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First-Mover Advantage: A Cross-National Comparison of Mature and Emerging Market Consumers' Attitudes Toward Pioneer and Follower Brands

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FIRST-MOVER ADVANTAGE:

A CROSS-NATIONAL COMPARISON OF MATURE AND EMERGING

MARKET CONSUMERS' ATITUDES TOWARD PIONEER

AND FOLLOWER BRANDS

by

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ABSTRACT

FIRST-MOVER ADVANTAGE:
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CONSUMERS' ATITUDES TOWARD PIONEER AND FOLLOWER BRANDS

Tarek T. Mady
Old Dominion University, 2004
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A number of scholars suggest that the ability to accrue any competitive advantage

stemming from time of entry is a function of the type of market being entered (e.g.,

Lieberman and Montgomery 1988; Kerin et *al.* 1992; Szymanski et *al.* 1995; VanderWerf

and Mahon 1997). This dissertation extended the current behaviorally-based research

domain of the field vis-a-vie a survey-based comparative study of mature market (U.S.)

and emerging market (Indian) consumers' attitudes toward pioneer and follower brands.

Two fundamental questions were asked: (1) Are there significant attitudinal differences

between mature market and emerging market consumers based on order of entry? (2)

Would firms considering emerging markets be better off entering early despite all the

start up difficulties, or postpone their entry until the first-mover gets "bloodied" and then

enter, with the expectation of greater performance?

Based on the earlier work of Alpert and Kamins (1995) and utilizing the Fishbein

and Ajzen (1975) Theory of Reasoned Action, 12 hypotheses examining the underlying

beliefs, attitudes, and purchasing intentions of consumers in both countries as they relate

to pioneering vs. follower brands were formulated and tested using paired-sample *t*-tests,

multiple regression analysis, and structural equation modeling. A number of significant

conclusions were drawn from the analyses. First, while consumers in both countries have

favorable attitudes towards the pioneer, Indian consumers tend to exhibit much more positive perceptions in terms of both global and multiattribute-based attitudes. Second, attitudinal preferences for the pioneer brand are positively related to intention to buy the pioneer brand. The notable attitudinal differences between the countries are reflected in a significantly more positive intention preference for the pioneer brand on the part of Indian consumers. Finally, in both countries, the preference for the pioneer is a function of a series of causal relationships where attitudes and social norms play dominant roles. In the U.S., individual attitudes play a more significant role in formulating purchase intention than social norms. However, societal norms tend to discourage the purchase of the pioneer brand. In the case of India, social norms play a more dominant role in intention formation. The study concludes with a discussion of the managerial implications, limitations of the study, and suggestions for future research.

This dissertation is dedicated to my parents, Tawfik and Claire. I am forever indebted to your guidance, direction, and endless support. My academic and personal achievements could not have been fulfilled without you. I can only begin to express my extreme love and appreciation for you and all that you have done for me. Thank you for believing in me and allowing me to pursue my dreams.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF EXHIBITS

CHAPTER I

INTRODUCTION

STATEMENT OF THE PROBLEM

Over the past three decades, first-mover advantage (FMA) or pioneering advantage has been extensively addressed in both the marketing and management research literature (Urban *et al.* 1986; Robinson 1988; Kerin, Varadarajan, and Peterson 1992; Kalyanaram, Robinson, and Urban 1995; Song, Benedetto, and Zhao 1999). The theoretical explanations of such advantages have traditionally been found in the barriers-to-entry literature (e.g., Bain 1956; Macmillan 1983; Porter 1980, 1985; Lieberman and Montgomery 1988). More recently, however, a number of significant conceptualizations have suggested that first-mover advantages transcend these typically economic explanations and are, at least in part, the result of psychological processes in the mind of the consumer (e.g., Carpenter and Nakamoto 1989; Alpert, Kamins, and Graham 1992; Kardes, Kalyanaram, Chandrashekaran, and Dornoff 1993; Alpert and Kamins 1994, 1995). This so-called behavioral paradigm of analysis, while still relatively fragmented and under-researched, has been increasingly acknowledged as a robust source of conceptual explanations for this complex phenomenon (Shankar, Carpenter, and Krishnamurthi 1998; Alpert et *al.* 2001; Rettie, Hilliar, and Alpert 2002).

Significant evidence in the market entry literature confirms the link between order of entry and long-term success (Lambkin 1992; DeCastro and Chrisman 1995). However, a number of scholars suggest that competitive advantages that accumulate from some form of early entry, be they economic or behavioral in nature, often do not apply to others

because of differing exogenous forces specific to the first-mover situation (e.g., Moore, Boulding, and Goodstein 1991; Green, Barclay, and Ryans 1995; VanderWerf and Mahon 1997; Johansson 2003; Arnold 2004). The suggestion is that the potential for generating any first-mover advantage is in fact a function of the type of the market being entered (Lieberman and Montgomery 1988; Kerin, Varadarajan, and Peterson 1992; Szymanski, Troy, and Bharadwaj 1995; Sivakumar 2002). Given this contextual nature of first-mover advantages, it is surprising that relatively little research has been devoted to addressing entry timing in international markets (Buckley and Casson 1981; Lilien and Yoon 1990; Mascarenhas 1992, 1997; Song, Benedetto, and Zhao 1999, Song, Benedetto, and Song 2000). Even more surprising is the lack of empirical research on entry timing in so-called emerging markets (Luo and Peng 1998; Arnold and Quelch 1998; Isobe, Makino, and Montgomery 2000; Rahman and Bhattacharyya 2003) where environmental conditions differ significantly from more mature markets (Garten 1997; Arnold and Quelch 1998).

The structural and cultural environments prevalent in emerging markets (EMs) present firms wishing to enter such markets with unique opportunities and challenges concerning marketing strategy formulation. Examples include the choice of time of entry and the potential consequences of such a strategy (Terpstra and David 1991; Nakata and Sivakumar 1997; Hoskisson, Eden, Lau, and Wright 2000; Fealy and Kompare 2003; Walters and Samiee 2003). That said, current management literature on first-mover advantages often provides an implied theoretical argument for early entry into emerging markets (e.g., Luo and Peng 1998; Song, Benedetto, and Song 2000; Arnold 2004). The argument has been made that competition is likely to become more intense over time as a

direct result of continuing structural reform and industrial deregulation as these markets become more mature (Shenkar 1990; Mascarenhas 1992; Kvint 1994; Luo 1995); therefore suggesting the need for early entry and the seizing of an impending monopolistic position. However, this argument is strictly based on the notion that first-mover advantages stem from barriers-to-entry and thus economic benefits of being first in a market. From a marketing viewpoint, the influence of emerging market conditions is most evident in terms of local consumer behavior within these markets (Frazier, Gill, and Kale 1989; Kumar 2000; Samli 2004). That is, a detailed examination of the emerging market literature suggests that certain fundamental conditions and key characteristics of such markets distinctly influence consumer behavior and may have an impact on the behavioral sources of first-mover advantages.

Consequently, given the under-researched nature of the behavioral paradigm of first-mover advantage (Rettie, Hilliar, and Alpert 2002), the situational nature of any international entry strategy, including timing of entry (Hoskisson, Eden, Lau, and Wright 2000; Meyer and Estrin 2001), the growing importance of emerging markets in today's globalized economy (Garten 1997; Arnold and Quelch 1998), and the impact of structural and cultural conditions in such markets on local consumer behavior, there is a clear need for extending current behaviorally-based order-of-entry literature beyond the typically domestic framework of analysis. More importantly, as befits a growing research stream, there is a need for replication and cross-national comparative analysis within the behavioral paradigm (Hubbard and Armstrong 1994; Alpert *et al.* 2001). This line of reasoning puts forward two fundamental questions not addressed in current first-mover advantages literature: (1) Are there significant attitude and intention differences between

mature market and emerging market consumers based on order of entry? and (2) If so, would firms considering doing business in emerging markets be better off entering early despite all the start up difficulties, or postpone their entry until the pioneer get "bloodied" and then enter, with the expectation of greater performance?

This dissertation attempts to shed light on this issue by extending the current behavioral research domain of first-mover advantages vis-a-vie a survey-based comparative study of mature market (U.S.) and emerging market (Indian) consumers' attitudes towards pioneer and follower brands. This chapter begins with a brief introduction to first-mover advantages, the inherent limitations of the existing international research stream along with the gaps in the literature regarding the question of entry timing in emerging markets. From this introduction, the specific research focus of this dissertation will then be discussed in detail. This will include a brief presentation of the proposed model, the significance of the study, and the inherent limitations of the particular scope of analysis. The final section will provide an outline of the remainder of the dissertation.

