers from senior management, 21 engineers, 45 support staff and 8 from the purchase and finance department.

iii) The third group, coded C, had 33 participants from the second largest steel mill in Malaysia. They included 5 officers from senior management, 8 engineers, 16 support staff and 4 from the purchase and finance department.

iv) The fourth group, coded D, had 21 participants. They were from government support agencies, the Indian Refractory Manufacturing Association and members of the academia.

**Designing the Questionnaire** - A survey questionnaire is as good as verbal questioning or interviewing (Zikmund 2000). Emphasis was, therefore, given to the design of the questionnaire. Guided by Zikmund (2000), a few factors were taken into consideration in order to ensure the accuracy and relevancy of the questions. The key design issues concern the nature and wording of the questions, the length and number of questions, sequencing the questions and the layout (Zikmund 2000).

Guided by the objectives of the study, and keeping in mind the target population and cost considerations, the researcher used only pre-coded questions for achieving accuracy and relevancy (Easterby-Smith & Jackson 2008).

i) Nature of the Questions: ‘Quasi-filter’ questions are those that include a choice answer such as ‘no opinion’, ‘unsure’ or ‘neutral’ (Eriksson & Kovalainen 2008). Quasi-filtered questions were used in the questionnaire as some of the topic areas were sensitive but nevertheless, important for the research. The quasi-filter questions provided an opportunity for the respondents to take a neutral position if they were reluctant to give their views on the matter.

ii) Wordings of the Questions: The questionnaire’s language must be approximate to the understanding level of the respondents (George 2005). A researcher must take extra care if the participants are heterogeneous or come from different situations of life than his or her own (Denzin & Lincoln 2008).
Particular attention was therefore given to the wordings of the questions in order to secure valid and reliable information and to give the respondents the feeling that they understand the questions.

iii) Number of Questions and Questionnaire Length: Researchers tend to prefer long questionnaires as they are more cost effective. However, respondents are normally busy people and are generally reluctant to fill in long questionnaires, so a short questionnaire of two to three pages was regarded as appropriate (Marshall & Rossman 2006). As a result, a three-page draft questionnaire with twelve questions was prepared by the researcher for pilot testing.

iv) Sequencing: The Funnel approach (Luster 2008) was adopted for sequencing the questions. This facilitated the easy and smooth progress of the respondents through the items in the questionnaire. Questions of a general nature and those that are relatively easy to answer were placed at the beginning with more difficult ones towards the end.

v) Questionnaire Layout: The questionnaire must be neat, clear and easy to follow (Marshall & Rossman 2006). This is particularly valid in mail and web questionnaires. Three knowledgeable persons: an academician in the industry, the general manager of one of the steel plant, and a marketing expert, advised the researcher on the layout of the questionnaire, which was then pilot-tested before finalisation (Marshall & Rossman).

**Attitude Rating Scales** - The research propositions and the statements in the questionnaire were aimed at collecting quantitative data. Hence, an important step of the research design exercise is to select an appropriate scale for the measurement of attitude (Merriam 2009). There are two main categories of attitude scales: the ranking scale and the rating scale. Ranking scales require the participants to rank the choices and make comparisons. Rating scales, however, have some categories of responses that require the participants to choose categories that are best representative of his or her attitude towards a particular subject (Sekaran 2008).

The ranking scale was not held to be suitable because the research statements did not require the respondents to rank their choices. The research statements in the
questionnaire only required the respondents to provide their opinions or views on each statement. The researcher decided that a rating scale would be used instead of a ranking scale (Onwuegbuzie & Leech 2006). Rating scales are used widely for the measurement of attitudes in a particular business arena (Neuman 2006). As a result, a Likert Scale was chosen for this research.

This is a popular scale because it is easy to administer. Respondents indicate the degree of agreement or disagreement to each research statement on a five points scale (Miles & Huberman 1994). The five points are ‘strongly agree’, ‘agree’, ‘neutral’, ‘disagree’ and ‘strongly disagree’. To measure attitudes, scores are assigned to the alternative responses. The respondents simply need to indicate their answers by circling or putting a tick to the chosen answer. The Likert scale is best suited for drawing a distinction in the attitudes of the respondents in the survey (Luster 2008). Table 4.6 shows the Likert scale with the assigned scores of 1 to 5 to measure the interviewees’ responses.

**Table 4.6: Five-Point Likert Scale**

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Adapted from Ticehurst & Veal (2000)

**Pilot Testing of Questionnaire** - It is crucial to test the survey beforehand (Kumar 2007). This is to ensure that the questions are easily understood and are appropriate for the testing of the research propositions. Three knowledgeable persons were requested to complete the draft questionnaire and to give their comments and views. The purpose was to determine whether:

i) The number of questions was appropriate

ii) The questions were relevant to the research
iii) They were easily understood

iv) The questions were clear and unambiguous

v) If any of the questions were of a sensitive nature

vi) The questionnaire was of the appropriate length to secure a good response rate and retain the respondent’s interest

The knowledgeable persons advised that the number of questions should be reduced from sixteen to twelve. They also suggested that the questionnaire should be confined to less than four pages with some amendments made to a few of the questions and to ensure that they were more comprehensible from the point of view of the respondents. Guided by these suggestions, the questionnaire was finalised with twelve pre-coded questions. These were rephrased as statements to permit attitude measurement.

4.5 Reliability and Validity

This section discusses the measures taken in order to collect valid and reliable data for research analysis. These are primarily related to reliability, validity and triangulation as discussed in the sub-sections.

4.5.1 Reliability

As Zikmund et al. (2010, p.305) point out, ‘Reliability is an indicator that measures internal consistency’. Although reliability is concerned with stability and consistency in measurement, it may still be subject to error because of participant error, participant bias, and observer error and observer bias (Robson 2002). In line with Cooper and Schindler (2006), the researcher endeavoured to meet the criteria for reliability through the following measures:

i) The selection of the expert panel and focus group participants with similar demographic and socioeconomic features, in terms of lifestyle, job classification, education, years of experience and levels of responsibility in their respective organisations.
ii) Pilot testing the questionnaire survey by knowledgeable persons ensured that the wordings of items in the questionnaire were coherent, consistent and were easily understood. This improved the reliability of the questionnaire survey (Kumar 2005).

iii) Ensuring that all the items in the questionnaire survey covered the range of the research issues that were being measured. This satisfied the criteria for content validity (Kumar 2005).

iv) Combining qualitative and quantitative methods in a complementary manner and by drawing on the strengths of both the methods, the research design provided for more valid and reliable findings (Bradley & Schaefer 1998). The qualitative approach provided useful insights on the research conducted. The quantitative design for the second stage of the research required the collection of value-free data and controlled bias and permitted objectivity (Stockton & Clark 2009).

v) Use of clear and simple words to avoid ambiguity, misunderstanding and misinterpretation by the participants.

vi) The provision of a Discussion Guide and Information Sheet to the focus group and expert panel participants to enable them to give informed views on the research issues.

vii) The use of closed-ended questions in the questionnaire encouraged response because of the quick and easy way to reply.

viii) The use of a five-point Likert scale in the questionnaire to accurately measure variability in the responses.

ix) The use of triangulation or multiple sources of data and evidence. This was achieved through the use of the expert panel for personal interviews, the focus group meeting, and the questionnaire survey. This triangulation methodology also strengthened internal validity (Creswell 1994).
4.5.2 Validity

Reliability and validity are usually complementary, but at times they may conflict with each other (Neuman 2006). The integrity of measurement is mainly evaluated in terms of reliability and validity. Reliability is concerned with stability and consistency in measurement whereas validity is concerned with whether the right concept is being measured. Lack of validity introduces systematic error, while lack of reliability introduces random error (Davies 2005). The researcher endeavoured to meet the criteria for reliability and validity through the measures detailed in the above subsection.

4.5.3 Triangulation

According to Saunders, Lewis and Thornhill (2003, p. 99), ‘triangulation refers to the use of different data collection methods within one study’. Triangulation provides support to the findings by showing them the independent measures that agree to it or at least do not contradict (Eriksson & Kovalainen 2008). Triangulation of findings can circumvent the personal biases of investigators and overcome the deficiencies that are intrinsic to a single-investigator, single-theory, or single method study, thus enhancing the validity of the findings (Easterby-Smith & Jackson 2008). Therefore, in order to improve the validity of the data collected, the researcher adopted:

i) **Data triangulation** to enhance construct validity through the use of data from multiple sources, to include primary data obtained from expert panel interview and focus group meetings, a questionnaire survey and secondary data from literature review.

ii) **Methodological triangulation** to increase internal and external reliability and validity. This included the triangulation of using the mixed methods of qualitative and quantitative approaches (Patton 2002).

4.6 Data Analysis

As stated in Section 4.2.3, this research comprised two stages. The first stage which was exploratory required the collection of qualitative data. This was done through an
expert panel interviews and the focus group meeting. The second stage was descriptive in nature and it relied on quantifiable data which was collected through the use of the questionnaire survey. The data analysis procedures for this research therefore comprised both the qualitative and quantitative data analysis.

4.6.1 Qualitative Data Analysis

Qualitative data is represented in the form of text or words, which means the researcher had to interpret the data obtained (Blaxter et al. 2006). The data analysis activity for qualitative data commenced with taking detailed notes during the personal interviews. The verbatim notes were then summarised in a methodical manner for identifying emerging themes or patterns.

The usual procedure is to tape record the discussion of a focus group meeting and for the researcher to produce a summary of the meeting (Patton 2002). This was not permitted by some of the focus group members. The researcher therefore took detailed notes of the meeting to draw out key elements of the discussions that were related to each of the research questions. The data analysis process comprised the following steps:

i) The first was data reduction. This involved the process of condensing data through summarizing and coding procedures (Eriksson & Kovalainen 2008).

ii) The second was to code the collected data to make them manageable and to facilitate the identification of themes and categories.

iii) The third was data display. This involved the display of the reduced data in diagrams and charts to facilitate the interpretation of the data.

iv) Guided by Patton (2002), the fourth was the content analysis of the coded and displayed data in order to locate patterns (Denzin & Lincoln 2008).

v) The researcher then investigated themes between the categories and drew conclusions. They are presented in Chapters 5 and 6.
4.6.2 Quantitative Data Analysis

Quantitative data for this research was collected through the questionnaire survey with a Likert scale for attitude measurement. The data analysis of the data comprised editing, coding, transcribing, and cleaning the data. In line with Guba and Lincoln (1994), the data was:

i) Edited: The questionnaires were reviewed to identify eligible, incomplete, inconsistent or ambiguous responses.

ii) Coded: This involved translating the collective data into codes for the purpose of computer analysis.

iii) Transcribed: This involved converting survey responses into a form that could be analysed by the computer.

iv) Cleaned: This involved checking for consistency and treatment of the missing data.

Guided by Manning and Munro (2007), and Steed and Price (2008), the data were analysed using Statistical Package for the Social Science (SPSS) version 19 and the output of the descriptive analysis included:

i) A Case Processing Summary

ii) Group Percentage Cross Tabulations of survey response for each statement

iii) Comparison of Mean responses for each Proposition

iv) Standard Deviation by Groups for each Proposition

v) The Responses to the three Statements for each Proposition by Groups

vi) Pearson Product Moment Correlations (Correlation analysis)

vii) Principal Component Analysis (Factor analysis)

4.7 Ethical Considerations

In conducting business research, the researcher is required to address a number of moral and ethical issues (Churchill & Brown 2004). Several ethical obligations are
placed on the researcher, including their own personal behaviour (Flick et al. 2004).

In academic research, there are generally three concerned parties: the researcher, the university and the respondents. The interactions of all these three parties identify a series of questions that are ethical in nature (Denzin & Lincoln 2008).

The approval of the SCU Ethics Committee was a prerequisite for the primary data collection exercise. This was necessary as the University has to comply with the provisions of the ‘National Statement on Ethical Conduct in Research Involving Humans’. This clearly sets out the nature and type of human research and includes interviews, focus groups or surveys (http://www.nhmrc.gov.au).

For the purpose of submitting an application to the SCU Ethics Committee, the researcher adhered closely to the University’s Guidelines, which stressed:

i) Informed Consent – focus group participants had to sign a form stating that:
   a. Participation: This was voluntary.
   b. Respondent: He/she retained the right to withdraw even after agreeing in writing to participate.
   c. Grievances: If a respondent has a complaint against the researcher, he/she could make a complaint to the University.

ii) The need for all voluntary participants to be fully informed on the purposes and all aspects of the intended research. The participants of the questionnaire survey and the focus group were provided with an Information Sheet which:
   a. Outlined the research.
   b. Covered grievance: if a respondent had a complaint against the researcher, he/she could make a complaint to the University.
   c. Stated that privacy issues will be safeguarded and the information provided by the respondent would be kept confidential and would not be divulged to a third party other than the University. Furthermore, if a respondent wished to remain nameless, that would be respected.
The above points were detailed in the Informed Consent Forms, which were signed by the participants in the focus group. The Informed Consent Forms and the Information Sheets are attached as Appendices A, B and C. The primary data collection exercise commenced after the receipt of the formal approval (ECN-10-35) from the SCU Ethics Committee.

4.8 Conclusion

This chapter discussed the research approach and design to justify the use of two-stage mixed methodology. It rationalised a two-stage research process, the first, exploratory (qualitative) and the second, descriptive (quantitative) in nature. This was followed by the discussion of the instruments for data collection and the procedure for data analysis. Finally, it described the measures taken to address the research quality and ethical issues. The next chapter presents the data analysis for this research.
CHAPTER 5: DATA ANALYSIS

5.1 Introduction

The data collection for this study involved two stages, the first being qualitative and the second being quantitative. The qualitative data was collected through personal interviews with the Expert Panel and from discussions in Focus Group meetings. Quantitative data was collected through a Questionnaire Survey. This chapter provides the analysis of the primary data collected for this research.

5.1.1 Chapter Structure

This chapter has seven sections as follows:

• Section 5.1 introduces the chapter and discusses the analysis process and outlines of the chapter structure.
• Sections 5.2 to 5.5 analyse the qualitative and quantitative data and present the results of the data analysis that relate to each of the twelve Statements grouped under the four Research Propositions.
• Section 5.6 includes the ‘unplanned data’, unsolicited data outside the scope of the study, offered by the participants from the Expert Panel and the Focus Group.
• Section 5.7 is the conclusion to this chapter.

5.1.2 Details of Primary Data Collection

The Expert Panel comprised eight participants, whereas the Focus Group had nine participants. The Questionnaire Survey involved 150 respondents across the industry. They were categorised into four groups and were selected on the basis of judgmental and quota sampling.

Both the qualitative and the quantitative data collected were used to test the four research propositions that emerged from the literature review. The responses received from the respondents in the questionnaire survey were measured using the five-point
Likert scale and analysed using SPSS version 19 to identify patterns and relationships among the statements. To ensure that the data was trustworthy and valid, methodological triangulation involving the expert panel, the focus group and the questionnaire survey was used. The results were then summarised and tabulated as follows:

i) Group percentage cross tabulations of survey response for each statement - To find out the distribution of groups.

ii) Comparison of mean responses for each proposition - To gauge the perceptions of the respondents for each statement as to whether they agree or disagree.

iii) The Standard Deviation by Groups for each Proposition - To find out the minimum and maximum fluctuations within the groups.

iv) The Responses to the three Statements for each Proposition by Groups - To assess the overall acceptance or rejection or inconclusive result for each statement.

v) Pearson Product Moment Correlations (Correlation analysis) - To show the relationship between two variables. The relationship can be strong or weak, positive or negative.

vi) Principal Component Analysis (Factor analysis) - To examine the factors that are relevant to this research study.

vii) Reliability Test -To know the consistency within a single factor/among the factors.

viii) Validity Test [CFA, Convergent Validity (FL) and Discriminant Validity (AVE)]-To test whether measures of a construct are consistent with nature of the construct.