BACKGROUND AND DEFINITION OF TERMS

The strategic concept of first-mover advantage asserts that firms that become initial market entrants in one form or another can leverage that status into long-term business success (Tellis and Golder 1996). That is, a first-mover advantage involves achieving a dominant and enduring market position as a result of a firm's preemptive competitive strategies resulting from a head start over competitors (Kerin, Varadarajan, and Peterson 1992). The hypothesis itself states that, on average, a firm's order of entry is

negatively correlated with its long-term market performance (Robinson, Kalyanaram, and Peterson 1994). And while the first-mover *status* has been clouded with definitional ambiguity (Urban *et al.* 1986; Lieberman and Montgomery 1988; Schnaars 1994), a number of extensive literature reviews have provided insight into the conceptual nature of the first-mover.

Kerin, Varadarajan, and Peterson (1992) defined the first-mover as a firm that: (1) produces a new product, (2) uses a new process, or (3) enters a new market. Golder and Tellis (1993) identify the notion of "first-mover" as synonymous with "pioneer." Namely, that pioneers include: (1) a firm that develops patents or important technologies in a new product category, (2) a firm that is first to develop a working model or sample in a new product category, or (3) a firm that is first to sell a new product. Both definitions are consistent with the earlier work of Urban et *al.* (1986) where a market pioneer is defined as the first entrant in a new *market*. This definition will be adopted for this study. That is, "first-movers" or "pioneers" are defined as the first firms to *sell* their goods or services in a particular industry or market, regardless of mode of entry (i.e. export, licensing, or foreign direct investment).

As seen in Chapter II, a number of factors contributed to the surge of interest regarding the role of entry timing in determining firm performance and consequently the establishment of a legitimate research stream focusing on first-mover advantage. Still, two specific factors have been cited extensively in the literature and are noteworthy at this stage. The first deals with industry-specific *historical* analysis and culminated with the widely cited 1983 *Advertising Age* study that compared the ranks of market share leaders in 1923 (using 25 different product categories) with their positions in 1983. As

illustrated in Table 1, of the 25 leaders in 1923, 19 were still first, four were second, one was third, and one was among the top five. The second significant factor that contributed to the rise of the first-mover advantage empirical generalization was the development of numerous *cross-sectional* databases used for marketing strategy research. The most significant of these databases is the dataset compiled by the Profit Impact of Marketing Strategies (PIMS) project (Golder and Tellis 1993). From this database, seventy percent of market leaders were identified as "pioneers", and almost half of all "pioneers" were also market leaders (Buzzell and Gale 1987).

Table 1
Market Share Ranks of Brands: 1923 vs. 1983 as published in *Advertising Age* (1983)

Brand	1923 rank	1983 rank
Swift's Premium Bacon	1	1
Kellogg's Corn Flakes	1	3
Eastman Kodak Cameras	1	1
Del Monte Canned Fruit	1	1
Hershey's Chocolate	1	2
Crisco Shortening	1	2
Carnation Canned Milk	1	1
Wrigley Chewing Gum	1	1
Nabisco Biscuits	1	1
Eveready Flashlight Batteries	1	1
Gold Medal Flour	1	1
Life Savers Mint Candies	1	1
Sherwin-Williams Paint	1	1
Hammermill Paper	1	1
Prince Alpert Pipe Tobacco	1	1
Gillette Razors	1	1
Singer Sewing Machines	1	1
Manhattan Shirts	1	Top 5
Coca-Cola Soft Drinks	1	1
Campbell's Soup	1	1
Ivory Soap	1	1
Lipton Tea	1	1
Goodyear Tires	1	1
Palmolive Toilet Soap	1	2
Colgate Toothpaste	1	2

Adapted from Golder and Tellis (1993)

These developments are important because they provide more than simple awareness of a budding phenomenon. They help to illustrate a direct link between a particular aspect of a firm's marketing strategy (timing of entry) and potential performance (market share), a relationship pivotal to the field of strategic market planning (Kerin, Mahajan, and Varadarajan 1990). Nevertheless, while the conclusions of historical analysis and PIMS-based research provide evidence of the possible *existence* of a link between order of entry and market performance, they have fallen short of explaining *why* first-movers enjoy long-term market share performance. More importantly, most early studies that relied on these empirical methods failed to answer questions regarding the poor performance of pioneers that were once market leaders in their respective industries (Golder and Tellis 1993). This has led a number of scholars to argue that these studies provided a myopic view of the phenomenon.

Tapping into the limitations of these earlier studies, a number of scholars have attempted to provide a more comprehensive, contingent, and theoretically-based approach, based on both the rewards *and* the risks associated with being first to enter the market. More importantly, however, these approaches ventured beyond simply measuring and reporting possible first-mover advantages by attempting to provide explanations while noting the contradictory evidence from the market (e.g., Kerin, Varadarajan, and Peterson 1992; Golder and Tellis 1993; Schnaars 1994). In doing so, these theoretical explanations have offered significant contributions to the literature by addressing a number of validity issues and the sampling bias inherent in previous findings. The result has been a growing diffusion of the first-mover empirical generalization into marketing theory (Kalyanaram, Robinson, and Urban 1995; Szymanski, Troy, and Bharadwaj 1995;

Vanderwerf and Mahon 1997). More specifically, while there is evidence of a negative correlation between order in the market and long-term competitive advantage, pioneering as a distinct marketing strategy, brings with it a number of risks that may hinder a firm's ability to capture or maintain that competitive advantage.

THEORETICAL PERSPECTIVES OF FIRST MOVER ADVANTAGE

While the existing literature on first-mover advantage is fragmented (Vanderwerf and Mahon 1997), there are two complementary schools of thought which are dominant: the economic-analytical perspective and the behavioral perspective. The economic perspective attempts to explain the first-mover phenomenon in terms of producer-based advantages or simply the *supply* of the product (Kerin, Varadarajan, and Peterson 1992). That is, first-mover advantages are viewed to emerge from sequential market entry and the creation of barriers to entry (Porter 1980; Lieberman and Montgomery 1988; Golder and Tellis 1993). Because first-movers are by definition monopolists, followers would be required to invest considerably greater resources to be competitive than those expended by the pioneering firm (von Hippel 1988). The result is a lengthening in the lead-time between a firm's head start and the response by followers; therefore, allowing the firm to earn higher profit than is possible in a competitive marketplace and/or an increase in the size of the market (Glazer 1985; Brown and Lattin 1994).

The economic barriers-to-entry literature has been reinforced with the development of the behavioral framework (Alpert and Kamins 1994). The behavioral perspective was noted as early as Bain (1956), but contemporary studies involving rational consumers within the context of pioneering brands originated in Schmalensee's

(1982) consumer economic research involving risk aversion. Unlike the economic-perspective, pioneering within the behavioral paradigm is interpreted at the product or brand level in terms of consumer-based advantages stemming from *demand* for the product (Golder and Tellis 1993). More specifically, this perspective holds first-mover advantage, in part, as a function of the psychological processes of the consumer (Alpert and Kamins 1995). In other words, there is a relationship between potential pioneering benefits and the way consumers select and then repurchase the product (Golder and Tellis 1993). Therefore, advantages derived from consumers are rooted in enhanced consumer preference, attitude, awareness, learning and memory of pioneer brands (Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992; Kardes, Kalyanaram, Chandrashekaran, and Domoff 1993; Alpert and Kamins 1994, 1995).

LIMITATIONS OF EXISTING LITERATURE

Despite the sizeable amount of theoretically-based knowledge, the clear majority of the generalizations arrived at are based on domestic domains of analysis (Kalyanaram, Robinson, and Urban 1995). This is a notable concern since the majority of studies in the area have noted the need to view the relationship between order of entry and performance in light of the unique circumstances that make up the market being studied (e.g., Urban et al. 1986; Robinson 1988; Carpenter and Nakamoto 1989). In their critical review of the literature, Kerin, Varadarajan, and Peterson (1992) developed a conceptual framework that takes into account the particular moderators affecting the overall direction and magnitude of first-mover advantage. Among the factors noted is the *type* of market into which the firm will enter. Several studies have considered the type of market in terms of

consumer vs. industrial markets (e.g., Robinson and Fornell 1985; Robinson 1988; Parry and Bass 1990) and manufacturing vs. service industries (e.g., Mascarenhas 1992; 1997; Song *et al.* 1999, 2000). There have been, however, few studies involving domestic vs. foreign markets (Kalyanaram, Robinson, and Urban 1995).