As shown in the Case Processing summary, presented as Table 5.1, the response rate was 96 percent, as 144 out of 150 participants responded to all 12 statements. The survey participants were located in the Klang Valley, the state of Pahang, and India.
Table 5.1: Case Processing Summary

<table>
<thead>
<tr>
<th>Research Propositions</th>
<th>Cases</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPO 1</td>
<td></td>
<td>144</td>
<td>96.0</td>
<td>6</td>
<td>4.0</td>
<td>150</td>
</tr>
<tr>
<td>RPO 2</td>
<td></td>
<td>144</td>
<td>96.0</td>
<td>6</td>
<td>4.0</td>
<td>150</td>
</tr>
<tr>
<td>RPO 3</td>
<td></td>
<td>144</td>
<td>96.0</td>
<td>6</td>
<td>4.0</td>
<td>150</td>
</tr>
<tr>
<td>RPO 4</td>
<td></td>
<td>144</td>
<td>96.0</td>
<td>6</td>
<td>4.0</td>
<td>150</td>
</tr>
</tbody>
</table>

Source: Analysis of Survey Data

5.2 Data Analysis for Research Proposition 1

Research Proposition 1:

The Malaysian steel manufacturers are reluctant to use Indian dolomite refractories.

Proposition 1 targets the need to understand the reasons for the Malaysian steel manufacturers’ reluctance to use the Indian dolomite refractories for steel making applications, despite the known expertise and product quality of the Indian dolomite refractories. This included the understanding of the present status of the Malaysian steel industry, the quality of key personnel in this industry and their business culture. This forms the strategic information for the Indian dolomite refractory manufacturers that are planning an entry into the Malaysian market. The statements presented below formed the basis of the discussion topics for the Expert Panel Interviews and Focus Group discussion.

Statement 1 (S1) - Malaysian steel manufacturers are not aware that India is now a major producer and exporter of quality dolomite refractories.

Statement 2 (S2) - Malaysian steel manufacturers are not technically receptive to use Indian dolomite refractories and hence their reluctance to import them.
Statement 3 (S3) - Malaysian steel manufacturers are inherently biased against Indian firms and hence have little desire to import Indian dolomite refractories, even if it is competitively priced and superior to products from other countries.

5.2.1 Expert Panel Interviews on Proposition 1

All the three Statements that relate to Proposition 1 were addressed in personal interviews with each member. The responses from these experts in their respective fields yielded a very wide range of perspectives and views. The results are summarised as follows:

- Most of the members of the panel seem to understand that India is one of the few manufacturers of good-quality dolomite refractories in the world and has a good source of raw materials available. But they added that they had not seen the products being regularly used in the international market as they catered mostly to the domestic market. As a result, more than half of the participants did not agree with S1.

- The response to the sharing of knowledge, technical know-how and comparison among themselves was something that all the participants claimed that they did not practise. Hardly anyone of them has ever visited other steel firms in the country. They cited confidentiality as one reason for not being aware of the success of the Indian dolomite refractories in other steel mills in the country. However, steel mills have expanded continuously by adding capacity and do make special grade steel. On that front, they have access to the latest technology and use advanced dolomite refractories as may be required by the steel making the process. Hence they did not accept S2.

- All participants from the steel mills did not agree that they had some bias towards Indian dolomite refractories, even though they expressed their bad experiences in the past with other products from India. So there is an image problem for the product as well as for the country. As a result, most of the panel members did not accept S3.
Finding: Considering all the expressed views in interviews, the Expert Panel members did not support Proposition 1.

5.2.2 Focus Group Views on Proposition 1

The Focus Group meetings of three participants each in the four groups were fruitful, with in-depth feedback for the three Statements. As the participants were drawn from different background and functional areas, members discussed their views with few inhibitions. The results were affirmative. Summaries of the discussions are as follows:

i) According to them, though they were aware of the availability of excellent quality dolomite refractories from India, they were mostly reluctant to use it. This was because they were happy with their traditional suppliers and were not keen to risk the change of suppliers. However, they maintained that they were aware of the source and hence did not accept S1.

ii) They agreed that all Malaysian steel manufacturers in general are not that receptive to new ideas and in conducting trials to improve productivity and efficiency. That was because they want to play it safe and also partly because of the lack of authority for the key personnel to make the decision to go ahead. As most of the steel manufacturers in the country are Chinese owned, with the owners directly getting involved in every decision making, they were unanimous in not supporting S2.

iii) Focus group members strongly disagreed with Statement 3, saying that it is the responsibility of the Indian firms to disseminate the necessary information to the steel manufacturers in Malaysia in order to enhance their competitive offering rather than blaming it on the Malaysian steel industry. They did not accept the logic of any bias towards the Indian suppliers, and overwhelmingly rejected S3.

Finding: From the discussions, the Focus Group did not support Proposition 1.
5.2.3 Questionnaire Survey Responses for Proposition 1

The analysis of the survey responses for Proposition 1 and each of the three Statements are set out in Tables 5.2 – 5.4. The results are shown below:

**Statement 1 (S1) -** Malaysian steel manufacturers are not aware that India is now a major producer and exporter of quality dolomite refractories.

### Table 5.2: Statement 1 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th>Statement 1</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly disagree</strong></td>
<td>Count</td>
<td>4</td>
<td>19</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>28.6%</td>
<td>24.4%</td>
<td>31.3%</td>
<td>25.0%</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>Count</td>
<td>7</td>
<td>47</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>50.0%</td>
<td>60.3%</td>
<td>53.1%</td>
<td>60.0%</td>
</tr>
<tr>
<td><strong>Uncertain</strong></td>
<td>Count</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>6.4%</td>
<td>9.4%</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>Agree</strong></td>
<td>Count</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>5.1%</td>
<td>3.1%</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Count</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>3.8%</td>
<td>3.1%</td>
<td>5.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As shown in Table 5.2, the following responses were given:

- A good majority (84%) of respondents rejected the statement that the Malaysian steel industry is not aware of the Indian source (26.4% strongly disagreed while 57.6% disagreed).
- A very small percentage of respondents, i.e. 9.1%, did accept this statement with 4.2% strongly agreed and 4.9% agreed with this statement.
- Only 6.9% were non-committal to the statement, the highest from Group C.
Finding: Based on this response, it is evident that a large majority of respondents, 84 percent, did not agree with S1.

Statement 2 (S2) - Malaysian Steel manufacturers are not technically receptive to use Indian dolomite refractories and hence their reluctance to import them.

Table 5.3: Statement 2 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Count</td>
<td>3</td>
<td>21</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>% within Group</td>
<td>21.4%</td>
<td>26.9%</td>
<td>25.0%</td>
<td>25.0%</td>
<td>25.7%</td>
</tr>
<tr>
<td>Disagree</td>
<td>Count</td>
<td>8</td>
<td>43</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>% within Group</td>
<td>57.1%</td>
<td>55.1%</td>
<td>56.3%</td>
<td>55.0%</td>
<td>55.6%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>Count</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>% within Group</td>
<td>7.1%</td>
<td>5.1%</td>
<td>6.3%</td>
<td>5.0%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Agree</td>
<td>Count</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>% within Group</td>
<td>7.1%</td>
<td>10.3%</td>
<td>9.4%</td>
<td>10.0%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>Count</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>% within Group</td>
<td>7.1%</td>
<td>2.6%</td>
<td>3.1%</td>
<td>5.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>% within Group</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As shown in Table 5.3, the following responses were given:

- Again, a large majority (81.3%) of the respondents did not accept the statement that they are not technically receptive to use Indian dolomite refractories (25.7% strongly disagreed while 55.6% disagreed).
- Only 13.2% supported the statement with 3.5% strongly agreeing while 9.7% only agreed with the statement.
- 5.6% was not committal to the statement above and the highest percentage was from Group A.
**Finding:** The result clearly indicated that a large majority of respondents, 81.3 percent, did not agree with S2.

**Statement 3 (S3)** - Malaysian steel manufacturers are inherently biased against Indian firms and hence are unlikely to import Indian dolomite refractories even if there are competitively priced and superior to products from other countries.

**Table 5.4: Statement 3 - Group Percentage Cross Tabulations**

<table>
<thead>
<tr>
<th>P1S3</th>
<th>Strongly disagree</th>
<th>Count</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% within Group</td>
<td></td>
<td>21.4%</td>
<td>20.5%</td>
<td>18.8%</td>
<td>20.0%</td>
<td>20.1%</td>
</tr>
<tr>
<td>Disagree</td>
<td>Count</td>
<td></td>
<td>7</td>
<td>44</td>
<td>19</td>
<td>11</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td></td>
<td>50.0%</td>
<td>56.4%</td>
<td>59.4%</td>
<td>55.0%</td>
<td>56.3%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>Count</td>
<td></td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td></td>
<td>14.3%</td>
<td>2.6%</td>
<td>3.1%</td>
<td>5.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Agree</td>
<td>Count</td>
<td></td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td></td>
<td>7.1%</td>
<td>10.3%</td>
<td>9.4%</td>
<td>10.0%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>Count</td>
<td></td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td></td>
<td>7.1%</td>
<td>10.3%</td>
<td>9.4%</td>
<td>10.0%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td></td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As shown in Table 5.4, the following responses were given:

- 76.4% of the respondents did not agree with the statement (20.1% strongly disagreed while 56.3% disagreed) and the highest group was from Group C, with 78.2%.
- Only 19.4% agreed, with 9.7% strongly agreeing with the statement.
- There were 4.2% who had no comments and Group A was the highest group, with an uncertain answer at 14.3%.
**Finding:** It was evident that respondents did not support S3.

### 5.2.4 Questionnaire Survey Data against Proposition 1

The comparison of mean responses and the Standard Deviations by various participants to Proposition 1 are shown in Figure 5.1.

**Figure 5.1: Comparisons of Mean Responses to Proposition 1**

![Bar chart showing mean responses and standard deviations for groups A, B, C, D, and Total]

Source: Developed from Survey Data

The mean rating for all the participants for the various responses is within 2.11 to 2.21 and the standard deviation is below 0.8. This means that, overall the respondents disagreed with the statements in Proposition 1 (Statements 1 to 3). Group C had the lowest mean with 2.11, and Group A had the highest mean with 2.21.

Table 5.5 below shows the groups’ responses to the three statements for Proposition 1.
Table 5.5: Focus Group Responses to the Three Statements for Proposition 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Disagree (%)</th>
<th>Agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Statement 1</td>
<td>78.6</td>
<td>84.6</td>
</tr>
<tr>
<td>Statement 2</td>
<td>78.6</td>
<td>82.1</td>
</tr>
<tr>
<td>Statement 3</td>
<td>71.4</td>
<td>76.9</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

Overall, about 80 percent of the respondents disagreed with the three statements. The highest percentage that disagreed with Statement 1 was from Group D, with Statement 2 from Group B, and Statement 3 from Group C.

5.2.5 Testing of Proposition 1

The results of the Questionnaire Survey indicated that Proposition 1 was not supported. This also conforms to the rejections from the expert panel and the focus group. As there is not much support for this proposition, this proposition is rejected.

5.3 Data Analysis for Research Proposition 2

Research Proposition 2:

The Indian government’s support policies and programmes to assist Indian exporting dolomite refractory firms to enter and successfully compete in the international market are ineffective.

Statement 4 (S4) - The Indian government’s support policies and programmes for actively promoting new international market penetration effort by the Indian dolomite refractory firms are not effective.

Statement 5 (S5) - The existing funding support and export incentive schemes provided by the Indian government do not help the Indian dolomite refractory industry to enter and effectively compete in the international market.
Statement 6 (S6) - The Indian government does not collaborate closely with Indian dolomite refractory firms in devising new policies and support measures for enhancing the international competitive positioning of the Indian firms.

5.3.1 Expert Panel Interviews on Proposition 2

There seems to be a general agreement in a number of areas:

i) The panel was of the view that the present policies and support framework provided for exports and manufacturing exports in particular were not effective at all because they were not in tune with changes that are already taking place in the global market. The present framework is more complicated with the involvement of too many government agencies whose work culture and ethics remained unchanged. Despite India’s gradual liberalisation of the market, economy and entry into various free trade agreements with different countries, like the CECA with Malaysia, the basic problems remain the same in the absence of strict implementation of the policies and programmes. The panel was of the view that the whole framework needed to be revamped and red tape should be removed. There was overwhelming agreement with S4.

ii) Most members in the panel felt that there was no funding support provided at all. Even the recently reintroduced export incentive schemes of Duty Draw Back (DDB) and the replacement for Duty Exemption Pass Book (DEPB) involved a cumbersome procedure to avail the benefits. Whenever there is a change in any scheme, the responsibility also gets transferred from one government department to another, which makes things even more difficult to follow up. Indirectly it becomes the norm for every export orders. Even securing the packing credit extended for export comes with a heavy interest burden. Securing the loan or refinancing even for export credit is by no means an easy process. All these are bottlenecks for the dolomite refractory firms to venture into the international market in a significant way. Results showed agreement with S5.
iii) Government policy-making agencies do not work hand in hand with the industry to understand and appreciate the problems. These agencies felt that the international market was another segment of the domestic market and that everything could wait. As a result, even the existing policy becomes obsolete because they did not add value to the industry and the system remains bureaucratic. Thus the government policy does not enhance the Indian firms’ competitiveness in the international market to promote exports. The panel accepted S6.

**Finding:** From the discussion of the Expert Panel, Proposition 2 is supported.

### 5.3.2 Focus Group Views on Proposition 2

The four focus group meetings addressed statements 4, 5 and 6, which relate to Proposition 2, i.e. that ‘the Indian government support policies and programmes to assist Indian dolomite refractory exporting firms with their efforts to enter the international market and successfully compete are not effective’. The focus group meetings generated a wide range of views and enabled the researcher to gain useful insights on the relevant issues. As far as the results were concerned, consensus was obtained in the following areas:

i) The focus group members were unanimous in their view that the present policies of the Indian government do not help the Indian exporters at all, as it was not in touch with reality. The present bureaucratic policies are a major stumbling block to the growth of the industry and export in particular. There is a desperate need for a comprehensive review of the redundant policies. There was unanimous acceptance of S4.

ii) There is no funding support provided for the development of international markets. Whatever export incentive schemes are in place for the manufacturing exports, they are too little and the most discouraging factor of all is the fact that obtaining such benefits is a difficult task because of the
procedural delays and red tape involved. Hence, this statement was fully agreed with. The Focus Group members are in agreement with S5.

iii) Although the Indian government policymaking bodies do invite the various industries to voice the problems they faced in the international market, the views expressed by the refractory industry are often ignored. Hence, the policy remains on paper just for name’s sake while the problems continue to cripple the industry. So far, there have been no concerted efforts to correct the situation. As a result, the Group members accepted S6.

**Finding:** According to the views expressed by the members of the Focus Group, Proposition 2 is accepted.

### 5.3.3 Questionnaire Survey Responses for Proposition 2

The analysis of the survey responses for each of the three Statements related to the Proposition 2 is summarised below:

**Statement 4 (S4)** - The Indian government’s support policies and programmes for actively promoting new international market penetration effort by the Indian dolomite refractory firms are not effective.
Table 5.6: Statement 4 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th>Statement</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2S4</td>
<td>Strongly disagree</td>
<td>Count</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>Count</td>
<td>2</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>Count</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Agree</td>
<td>Count</td>
<td>9</td>
<td>50</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Count</td>
<td>1</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As shown in Table 5.6:

- With respect to the respondents accepting Statement 4, 16.7% strongly agreed and 62.5% agreed with this statement. These were mainly from Groups B and Group C.
- A very small number of respondents were not in agreement to this statement as 2.8% strongly disagreed while 13.9% disagreed.
- Only 4.2% were non-committal to the statement.

**Finding:** Based on this response, it is evident that a very large percentage (79.2%) supports S4.

**Statement 5 (S5)** - The existing funding support and export incentive schemes provided by the Indian government do not help the Indian dolomite refractory industry to enter and effectively compete in the international market.
Table 5.7: Statement 5 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P2S5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>Count</td>
<td>3</td>
<td>13</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>21.4%</td>
<td>16.7%</td>
<td>18.8%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>Count</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>9.0%</td>
<td>9.4%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>Count</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>6.4%</td>
<td>3.1%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Agree</td>
<td>Count</td>
<td>3</td>
<td>18</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>21.4%</td>
<td>23.1%</td>
<td>21.9%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>Count</td>
<td>6</td>
<td>35</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>42.9%</td>
<td>44.9%</td>
<td>46.9%</td>
<td>45.0%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Likert-scale:** Strongly Disagree; Disagree; Uncertain; Agree; Strongly Agree

Source: Developed from Survey Data

As shown in Table 5.7, responses were as follows:

- A large group, i.e. 45.1%, claimed that they strongly agreed with the above statement, while 22.2% agreed with this statement. Thus, a total of 67.3% supported this statement.
- However, a small percentage of 18.1% strongly disagreed while 9.0% disagreed.
- A negligible percentage of 5.6% had no comments.

**Finding:** This result indicates very strong support for S5.

**Statement 6 (S6)** - The Indian government does not collaborate closely with Indian dolomite refractory firms in devising new policies and support measures for enhancing the international competitive positioning of the Indian firms.
Table 5.8: Statement 6 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2S6</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>% within Group</td>
<td>7.1%</td>
<td>10.3%</td>
<td>9.4%</td>
<td>10.0%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Disagree</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>13</td>
<td>5</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>% within Group</td>
<td>14.3%</td>
<td>16.7%</td>
<td>15.6%</td>
<td>20.0%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Uncertain</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>% within Group</td>
<td>14.3%</td>
<td>11.5%</td>
<td>12.5%</td>
<td>10.0%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Agree</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>28</td>
<td>12</td>
<td>7</td>
<td>52</td>
</tr>
<tr>
<td>% within Group</td>
<td>35.7%</td>
<td>35.9%</td>
<td>37.5%</td>
<td>35.0%</td>
<td>36.1%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>20</td>
<td>8</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>% within Group</td>
<td>28.6%</td>
<td>25.6%</td>
<td>25.0%</td>
<td>25.0%</td>
<td>25.7%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
<td>144</td>
</tr>
<tr>
<td>% within Group</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As shown in Table 5.8, responses were as follows:

- With respect to the bias against the Indian dolomite refractory firms, 61.8% support this statement, with 25.7% strongly agreeing and 36.1% agreeing.
- Only 9.7% strongly disagreed, while 16.7% disagreed, with another 11.8% being non-committal about this statement.

Finding: This Response indicates very strong support for S6.

5.3.4 Questionnaire Survey Data against Proposition 2

The comparison of mean responses and the standard deviations to Proposition 2 are shown in Figure 5.2.
Figure 5.2: Comparisons of Mean Responses to Proposition 2

![Comparison of Mean Responses to Proposition 2]

Source: Developed from Survey Data

The mean rating responses was maintained at 3.65, while the highest range was at 3.67 with the lowest range at 3.57. With respect to the mean and standard deviations, it is seen that a large number of respondents showed a strong agreement to the proposition, while those who disagreed were fewer in number. Once again, it is seen that the number of respondents who agree with the proposition are greater than those who do not agree. Thus, there was a greater support for Proposition 2.

**Finding:** The Questionnaire Survey suggested there is strong support for Proposition 2.

**Table 5.9: Focus Group Responses to the Three Statements for Proposition 2**

<table>
<thead>
<tr>
<th>Proposition 2</th>
<th>Disagree (%)</th>
<th>Agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group</td>
<td>A</td>
</tr>
<tr>
<td>Statement 4</td>
<td>Group A</td>
<td>21.4</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>Group C</td>
<td>21.4</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data
Table 5.9 shows the groups’ responses to the three statements for Proposition 2. Generally, 60.0% to 80.0% of the respondents agree to the three statements and the highest ‘agree’ percentage in S4 comes from Group B, for S5, from Group C and for S6, from Group A.

5.3.5. Testing of Proposition 2

The results of the Questionnaire Survey suggested strong support for Proposition 2. This is also in line with the Expert Panel and the Focus Group members.

5.4 Data Analysis for Research Proposition 3

Research Proposition 3 - The Indian dolomite refractory firms are less competitive compared to other sources that are regularly exporting to Malaysia.

This proposition deals with the views of the Malaysian steel manufacturers on the foreign non-Indian dolomite refractory suppliers. The supporting statements are:

Statement 7 (S7) - Their traditional dolomite refractory suppliers are well established in the Malaysian market as they have a longer presence and hence having advantage over newcomers like the Indian dolomite refractory manufacturers.

Statement 8 (S8) - Their traditional dolomite refractory suppliers have a better image in the international market and hence they perform better and are more successful in Malaysia.

Statement 9 (S9) - Their traditional dolomite refractory suppliers have sincere marketing efforts and a synergistic partnership with Malaysian steel manufacturers; hence, they are well accepted and have a strong presence in Malaysia.
5.4.1 Expert Panel Interviews on Proposition 3

The Expert Panel acknowledged the importance of the dolomite refractories currently being imported from Europe. They understood how these refractories have assisted the Malaysian steel industry and the role played by some of the suppliers in helping the steel manufacturers to produce quality steel at a competitive cost.

i) Most of the members in the expert panel agreed that the Western dolomite refractory manufacturers have been in Malaysia for many decades and collectively, have had a regional monopoly in the export of this strategic product for the steel manufacturers. Thus, they understand the Malaysian culture and politics well and this gives them a bigger advantage over any new entrants into the Malaysian steel market.

ii) Most of the panel members agree that the Western dolomite refractory manufacturers do enjoy a better image in the international market by virtue of the limited supply of dolomite refractories in the world. Performance and success come with their status as the European manufacturers possess the latest technology, resulting in appreciable sales in the international market.

iii) The panel was unanimously in agreement that non-Indian dolomite refractory manufacturers resort to aggressive marketing strategies in Malaysia. Most of the exporters have a strong presence in Malaysia, even though the volume of dolomite refractories that they sell here in Malaysia is relatively small as compared to other developed or developing countries. Most of them have regional or representative offices in Malaysia. They make regular customer visits to all their customers to provide technical assistance and after-sale service as required. This gives a lot of comfort to their customers.

Finding: Based on the expressed views of the Expert Panel Proposition 3 is supported.
5.4.2 Analysis of The Focus Group’s Views on Proposition 3

Many of the panel members were aware that a group of Western dolomite refractory producers have merged together and operate as separate Strategic Business Units (SBUs). These four focus groups were able to highlight more details than the expert panel interviews, as the group discussions were very cordial and the members were free to express their personal views on the issues that were discussed.

i) Most of the focus group members agreed that the Western dolomite refractory suppliers did have a head start compared to the struggling Indian dolomite refractory suppliers in the Malaysian market. Some of the leading Malaysian steel manufacturers have prospered under the guidance of the Western suppliers and are grateful for their assistance. They stressed that only those firms that could provide more benefits will remain in business. Therefore, if Indian dolomite refractory suppliers could offer something more competitive or add more value to the Malaysian steel industry, they may gain a foothold. But just having a superior product does not mean that the Indian producers will gain a comparative advantage over the Western dolomite refractory manufacturers. The Western manufacturers have proven themselves with superior technology, modern marketing strategies, good customer relationship and competitive prices. Can the Indian producers match this or do better? The Western manufacturers know and understand Malaysian culture, its work ethics, the ethnic group that owns the industry and the ethnic group that controls the policy. The question that needs to be asked is: do the Indian manufacturers have the necessary qualities, patience and ability to match their Western peers? If yes, then the Indian dolomite refractory manufacturers will be able to compete with the established Western exporters in the Malaysian industry.

ii) Another important issue in marketing which the focus group stressed was ‘image’. The Western manufacturers are known for their technological advancement. India is comparatively new to industrialisation and, as far as the world understands, India is still a backward third-world country with its
myriad of domestic problems such as hunger, infant mortality, poverty, lack of hygiene and sanitation, lack of basic infrastructure, etc. Therefore the members of the focus groups stressed that, even if the Indians were to have superior quality products compared to the Western manufacturers, selling the products would be an uphill task because of the prevalent negative perceptions. Thus the members of this group emphasised that, because of the Western manufacturers’ better image in the Malaysian market, they have a huge advantage over a third-world country like India.

iii) The response here is similar to what we saw from the members of the expert panel group. The Western dolomite refractory manufacturers had the foresight to joined hands with the Malaysian steel manufacturers and have been doing so for many years. In fact, most of the technology and expertise had come from these Western companies. Over the years, the Malaysian steel industry also saw the exit of some of these Western experts. Thus, the question of synergy in a true sense does not exist. It was dollars and cents that cemented this so-called synergetic relationship. According to some of the industry personnel, if a newcomer were to devise a more genuine and lasting relationship built on mutual trust and coexistence, something more synergetic could result.

Finding: From the discussions, the Focus Group supported Proposition 3.

5.4.3 Questionnaire Survey Responses for Proposition 3

Results of analyses of the Survey responses, for each of the three Statements that relate to Proposition 3, are set out in Tables 5.10-5.12.

Statement 7 (S7) - Their traditional dolomite refractory suppliers are well established in the Malaysian market as they have a longer presence and hence having advantage over newcomers like the Indian dolomite refractory manufacturers.
Table 5.10: Statement 7 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th>P3S7</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>% within Group</td>
<td>7.1%</td>
<td>6.4%</td>
<td>6.3%</td>
<td>5.0%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Disagree</td>
<td>4</td>
<td>25</td>
<td>10</td>
<td>6</td>
<td>45</td>
</tr>
<tr>
<td>% within Group</td>
<td>28.6%</td>
<td>32.1%</td>
<td>31.3%</td>
<td>30.0%</td>
<td>31.3%</td>
</tr>
<tr>
<td>Agree</td>
<td>6</td>
<td>34</td>
<td>14</td>
<td>8</td>
<td>62</td>
</tr>
<tr>
<td>% within Group</td>
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<td>43.1%</td>
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<tr>
<td>Strongly agree</td>
<td>3</td>
<td>14</td>
<td>6</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>% within Group</td>
<td>21.4%</td>
<td>17.9%</td>
<td>18.8%</td>
<td>25.0%</td>
<td>19.4%</td>
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<tr>
<td>Total</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
<td>144</td>
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<tr>
<td>% within Group</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As shown in Table 5.10, the responses from the members were as follows:

- 65.5% were in agreement with the above statement: 43.1% strongly agreed and 19.4% agreed. The Western manufacturers have a stronger presence in Malaysia and were the early entrants into the Malaysian steel industry.

- However, 37.6% of the respondents did not agree with this statement, as 31.3% disagreed and 6.3% strongly disagreed that a longer presence does not necessarily denote an advantageous position for them. They claimed that, as the marketing world today is so fluid, longer presence does not really confer much advantage.

**Finding:** No doubt a large number of respondents (62.5%) did agree that the Western dolomite refractory manufacturers have an advantage over the newcomers, yet the balance of 37.6% were of the view that early entry into a market does not really confer the necessary advantages in the market today owing to the ever-changing global scenario. Almost two-thirds of respondents agreed, and well over one-third agreed with S7.
Statement 8 (S8) - The traditional dolomite refractory suppliers have a better image in the international market and hence they perform better and are more successful in Malaysia.

As shown in Table 5.11, the responses from the members were as follows:

- 63.9% of the respondents agreed with the statement that the Western dolomite refractory manufacturers have a better image in the international market and are more successful in Malaysia. Of these, 20.1% strongly agreed and 43.8% agreed with this statement.

- However, there was a good number who did not support this statement as 10.4% strongly disagreed, while 25.0% disagreed, which means that 35.4% did not agree.

Table 5.11: Statement 8 - Percentage Cross Tabulations

<table>
<thead>
<tr>
<th>Group</th>
<th>P3S8 Strongly disagree</th>
<th>% within Group</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14.3%</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>10.4%</td>
<td>15</td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td>21.4%</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.6%</td>
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<td>25.0%</td>
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<td>5</td>
</tr>
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<td></td>
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</tr>
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<td></td>
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<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43.6%</td>
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<tr>
<td></td>
<td></td>
<td>43.8%</td>
<td>14</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>43.8%</td>
<td>63</td>
</tr>
<tr>
<td>Strongly agree</td>
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<td>21.4%</td>
<td>3</td>
</tr>
<tr>
<td></td>
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<td>3</td>
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<td></td>
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</tr>
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</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>144</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

Finding: The responses from the dissenting group highlighted some important facts. They clearly stated that having a good image does not necessarily mean that these
firms are more successful. More analysis must be made in order to arrive at a better understanding of the responses to S8.

**Statement 9 (S9)** - Their traditional dolomite refractory suppliers have sincere marketing efforts and a synergetic partnership with Malaysian steel manufacturers; hence they are well accepted and have a strong presence in Malaysia.

As shown in Table 5.12, the responses were as follows:

- 61.8% of the respondents supported the statement that the Western dolomite refractory producers have better marketing efforts and strategies and are more competitive. 16.0% strongly agreed with this statement while 45.8% agreed. The Western dolomite refractory manufacturers have a synergetic partnership with Malaysian steel manufacturers and, because of this, have a strong foothold in the Malaysian steel industry.

- However, 37.5% did not agree with this statement as 6.9% strongly disagreed, with 30.6% disagreeing with this statement.

### Table 5.12: Statement 9 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th>P3S9</th>
<th>Count</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>% within Group</td>
<td>7.1%</td>
<td>7.7%</td>
<td>3.1%</td>
<td>10.0%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Disagree</td>
<td>Count</td>
<td>4</td>
<td>24</td>
<td>10</td>
<td>6</td>
<td>44</td>
</tr>
<tr>
<td>% within Group</td>
<td>28.6%</td>
<td>30.8%</td>
<td>31.3%</td>
<td>30.0%</td>
<td>30.6%</td>
<td></td>
</tr>
<tr>
<td>Uncertain</td>
<td>Count</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>1</td>
</tr>
<tr>
<td>% within Group</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.1%</td>
<td>0.0%</td>
<td>0.7%</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>Count</td>
<td>6</td>
<td>36</td>
<td>15</td>
<td>9</td>
<td>66</td>
</tr>
<tr>
<td>% within Group</td>
<td>42.9%</td>
<td>46.2%</td>
<td>46.9%</td>
<td>45.0%</td>
<td>45.8%</td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>Count</td>
<td>3</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>% within Group</td>
<td>21.4%</td>
<td>15.4%</td>
<td>15.6%</td>
<td>15.0%</td>
<td>16.0%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
<td>144</td>
</tr>
<tr>
<td>% within Group</td>
<td>100.0%</td>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data
**Finding:** This response is not very conclusive as there is still a good percentage, i.e. 37.5%, who do not support the statement that the Western dolomite refractory manufacturers have sincere marketing efforts and are very competitive in the Malaysian market.

The focus group and expert panel substantively agreed that there are indeed no sincere marketing efforts from the Indian manufacturers as compared with the Western manufacturers. The Western manufacturers are in Malaysia because it is a captive market for them as there is no competition from non-Western manufacturers yet. It appears that there is a deadlock in this opinion. This means that there is a sizeable group that supports this statement and another group that does not agree with this statement and suggesting a more thorough study is required concerning S9.

5.4.4 Questionnaire Survey Data against Proposition 3

The comparison of mean responses and the standard deviations to Proposition 3 are shown in Figure 5.3.

**Figure 5.3: Comparisons of Mean Responses to Proposition 3**

![Bar chart showing comparisons of mean responses and standard deviations across different groups.](chart)

Source: Developed from Survey Data
These responses indicate ‘no concrete agreement’ as shown by the means for agree or disagree with the statement. This is because the average scores for the entire group are below 3.50, i.e. 3.35-3.41.

Table 5.13 shows the groups’ responses to the three statements for Proposition 3. More than 60% of the respondents agreed with the three statements. The highest agree score for S7 was from Group D, while for S8 it was Group C, and for S9 it was Group A.

**Table 5.13: Focus Group Responses to the Three Statements for Proposition 3**

<table>
<thead>
<tr>
<th>Proposition 3</th>
<th>Disagree (%)</th>
<th>Agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group</td>
<td>A</td>
</tr>
<tr>
<td>Statement 7</td>
<td>35.7</td>
<td>38.5</td>
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<tr>
<td>Statement 8</td>
<td>35.7</td>
<td>35.9</td>
</tr>
<tr>
<td>Statement 9</td>
<td>35.7</td>
<td>38.5</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

**Finding:** The survey results indicated a slightly stronger position, though not significant, on the agreement side for Proposition 3.

**5.4.5 Testing of Proposition 3**

The survey results reflected neutral responses with no concrete agreement or disagreement to this research Proposition. This follows the response of the Expert Panel and the Focus Group as seen in this study. We can conclude that the Western dolomite refractory manufacturers are not really superior, as perceived by Indian firms. Proposition 3 is not fully supported.

**5.5 Data Analysis for Research Proposition 4**

The marketing strategies adopted by the Indian dolomite refractory firms for successfully entering new international markets like Malaysia lack focus and
commitment and are thus inappropriate. The following statements relate to Research Proposition 4.

**Statement 10 (S10)** – Indian dolomite refractory manufacturers have not fully assessed the current and future potential of the Malaysian Steel industry.