As illustrated by the exhaustive research on the problems associated with cross-national research (e.g., Green and White 1976; Boddewyn 1981; Winter and Prohaska 1989), the ability to achieve generalizability of findings and the universality of the underlying marketing theories is an extremely complicated process hindered by both theoretical and methodological problems (Malhotra et *al.* 1996). As a result, both management and marketing science have tended to be ethnocentric, parochial and lacking in applicability in non-domestic domains of analysis (Adler 1983; Aharoni and Burton 1994; Silk 1993). More specifically, because most findings regarding the role of order-of-entry on firm performance were arrived at using domestic data, the resulting empirical generalizations are limited to those domestic markets and therefore lack the ability to fully explain first-mover advantages in international environments. This is a concern identified by Day and Montgomery (1999). In their widely-cited review of the field of marketing, Day and Montgomery (1999) noted the ethnocentric nature of most marketing theories and the need to expand the domains of analysis to include other countries. In fact, they refer specifically to the need for expanding on first-mover advantage theories in today's globalized economy:

> ". . . of differing perceptions regarding first-mover advantages across countries, ... it is important to comprehend such differences to facilitate understanding of how likely to behave and react in their various roles as customers, competitors, and collaborators." (p. 11)

Given this call, there has been a growing focus on the international dimensions of first-mover advantage (Arnold 2004). A detailed examination of the literature, however, has unearthed a number of significant limitations hindering international development. First, the clear majority of international studies have focused on the economic or *supply-*side of first-mover advantages. With the exception of a few studies (e.g., Alpert *et al.* 2001; Rettie *et al.* 2002), most academic investigations define first-mover advantages in terms of either cost advantages associated with learning curve economics (Lilien and Yoon 1990), information asymmetry associated with the ability to enter earlier (Mitra and Golder 2002), or monopolistic positions stemming from technological and/or governmental-sanctioned contracts (Mascarenhas 1992, 1997). Therefore, despite the growing attractiveness of the behavioral perspective as a robust source of interpreting the competitive advantages sustained from early entry, little effort has been devoted to the study of local consumer behavior and it's effect on first-mover advantages. Second, most studies have relied on survey responses from firm key-informants. As discussed in detail in Chapter II, such a data collection method is flawed on a number of levels. Key informants may not know the firm's position on key order-of-entry variables. It is also possible that key informants themselves may not be indicative of the country being analyzed. To illustrate, both Song, Benedetto, and Zhao (1999) and Song, Benedetto, and Song (2000), conducted a cross-national study of senior managerial perceptions of the benefits and disadvantages of early entry. While they found significant differences across the countries/regions analyzed, such perceptions offer little insight into *actual* advantages associated with pioneering in international markets. More importantly, the reliance on managerial perceptions utilizes a firm perspective that may fail to consider consumer-

related aspects and their possible effects on first-mover advantages in international markets. A third limitation of existing international studies is the fragmented methodological approaches that have been used and the tendency to rely on statistical scales and techniques that may not apply in nondomestic domains. For example, most international studies involving first-mover advantages assume interval or higher level measurements (Mullen 1995). This is a concern given that order of entry is typically measured using ordinal scaling (*first*-mover, *second*-mover, *third*-mover, etc.). In domestic research, treating ordinal measures as if they were interval scales is generally not a problem. However, because intervals in such data are not always equal, especially in the case of cross-national comparisons, some argue that the *median* should be used as a measure of central tendency instead of the *mean* (e.g., Kerlinger 1986; Mullen 1995). In fact, Preszeworski and Teune (1970) specifically noted that the cross-national comparison of means on perceptual measures is hazardous because they are sensitive to cultural bias. Current studies of first-mover advantages across countries have seemingly ignored this issue. The problem is the assumption is made that metric equivalency is maintained without any demonstration of the maintenance of distances between scale values across national populations. Consequently, the majority of statistical analyses used fail to take this into account. A fourth limitation is the current inclination in the field to opt for simple replications of findings with little effort to explain the significance of such findings in other country/cultural contexts. Very few of these studies have attempted to explain *why* differences in the potential for advantages even exist. That is, despite the extensive amount of theoretical explanations regarding first-mover advantage, most international studies have failed to utilize cohesive foundational theories and have relied

primarily on empirical documentation regarding the likely role of order of entry. Finally, absolutely no empirical work has been conducted on international first-mover advantages in emerging markets. That is, most international studies have explicitly (or implicitly) assumed mature market conditions. With the exception of speculative arguments suggested by a few conceptual studies (e.g., Nakata and Sivakumar 1997; Rahman and Bhattacharyya 2003), little is known about how specific environmental and structural conditions in such markets might affect first-mover advantages in terms of magnitude and direction as opposed to more mature markets. This dissertation will attempt to address the aforementioned limitations.

RESEARCH FOCUS

Current shifts in the basic first-mover advantage paradigm suggest the robustness of the consumer-based behavioral interpretation of the phenomenon (Alpert and Kamins 1994; Engelland and Alford 2000; Rettie, Hilliar, and Alpert 2002). And while a number of scholars have found significant differences in attitudes based upon order of entry (e.g., Carpenter and Nakamoto 1989; Alpert and Kamins 1992; Kardes and Kalyanaram 1992), little is known about emerging market consumer attitudes towards pioneering brands and subsequently their intention to buy such brands. More importantly, little is known about how these attitudes differ from mature market consumer attitudes.

In order to address the perceptions of emerging market consumers, an effort must be made to identify countries which meet the criteria necessary to be categorized as "emerging" and to utilize data from these markets to compare with mature markets (as exemplified by the U.S. market). This must involve a brief discussion of the definition of

the term "emerging markets." While there is no universally accepted definition of an emerging market, some scholars have argued that such markets are categorized based on three tests: (1) absolute level of economic growth in terms of per capita GDP, (2) economic growth rate as defined by annual GDP growth rates, and (3) the extent to which marketing infrastructure supports a free market system (Arnold and Quelch 1998). However, others have argued that these tests provide standards which are too rigid and therefore cannot be applied in unison when defining an emerging market (e.g., Rahman and Bhattacharyya 2003; Samli 2004). For instance, according to the criterion of absolute economic growth, such commonly acknowledged emerging markets as China, India and Vietnam would not qualify as emerging markets. These countries would instead fall under the category of "low-income" countries (Garten 1997). For this reason, the definition presented by Rahman and Bhattacharyya (2003) will be adopted for the sake of this study. That is, a national economy is designated as an "emerging" market when it meets the following conditions: First, it should hold out the promise of substantial economic growth in the future. Second, the economy should have been opened in the recent past for direct foreign investment and is expected to continue into the future. Third, the economy should have an institutional infrastructure, which will facilitate market transactions but will lack the efficiency and effectiveness of developed market.

Based on the aforementioned criteria, India would qualify as the quintessential emerging market (Maxwell 2001; Rahman and Bhattacharyya 2003). India is the largest market in the developing world behind China (Sethi *et al.* 1990). With more than 150 million middle-class consumers earning more than $4,000 annually (in U.S. equivalent) in local purchasing power (Kulkarni 1993), the Indian market potential is greater than

that of many countries in Western Europe (Bandyopadhyay 2001). This so-called "consuming class" is expected to reach 450 million by 2010. The new entrants to this class are not replications of the old middle class consumers. The newcomers are much less predictable and understandable (Maxwell 2001) and therefore worthy of investigation. Also, beginning in the late 1980s, the Indian government took a series of steps to liberalize the economy and ease restrictions on imported goods. Therefore, unlike China, India has made a strong effort to move away from and actually reverse decades of socialistic economic policies and a near-obsessive focus on self-reliance in the consumer goods sector (Banks and Natrajan 1995). Consequently, for the purposes of this study, the Indian market is expected to provide a proxy of emerging market conditions, and Indian consumer attitudes towards pioneer and follower brands will be assumed to be indicative of emerging market consumer attitudes when compared with mature (U.S.) consumers.

Proposed Framework of Analysis

The issue of consumer attitudes towards pioneering brands is one of attributing a pioneership construct including the salient beliefs and evaluative aspects that come with it and relating it to attitudes towards such brands. That is, consumers may be aware of pioneership and have special product/attribute beliefs about pioneer brands that become salient when a brand is identified as the pioneer. For example, some consumers may believe that pioneer brands are higher in quality compared to follower brands or that the brand that has been around the longest (i.e. the pioneer brand) is the most dependable..