**Statement 11 (S11)** - Indian dolomite refractory manufacturers lack commitment and dedication towards Malaysian steel industry, despite having superior grade dolomite refractories.

**Statement 12 (S12)** - The current strategies used by the Indian dolomite refractory manufacturers may not be applicable to the Malaysian market.

5.5.1 Expert Panel Interviews on Proposition 4

All the three Statements that relate to Proposition 4 were addressed during the interviews with each member of the Expert Panel. Its diverse membership, with senior employees from the various mills in the Malaysian steel industry, revealed a wide range of perspectives and views. There was general agreement that:

i) The statement that the Indian dolomite refractory manufacturers have not paid sufficient attention to the potentials of the Malaysian steel industry was fully accepted by all the members. On account of this, the Indian suppliers did not have any focus and hence struggle in the Malaysian steel industry scene.

ii) The panel members also claimed that, based on their experience with other Indian manufacturing exporters, they were normally slow, and late in introducing the innovative products that they had manufactured. The significance of competitiveness was being lost on account of the reactive policies and attitudes of the Indian firms. Many felt that the Indian firms do not have any competitive marketing strategies and tend to be followers rather than leaders, even though they have significant innovative products. They
also lack marketing strategies because most of the Indian firms do not plan for a long-term presence in the market.

iii) Another astounding fact revealed here was the opinion that the Indian dolomite refractory manufacturers, despite having a superior product compared to that of the Western manufacturers, lack commitment, dedication and focus. The Indian manufacturers have a surplus of the product and yet they are not able to gain a captive market in Malaysia. This is despite the fact that Indian firms have competitive advantages like geographical proximity, similar culture, cordial relationship and extensive trade ties between Malaysia and India. The panel members felt that the Indian manufacturers have been losing many opportunities that could have been utilised for enormous profits.

iv) With reference to the current strategies used by the Indian dolomite refractory manufacturers in Malaysia, all stated that there are hardly any strategies at all. The Indians have one representative office here with an engineer providing sales and some technical assistance only. It just shows that the Indian dolomite refractory manufacturers are not serious about the Malaysian steel industry which could be a lucrative market at present and in the future.

Findings: Based on the views expressed by the members of the Expert Panel, it can be concluded that the Panel was fully supportive of the three statements under Proposition 4.

5.5.2 Focus Group Views on Proposition 4

The research issues, as reflected by all the three Statements related to Proposition 4, were addressed at the Focus Group meeting. The diverse nature of the Focus Group with respect to the participants resulted in an interesting outcome that was also similar to the Expert Panel. A summary of the comments and observations is stated below:
i) Most of the focus group members were really surprised as to why Indian firms have not really studied the Malaysian steel industry in depth before venturing into the market to capitalise on its potential. They felt that, unlike the Indian steel industry, the Malaysian steel industry is very small and not that technologically superior and venturing into the Malaysian market should have been an easy task. However, they failed to take this into consideration, which has resulted in them having to face an uphill task as a latecomer into the Malaysian steel industry.

ii) The answer to the second statement was an overwhelming ‘yes’. The respondents felt that the Indian firms have a laidback attitude and now need a paradigm shift in their marketing strategies. It has proven that there is no guarantee of success in a competitive market place even if there is a more superior product in place. A product does not sell by itself: it requires astute marketing strategies to do so. Taking this into consideration, the Indian firms have to study the various macro and micro factors. They must be aware of the different controllable and uncontrollable variables before concluding a proactive action plan that can be translated into reality for success in the Malaysian market.

iii) The third statement also generated a very high degree of agreement among the participants. They cited a lack of commitment and dedication, like irregular shipments of dolomite refractories, late deliveries, delays in communication with the Indian companies, giving excuses for non-performances, etc. These projected a bad image of the Indian dolomite refractory manufacturers and they have to bear with this. The Indian manufacturers are also not consistent with their exports as there is no relationship marketing involved. The participants claimed that they are at times un-professional and very cold in their relationship with the Malaysian importers.

iv) According to the views expressed by most members of the Focus Group, the Malaysian steel industry is highly capital intensive. The cost of production is
extremely high, with almost all raw materials being imported, the profit margin being very low and the industry is often susceptible to economic vagaries. Under such trying circumstances, the Malaysian steel industry only looks for exporters who treat them as partners for their firms and are experts with a proven track record. The Malaysian firms want a long-term relationship that would be mutually beneficial. The Indian dolomite refractory manufacturers are deemed interested only in exporting their dolomite refractories only and not being a one-stop centre like some of the Western firms who provide total solutions.

**Finding:** In general, the Focus Group members were fully in agreement with the statement that the Indian dolomite refractory manufacturers do not have any marketing strategies, no viable idea of the structure and limited understanding of the unique elements of the Malaysian steel industry. They also strongly believed that conventional marketing theories and concepts from textbooks may not offer a feasible solution for success in Malaysia. There has to be a revamp of the marketing strategies in order to compete and survive in the Malaysian context. Based on evidence from the Focus Groups, Proposition 4 is supported.

### 5.5.3 Questionnaire Survey Responses for Proposition 4

The analyses of the survey responses, for each of the three Statements that relate to Proposition 4, are set out in Tables 5.14-5.16.

**Statement 10 (S10)** – Indian dolomite refractory producers have not fully assessed current and future potential of the Malaysian Steel industry.

As shown in Table 5.14, the responses from the members were as follows:

- A very strong majority, i.e. 93.1%, were supportive of the above statement, with 62.5% strongly agreeing and 30.6% agreeing.
- Only 6.9% disagreed, with none strongly disagreeing or remaining noncommittal.
Finding: This analysis indicates that there was strong support for S10.

Table 5.14: Statement 10 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
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</tr>
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<td>6.3%</td>
<td>10.0%</td>
<td>6.9%</td>
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<tr>
<td>Agree</td>
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<td></td>
<td></td>
</tr>
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<td>Count</td>
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<td></td>
</tr>
<tr>
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<td>% within Group</td>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

Statement 11 (S11) - Indian dolomite refractory manufacturers lack commitment and dedication towards Malaysian steel industry, despite having superior grade dolomite refractories.

Table 5.15: Statement 11 - Group Percentage Cross Tabulations

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
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<th>Group D</th>
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</tr>
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<td>1</td>
</tr>
<tr>
<td>% within Group</td>
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<td>1.3%</td>
<td>.0%</td>
<td>.0%</td>
<td>.7%</td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>% within Group</td>
<td>7.1%</td>
<td>.0%</td>
<td>3.1%</td>
<td>5.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>4</td>
<td>26</td>
<td>11</td>
<td>6</td>
<td>47</td>
</tr>
<tr>
<td>% within Group</td>
<td>28.6%</td>
<td>33.3%</td>
<td>34.4%</td>
<td>30.0%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>9</td>
<td>51</td>
<td>20</td>
<td>13</td>
<td>93</td>
</tr>
<tr>
<td>% within Group</td>
<td>64.3%</td>
<td>65.4%</td>
<td>62.5%</td>
<td>65.0%</td>
<td>64.6%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
<td>144</td>
</tr>
</tbody>
</table>

Likert-scale: Strongly Disagree; Disagree; Uncertain; Agree; Strongly Agree

Source: Developed from Survey Data
The results shown in Table 5.15 revealed that:

- Almost all the respondents stressed that the Indian dolomite refractory manufacturers have to be more proactive and have a better market development strategy. 64.6% of them strongly agreed while 32.6% agreed, which means a 97.2% supported this view. The Indian dolomite refractory manufacturers lack commitment and dedication for the Malaysian steel industry, though they have very superior products.
- A very small figure, i.e. only 2.8%, disagreed, which means this is very insignificant. There were none who strongly disagreed or were uncertain.

**Finding:** This analysis strongly supports the view that the Indian dolomite refractory manufacturers have to be proactive and have better market development strategies. Almost all respondents supported S11.

**Statement 12 (S12) -** The current strategies used by the Indian dolomite refractory manufacturers may not be applicable to the Malaysian market.

**Table 5.16: Statement 12 - Group Percentage Cross Tabulations**

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly disagree</strong></td>
<td>Count</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>3.8%</td>
<td>.0%</td>
<td>5.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>Count</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>7.1%</td>
<td>9.0%</td>
<td>9.4%</td>
<td>10.0%</td>
<td>9.0%</td>
</tr>
<tr>
<td><strong>Agree</strong></td>
<td>Count</td>
<td>4</td>
<td>26</td>
<td>11</td>
<td>6</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>28.6%</td>
<td>33.3%</td>
<td>34.4%</td>
<td>30.0%</td>
<td>32.6%</td>
</tr>
<tr>
<td><strong>Strongly agree</strong></td>
<td>Count</td>
<td>8</td>
<td>42</td>
<td>18</td>
<td>11</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>57.1%</td>
<td>53.8%</td>
<td>56.3%</td>
<td>55.0%</td>
<td>54.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Count</td>
<td>14</td>
<td>78</td>
<td>32</td>
<td>20</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>% within Group</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data
The results shown in Table 5.16 revealed the following:

- Once again, a good majority (87.5%) of the respondents agreed with the statement that the current marketing strategies used by the Indian dolomite refractory manufacturers may not be applicable to the Malaysian steel industry (32.6% did agree, while 54.9% strongly agreed).
- 9.0% disagreed, while 3.5% strongly disagreed.

**Finding:** This analysis showed that the majority are of the view that the marketing strategies used by the Indian may not be relevant to the Malaysian steel industry market. A large majority of respondents supported S12.

### 5.5.4 Questionnaire Survey Data against Proposition 4

The comparison of mean responses and the standard deviations to Proposition 4 are shown in Figure 5.4.

**Figure 5.4: Comparisons of Mean Responses to Proposition 4**

![Figure 5.4: Comparisons of Mean Responses to Proposition 4](source: Developed from Survey Data)

Overall, the mean scores are very high (around 4.5 over 5.0). This shows that almost all the respondents agreed with Proposition 4 (S10 – S12), with a low standard deviation around 0.5.

**Table 5.17: Focus Group Responses to the Three Statements for Proposition 4**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.38</td>
<td>0.61</td>
</tr>
<tr>
<td>B</td>
<td>4.46</td>
<td>0.51</td>
</tr>
<tr>
<td>C</td>
<td>4.48</td>
<td>0.44</td>
</tr>
<tr>
<td>D</td>
<td>4.38</td>
<td>0.56</td>
</tr>
<tr>
<td>Total</td>
<td>4.44</td>
<td>0.51</td>
</tr>
</tbody>
</table>
Table 5.17 shows the groups’ responses to the three statements for Proposition 4. More than 90% of the respondents agree with the three statements and the highest ‘agree’ percentage for statement 10 comes from Group C, for statement 11 from Group B, and for statement 12, from Group C.

**Finding:** As seen from the table of the mean and standard deviations, it is very obvious that the findings indicate acceptance of Proposition 4.

### 5.5.5 Testing of Proposition 4

Table 5.18 shows the relationship among the four propositions. As per the results from Pearson Correlation analysis, Proposition 1 has a significant positive relationship with Proposition 2 at $\alpha = 0.05$ and Proposition 4 at $\alpha = 0.01$.

For P1 Vs P2 correlation is positive and significant at 0.05
For P1 Vs P4 correlation positive and significant at 0.01
Table 5.18: Correlation Analysis between Each Proposition

<table>
<thead>
<tr>
<th></th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.209(*)</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>Sig.(2-tailed)</td>
<td>0.012</td>
<td>0.951</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>P2</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.136</td>
<td>0.128</td>
</tr>
<tr>
<td></td>
<td>Sig.(2-tailed)</td>
<td>0.105</td>
<td>0.125</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>144</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig.(2-tailed)</td>
<td></td>
<td>0.152</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>Pearson Correlation</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig.(2-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

**Principal Component Analysis** – Results from Factor Analysis indicates four factors that have emerged out of twelve statements from four propositions. As shown in Table 5.19, Indian dolomite refractories have not been recognised and accepted as a reliable alternate source by key personnel in the Malaysian Steel Industry, as derived from S1 and S3. The conclusion from S2, S6 and S9 is that Indian manufacturers of dolomite refractories lack market knowledge, and are not committed to the Malaysian market. They have not spent efforts to analyse the overall market potential, understand the cultural requirements, or develop strategic business models to meet market demands.

Responses to Statements 4 and 5 indicated that there is a lack of export development assistance and support from the Indian government for the development of exports from India. Responses to Statements 8 and 11 further confirmed the lack of commitment to the Malaysian market from the Indian dolomite refractory manufacturers. They are not committed to form synergetic partnerships with local firms to grow the market and are not prepared to enhance their position as a solution provider.
Table 5.19: Factor Analysis

<table>
<thead>
<tr>
<th>Factors</th>
<th>Statement</th>
<th>Percentage of Variance</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of recognition for the Indian refractory firms</td>
<td>1, 3,12</td>
<td>17.70%</td>
<td>17.70%</td>
</tr>
<tr>
<td>2. Indian firm’s lack of marketing efforts and commitment for developing new export market</td>
<td>2,6,9</td>
<td>13.90%</td>
<td>31.60%</td>
</tr>
<tr>
<td>3. Inadequate funding and support for export promotion</td>
<td>4, 5</td>
<td>11.99%</td>
<td>43.59%</td>
</tr>
<tr>
<td>4. Synergic partnership for competitive advantage</td>
<td>8, 11</td>
<td>10.96%</td>
<td>54.55%</td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

As per findings revealed in Table 5.20, this study has shown that Research Proposition 1 has a strong positive relationship with Research Proposition 2 and 4, thus influencing the decision for formulating an appropriate strategy for export of dolomite refractories from India to Malaysia. The Kaiser-Meyer-Olkin (KMO) value is above 0.5. Based on the above four factors, the predictors explained 54.55 percent of the variance.
Table 5.20: Principal Component Analysis - KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th>Factors</th>
<th>Factor Loadings</th>
<th>Eigen-values</th>
<th>% of variance explained</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Lack of recognition for the Indian refractory manufacturers</strong></td>
<td></td>
<td>1.770</td>
<td>17.70</td>
<td>17.70</td>
</tr>
<tr>
<td>S1: Malaysian steel manufacturers are not aware that India is now a major producer and exporter of quality dolomite refractories.</td>
<td>0.769</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3: Malaysian steel manufacturers are basically biased against Indian firms and hardly want to import Indian dolomite refractories even if they are at a competitive price and of better quality when compared to products from other countries.</td>
<td>0.656</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12: The current strategies used by the Indian dolomite refractory manufacturers may not be applicable to the Malaysian market.</td>
<td>0.584</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 2: Indian firms lack marketing efforts and commitment for developing new export market</strong></td>
<td></td>
<td>1.390</td>
<td>13.90</td>
<td>31.60</td>
</tr>
<tr>
<td>S2: Malaysian steel manufacturers are not technically receptive to using Indian dolomite refractories and are reluctant to import them.</td>
<td>0.687</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S6: The Indian government does not collaborate closely with Indian refractory manufacturers in devising new policies and support measures for enhancing the international competitive positioning of the Indian firms.</td>
<td>0.586</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S9: Their traditional dolomite refractory suppliers resort to much sincere marketing efforts and a synergistic partnership with Malaysian steel manufacturers and they have a strong presence in Malaysia.</td>
<td>0.524</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 3: Inadequate funding and support for export promotion</strong></td>
<td></td>
<td>1.199</td>
<td>11.99</td>
<td>43.59</td>
</tr>
<tr>
<td>S4: The Indian government targeted support policies and programmes for actively promoting new international market penetration effort by the Indian refractory manufacturers are not effective.</td>
<td>0.771</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S5: The existing funding support and export incentive schemes provided by the Indian government do not help the Indian refractory industry to enter and effectively compete in the international markets.</td>
<td>0.768</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 4: Image problem and lack of commitment</strong></td>
<td></td>
<td>1.096</td>
<td>10.96</td>
<td>54.55</td>
</tr>
<tr>
<td>S8: Their traditional dolomite refractory suppliers have a better image in the international market and are more successful in Malaysia.</td>
<td>0.770</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S11: Indian dolomite refractory manufacturers lack commitment and dedication towards Malaysian steel manufacturers, despite having superior grade dolomite refractories.</td>
<td>0.690</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.552
Bartlett's Test of Sphericity
Approx. Chi-Square is 82.776df = 45Sig. 0.001

Source: Developed from Survey Data
Table 5.21 shows the relationship among the four factors. As per results, Factor 3, i.e. inadequate funding and support for export promotion, has a significant positive relationship with Factor 1, i.e. lack of recognition for the Indian refractory firms, and Factor 2, i.e. Indian firm’s lack of marketing efforts and commitment for developing new export market, at $\alpha = 0.05$. For Factor 1 and Factor 3, the correlation is positive and significant at at 0.05 levels. For Factor 2 and Factor 3, the correlation is positive and significant at 0.01 levels.