Following the example set in a number of significant behavioral studies (e.g., Alpert and Kamins 1994, 1995; Alpert et al. 2001; Rettie et al. 2002), the Fishbein and

Ajzen (1975) Theory of Reasoned Action (TRA) will serve as the foundation for the proposed model. The Fishbein and Ajzen (1975) theory provides a sound basis for the development of beliefs, values, and therefore attitudes of consumers regarding pioneering brands may be addressed (Alpert and Kamins 1995). More notably, support for the Fishbein and Ajzen (1975) has been extensive in both domestic and cross-cultural domains of analysis (Ryan and Bonfield 1975, 1980; Miniard and Cohen 1983, Lee and Green 1991; Malhotra and McCort 2001). The model is therefore deemed to be appropriate given the cross-national comparative nature of this study. The central equations in the theory are as follows:

$$B \approx BI = (A_{act})w_1 + (SN)w_2$$

where

$$A_b = \sum_{i=1}^{n} W_i E_i \qquad \text{And} \qquad SN = \sum_{j=1}^{n} NB_j MC_j$$

The model hypothesizes that a person's behavioral intention (BI) is determined by an *attitudinal* or personal component and a *normative* or social component. The personal attitude towards the behavior refers to the person's judgment of being in favor of or against performing the behavior in question. The subjective norm is a person's perceptions of the social pressure to perform the behavior in question. In the context of consumer behavior, the basic paradigm of the Fishbein behavioral intention model is that consumption behavior (B) is affected by behavioral intentions (BI), which, in turn, are affected by attitude (A_b) and a subjective norm (SN). The first component, attitude toward the brand (A_b), is a function of the evaluative aspect or belief towards a salient attribute i for brand b (E_i) and the perceived consequences (or importance) people

associate with that attribute i (W_i). The second component, the subjective norm (SN), is

represented as a function of belief about the expectations of the important referent others

(NB), and his/her motivations to comply with these referents (MC). The proposed model

of analysis to be tested in the two countries is illustrated by Figure 1.

Figure 1
Proposed Model
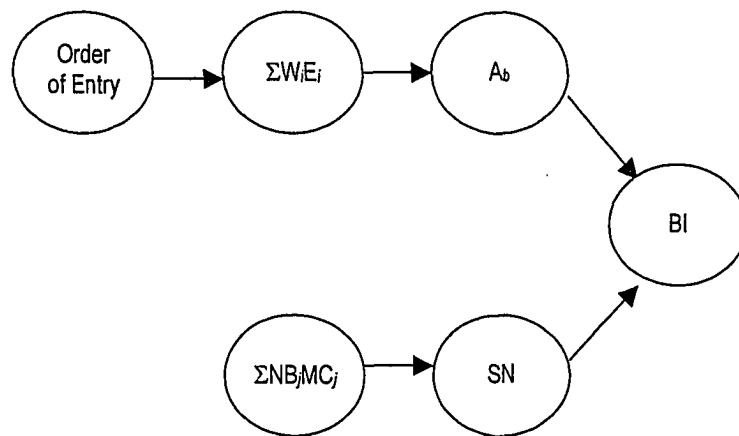
With the exception of the inclusion of the normative component, the proposed

framework of analysis is consistent with other studies of attitudes towards pioneering

brands (e.g., Alpert, Kamins, and Graham 1992; Alpert and Kamins 1994, 1995). As

discussed in Chapter III, the inclusion of the normative component of the model is a

major contribution of this study and is justified within the context of emerging market

conditions. However, another aspect of the model must be mentioned at this stage: A

number of researchers applying structural equation modeling techniques have questioned

the possible relationship between the attitudinal and normative components of the

Fishbein and Ajzen (1975) model (Oliver and Bearden 1985). Ryan (1978) and Miniard and Cohen (1979) were among the first to empirically address the independence of beliefs concerning attribute levels and beliefs relating to the desires of others. In a latter study, Ryan (1982) provided a theoretical premise for the interdependency of the two components based on Fishbein and Ajzen's (1975) typology of beliefs: descriptive, information, and inferential. Simply stated, Ryan (1982) argued that information from the environment targeted toward one set of beliefs may affect other types of beliefs through inference or secondary processing. Accordingly, Ryan (1982) asserted that cognitive information will have subsequent influence on normative perceptions, and that normative information will affect cognition. While Ryan (1982) found evidence of such a relationship, numerous inconsistencies in later findings have failed to provide definitive conclusions regarding the direction and extent of these cross-over effects. (Lee and Green 1991). Consequently, there has been a general tolerance of individual researcher discretion in applying any form of cross-over effect between the attitudinal and normative components depending on the particular problem being studied (Malhotra and McCort 2001). To the best of the researcher's knowledge, there is no theoretical justification for applying a cross-over effect within the current research. For this reason, no cross-over effect is applied.

As illustrated in Figure 1, in this study, order-of-entry is considered the stimulus condition affecting belief and attitude formation and ultimately behavioral intention. Order of entry is treated as an ordinal variable and operationalized based on the definitions utilized by Alpert and Kamins (1995). The "pioneer" brand is defined as the very first brand of a new type of product which comes to the market. All other brands of

the same type of product that enter the market after the pioneer brand will be called the "follower" brand. The reason the more common "PIMS" originated classification of pioneer, early follower and late entrant is not being used is because of the limited ability of typical consumers to identify the exact classifications of brands entering the market at a later time (Alpert and Kamins 1994, 1995).

A series of paired-sample t-tests will be utilized to compare the attitudinal and preference components of the model within the countries. Multiple Regression Analysis will be used to compare the components across the two countries. In order to test the causal relationships hypothesized, Structural Equation Modeling (SEM) with latent variables will be used. As discussed later in Chapter III, this form of analysis has several advantages over the traditional regression methods of testing causal relationships of attitudinal models, especially in cross-national research (Lee and Green 1991). First, the method allows for simultaneous estimation of all path coefficients and significance. Second, and more importantly, SEM permits the evaluation of the performance of the model as a whole (Bagozzi 1981, 1982; Ryan 1982), which enables one to make direct comparisons across countries (Chan and Lau 1998).

Significance of the Study

There is little question about the importance of first-mover advantages both academically and practically (Luo and Peng 1998). In fact, in an era in which cost and differentiation advantages can be readily replicated, first-mover advantages have been described as representing one of the few means by which firms can attain sustainable competitive advantages (Alpert and Kamins 1994). While some scholars may view this

statement as a glaring exaggeration, the overwhelming evidence suggests that there is either a direct or indirect relationship between order-of-entry and firm performance (Tellis and Golder 1996; Lieberman and Montgomery 1998). However such evidence, as discussed in Chapter II, is often limited on a number of levels. Among these limitations are the relatively limited amount of research on first-mover advantages in international markets (Buckley and Casson 1981; Mascarenhas 1992) and the particular lack of knowledge regarding the role of order of entry in so-called emerging or transitional markets (Luo and Peng 1998). This limitation is heightened by the increasing academic and practical interest in these markets.

Despite the significant risks associated with conducting business in emerging markets (Nakata and Sivakumar 1997), the increasingly sluggish growth rates and maturing populations in developed markets like Japan and the U.S. have motivated more and more firms to consider entering markets outside their domestic mature markets (O'Reilly 1988; Peak 1992; Shama 1995). The existing marketing and management literature has failed to keep up with this growing interest when it comes to the entry timing decision. Various dimensions of business operations in emerging markets have been addressed, including channels of distribution (e.g., Samiee 1993), strategy formulation (e.g., Wortzel 1983; Hoskisson *et al.* 2000), country-of-origin effects (e.g., Bandyopadhyay 2001), and organizational structuring (e.g., Jorgensen *et al.* 1986).

Entry strategies into emerging markets have also received increased scholarly attention. However, the clear majority of the writings in the area emphasize entry *mode* (e.g., Phatak, Muralidharan, Chandran 1996; Lin 2000; Belderbos 2003) and *partner selection* issues (e.g., Luo 1996, 1997). Yet entry timing strategies in general, and first-

mover advantages in particular, appear to have been ignored. This is surprising given the growing evidence from emerging markets. Procter and Gamble, for example, has always trailed rival Unilever in certain large markets (including India and some Latin American countries), and the most obvious explanation is that Procter and Gamble's European rivals were operating in these countries long before, simply for reasons of European colonial history (Arnold 2004). While this would imply that Procter and Gamble and other companies attempting to enter emerging markets, err on the side of urgency in reaction to the recent opening of large markets such as China and Russia, very little effort in the literature has been devoted to empirically examining the underlying factors behind consumer preference for the earlier brand. That is, there is a need to study the attitudinal underpinnings of local consumers to explain not only *if* the pioneer accrues competitive advantages but *why* such advantages exist given the structure of the typical emerging market. Underlying behavioral processes of local consumers could be simply attributed to cultural issues, which may or may not have an effect on the ability of a firm to accrue first-mover advantages. This is a legitimate issue that has not been addressed despite several calls for it. Indeed, Alpert and Kamins (1995), in their well-cited study, call for cross-cultural replication of attitudinal processes because differing degrees of enthusiasm for pioneer brands may be found on the basis of differing core cultural values as well as different exogenous factors that affect attitude formation and thus local consumer behavior.

Previous domestic research comes to the conclusion that consumer attitudes will be favorable towards pioneer brands (e.g., Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992). However, the preference for the pioneer brand was found to be rooted

in core American values of innovativeness and pioneer image/self-image consistency (Alpert and Kamins 1995). These values are rarely dominant in emerging markets (Fletcher and Melewar 2001). Nonetheless, new foreign brands have always boasted a social mystique in emerging markets because access to these brands was restricted for so long (Maxwell 2001). In the specific case of India, the few imports that did enter the market "created a powerful image among the upper-middle to upper class that foreign goods were exotic, showy and better than Indian-made products" (Bullis 1997, p 64). Therefore, it is conceivable to presume that, as in the case of mature market consumers, emerging market consumers will also exhibit favorable attitudes toward pioneer brands but for entirely different reasons. Moreover, certain environmental conditions unique to emerging markets may allow for an inconspicuous argument that emerging market consumers' attitudes towards pioneer brands are actually much more positive when compared to their U.S. counterparts.

Emerging markets, by their very nature, lack an established communication infrastructure (Luo and Peng 1998; Arnold 2004; Samli 2004). The lack of clutter associated with a poor communication infrastructure provides a pioneer brand with the opportunity to enjoy certain differential advantages otherwise difficult to secure in more developed markets (Rahman and Bhattacharyya 2003). Promotional messages that are communicated in such environments have less competing messages to deal with, thus shaping consumers' perceptions to its advantage and eventually becoming the category standard (Nakata and Sivakumar 1997; Luo and Peng 1998; Hawkins, Best and Coney 2004). Furthermore, product assessment is a much more difficult process in emerging markets (Fletcher and Melewar 2001; Kumar 2002). Compared with mature markets, an

emerging market has few vigilant and independent agencies, which can warn consumers of unscrupulous business activities (Rahman and Bhattacharyya 2003). This would suggest consumers gather information primarily via personal means and word-of-mouth in order to make rational consumption decisions (Johansson 2003). Accordingly, consumers strive for any signal that may provide some information about the brand or at least help alleviate the ambiguity and subjectiveness associated with product attributes (Hult, Keillor, and Hightower 2000; Bandyopadhyay 2001). In India, where the quality of local unbranded products varies widely because most products are manufactured by small, dispersed and often uncoordinated manufactures and retailers (Maxwell 2001), the pioneership construct, once identified, may provide some assurance of standardized quality and a perception of innovativeness.

Another factor critical to attitude towards pioneer and follower brands in emerging markets is the pent-up demand resulting from years of economic isolationism. While, traditional diffusion-of-innovation theories presume that the diffusion of a new product approximates a bell shaped curve (Rogers 1971, 1983), typical conditions that firms encounter in the introductory stages of the Product Life Cycle in more developed markets, where slow diffusion of product awareness and familiarity often result in slow sales take-offs after launch, may not apply in emerging markets (Cosmas and Sheth 1980; Arnold 2004). In fact, a number of studies suggest that the diffusion process in emerging markets is actually best represented by a curve which is asymmetrical with consumers falling under categories of innovators, early adopters, and early majority being more in number than those who encompass the remaining categories of consumers (e.g., Rahman

and Bhattacharyya 2003; Yaveroglu and Donthu 2002). Such a skewed diffusion process implies a significantly more positive attitude towards pioneering brands.

However, as discussed in detail in Chapter III, a comprehensive understanding of emerging market consumer attitudes towards pioneer and follower brands can not be complete without addressing the role of social factors. In fact, there is reason to believe that such societal influences will have an even more significant effect on consumer behavioral intent in emerging markets than in more mature markets. For example, emerging markets exhibit much greater degrees of both power distance (i.e. acceptance of hierarchy and inequality as the natural order of things) and collectivism (i.e. the identity and worth of the individual is rooted in the social system) (Hofstede 1980; Fletcher and Melewar 2001). These dimensions, by their very definition, provide motivating forces behind a consumer's tendency to conform to the norms of the group rather than the pursuit of individualized goals (Czinkota and Ronkainen 2003; Johansson 2003). Both dimensions suggest an amplified influence of social norms on consumer behavior. Also, as emerging markets become more open and consequently local consumers become more materialistic (Ger and Belk 1996; Arnold 2004), the concept of "face" becomes an even more dominant factor, especially amongst the middle class (Maxwell 2001). Face is lost when conduct or performance falls below the minimum acceptable standard or when some essential requirements corresponding to one's social position are not satisfactorily met (Ho 1977). The individual in such a situation has no choice but to satisfy these requirements; failing to do so would threaten one's standing in society. In the case of India, the need to not "lose face" is reflected, in part, by the hierarchical nature of the society and the constant need to perform according to one's status. Thus, emerging

market consumers have a strong motivation not to "lose face" that is reflected in their consumption patterns (Gong 2003). They exhibit a strong tendency to purchase a product whose price, brand and package match their social position and reputation in order to not lose face (Lee 1990). Because pioneer brands tend to exhibit, among other things, social status and superiority (Alpert and Kamins 1994, 1995), it may be postulated that societal norms will be generally positive with regards to new products. Coupled with a strong motivation to comply with these social norms and their positive attitudes towards the pioneer brands, Indian consumers should have a much more positive preference (in the form of behavioral intention) for pioneer brands when compared to U.S. consumers. This dissertation attempts to address the aforementioned structural and cultural differences between mature and emerging markets and how they affect local consumers' attitude and intention towards pioneer and follower brands.

Limitations of Scope

Any research endeavor is restricted by the boundaries and assumptions that define the scope of analysis (Kumar 2000). Therefore, any study is bound by a number of limitations that must be taken into consideration when interpreting the findings (McDaniel and Gates 2004). The research setting of this dissertation is limited on a number of dimensions. First, as discussed in Chapter II, the scope of research on first-mover advantages is sizeable and inclusive of many theories and perspectives. This study focuses on the behavioral aspects of early entry. This behavioral paradigm is only one of the two pivotal theoretical explanations of the phenomenon. Therefore, while the psychological processes of consumer attitude formation make up the focal point of this

study, acknowledgement must be made of the complementary nature of this approach to the economic-analytical perspective that recognizes the role of barriers to entry as a major source of first-mover advantages. Second, the researcher will rely on a survey approach which will result in a data set of self-reported beliefs, attitudes, and purchasing intentions. As discussed in Chapter III, a significant amount of effort is exerted to limit the concerns regarding the appropriateness of this research method and the necessary considerations regarding cross-cultural data collection. Nonetheless, caution must be taken in interpreting such data. Third, the study attempts to address the issue of different attitudes across two categories of markets, namely mature (U.S.) and emerging (India) markets. Definitive conclusions regarding the generalizability of any findings stemming from this research will essentially be limited to the two countries in question. That is, while it is the goal of the research to undertake the analysis utilizing data from two countries representing quintessential examples of countries from each category, caution must be taken with regards to the results being indicative of *all* mature or *all* emerging markets. Finally, the researcher will elicit the responses of a sample of students. As discussed in detail in Chapter III, a number of reasons are cited to justify the use of such a sample. However, while every effort is made to reduce the problems associated with student samples, this presents a limitation of the study's scope of analysis and must be brought to light. More specific limitations of the study will be discussed in detail in the final chapter of this dissertation.

STRUCTURE OF THE DISSERTATION

The final section of this chapter is devoted to a presentation of the structure of the remainder of the dissertation. Chapter II will constitute a detailed review and critical assessment of the three distinct literature streams that form the theoretical foundations of this study: order-of-entry, emerging markets, and behavioral intention models. The goal of this chapter is therefore to provide the reader with insights regarding the development of the various research streams focusing on first-mover or pioneer advantages. Special emphasis will then be given to the few non-domestic studies in the area leading into a discussion of the emerging markets literature and the gaps inherent in the current field. Following this discussion, a review of the behavioral intention models literature is presented along with the research context of the study. Chapter III will start off with a formal presentation of the specific research hypotheses to be tested. Following this presentation, a review of the research methodology to be used will be provided. This will include a detailed presentation of the research approach and methods, sampling design, data collection techniques, measurement issues, and the analytical techniques to be employed. Chapter IV will focus on the analysis of the data and provides a brief discussion of the results in light of the research hypotheses. The final chapter, Chapter V, will provide a detailed discussion of the findings and their managerial implications. This chapter will also include a final section that focuses on the relevant limitations of the dissertation as well as suggestions for future research.