Table 5.21: Correlation Analysis between Factors

<table>
<thead>
<tr>
<th>Correlations</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 Pearson Correlation</td>
<td>1</td>
<td>0.110</td>
<td>0.182*</td>
<td>-0.007</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.191</td>
<td>0.029</td>
<td>0.929</td>
</tr>
<tr>
<td>N</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>F2 Pearson Correlation</td>
<td>0.110</td>
<td>1</td>
<td>0.166*</td>
<td>0.060</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.191</td>
<td>0.046</td>
<td>0.474</td>
</tr>
<tr>
<td>N</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>F3 Pearson Correlation</td>
<td>0.182*</td>
<td>0.166*</td>
<td>1</td>
<td>0.054</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.029</td>
<td>0.046</td>
<td>0.523</td>
</tr>
<tr>
<td>N</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>F4 Pearson Correlation</td>
<td>-0.007</td>
<td>0.060</td>
<td>0.054</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.929</td>
<td>0.474</td>
<td>0.523</td>
</tr>
<tr>
<td>N</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
</tbody>
</table>

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

Source: Developed from Survey Data

Reliability – This study found that the Cronbach’s Alpha for the four factors, F1, F2, F3 and F4, are above 0.5. According to Muhamad (2012), the acceptable Cronbach’s Alpha value from 0.5 to 0.7 is good, and greater than 0.7 is excellent. Since the four factors Cronbach’s Alpha values are above 0.5, the items from the scales have reasonable internal consistency reliability (Table 5.22).
Table 5.22: Reliability Test

<table>
<thead>
<tr>
<th>Construct and Indicators</th>
<th>Cronbach’s Alpha (Factor loading)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>0.670</td>
<td>2.873</td>
<td>0.742</td>
</tr>
<tr>
<td>S1</td>
<td>(0.656)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td>(0.769)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12</td>
<td>(0.584)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F2</strong></td>
<td><strong>0.599</strong></td>
<td>2.982</td>
<td>0.773</td>
</tr>
<tr>
<td>S2</td>
<td>(0.524)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S6</td>
<td>(0.586)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S9</td>
<td>(0.687)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F3</strong></td>
<td><strong>0.730</strong></td>
<td>3.719</td>
<td>1.000</td>
</tr>
<tr>
<td>S4</td>
<td>(0.690)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S5</td>
<td>(0.770)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F4</strong></td>
<td><strong>0.769</strong></td>
<td>3.983</td>
<td>0.820</td>
</tr>
<tr>
<td>S8</td>
<td>(0.768)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S11</td>
<td>(0.771)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

**Validity Test** – Confirmatory Factor Analysis was applied to test whether the data fit a hypothesised measurement model. In this study, the measurement model was based on four constructs, i.e. F1, F2, F3 and F4, and they were also checked through confirmatory factor analysis to test the convergent and discriminant validities. The model fit for the suggested model was adequate with Chi-square ($\chi^2$) = 30.1, df = 30 and $p<0.05$ (Table 5.23).
Table 5.23: Confirmatory Factor Analysis (CFA)

<table>
<thead>
<tr>
<th>Construct and Indicators</th>
<th>Factor Loading</th>
<th>t-value</th>
<th>p-value</th>
<th>Cronbach’s Alpha</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td></td>
<td></td>
<td></td>
<td>0.670</td>
<td>0.586</td>
</tr>
<tr>
<td>S1</td>
<td>0.656</td>
<td>3.944</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td>0.769</td>
<td>3.284</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12</td>
<td>0.584</td>
<td>2.529</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td></td>
<td></td>
<td></td>
<td>0.599</td>
<td>0.529</td>
</tr>
<tr>
<td>S2</td>
<td>0.524</td>
<td>1.131</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S6</td>
<td>0.586</td>
<td>1.399</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S9</td>
<td>0.687</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td></td>
<td></td>
<td></td>
<td>0.730</td>
<td>0.628</td>
</tr>
<tr>
<td>S4</td>
<td>0.690</td>
<td>1.457</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S5</td>
<td>0.770</td>
<td>1.785</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F4</td>
<td></td>
<td></td>
<td></td>
<td>0.769</td>
<td>0.644</td>
</tr>
<tr>
<td>S8</td>
<td>0.768</td>
<td>1.957</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S11</td>
<td>0.771</td>
<td>1.964</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the 0.10 level.

Source: Developed from Survey Data

Convergent Validity – The table below outlines the thresholds for sufficient/significant factor loadings. In general, the smaller the sample size, the higher the required loading. In this study, the factor loading is 0.50 owing to the sample size of less than 150 participants (the actual sample size is 144) which means that the convergent validity was achieved (Hair et al. 2010) as presented in Table 5.24.
Table 5.24: Convergent Validity Test

<table>
<thead>
<tr>
<th>Sample Size (n)</th>
<th>Sufficient Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>0.75</td>
</tr>
<tr>
<td>60</td>
<td>0.70</td>
</tr>
<tr>
<td>70</td>
<td>0.65</td>
</tr>
<tr>
<td>85</td>
<td>0.60</td>
</tr>
<tr>
<td>100</td>
<td>0.55</td>
</tr>
<tr>
<td>120</td>
<td>0.50</td>
</tr>
<tr>
<td>150</td>
<td>0.45</td>
</tr>
<tr>
<td>200</td>
<td>0.40</td>
</tr>
<tr>
<td>250</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Source: Hair et al. (2010)

**Discriminant Validity** – refers to the extent to which factors are distinct and uncorrelated. The rule is that variables should relate more strongly to their own factor than to another factor. This validity is to examine the factor correlation matrix. The correlations between factors should not exceed 0.70 (Fornell & Larker, 1981). If the correlation is greater than 0.70, there is a shared variance. In this study, the construct correlation matrix shown that the correlations between four factors are within 0.4 to 0.6, meaning discriminant validity was achieved (Table 5.25).

Table 5.25: Construct Correlation Matrix (Standardised)

<table>
<thead>
<tr>
<th></th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>1.000</td>
<td>0.410</td>
<td>0.512</td>
<td>0.407</td>
</tr>
<tr>
<td>F2</td>
<td>1.000</td>
<td>0.466</td>
<td>0.460</td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td>1.000</td>
<td>0.454</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F4</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Developed from Survey Data

**Discriminant validity** can be achieved through average variance extracted (AVE). The research findings show that the four factors’ AVE values are within 0.529 to
0.644. According to Chin, Yu and Yong (2013), as long as the Cronbach’s Alpha and AVE scores are greater than 0.5, the discriminant validity is still achievable. In addition, many researchers also accepted that an AVE value of more than 0.5 is useable (Chen & Kao 2012; Cheng 2011; Huang et al. 2013) (Table 5.26).

Table 5.26: Discriminant Validity

<table>
<thead>
<tr>
<th>Construct and Indicators</th>
<th>Factor Loading</th>
<th>t-value</th>
<th>p-value</th>
<th>Cronbach’s Alpha</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td></td>
<td></td>
<td></td>
<td>0.670</td>
<td>0.586</td>
</tr>
<tr>
<td>S1</td>
<td>0.656</td>
<td>3.944</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td>0.769</td>
<td>3.284</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S12</td>
<td>0.584</td>
<td>2.529</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td></td>
<td></td>
<td></td>
<td>0.599</td>
<td>0.529</td>
</tr>
<tr>
<td>S2</td>
<td>0.524</td>
<td>1.131</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S6</td>
<td>0.586</td>
<td>1.399</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S9</td>
<td>0.687</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td></td>
<td></td>
<td></td>
<td>0.730</td>
<td>0.628</td>
</tr>
<tr>
<td>S4</td>
<td>0.690</td>
<td>1.457</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S5</td>
<td>0.770</td>
<td>1.785</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F4</td>
<td></td>
<td></td>
<td></td>
<td>0.769</td>
<td>0.644</td>
</tr>
<tr>
<td>S8</td>
<td>0.768</td>
<td>1.957</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S11</td>
<td>0.771</td>
<td>1.964</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at 0.10 level.

Source: Developed from Survey Data

5.6 Analysis of Unplanned Data

The following pertinent views, observations and suggestions from the participants of the Expert Panel and the Focus Group were not included as discussion items:

**Alarming Raw Material Situation** - Focus Group members pointed out the impending situation with regard to raw material availability for manufacturing of
refractory products, and the quality of the raw material itself. With advancements in technology, the industry is slowly but surely moving towards synthetic raw materials that are very expensive. So, on one hand, the source of refractory grade natural raw material is diminishing, and on the other, the cost of synthetic raw materials is exorbitant. Inevitably, the price of the raw materials and end-products are going to rise while the market for steel continues to be somewhat sluggish. This suggests challenging conditions in the future.

**Rising Energy Costs** - Some members from the Expert Panel mentioned that the refractory industry is a high energy consuming industry. This is owing to the fact that the raw dolomite needs to be sintered at around 2000øC for use in production of refractories. For dolomite refractories production, energy cost alone accounts for more than 60 percent. Since the price of oil and gas is at an all-time high in India, energy becomes the major component of the cost structure. Even a marginal increase in oil price will lead to a price increase that cannot be easily passed on to the customers in the international market. The industry is dependent upon the government’s ability to contain the price of oil or provide special financial funding or introduce some special tariff rate for electricity for the export-oriented refractory industry.

**Economic Situation** - With the cooling of the China’s economy and the concomitant ripples in the Euro zone, the predicted global economic slowdown will come sooner than later. The effects are already being felt in India. GDP rate for the year 2012 is expected to be not more than 6-10 percent as compared to 9-10 percent for the past five years (RBI 2011). This could lead to a shrinkage in the domestic demand, while the international market will naturally become very competitive owing to the predicted ‘price war’. The near future appears to be somewhat dim for the manufacturing sector.

Malaysia claims to have made inroads into the international market, but a study of its export markets reveals (Kok 2011) that it is only a small player in the South East Asian market. It has not achieved an international reputation owing to the lack of quality products and price competitiveness. This has become a serious disadvantage for the Malaysian steel industry with respect to achieving international status. What is
lacking is support for research and development and productivity. The technology used is still backward and hence, retards the growth of the industry.

**Exchange Rate Fluctuation** - During the first half of 2012, the rupee lost more than 20 percent of its value. Against the US dollar, it dropped from 44 to 55 rupees and has become one of the worst performing currencies in the Asian continent. With the removal of capital control and the implementation of measures for market liberalisation, it can only get worse if not better (RBI 2013). In any case, the depreciating Rupee will be good for international business as that will lead to more competitive advantage and create more opportunities for the exporting firms, even though the hike in manufacturing cost is unavoidable.

### 5.7 Conclusion

This chapter presented and analysed the views expressed by the members of the Expert Panel and the Focus Groups. Using SPSS, it also analysed the responses to the Questionnaire Survey for testing of the four Research Propositions with three statements each. These findings were also supplemented by the unplanned data obtained from pertinent information which fall outside the scope of the research propositions.

The data collected from expert panel and focus group were analysed against each research proposition. All research propositions were tested directly against the results obtained from the analysis of exploratory qualitative and descriptive quantitative data without which the findings would not have met the validity criteria (Davies 2005). Chapter 6 presents the conclusions and the impact of the research in relation to the objectives of the research.
CHAPTER 6: CONCLUSIONS AND IMPLICATIONS

6.1 Introduction

This chapter presents the findings of this research, which addresses the research problem: ‘What is an effective strategic marketing program for the export of Indian dolomite refractories to steel mills in Malaysia?’ A mixed methods approach was employed in order to test the following four propositions:

**Research Proposition 1** - The Malaysian Steel Manufacturers are reluctant to use the Indian dolomite refractories.

**Research Proposition 2** - The Indian government’s support policies and programmes to assist Indian exporting dolomite refractory firms to enter and successfully compete in the international market are ineffective.

**Research Proposition 3** - The Indian dolomite refractory firms are less competitive compared to other sources that are regularly exporting to Malaysia.

**Research Proposition 4** - The marketing strategies adopted by the Indian refractory firms for successfully entering new international markets like Malaysia lack focus and commitment and are inappropriate.

6.1.1 Chapter Structure

The structure of the chapter is as follows:

- Section 6.1 introduces the chapter and presents the chapter structure.

- Section 6.2 presents the conclusions of each of the four Research Propositions. They are derived from the analysis of primary data and findings of the literature review.
Section 6.3 addressed the research problem and provides the overall conclusion for this research.

Section 6.4 presents the implications of the research.

Section 6.5 presents the contributions of this research for the Indian government’s policies and practices and for the Indian dolomite refractory manufacturers.

Section 6.6 discusses the limitations for this research.

Section 6.7 addresses the areas that require further research.

Section 6.8 sets out the conclusion to this research and thesis.

6.2 Conclusion for Research Propositions

This section presents the conclusions drawn from the analysis of the data relating to each of the four research propositions. As discussed in Chapter 5, primary data was collected through personal interviews with an expert panel, group discussion with focus group members, and a questionnaire survey. Secondary data was collated from a literature review as provided in Chapters 2 and 3. The triangulation of the research findings ensured reliability and validity for each of the four research propositions.

6.2.1 Research Proposition 1

Findings concerning Research Proposition 1, ‘The Malaysian Steel Manufacturers are reluctant to use the Indian dolomite refractories’, were as follows:

The literature review revealed that the Indian dolomite refractory industry, by virtue of having high-quality products together with the necessary attributes, is well poised to make a push for entry into the international market in a big way. These efforts are equally supported by the policies of the Indian government through its provision of various export support programmes and incentive schemes. The government’s long term commitment to support the manufacturing exports has been reinforced by
entering into free trade agreements with ASEAN member countries and a separate bilateral trade agreement (CECA) with Malaysia within the framework of ASEAN.

The literature also revealed that the Indian dolomite refractory industry has the key competencies and technical capabilities to enter into the international market. It is capable of meeting any quality and quantity requirements of all the eight steel manufacturers in Malaysia, on whom more than 100 downstream firms are dependent for their source of billets and slabs. However, the literature was relatively silent on the present competitive positioning of the Indian refractory industries in the Malaysian market, as they have not enhanced their competitive offerings on the assumption that they are not being supported by Malaysian steel mills.

From analysis of secondary and primary data, the following response patterns relevant to Proposition 1 were identified, as shown in Table 6.1:

Table 6.1: Response Pattern for Research Proposition 1

<table>
<thead>
<tr>
<th>Research Issues</th>
<th>Literature Review</th>
<th>Expert Panel</th>
<th>Focus Group</th>
<th>Questionnaire Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>The perception of the Malaysian steel makers on the use of Indian dolomite refractories</td>
<td>Inadequate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unawareness of such products in the market</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Not accepting the products based on its technical evaluation to meet the service requirements</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Rejection of the Indian products on the notion it is inferior to traditional source from the West.</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
</tbody>
</table>

Source: Developed for this Research

On the basis of the findings, the following conclusions are drawn:
i) The Indian dolomite refractories are regarded as a competitive alternative to the traditional source from the West and are well known to the steel manufacturers in Malaysia. However, there is evidence that the Indian firms are not disseminating enough information to the market, and not attempting to make an aggressive push for market penetration.

ii) The traditional suppliers from the West have been in the market since its inception, long before the signing of the free trade agreement between India and Malaysia. These Western firms are bigger than the Indian firms and well established as market leaders. They are well positioned in this competitive market because of their superior technical know-how, expertise, problem-solving skills and, more importantly, their international experience. These are the competencies lacking in the offerings of the Indian firms. Just matching the technical specification of products with their competitors is not tantamount to being on par with their global competitors.

iii) The mind-set and the culture of the Indian firms would need to change in order to enter and successfully compete in the international market. They would have to stop treating the international market as the extension of home market. Indian firms would need to improve their financial resources and enhance their marketing skills in order to widen their reach.

6.2.2 Research Proposition 2

This section summarises the findings that emerged from the testing of Research Proposition 2, ‘The Indian government’s support policies and programmes to assist Indian dolomite refractory firms with their efforts to enter the international market and successfully compete are ineffective’. The discussion takes into account the findings from secondary and primary data analysis.

The literature review revealed that the Indian government has the policies and programmes in place to actively support the efforts of the Indian dolomite refractory
firms in their efforts to enter the international market. The government provides funding support and has introduced incentive schemes to encourage the export-oriented firms to go international. In line with the government’s long-term commitment and resolve to support the manufacturing exports, it has entered into free trade agreements with ASEAN and a separate bilateral trade agreement (CECA) with Malaysia.

The reviewed literature was relatively silent on the effectiveness and adequacy of such Indian government’s support policies and programmes for the purpose of effectively promoting and encouraging the Indian exporting firms. Response patterns relevant to Proposition 2 are shown in Table 6.2.

**Table 6.2: Response Pattern for Research Proposition 2**

<table>
<thead>
<tr>
<th>Research Issues</th>
<th>Literature Review</th>
<th>Expert Panel</th>
<th>Focus Group</th>
<th>Questionnaire Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequacy of Indian government policies and support programmes for export of manufactured goods</td>
<td>Inadequate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy framework is not effective</td>
<td>Unknown</td>
<td>Agreed</td>
<td>Agreed</td>
<td>Agreed</td>
</tr>
<tr>
<td>Promotion and support services are inadequate</td>
<td>Unknown</td>
<td>Agreed</td>
<td>Agreed</td>
<td>Agreed</td>
</tr>
<tr>
<td>Not prepared to collaborate with Malaysian steel industry to form a strategic partnership</td>
<td>Unknown</td>
<td>Agreed</td>
<td>Agreed</td>
<td>Agreed</td>
</tr>
</tbody>
</table>

Source: Developed for this Research

On the basis of these findings, the following conclusions are drawn:

i) Though the Indian government’s policies are meant to be supportive of the Indian dolomite refractory firms’ initiatives to penetrate the international market, in reality, they appear to be ineffective and thus have no bearing on the outcome of the firms’ efforts. The current policies require complete overhauling in line with changes in the international market.
ii) The Indian government is promoting Indian firms overseas through its local embassies, various trade fairs, trade missions, market information, market intelligence and trade agreements between governments. However, in the absence of focused planning and effective strategies in order to achieve the targeted outcome, these actions become more of a custom than true concerted efforts for effective promotion. Indian firms need the government’s funding and incentives to enter the international market. The lack of availability of export development fund and poor incentives offered to exporters make it difficult for the exporters to actively pursue their efforts.

iii) It is a myth among the Indian firms that they are not well accepted or encouraged in the market place because their products are inferior to their competitors from the West. In today’s liberalised market, it is survival of the fittest. No firm can rest on its laurels, no matter how big and established it is. Still, they have to face competition and perform effectively. So, it is the responsibility of the Indian firms to enhance their offering, show their true commitment and dedication for market penetration, but not the other way around.

iv) Although the Indian government asks for the views of Indian dolomite refractory manufacturers from time to time on major policy decisions including duty structure on imported dolomite refractories or the benefits to be extended for export of dolomite refractories through various export incentive schemes through its agencies like CAPEXIL and DGFT, the procedure needs a complete review. At present it remains a formality and nothing gets implemented. Thus, it brings no benefits of any substance for the growth of the industry.
6.2.3 Research Proposition 3

This section summarises the findings that emerged from the testing of Research Proposition 3, ‘The Indian dolomite refractory firms are less competitive compared to other countries sources that are regularly exporting to Malaysia’. The discussion takes into account the findings from secondary and primary data analysis.

The literature also revealed that the Indian dolomite refractory industry have the key competencies and technical capability required to enter the international market. Their strategic positions have been enhanced by the efforts of the Indian government through various support and policy measures, together with entering into free trade agreements with various governments. The Indian dolomite refractory firms are not taking advantage of the emerging new market opportunities arising from the free trade agreement with Malaysia. It was found that the Indian firms regarded their international competitors as more competitive. A summary of the results is provided in Table 6.3.

On the basis of these findings, the following conclusions are drawn:

i) Indian dolomite refractory firms are trying to penetrate the Malaysian market for the first time. But the traditional suppliers to this market have been there since inception and are well established. However, that does not necessarily mean that no other suppliers can enter this market. As long as the Indian source is competitive, it definitely stands a chance.

ii) The Indian dolomite refractory firms are relatively newcomers to the international market, as compared to their competitors who are the pioneers. Moreover, they come from developed countries and are proven for their supply, quality, consistency and service. They have the advantage of having built a brand image, which the Indian firms do not have. The Indian dolomite refractory firms need to change their outlook, be more competitive in their strategies and provide more value-added programmes to the Malaysian steel industry. In this way, they are bound to reverse the current trend.
iii) The focus of the Indian firms should be to meet their customers’ requirements, and not on just increasing their sales. They should learn to focus on what they want to achieve, which can only be done through focused marketing. There is a need for a complete review of their present culture of doing business. This is because what appears to be effective in the home market may not be applicable in the international market. Their present practice of ad-hoc or one-off supply cannot be sustained in the international market.

Table 6.3: Response Pattern for Research Proposition 3

<table>
<thead>
<tr>
<th>Research Issues</th>
<th>Literature Review</th>
<th>Expert Panel</th>
<th>Focus Group</th>
<th>Questionnaire Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive positioning of the Indian dolomite refractory industry emerging from FTA</td>
<td>Inadequate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Because of longer presence of their competitors in Malaysia, the Indian firms become less competitive</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Better images of their competitors in international market adds to their competitive advantages</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Indian firms resort to sincere marketing and synergic partnership with the intermediaries</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
</tbody>
</table>

Source: Developed for this Research

6.2.4 Research Proposition 4

This section summarises the findings that emerged from the testing of Research Proposition 4, ‘The exporting Indian refractory firms do not have the appropriate marketing strategies for successfully entering international markets like Malaysia’. The discussion takes into account the findings from secondary and primary data analysis.
The literature revealed much information on the international marketing entry strategies that can be employed by new entrants in the international markets, and also the importance of cultural issues in international business. The strategic management approach to internationalisation, is based on the Resource-Based View (RBV) discussed in section 3.2.2. RBV combines both the network and strategic perspectives of a firm with an objective of developing the strategies that are based on resource allocation, without taking into consideration whether the firm is global, international or domestic. However, there are gaps in the existing body of knowledge on whether some of the exporting Indian dolomite refractory firms have the appropriate marketing strategies in place for entering international markets and successfully competing with their global competitors. These gaps are shown in Table 6.4.

On the basis of the findings, the following conclusions are drawn:

i) Despite the Indian dolomite refractory firms’ intentions to enter into Malaysian market in a significant way, they did not commit themselves to it. These intentions are backed by their resource-based competitive capabilities and further supported by the Indian government policies. It appears that the firms choose to ignore this key market. There was no commitment at all and not even a single full-fledged representative office was opened in the region in question. No sincere efforts have been made to assess the true size and potential of the market and to act accordingly. As a result, the firms are still adopting short-term ad-hoc sale decisions.
Table 6.4: Response Pattern for Research Proposition 4

<table>
<thead>
<tr>
<th>Research Issues</th>
<th>Literature Review</th>
<th>Expert Panel</th>
<th>Focus Group</th>
<th>Questionnaire Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>The appropriate corporate and marketing strategies for enhancing the global expansion of the Indian refractory industries</td>
<td>Inadequate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian firms did a proper market research and assessed the true potential of the Malaysian market</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Indian firms are fully committed for developing appropriate strategies for market entry into Malaysia</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Indian firms are open to form a strategic partnership with customers and intermediaries to offer total solution rather than just selling.</td>
<td>Unknown</td>
<td>Disagreed</td>
<td>Disagreed</td>
<td>Disagreed</td>
</tr>
</tbody>
</table>

Source: Developed for this Research

ii) Without assessing the full potential of the market, no focused planning could be done in order to enter the international market, which was already occupied by world class competitors. No matter what government support incentives are made available, a firm will never make it into the international market without commitment and strategies for market development. Products or smart pricing alone are not enough to succeed and, in the case of the Indian firms, no marketing strategy has been adopted.

iii) In their attempts to enter the Malaysian market, the Indian dolomite refractory firms only tried to sell as much as they could and did not have any strategic marketing plans to stay in the long term. They did not adapt the culture for entering into international business, as they consider it to be an extension of the domestic market. They are not prepared to take the risks of doing business internationally. Unless the Indian firms change their approach to international business in order to adopt a broader perspective and cooperate with the customers and other intermediaries as a strategic decision, it would be hard for them to penetrate the Malaysian market.
The above section examined the findings of the data analysis that were discussed in Chapter 5 and derived conclusions on each of the four propositions. These were based on the patterns that emerged from the analysis of the findings from review of the literature, and from analysis of data collected from expert panel interviews, the focus group meeting and the questionnaire survey. The next section provides the conclusion on the research problem.

6.3 Conclusion on the Research Problem

This section discusses the quantitative and the qualitative findings regarding the research problem. The literature review presented in Chapter 2 and 3 identified the gaps and the pertinent theories associated with the parent and the immediate disciplines of the research. The review revealed that:

i) The Indian government is committed to substantially increase the exports of manufactured goods from India, for which it has formulated several support policies, programmes and incentive schemes. The dolomite refractory manufacturers from the private sector are trying to enter the international market but are hampered by the myth that the Malaysian steel manufacturers are biased against them, and thereby deny them the opportunity to gain new market entry.

ii) While the Indian government has introduced several export promotion policies and programmes, there were doubts about the effectiveness of the delivery systems the whole system is not geared up to meet export demands.

iii) With the liberalisation of trade under WTO and the signing of several FTAs with various countries including the ASEAN region, together with a separate CECA with Malaysia, the manufacturing sector in India has faced several challenges from both within and outside the country. The sector has had to enhance its international competitiveness in order to gain entry into new markets and sustain the current market share. These challenges include securing adequate financial support, changing the mindset, adopting a global
outlook and moving up the value chain, together with gaining a strategic position for moving into the international market.

iv) In order to enter the international market and to compete successfully, a firm has to make several strategic decisions, including the right selection of market entry mode based on the proper evaluation of the customers’ demands. The firms have to make use of all the available resources from both within and outside the firm. In order to enhance their competitiveness, the firms should offer total solutions to problems rather than just selling their products. The firms should also come up with appropriate strategies to enter the international market and sustain the business.

Furthermore, the available literature was silent on several key variables that are required for proper marketing strategies for the Indian dolomite refractory manufacturers with regard to doing business in Malaysia. These gaps are related to:

i) The extent of change required for the Indian manufacturing exporters to realign their culture and mindset for doing business in the international market.

ii) The effectiveness and adequacy of the Indian government’s support policies and programmes for export development.

iii) The competitive positioning of the Indian firms under the FTA and separate CECA with Malaysia.

iv) The appropriate strategies needed for enhancing the competitive offerings of the Indian firms to enter into the international market and compete successfully. The literature was silent on the strategies adopted by the Indian firms and their openness to form a partnership with intermediaries.

The research gaps also formed the basis for the development of the research questions and the four research propositions tested by this research. The analysis of the collected data provided additional insights that showed that:
i) The Indian refractory manufacturing firms do not appear to give importance to cultural aspects when doing international business. They should not think that the international markets are an extension of the home market and should stop doing things the way they do in their home market for export. Overall, the Indian firms should change their mind-set when dealing with different people in the international market.

ii) The Indian government’s delivery system supporting the manufacturing exporters has several shortcomings. A complete overhaul of the system in line with market forces is imperative. The government can no longer operate in isolation. In order to achieve their export growth target, more development funds should be made available to the exporters and all red tape and bureaucratic stumbling blocks should be removed to ensure the system’s effectiveness. This could be done with the setting a one-stop or single agency to handle all the pertinent issues.

iii) Indian refractory manufacturing firms should concentrate on formulating effective marketing strategies as they are generally unaware of the competitive challenges emerging from the AFTA and CECA.

iv) Appropriate strategies are essential for successfully entering the international markets. This requires the firms to take the resource-based view and develop broad-based cultural change, strategic planning and marketing capabilities involving their intermediaries and network actors in a foreign market in order to enhance their competitive position, instead of following clients on an ad-hoc basis.

The combined findings of this research provided useful perspectives and insights that served to bridge the gap found in the existing body of knowledge. These, as set out in Table 6.5, underlined the relevance of the research problem which concerned the question of an effective strategic marketing program for the export of Indian dolomite refractories to steel mills in Malaysia.”
Table 6.5: Investigation of Research Issues

<table>
<thead>
<tr>
<th>Research Issues</th>
<th>Literature</th>
<th>Research Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>The economic development policies of the Indian government</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>Exporting of manufactured goods from India to Malaysia</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>The Indian refractory industry</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>International marketing strategies</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td><strong>The perception of the Malaysian steel makers in the use of Indian dolomite refractories</strong></td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Unawareness of such products in the market</td>
<td>Unknown</td>
<td>Reflection of poor marketing efforts</td>
</tr>
<tr>
<td>• Not accepting the products based on its technical evaluation to meet the service requirements</td>
<td>Unknown</td>
<td>Reflection of poor marketing efforts</td>
</tr>
<tr>
<td>• Rejection of the Indian products on the notion it is inferior to their traditional source from West</td>
<td>Unknown</td>
<td>Gap</td>
</tr>
<tr>
<td><strong>Adequacy of Indian government policies and support programmes for export of manufactures goods</strong></td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Adequacy of export policy framework for to active promotion of exports</td>
<td>Unknown</td>
<td>Gap</td>
</tr>
<tr>
<td>• International promotion and support</td>
<td>Known</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>• Collaboration with Malaysian Steel industry to form a strategic partners to offer solution</td>
<td>Known</td>
<td>Change in mindset</td>
</tr>
<tr>
<td><strong>Competitive positioning of the Indian dolomite refractory industry emerging from FTA</strong></td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Less competitive because of longer presence of their competitors in Malaysia</td>
<td>Unknown</td>
<td>Design capabilities, Branding</td>
</tr>
<tr>
<td>• Less competitive because of better images of their competitors in the international market</td>
<td>Unknown</td>
<td>Design capabilities, Branding</td>
</tr>
<tr>
<td>• Indian firms do not commit to forming a synergetic partnership with intermediaries</td>
<td>Unknown</td>
<td>Gap</td>
</tr>
<tr>
<td><strong>The appropriate corporate and marketing strategies for entering the Malaysian Market</strong></td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>• Indian firms did not assess the true potential of the Malaysian steel market</td>
<td>Known</td>
<td>Active assessment and planning</td>
</tr>
<tr>
<td>• Indian firms lack commitment and focus in developing strategies for market entry</td>
<td>Unknown</td>
<td>Gap</td>
</tr>
<tr>
<td>• Openness to form a strategic partnership with customers and intermediaries to offer value added services rather than just selling</td>
<td>Known</td>
<td>Active assessment and planning</td>
</tr>
</tbody>
</table>

Source: Developed from the Research Data
6.4 Implications for Theory

This research is largely exploratory and fits into the interpretivist paradigm. As a result, the purpose here is to diagnose the existing situations, explore new alternatives and support development of new ideas and thereby build new theories.

The literature review in Chapter 3 identified three theories relating to the internationalisation of firms. As discussed in Sub-Section 2.4.2, those of relevance to this research are the:

i) Stage theories of internationalisation

ii) Networking approaches to internationalisation

iii) The Strategic Management Approach to internationalisation

There are two models of stage theories: (1) Uppsala Internationalisation Model (U-Model) and (2) Innovation related Internationalisation Model (I-Model). They explain the evaluation of exporting firms by way of three generic strategic stages, namely the ‘pre-export stage’, the ‘initial export stage’ and the ‘advanced export stage’. Although these models describe the process of change, they do not explain the various approaches that are adopted by these firms for attaining their growth successfully in the international market.

Network theory has its own strength, in particular, the importance it places on the management of international relationships. However, it does not get the deserved importance to the strategic positioning of the firms. Unless the firms enhance their competitive positioning in the international market in comparison with their nearest rivals, no matter how good and what network connection that the firms may have, they still may not be able to sustain the business with just the relationship alone.

However, the shortcomings of the above models have been addressed by the RBV of the strategic management approach to internationalisation. The RBV focuses on the factors such as unique, sustainable and costly to copy attributes of the organisation as
a main driver of SCA required for entering into the international market and to compete successfully. The ability of a firm to obtain profitable positions in the market depends on its ability to gain and defend its competitive position with respect to the resources that are crucial to the organisation. In other words, it combines the strategic and network perspectives of firms which include both key internal and external resources. External resources, like customers and intermediaries, could be added through network relationships. Accordingly, the researcher adopts the position that this is the most appropriate model for this research.