CHAPTER II

LITERATURE REVIEW

While a brief introduction to the first-mover phenomenon was provided in Chapter I, this chapter will present a more detailed discussion of the major literature steams and findings regarding first-mover advantages. As illustrated in Figure 2, a number of major perspectives/theories of first-mover advantages have dominated the existing literature. First, earlier work relevant to the empirical documentation of first-mover advantages will be presented. This will include an explicit discussion of the major studies within the industry-specific and cross-sectional research streams. Following this discussion, the fundamental limitations of those studies will be presented along with the evolution of the research stream into a more theoretically-based conceptual interpretation of the phenomenon. The second part of this literature review will therefore examine the theoretical sources of first-mover advantages in terms of the economic–analytical approach and the more recent behavioral sources of these competitive advantages. Following these discussions, the researcher will attempt to shed light on some of the research gaps evident in the literature along with those gaps specific to the justification of this dissertation. This will include a brief discussion and critique of two more relevant literature streams critical to this dissertation. First, previous studies focusing on the international extension of the first-mover paradigm will be discussed along with special emphasis on emerging markets. Second, discussion of Behavioral-Intention models such as the Fishbein and Ajzen (1975) model will be provided leading into the formulation of the research hypotheses and applicable methodology to be detailed in Chapter III.

Figure 2
Major Literature Streams of First-Mover Advantage
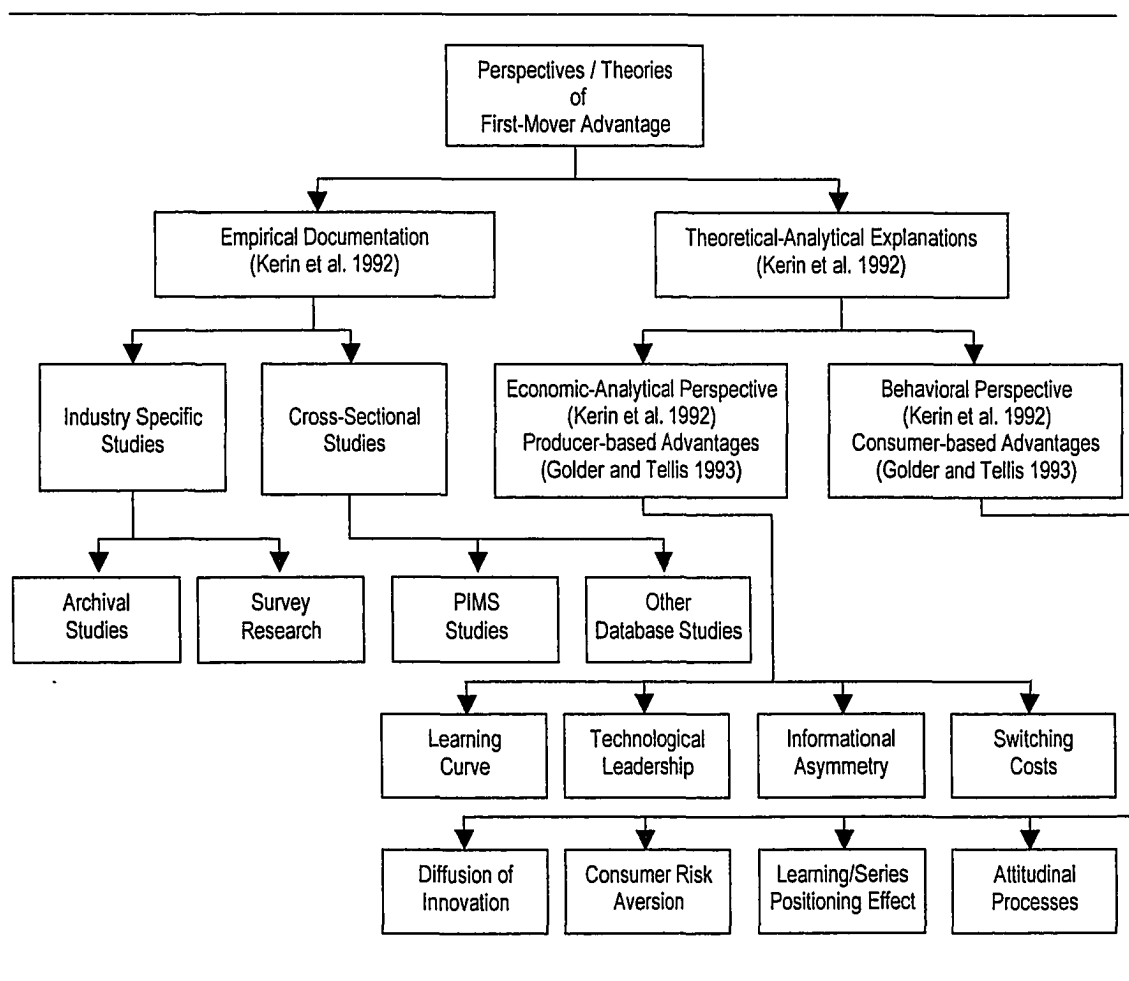
EMPIRICAL DOCUMENTATION OF FIRST-MOVER ADVANTAGES

As mentioned previously, the interest in the first-mover phenomenon originated in empirical findings of possible relationships between order of entry and firm performance. In this initial phase of the chapter, both the industry-specific and cross-sectional empirical support for first-mover advantages will be discussed in detail along with the limitations and criticisms of the findings and the emergence of the more contingent approach to addressing the phenomenon.

Empirical evidence of first-mover advantages is divided into two broad areas of research - the industry-specific research stream and the cross-sectional research stream (Kerin, Varadarajan, and Peterson 1992; Golder and Tellis 1993). Within the industry specific research stream, studies have analyzed data brought about from either primary survey methods or from secondary archival records, with archival records constituting the clear majority of the studies. Industry-specific studies have covered a wide range of business sectors including pharmaceutical drugs (Bond and Lean 1977), cigarettes (Whitten 1979), semiconductor sub-markets (Spital 1983; Flaherty 1984), publicly underwritten offerings (Tufano 1989), medical diagnostic imaging equipment (Mitchell 1989; 1991), aviation (Gannon, Smith, and Grimm 1992), semi-submersible oil drilling equipment (Mascarenhas 1992; 1997), word processing and business graphic software (Green, Barclay, and Ryans 1995), and pollution-reducing manufacturing technologies (Nehrt 1996). The second category draws from cross-sectional analysis based on data from either the popular Profit Impact of Marketing Strategies (PIMS) database or from alternative databases such as ASSESSOR and BEHAVIORSCAN (Golder and Tellis 1993). The following is a detailed discussion of major studies within each subset of the empirical order-of-entry literature.

Industry-Specific Research

Studies that specifically addressed the effects of order of entry on firm performance initially focused on specific industries. The earliest of these industry-specific studies was the work of Bond and Lean (1977). The study originated in the early 1970s amidst growing governmental concerns of potential marketing abuses within the

pharmaceuticals industry. On November 8, 1973, the Federal Trade Commission adopted a resolution authorizing the investigation and collection of data pertaining to certain prescription drugs. One of the outcomes of this investigation was the Bond and Lean (1977) study examining introduction dates and subsequent market shares of 11 innovations in two categories of prescription drugs (oral diuretics and antianginals). Bond and Lean (1977) formulated a regression model where average annual sales revenue was a dependent variable and various contributory factors such as patents and licenses held by manufacturer, promotional expenditures, relative market power of the corporation, and sequence of market entry acted as independent variables. Bond and Lean (1977) surveyed 132 manufacturers of the drugs in question and found no statistically significant relationship between the two main focal points of the study: promotional expenditures and sale performance. However, the analysis revealed a highly significant first-mover advantage in both the oral diuretic drugs market (β=11.66, t=4.48) and the antianginal drugs market (β=14.33, t=56.89). Specifically, within the oral diuretic category, dramatic sales achieved by the first brand appeared to motivate other competing firms to get around the original patent and enter with closely substitutable products. However, this patent protection was not found for first-movers in the antianginal market. Also, while the original monopolistic shares of the category pioneers were found to dwindle as more competitors offered substitutes, the first-mover in both markets was found to retain a degree of market leadership that was not associated with marketing activity or any other variables considered in the study. Therefore, as Bond and Lean (1977) noted, the findings of their study provided an early glance at the idea that order of entry may in fact be a significant contributor to long-term firm performance:

"The advantage to firms of being first to offer a new type of drug is considerable and physician's long term preference for the first brands appears to insulate firms from competition even more effectively than patents." (p. 77)

Still, one major concern with the structure of the study pointed to the noticeable absence of price as a purchasing criterion for these drugs. Bond and Lean (1977) did note that while drug brand specification was a significant concern of the physician community, there was little, if any, financial incentive for physicians to prescribe drugs based upon price. Some scholars have argued that this absence of price represents a significant limitation to the generalizability of this study (e.g., Kerin, Varadarajan, and Peterson 1992; Schnaars 1994). Notwithstanding, Bond and Lean's (1977) study of first-mover advantages within two very narrowly defined pharmaceutical categories provided very early empirical evidence of a relationship between timing of entry and market performance and subsequently inspired a whole generation of scholars focusing on the phenomenon (e.g., Robinson and Fornell 1985; Urban *et al.* 1986; Schnaars 1994).