‘A Framework for Global Strategy’ model developed by Yip (1992) and discussed in Sub-Section 3.2.2 and shown in Figure 3.3 highlighted the key variables for the export of Indian manufactured dolomite refractories in the international markets like Malaysia. This framework provided the theoretical foundations for the research. The key variables included both internal and external factors. Influential internal factors considered are the strategic positions and the competitive advantages and the external factors are industry characteristics and target market forces.

The improvised model served to link the firms, globalisation drivers and other environmental conditions as the factors for success of the firms’ operation, thereby resulting in improved export sales and performance. Thus, the modified model should enable the firms to secure much needed Sustainable Competitive Advantage (SCA) over other firms that are competing for the same business in the market. However, as emerged from the findings of this research, there are also other important critical factors that have a bearing on the export of dolomite refractories to the international market successfully. They are summarized as follows:

i) The necessity for the Indian firms to realign their business culture and develop a global mind-set as a first step to understanding and moving into international business relationship with various intermediaries.

ii) Understanding the importance of reputational advantage as a source of sustainable competitive advantage of a firm entering the international market.
iii) Brand development is an essential step for the international market to thwart competition and serve as a source of competitive advantage.

iv) International market expansion requires commitment and funds. This requires the government to allocate special funds for market development programme because the present support is too little and cannot be availed easily owing to red tape and excessive bureaucracy.

v) Appropriate marketing strategies for entering the international market clearly include the selection of the target market, the right product, the timing of the market entry and the choice of market entry mode.

vi) Adapting to local culture in international business through the process called ‘glocalisation’ is the source of competitive advantage, especially for the new aspirants to the market because it develops a network of relationship with all the intermediaries, including the customer. Through this process, Total Refractory Management (TRM) concept can be easily introduced and will pave the way for a long-term business relationship instead of simply selling on consignment basis every time.

vii) Accordingly, ‘A Framework for Global Strategy’ developed by Yip (1992), as shown in Figure 3.3, has been modified as shown in Figure 6.1 to reflect all the above additional critical important factors for the successful export of dolomite refractories from India to Malaysia. The effect of all these components of a modified model should enable the firm to secure global sustainable competitive advantage (SCA).
Figure 6.1: Modified Export Strategy Framework

Source: Developed for this Research

The full picture of the research findings within the body of knowledge is provided in Section 6.4; that is, it presents the theoretical implications of the research. This section highlights that the research has not only made a significant contribution to knowledge in its immediate discipline/field as outlined in Sections 6.2 and 6.3, but
also highlights that they have implications for the wider body of knowledge, including the parent disciplines/fields discussed Chapters 2 and 3.

The conceptual model developed in Chapter 3 (Figure 3.3) has to be modified because of the research findings. The modified or newly developed model is shown in Section 6.4 (Figure 6.1), with the modifications clearly marked in bold on the figure. Indeed, development of a modified model is an excellent summary of how the research has added to the body of knowledge.

6.5 Implications for Policy and Practice

As explained in sub-section 1.4.2, one of the main objectives of this research was to recommend appropriate marketing strategies for adoption by the Indian refractory firms for gaining a greater share of dolomite refractory market in Malaysia that is currently dominated by the Westerner exporters. The other important objective was to examine the adequacy and effectiveness of the present Indian government’s support policies and programmes for developing the manufacturing exports from India.

To meet the stated objectives, this section offers recommendations, based on the research findings, to the Indian firms in their efforts to enter the Malaysian market and gain more market share. Since these recommendations are also for consideration, review and implementation by the policy makers in the government body, this section is divided into two sub-sections. The first examines the impact of the research findings on the government’s support policies and programmes and the second comprises the recommendations offered for consideration by the Indian dolomite refractory firms.

6.5.1 Implications for Policy

The research findings, as emerged from the analysis of research propositions in Chapter 4, pointed the necessity for the Indian authorities (DGFT, CAPAXIL and IRMA) to critically review and evaluate the existing polices in order to improve the effectiveness of its support programmes for the exporters of dolomite refractories, who are either ready to export or already involved in international business. The
policies that merit considerations for changes are listed below and are further elaborated.

- Application procedure through single agency
- Delivery system through single agency
- Additional financial support system

**Application procedure through single agency** – As revealed by the research findings, the documentation part is the major hurdle for exports from India. Be it the custom department or central excise or banking institutions or any other government agencies, the procedures are too cumbersome, time consuming and full of bureaucratic red tape. At times, the exporters are required to coordinate between these agencies. The application procedures for availing the export benefit through Duty Draw Back (DDB) or the earlier Duty Exemption Pass Book (DEPB) schemes are too detailed and need excessive supporting documents and constant follow-ups. All these issues simply discourage the smaller exporters who are contemplating an export orientation. In order to improve the current situation, it is recommended that:

i) All the application forms related to export formalities, including availing of benefits or loan procedures, should be made simple, easy to understand and preferably not more than one page, if possible.

ii) The requirement for voluminous supporting documents should be reduced to the absolute minimum or, if possible, done away with.

iii) In order to reduce time and cost, the application forms should be made available online.

iv) The government should establish a ‘one-stop agency’ to handle all the procedures. Educate the exporters or aspiring exporters from time to time on all these matters and also collect feedback for further improvement.
**Delivery system through single agency** – As revealed by the research findings, the delivery of support services and assistance for promoting exports is the collective responsibility of the government and its ministries. The Commerce Ministry and various other agencies, as discussed in Chapter 4, are seen to have overlapping responsibilities and duplication of efforts, thereby leading to much confusion. The present policy environments do not provide the needed funding support or incentives except for duty drawback.

In order to improve the current situation, it is recommended that:

i) Government should create a ‘single window clearance’ system otherwise known as a ‘one-stop agency’ that will have the complete responsibility to critically review the present problems faced by the exporter and formulate effective strategies and ensure the implementation of all export-related support policies and programmes in order to encourage exporters.

ii) Government should establish a local presence in all the countries through the embassies and foreign trade offices overseas to specifically look after business prospects and fully support the efforts of Indian firms with respect to building their business networks.

iii) Government should educate the exporters or aspiring exporters from time to time on all these matters and acquire feedback for further improvement.

**Additional Financial Support System** – As revealed by the research findings, the financial incentives provided to the Indian exporters are inadequate. On account of this, they are faced with enormous difficulties in securing the required funding as they have to rely on costly borrowings from the private institutions, which at times make their exports unviable and uncompetitive in the international market. This scenario justifies the requirement for additional funding support measures. In order to improve the current situation, it is recommended that:
i) The Indian government provide funding support and incentives to all the exporting firms and encourage them to venture into foreign markets.

ii) The Indian government should introduce tax holidays for a fixed number of years in order to encourage more exports.

### 6.5.2 Recommendations for the Indian Refractory Exporting Firms

Organisations face a number of challenges, obstacles and barriers, during their efforts to market their services and products in the global markets. The findings of the literature review, the expert panel, the focus group and the questionnaire survey clearly indicated that the Indian refractory firms venturing into the foreign markets face several challenges. These include adapting to various cultures in the international business arena, enhancing their competitiveness globally through the development of product and corporate images, introducing a value-added proposition to the business and creating networks so as to achieve better access to resources that are available in the markets. It is therefore necessary for the Indian firms to overcome these challenges in order meet the demands of the highly competitive international market. It is recommended that they adopt the following strategies:

- Adapt to the Malaysian business culture
- Create a superior corporate image as an essential strategy in Malaysia
- Craft a unique differentiation strategy for creating better value through Total Refractory Management (TRM)
- Create a competitive advantage via synergy through International Joint Venture (IJV)
- Transform themselves as a competitive strategy

The recommendations based on the findings of this research are outlined below:

**Adapt to the Malaysian business culture** – For the Indian firms venturing abroad especially into new markets like Malaysia, it is essential that they first understand the local business culture. The literature review revealed that any company that aspires to
industry leadership must have a global outlook and perspective. When products are introduced from one country to another, acceptance is far more likely, if there are similarities between the two cultures.

National culture definitely has an impact on business activities. While, venturing into foreign markets, firms should integrate into one culture to take maximum advantage of its managerial know-how, advanced techniques and coordinated marketing and accordingly formulate strategies to compete in the foreign markets (Thomson, Stricklan and Gamble 2007). The Indian firms should integrate with the Malaysian steel industry to enhance their strategic competitive advantage.

Recommendations:

i) Apply the ‘Malaysian Glocalisation’ Concept

The Indian dolomite exporters and steel mills have to make concerted efforts to address the issue of Malaysian intercultural management to evolve a corporate strategy that reflects their Malaysian interests. Thus, there is a need for a strategy of ‘Malaysian globalisation’ where the aim is to find the right combination of Indian global networking with local policy.

ii) Overcome cultural resistance in Malaysia

Through a locally-based team of professionals to discuss and debate various issues pertaining to their operations in Malaysia and formulate recommendations that the companies can subsequently adopt. This strategy can be used to obtain insights into managing problems in Malaysia, like the government laws, work ethics, religion, language, norms, etc. As the members are of a culturally diverse group, this would help solve much of the problems in dealing with the complex Malaysian market.

iii) Help to build a cultural teamwork for fostering open-mindedness

By reinforcing the awareness among the Indian firms that ways of transacting business can differ across cultures. Hence, the Indian firms would not have the
supposition that Indian management practices were the best in the world and should be imposed upon the Malaysians. It is a fact that it would be difficult for outsiders, as they cannot fully gauge the cultural aspects of Malaysia as it is a multi-racial and multi-religious country, while most of the businesses are controlled by the Chinese.

**Create a superior corporate image as an essential strategy in Malaysia** – To find acceptance in the Malaysian steel industry, the leading Indian dolomite refractory manufacturers need to highlight their global strengths, which are not really known in the Malaysian steel industry. For instance, Tata Steel Europe (formerly Corus Steel) is the second largest steel producer in Europe and fifth largest in the world, yet it is still not a recognised name in Malaysia. This shows the lack of a strong corporate image in Malaysia.

Building a corporate brand is always a journey, not just a destination, as corporate branding is a powerful tool that can make a vital contribution to any organisational success. Thus, the Indian dolomite refractory exporters have to understand that a strong corporate identity will enhance the perceived value of the Indian companies’ products and will help to differentiate these companies from the Western competitors and creating their own ‘Corporate Brand’. The Indian firms need to identify how they want their companies to be portrayed with respect to their brand values and then act accordingly to make this happen.

**Recommendations:**

i) **Craft a corporate branding strategy**

It has been noted that the Indian dolomite refractory exporters are not popular in the Malaysian steel industry. Thus, the need to build a corporate brand strategy is the need of the hour. The Indian dolomite refractory firms need to understand that a powerful corporate brand would serve to create confidence in the Malaysian firm’s mind-set. As revealed by the findings of this research, Indian firms should build their corporate brand, which will become a powerful
tool to deliver the right message about their companies, thereby ensuring that
the brand is conveying the values of the business as effectively as possible.

ii) Establish an integrated approach to brand management

The Indian dolomite refractory manufacturers should have an integrated
approach to brand management, where the brand image should be directly
linked to the key economic factors of price, market share and brand value in
the Malaysian market. They should create a strong equity that is positive, so
that the Malaysian steel mills will buy more of the Indian dolomite refractories.
This is because brands act as ‘signals’ to customers, conveying, often in a very
complex way, what is commonly known as ‘brand image’ information. Some
of the Indian dolomite refractory manufacturers having a global industrial
brand, which conveys the image of ‘superior engineering’, ‘global
performance’, ‘excellent technology’, ‘excellent value’ and ‘trustworthiness’
to the Malaysian steel industry.

iii) Create a Competitive Brand Equity for Dolomite Refractories

The Indian dolomite refractory exporters have to understand that a strong
brand carries enormous weight in the marketplace and represents everything
about the company and its products. More important than this is the brand
equity, which is the total value of all qualities and attributes implied by the
brand name that impact the choices made by the Malaysian customers. This
translates into monetary terms as a brand’s power to convince the Malaysian
steel mills to buy Indian dolomite refractories. This should reinforce the
brand’s ability to actually shift demand from the competitors.

iv) Implement Brand Management as a Global Competitive Weapon

As brand dominance sets one company apart from another in local markets,
the Indian dolomite refractory producers have to understand that achieving a
high or the top position in the Malaysian steel industry should be their ultimate
goal, if they want to achieve success in Malaysia and any of the global markets.
Investment in building a brand must be as unequivocal as in any other valued
corporate asset. This approach, integrated with the brand’s image with economic measures, would be a significant edge for the Indian dolomite refractory manufacturers that are aspiring for leadership in the Malaysian steel industry as a global brand.

Craft a unique differentiation strategy: Create better value through the Total Refractory Management (TRM) concept – There was evidence to suggest that the Indian dolomite refractory producers have to understand that to improve marketing efficiency and become more successful in the international markets, they need to think in terms of product line, that is, engineering, technology, production and so on, as a package solution rather than just in terms of the product itself, the dolomite refractory.

Recommendations:

i) This approach would provide a package with a one-stop solution for most of the steel mills, a very competitive strategy that can win the confidence and loyalty of the Malaysian Steel Industry. This would provide a solution, and could be termed as Total Refractory Management (TRM) for complete plant refractory planning and management. This would entail the Malaysian steel operators to make significant savings in refractory costs and engineering by providing crucial operational data and management information on costs, refractory performance and materials, which would be the right solution for the entire Malaysian production process, making it simpler, cost-effective, and increasing productivity and efficiency.

ii) The TRM introduces a revolutionary approach to refractory management, providing an integrated data management system for tracking entire usage and performance through databases; costs and performances can be updated on a regular basis for routine reports. There will be substantial savings in refractory costs and increased productivity will be ensured. This will result in Malaysian steel mills focussing on their core business and leaving the refractory planning, purchasing and other logistics to their suppliers.
Create a Competitive Advantage via Synergy through International Joint Venture (IJV) – The major Indian dolomite refractory exporters need to resort to International Joint Ventures (IJV) with some of the leading Malaysian steel mills. This would be an inter-company collaboration for the attainment of mutual goals, as these can become strategic networks and strategic alliances between the firms.

Recommendations:

i) The strengths of the local companies include knowledge of the domestic market, deep understanding of the government functionary and mechanism, the pulse of workforce, etc. The Indians can provide their superior dolomite refractory and steel technology to assist the Malaysian joint venture partners in producing advanced quality steel at competitive costs. This shared control can lead to positive outcomes with higher levels of trust and mutual forbearance.

ii) The Indian firms can also enjoy accelerated growth that may be attained through the expansion of existing markets and entering into new markets. They can reduce their risks by creating a balanced portfolio in Malaysia by way of diversification. Thus, the competitiveness of the Indian dolomite refractory exporters will become more aggressive and can compete for a larger market share and a better position in the Malaysian steel market.

Transform themselves as a competitive strategy – The Indian dolomite refractory exporters need to understand that whatever advantage they have is only transient as the foreign markets are vulnerable to technological disruptions, competition, new regulatory regimes, political changes, etc. These Indian firms will therefore have to re-invent themselves thoroughly with this new paradigm shift. This calls for change in their mind-set so as to align them better with the market reality.

Recommendations:

i) The Indian refractory manufacturers need to develop the source of competitive advantage that will attract customers, employees, and suppliers
and is grounded in internal capabilities, i.e. the things that the companies can do with distinction.

ii) The answer to this is not to keep adopting new theories in the hope of finding the right answer, but for them to develop their own capabilities-driven strategy. The firms need to understand how they have to develop value, now and in the future, for their chosen customers by understanding what their most important capabilities are, and how they fit together, so as to align them with the portfolio of products and services.

iii) The more clearly and strongly these Indian firms make such choices, the better the chances of creating an identity that will give them the right to succeed in the long run.

6.6 Research Limitations

A number of limitations associated with this research were identified in Section 1.9 of Chapter 1. This section discusses the limitations that became apparent during the course of this research:

i) The research being mainly exploratory and qualitative in nature, had to rely heavily on the interpretation of the findings.

ii) While the use of judgemental and quota sampling permitted the sub-groups of the target population related to industry to participate in the survey, the size of different groups used in the survey could have resulted in survey bias.

iii) The sensitive and confidential nature of some of the questions included in the survey questionnaire may have precluded or constrained some of the participants from expressing their views candidly.

iv) Insufficient representation of government representatives in both the expert panel and focus group may not have provided a good representation of the views sought which could have affected the research findings.
6.7 Further Research

This research is largely exploratory and preliminary in nature. This provides opportunities for further research on the marketing areas related to the Indian dolomite refractory manufacturers in order to formulate better marketing strategies in Malaysia. A few suggested research issues that can be explored further are given below.