One of the studies that was inspired, at least in part, by the findings of Bond and Lean (1977), was Whitten's (1979) analysis of order of entry of different product categories within the cigarette industry from 1913 through 1974. Similar to Bond and Lean (1977), Whitten's (1979) study was also backed by the Federal Trade Commission (Vanderwerf and Mahon 1997). His analysis included a number of cigarette types including both 70mm and 85mm non-filter, plain filter, menthol filter, high-fiber filter, charcoal filter, and low tar filter cigarettes. Whitten (1979) tackled the problem of price as a purchasing criterion by noting the inelastic nature of demand in both the pharmaceutical markets studied by Bond and Lean (1977) as well as the cigarette market at the time of his analysis, a view consistent with the work of Needham (1976).

Accordingly, Whitten (1979) argued that with little or no product differentiation and no competition based on price, both the cigarette industry and pharmaceutical industry provide homogenous markets ideal for the study of entry advantages. One major difference between the two studies however was Whitten's (1979) focus on the role of the ultimate user of the product rather than the specific intermediary such as prescribing physicians as in the case of Bond and Lean's (1977) study. Using archival data, Whitten (1979) found that the success of the first-mover stimulated subsequent entry of so-called "me-too" products that were characterized by little, if any, differentiation from the pioneering brand (Lieberman and Montgomery 1988). His research showed support for a substantial order-of-entry effect in six out of seven sub markets studied:

> "… the first firm to offer, promote, and widely distribute a brand for which there was favorable market received a substantial and oftentimes enduring sales advantage … (even though)… six out of seven first entry brands had smaller advertising expenditures per million cigarettes than did their competitors." (p. 41)

Illustrating the diverse nature of earlier work on first-mover advantage and the growing academic appeal of the phenomenon, two particular studies published in *Research on Technological Innovation, Management and Policy* (Rosenbloom, ed. 1983) addressed possible linkages between technological innovations and competitive advantage in high growth markets. The first of these studies, (Spital 1983), focused on the metal oxide semiconductor (MOS) industry. Spital (1983) tracked 22 product innovations in the industry and found that in 17 of the 22 innovations, the first manufacturer to produce a new design held the largest market share in that design from the date of first production until the time of the study. Spital (1983) argued that, due to the innovative nature of the MOS industry, lengthy periods of time were often required to

qualify vendors to sell the products, thereby limiting a vendor's ability to switch from one design to another in a timely fashion. More importantly, Spital (1983) argued that the first-mover situation could arise from the general practice of "designing-in" technology within the industry where technology is rarely shared once a vendor is qualified. Being in that situation can lead to competitive advantages for the manufacturer. On the other hand, Spital (1983) found that because of the exclusive nature of the technology, later entrants were often precluded from the market and thus there were no late-mover advantages. The second study, (Flaherty 1983), examined the nature of linkages between technological innovation and market growth within ten submarkets of the international semiconductor industry. Flaherty (1984) utilized data from 10 submarkets of the semiconductor industry and found a small but significant correlation between order of entry and market share in lead technology. This validated the first entrant hypothesis advanced by earlier research (Bond and Lean 1977; Whitten 1979). However, the most noteworthy contribution of the study was Flaherty's (1984) finding that this relationship was moderated by both product quality as well as a firm's ability to consistently keep up with technological innovations in the industry via application engineering. This assertion provided a foundation on which a clear majority of subsequent conceptual explanations of the phenomenon were built (Kerin, Varadarajan, and Peterson 1992); explanations that were based on the notion that firm performance was *indirectly* rather than directly a function of order of entry.

Again illustrating the growing interest and appeal of the pioneering phenomenon in other functional areas of study, Tufano (1989) addressed the issue within the financial services industry. Based in part on his Ph.D. dissertation research, the study attempted to

shed light on the role of pioneering on the performance of investment banks and more specifically how investment banks were compensated for their investments in developing new products. Tufano (1989) constructed a series of linear (OLS) regression models in which pioneers vs. imitator statuses were hypothesized to affect market share for securities offerings. Noting the unique nature of the financial services industry, Tufano (1989) utilized securities underwritten spreads as another dependent variable. Spreads are traditionally indicative of the price charged by the investment bank for the underwriting services provided. Using archival data from 1944 public underwritten offerings based on 58 financial innovations from 1974 to 1986, Tufano (1989) found that investment banks captured a significantly larger share of underwritings with innovations than with imitative products. This provided evidence of a first-mover advantage. However, investment banks that created new products did not charge higher prices (spreads) in the brief period of monopoly before imitative products appeared in the market. Moreover, in the long run, innovators charged prices below, not above, those charged by rivals offering imitative products. Tufano (1989) argued that this was not uncommon since innovators in the financial industries market tended to slide down the opportunity curve much faster than imitators did. That is, in the long run, they tended to enjoy lower costs of trading, underwriting, and marketing. Therefore, according to Tufano (1989), since innovators neither set higher prices before rival entry nor charged larger spreads than those charged by imitators, first-mover advantages did not appear to be delivered through differential pricing. This suggestion tended to corroborate Whitten's (1979) assertion regarding the insignificance of pricing a factor in accruing a competitive advantage from early entry.

In an early attempt to provide both empirical *and* theoretical support to the first-mover phenomenon, Mitchell (1989; 1991) investigated the role of first-mover advantage within the medical diagnostic imaging industry. Mitchell (1989) tapped into micro-economic equilibrium theory and attempted to examine the role of industry-specialized assets and competitive threats to the firm's core product and their influences on the firm's market entry decision. To better capture the potential risk to specialized assets that entry into a market may bring, Mitchell (1989) focused on 320 pure manufacturing entrants in the medical diagnostic imaging industry and, in particular, five subsets of this market. The five submarkets addressed and the years in which the respective technologies were pioneered are as follows: nuclear medicine (1959), ultrasound (1963), computer topography (1973), magnetic resonance (1980), and digital radiography (1981). Mitchell (1989) found that as each successive technology emerged, the sales of older technologies declined, leaving the previous incumbents with an entry decision concerning whether to enter that emerging market and if so, when to do so. Utilizing both logit regression and accelerated event-time analysis, Mitchell (1989) tested whether the possession of industry-specialized assets and competitive threats to a firm's core product were in fact major influences on the firm's entry timing decision. He found that competitive threats to the firm's core products were in fact key determinants of *early* though not *first* entry. Also, while not statistically significant, evidence was found that firms were reluctant to enter new markets when doing so would have no value to their specialized assets.

Drawing upon these specific findings, Mitchell conducted a second study in 1991. In it, Mitchell (1991) attempted to measure first-mover advantages in terms of both market share and *survival* within the same medical diagnostic imaging industry using

essentially the same sample (314 rather than the previous 320 entrants). The major difference between the two studies was that the second study focused on whether the effects of early or late entry varied depending on whether the firm in question was an industry newcomer or an industry incumbent. Specifically, Mitchell (1991) hypothesized that an industry newcomer's performance should be predicted by its order of entry relative to all competitors, while an industry incumbent's performance should be predicted by its time in the market. Mitchell (1991) found strong support for the hypothesis that newcomer market share is closely related to order of entry. Particularly, early entrants enjoyed a sustainable advantage in terms of market share when compared to later entrants after four years (β=-0.5677, p=0.01) as well as the ninth year of industry participation (β=-3.178, p=0.01). However, for industry incumbents entering an emerging sub-market, the order of entry effect was found to be moderated by *time* within the new market. That is, while first-mover advantages were found to be sustainable after four years (β=-2.750, p= 0.05), these advantages had a tendency to diminish by the ninth year (β=5.022, p=0.01). Mitchell (1991) speculated that this diminishing relationship may be due to the ability of the late-entry industry incumbent to overcome the first-mover incumbent's specialized assets such as dedicated field sales forces and cross-subsidization of technology, distribution, and capital. Therefore, while Mitchell's (1991) results were mixed, his particular conclusions regarding the effect of industry incumbency on the extent of first-mover advantages also provided a basis for the rise in more contingent approaches to the phenomenon (Kerin, Varadarajan, and Peterson 1992).