First, quantitative research using larger sample sizes and premised on a positivist or deductive methodology could be conducted. Benefiting from the use of a larger sample, the research findings of such studies could provide statistical validity to underline the results and the conclusions drawn in this exploratory study. As discussed, it is acknowledged that the use of a small sample size, such as that used in this study, compromises the reliability of the findings.

Secondly, this study determines the right or most appropriate marketing strategies for the Indian dolomite refractory exporters in Malaysia. Presented in Section 5.4, this model shows some of the critical strategies for the successful market entry of the Indian firms into Malaysia. The conduct of a descriptive research study could examine the relevance of the model to verify or refute it. The outputs of this further research could also provide useful benchmarks for the Indian firms or similar companies in the Malaysian market.

6.8 Conclusion

This chapter presented the conclusions drawn on each of the four propositions and the research problem. It then discussed the new theory development and offered recommendations for policy and practice. First, the implications for policy formulation and implementation by the government authorities those are responsible for growth of exports from India. Second, the implications of the findings to senior management of the Indian exporting firms for practice. It then covered the limitations that became apparent during the conduct of this research and provided suggestions for further research on issues related to development of strategies for the Indian firms for venturing into international market.
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APPENDIX - A

DISCUSSION GUIDE

FOCUS GROUP

EXPORTING DOLOMITE REFRACTORIES FROM INDIA TO MALAYSIA –MARKETING STRATEGIES FOR SUCCESS

(A) INTRODUCTION:

- Introduction of the researcher and roles.
- Personal introduction of participants, their background and business.
- Aim and format of the focus group.
- Conventions (confidentiality, speak one at a time, everybody’s views, open debate, recordings and report of proceeding).

(B) DISCUSSION TOPICS / ISSUES:

(I) The Malaysian Steel Manufacturers are reluctant to use the Indian dolomite refractories.

1. Malaysian Steel producers are not aware that India is now a major producer and exporter of quality dolomite refractory.

2. Malaysian Steel mills are not technically receptive to use Indian dolomite refractory and hence their reluctance to import Indian dolomite refractory.

3. Malaysian Steel manufacturers are basically biased against Indian firms and hence they hardly want to import to Indian dolomite refractory even if it is competitive and superior to products from other countries.

(II) The Indian government’s targeted support policies and programmes to assist Indian exporting firms to enter and successfully compete in international market are ineffective.
(4) The Indian government targeted support policies and programmes for actively promoting new international market penetration effort by the Indian firms are not effective.

(5) The existing funding support and export incentive schemes provided by the Indian government do not help the Indian refractory industries to enter and effectively compete in the international market.

(6) The Indian government does not collaborate closely with Indian refractory firms in devising new policies and support measures for enhancing the international competitive positioning of the Indian firms are not effective.

(III) The Indian dolomite refractory firms are less competitive compared to other countries sources that are regularly exporting to Malaysia.

(7) Their traditional dolomite refractory suppliers are well established in the Malaysian market as they have longer presence and hence their advantage over any new-comers likes the India dolomite refractory manufacturers.

(8) Their traditional dolomite refractory suppliers have better image in the international market and hence they perform better and are more successful in Malaysia.

(9) Their traditional dolomite refractory suppliers resort to much sincere marketing efforts and a synergic partnership with Malaysian steel mills hence they have a strong presence in Malaysia.

(IV) The marketing strategies adopted by the Indian refractory firms for successfully entering new international markets like Malaysia lacks focus and commitment thus are inappropriate.

(10) Indian dolomite refractory producers have not fully assessed the true potential of the Malaysian Steel industry to have a better focus.

(11) Indian dolomite refractory producers lack commitment and dedication towards Malaysian Steel mills despite having superior grade dolomite refractories.

(12) The current strategies used by the Indian dolomite refractory manufacturers may not be applicable to the Malaysian market.

(C) SUMMING UP
APPENDIX - B

INFORMATION SHEET

FOCUS GROUP

EXPORTING DOLOMITE REFRACTORIES FROM INDIA TO MALAYSIA – MARKETING STRATEGIES FOR SUCCESS

My name is PK Santhakumar and I am conducting a research as part of my Doctor of Business Administration (DBA) degree at Southern Cross University, Australia. My thesis is investigating the appropriate marketing strategies for the export of dolomite refractories from India to Malaysia for application in the Steel Mills.

I am inviting selected informed individuals to participate in the Focus Group meeting as part of this study and would welcome and appreciate your participation. I believe your participation will contribute useful and valuable information for the research.

Overview of the Research:

The Indian industry is being gradually liberalized under the impact of the General Agreements on Trade and Tariff and other Free Trade agreements including Comprehensive Economic Cooperation Agreement (CECA) with Malaysia. Though, the Indian refractory industry has been steadily growing over the years due to continuous increase in steel production in India, it is certain that the firms will face intense competition in the domestic market from both the local and foreign suppliers in future. So, it is timely for the Indian firms, with their superior quality products and competitiveness, to strategize by seeking new avenues for growth, sustainability and survival.

My research aims to determine the competitive positioning of the Indian refractory firms in the face of globalisation and to identify the appropriate strategies for successful entry into new international markets such as Malaysia.

The findings of this research will lead to identify the appropriate marketing strategies for the Indian firms to be better prepared for successfully entering this market and compete in the face of stiff global competition.

Procedures of the Focus Group Meeting:
The Focus Group meeting will take approximately 90 minutes and will be held at a date, time and place to be determined later.

The forum will provide an opportunity for all eight participants to share their views, opinions and issues facing Indian firms as they venture into international market. Participation is on a voluntary basis and no financial remuneration or incentive will be offered for taking part. Refreshments and light snacks will be served, however, travel expenses or any other costs associated for participation will not be reimbursed.

**Responsibilities of the Researcher:**

As the facilitator and moderator for the focus group meeting, I will ensure that the discussion remains focused and I will clarify and summarize key points where required and appropriate.

To ensure confidentiality, apart from utilizing your name and contact details for the invitation for participation, your name and other identifying information will not be attached in the data collected.

As a participant, you will be required to sign a consent form. The consent form outlines your permission to utilise the information collected in the focus group meeting as part of this study, without identifying you or your organisation. All signed consent forms will be held in safe storage for a period of seven years before being destroyed.

The research findings may be submitted for publication. All data collected will be presented as overall data. The results of the research will be made available as part of the Final Thesis through the Southern Cross University library.

**Responsibilities of the Participants:**

Your responsibility in participating in this research involves your time, opinions, ideas and views about the research topic. There is no risk associated to participants in this research. You will be free to leave and withdraw consent without any explanation at any time.

**Research Results:**

The research findings may be submitted for publication. All data collected will be presented as overall data. The results of the research will be made available as part of the Final Thesis at the Southern Cross University library.

As a participant, you are entitled to the feedback and the summary results of the research. If you wish to receive the summary results, please provide your e-mail address or mailing address (confidential) as indicated in the consent form.

**Enquiries:**
The form is yours to keep for future reference. Please feel free to contact us should you require any additional information or have any queries:

**Researcher**
Candidate
PK Santhakumar
C/o City University College of Science and Technology
Phone: +6012-200 6575
Email: santha2020@gmail.com

**Supervisor**
Dr. Andy Woo
City University College of Science and Technology
Tel: +6012 2082698
Email: aclwoo@gmail.com

This research has been approved by the Human Research Ethics Committee at Southern Cross University. The approval number is ECN-10-035. If you have concerns about the ethical aspects of this research or the researcher, please write to the following:

The Ethics Complaints Officer
Southern Cross University
PO Box 157
Lismore NSW 2480
Email: ethics.lismore@scu.edu.au

All information is confidential and will be handled as soon as possible.
APPENDIX - C

CONSENT FORM - FOCUS GROUP
AS PART OF A DOCTOR OF BUSINESS ADMINISTRATION (DBA)
RESEARCH THESIS

Title of research project: Exporting Dolomite Refractories from India to Malaysia: Marketing Strategies for Success

Name of researcher : PK Santhakumar
Name of Supervisor : Dr Andy Woo
Supervisor
City University College of Science and Technology
Tel: +6012 208 2698
E-Mail: aclwoo@gmail.com

Tick (√) the box that applies, sign and date and give to the researcher

* I agree to take part in this Southern Cross University research project
   Yes ☐ No ☐

* I understand the information that has been provided to me by the Researcher in relation to my participation
   Yes ☐ No ☐

* I agree to be interviewed by the researcher
   Yes ☐ No ☐

* I agree to make myself available for further interview if required
   Yes ☐ No ☐

* I understand that my participation is voluntary
   Yes ☐ No ☐

* I understand that I can choose not to participate in part or all of this research at any time, without negative consequence to me
   Yes ☐ No ☐

* I understand that any information that may identify me, will be de-identified at the time of analysis of any data.
   Yes ☐ No ☐

* I understand that all information gathered in this research is confidential. It will be kept securely and confidentially for 7 years at the University.
   Yes ☐ No ☐

* I am aware that I can contact the supervisor or researcher at any time with any queries
   Yes ☐ No ☐
* I understand that the ethical aspects of this research have been approved by the SCU Human Research Ethics Committee

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If you wish to receive the summary results of the research, please provide your email address or mail address (confidential) below:

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APPENDIX - D

INFORMATION SHEET

QUESTIONNAIRE

EXPORTING DOLOMITE REFRactories FROM INDIA TO MALAYSIA
–MARKETING STRATEGIES FOR SUCCESS

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Overview of the Research:
The Indian industry is being gradually liberalised under the impact of the General Agreements on Trade and Tariff and other Free Trade agreements including CECA with Malaysia. Though, the Indian refractory industry has been steadily growing over the years due to continuous increase in steel production in India, it is certain that the firms will face intense competition in the domestic market from both the local and foreign suppliers in future. So, it is timely for the Indian firms, with their superior quality products and competitiveness, to strategise by seeking new avenues for growth, sustainability and survival.

My research aims to determine the competitive positioning of the Indian refractory firms in the face of globalisation and to identify the appropriate strategies for successful entry into new international markets such as Malaysia.

The findings of this research will lead to identify the appropriate marketing strategies for the Indian firms to be better prepared for successfully entering this market and compete in the face of stiff global competition.
Procedures of the Questionnaire Survey:

The questionnaire comprises 12 questions which have been cast as statements. Each statement relates to an issue which is pertinent to the research. In order to measure your responses, a five-point Likert scale is used. There are five boxes ranging from ‘Strongly Disagree’ to ‘Strongly Agree’ for each statement. Please tick the appropriate box for your answer.

Based on an earlier pre-testing of the questionnaire, it is estimated that you would require no more than 15 minutes in total to complete all the questions. After you have completed the questionnaire, please return the questionnaire to us in the enclosed self-addressed and stamped envelope or by returned e-mail.

Participation is purely voluntary and no financial remuneration or incentive will be offered for taking part in this research. There are no travel expenses, nor are there any costs associated with participation in this research apart from your time.

Responsibilities of the Researcher:

It is our duty to make sure that any information given by you is protected. To ensure confidentiality, apart from utilising your name and contact details for the invitation for participation, your name and other identifying information will not be attached in the data collected.

The returned questionnaire is an implied consent that you have given your permission to utilise the information collected in the survey as part of this study, without identifying you or your organisation. All returned questionnaire will be held in safe storage for a period of seven years before being destroyed.

Responsibilities of the Participants:

Your responsibility in participating in this research involves your time, opinions, ideas and views about the research topic. If there is anything that might unduly affect your response to the statements in the questionnaire, you can decline to answer. There is no risk associated to you in this research. You are free to withdraw and to discontinue participation at any time without explanation. However, we would appreciate you letting us know your decision.

Research Results
The research findings may be submitted for publication. All data collected will be presented as overall data. The results of the research will be made available as part of the Final Thesis at the Southern Cross University library.

As a participant, you are entitled to the feedback and the summary results of the research. If you wish to receive the summary results, please provide your e-mail address or mailing address (confidential) as indicated in the front page of the survey questionnaire.

**Enquiries:**

The form is yours to keep for future reference. Please feel free to contact us should you require any additional information or have any queries:

**Researcher**
Candidate  
PK Santhakumar  
C/o City University College of Science and Technology  
Phone: +6012-200 6575  
Email: santha2020@gmail.com

**Supervisor**
Dr. Andy Woo  
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This research has been approved by the Human Research Ethics Committee at Southern Cross University. The approval number is ECN-10-035. If you have concerns about the ethical aspects of this research or the researcher, please write to the following:

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Southern Cross University  
PO Box 157  
Lismore NSW 2480  
Email: ethics.lismore@scu.edu.au

All information is confidential and will be handled as soon as possible.
APPENDIX - E

THE SURVEY QUESTIONNAIRE

EXPORTING DOLOMITE REFRACTORIES FROM INDIA TO MALAYSIA –MARKETING STRATEGIES FOR SUCCESS

Instructions: Please read carefully and complete the appropriate sections. Upon completing the survey, please return the survey sealed in the self-addressed and stamped envelope provided.

(A) Your Organization

Please Tick (✓) only One Box:

Government / Regulatory Body  [ ]
Consulting Firm  [ ]
Contracting Firm  [ ]

(B) Your Position in Your Organization:


(C) If you wish to have the summary results of this research, please provide your e-mail address or mailing address (confidential) as indicated below :-

E-mail :

Mailing Address :

**Instructions:** Please rate how strongly you agree or disagree with each of the following statements by placing a tick (✓) in the appropriate box.

**Research Proposition 1:**

The Malaysian Steel Manufacturers are reluctant to use Indian dolomite refractories.

**Statement 1**

Malaysian Steel producers are not aware that India is now a major producer and exporter of quality dolomite refractory.

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**Statement 2**

Malaysian Steel mills are not technically receptive to use Indian dolomite refractory and hence their reluctance to import Indian dolomite refractory.

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<th>Strongly Disagree</th>
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**Statement 3**

Malaysian Steel manufacturers are basically biased against Indian firms and hence they hardly want to import to Indian dolomite refractory even if it is competitive and superior to products from other countries.

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Research Proposition 2:

The Indian government’s targeted support policies and programmes to assist Indian exporting firms to enter and successfully compete in international market are ineffective.

Statement 4

The Indian government targeted support policies and programmes for actively promoting new international market penetration effort by the Indian firms are not effective.

Statement 5

The existing funding support and export incentive schemes provided by the Indian government do not help the Indian refractory industries to enter and effectively compete in the international market.

Statement 6

The Indian government does not collaborate closely with Indian refractory firms in devising new policies and support measures for enhancing the international competitive positioning of the Indian firms are not effective.
**RESEARCH PROPOSITION 3:**

The Indian dolomite refractory firms are less competitive compared to other countries sources that are currently exporting to Malaysia.

**STATEMENT 7**

Their traditional dolomite refractory suppliers are well established in the Malaysian market as they have longer presence and hence their advantage over any new-comers likes the India dolomite refractory manufacturers.

**STATEMENT 8**

Their traditional dolomite refractory suppliers have better image in the international market and hence they perform better and are more successful in Malaysia.

**STATEMENT 9**

Their traditional dolomite refractory suppliers resort to much sincere marketing efforts and a syneric partnership with Malaysian steel mills hence they have a strong presence in Malaysia.

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**Research Proposition 4:**

The Indian dolomite refractory firms are less competitive compared to other countries sources that are currently exporting to Malaysia.

**Statement 10**

The marketing strategies adopted by the Indian refractory firms for successfully entering new international markets like Malaysia lacks focus and commitment thus are ineffective.

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**Statement 11**

Indian dolomite refractory producers lack commitment and dedication towards Malaysian Steel mills despite having superior grade dolomite refractories.

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**Statement 12**

The current strategies used by the Indian dolomite refractory manufacturers may not be applicable to the Malaysian market.

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APPENDIX- F

SURVEY QUESTIONNAIRE RESPONSES (RAW DATA)

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| Group A: Industry Experts |
| Group B: Steel Mill 1 |
| Group C: Steel Mill 2 |
| Group D: Support Agencies |

Source: From Survey Questionnaire