While empirical findings presented in the literature are almost exclusively based on archival data from actual firms, one particular study addressed the pioneering

phenomenon using simulation technology. Green and Ryan (1990) utilized data gathered from the business simulation *Markstrat* to examine firm entry strategies and market performance. According to the authors, the *Markstrat* environment provided an appealing domain for studying order of entry because of several reasons: (1) the *Markstrat* environment allows for a notable absence of survivor bias and perceptual self-reporting bias regarding entry strategy, (2) the simulated nature of the environment minimizes measurement error, allowing for an acceptable degree of realism, and (3) *Markstrat* represents an attractive research vehicle for the study of entry strategy because it allows participants to control timing of entry and the degree of commitment to the market being entered. The *Markstrat* simulation involves five hypothetical firms competing within the same business environment (identical customer needs, potential demand, and underlying market growth rates) but with different competitive positions and resource endowments. The asymmetric nature of these initial positions would therefore allow for dramatic changes to the market based upon the actions of those firms choosing to participate in the new market. Green and Ryan (1990) solicited the participation of 55 second-year MBA students. Students were randomly assigned to one of the five hypothetical firms. Of the 55 participants, 45 chose to enter "Vodite" market, the hypothetical industry presented in the simulation. Employing a partial least square methodology, Green and Ryan (1990) found that order-of-entry was negatively related to performance, demonstrating that early entry was associated with superior market share performance (β=-0.311, t=-0.071). However, as with the findings of Flaherty (1984), this effect was found to be largely indirect. Early entry improved market share performance via manipulation of other variables. More specifically, increased levels of investment and modified competitive

positioning had a moderating effect on the relationship between order of entry and performance. That is, while the total effect of timing of market entry was the aforementioned -0.311, *direct* effects represented only –0.017 of that total and *indirect* effects represented the remaining –0.294. Therefore, while generally supportive of the first-mover hypothesis, Green and Ryan's (1990) inconclusive and often confusing results were indicative of the complexity of the first-mover phenomenon and the need for further research in the area.

A second industry-specific study characterized by its unique approach to order-of-entry research was Gannon, Smith, and Grimm's (1992) analysis of organizational predictors of first-mover advantage within the domestic airline industry. Unlike Green and Ryan (1990), the uniqueness of this study stems from the authors' methodological representation of the constructs (Vanderwerf and Mahon 1997). Specifically, two basic differences were evident in the structure of the study: (1) a more tactical approach to the phenomenon with a focus on marketing mix decisions such as new pricing tactics, new promotional campaigns, the opening of new service routes, and the introduction of new aircraft types, and (2) first-moverism as a dependent variable (contrary to traditional thinking), while factors such as degree of hierarchical formalization, level of formal years of education, years of industry experience, and boundary spanning activity were modeled as independent variables. The study was based on archival data gathered from a number of aviation publications including *Aviation Daily*, *Air Carrier Financial Statistics*, and *World Aviation Directory* for the periods 1979 through 1986. Using Tobit analysis, The authors found a significant relationship between first-mover activity and degree of hierarchical formalization within the organization (β=-3.54, t=-4.20). Also, first-mover

activity was found to be significantly related to increased boundary spanning (β=1.41, t=3.23). Finally, Gannon, Smith, and Grimm (1992) also found that first-movers were characterized by higher levels of formal education (β=0.95, t=3.65) and lower levels of industry-specific experience (β=-0.57, t=-2.25). Thus, Gannon, Smith, and Grimm (1992) again provided general support for the existence of a first-mover phenomenon. However, their major contribution lies in their finding that the likelihood for first-mover preemption depends on a number of organizational characteristics such as the degree of formalization and the educational and experience levels of firm management. As will be discussed later in the chapter, this view plays a pivotal role in more theoretical explanations of the phenomenon (Kerin, Varadarajan, and Peterson 1992).

Mascarenhas (1992, 1997) extended the current knowledge of first-mover advantages by examining order-of-entry effects within the semi-submersible oil drilling industry. Both studies are significant for a number of reasons. First, Mascarenhas extended the growing body of knowledge by focusing on the service industry rather that the manufacturing sector. Second, both studies addressed the issue of first-mover advantages within an international context. Mascarenhas (1992) noted that the semi-submersible oil drill was developed in 1962 by Shell Oil as a drilling rig resting above the water surface on large buoyant pontoons. It was this flotation technology which allowed the drill to operate in deep water conditions yet remain stable in rough seas. As a major oil company, Shell Oil felt that involvement in the drilling industry was strategically inappropriate and made public all patents regarding its innovation in an attempt to encourage wider supply and demand for the specialized rig. As a result of this action, an international semi-submersible oil drilling industry arose, characterized by initial high

uncertainty, high capital costs ($60 million per unit in 1984), and potential buyer switching costs. These independent drilling firms contracted out their services to major oil companies and were, in turn, compensated on a project-by-project basis. In his first study, Mascarenhas (1992) conducted a longitudinal analysis of 143 firms that entered the semi-submersible drilling industry during the period between 1962 and 1984. The relevant market was defined at the national level because, according to Mascarenhas, the energy industry is often seen as critical to national security and the balance-of-payments status of respective countries. Furthermore, Mascarenhas (1992) noted the common entry mode of joint ventures between the national government and the oil drilling company. Because of this governmental involvement in the process, pressures often existed to use local national drilling firms rather than the more-experienced multinational drilling contractors if it can be demonstrated that the local firm possesses the required competency. Therefore, according to Mascarenhas (1992), the effects of this tendency towards localization could be hypothesized to counteract the advantages of the first mover. That is, as demonstrated by Lieberman and Montgomery (1988), a pioneer may drive first-mover advantages through the pre-emption of prime drilling locations and agents influential with local governments. In addition, the experienced drilling contractor should be able to benefit from the presence of higher buyer switching costs and levels of perceived risk. Mascarenhas (1992) subsequently identified a total of 46 national markets where semi-submersible oil drilling had been actively pursued during the relevant time period. The central research question of this study was whether or not pioneers exhibited higher market shares at the 1984 census after controlling for market localization. A multiple regression methodology was utilized in which market share was modeled as a

dependent variable. Firm nationality and order-of-entry were identified as independent variables. The issue of entrant survival was addressed though the development of two regression equations: one which included only surviving entrants (R^2=0.29) and a second which included all firms which had been involved in the industry during the period of interest (R^2=0.16). The result confirmed the first-mover advantage hypothesis at the p<0.01 level for both samples, although the relationship between pioneering and market share was twice as strong in the sample which was limited to surviving firms. That being said, one major implication from his findings was that while pioneer advantage could be demonstrated within the semi-submersible oil drilling industry, research designs which excluded non-survivors may systematically overestimate the strength of the order of entry effect (Szymanski, Troy, and Bharadwaj 1995). This issue will be discussed in detail when addressing the limitations of previous empirical research on first-mover advantages.

In his more recent study, Mascarenhas (1997) extended his analysis by introducing a size-of-entry component to the model. Using 8000 observations collected from *Offshore Data Services*, a company which monitors and reports annual worldwide activities within the oil drilling industry, Mascarenhas (1997) constructed a regression model similar to that of the 1992 study. Contrary to the findings of Green and Ryan (1990), Mascarenhas found that larger initial resource commitment did not result in higher market share and market survival among the 187 firms in 68 international markets over the 18-year period analyzed (β=-0.03, p=-0.38). Accordingly, Mascarenhas concluded that:

> " . . . after controlling for entry size, first entry indeed does result in higher long-term international market share and market survival in the offshore drilling

industry. In contrast, firms that entry international product-markets with larger initial resource commitment in this industry do not on average achieve higher market share or market survival." (p. 296)

Mascarenhas (1997) attributed his findings regarding the role of resource commitment to the different developmental stages in international markets. More specifically, he suggested that aggressive entry strategy might not be advisable across the board because different countries require different levels of resources when being entered. This contention gives rise to another argument. According to Mascarenhas (1997), given the finding that timing of entry is more important than size of that entry, international markets provide smaller firms with the opportunity to use their natural agility to create competitive advantages by entering foreign markets first.

Another widely cited study providing evidence of a maturing research stream was the 1995 work of Green, Barclay and Ryan. In their study, Green, Barclay and Ryan (1995) conducted a two-part examination of order-of-entry within the U.S. microcomputer software industry. Complementing the more contingent approach to addressing first-mover advantage offered by Kerin, Varadarajan, and Peterson (1992), Green, Barclay, and Ryan (1995) examined first-mover advantage within a broader framework that encompassed entry strategy, external market characteristics, and internal sources of competitive advantage. The authors dubbed this conceptual framework the "Entry Strategy Performance Model (ESPM)." Archival data from both trade and general business press as well as the results of a PC Magazine interactive reader survey provided the researchers with data regarding variables such as performance, magazine coverage, quality, value, advertising investment, number of competitors, and timing of entry. The authors utilized a partial least squares (PLS) model in order to maximize the prediction of

performance. The first of their two studies attempted to capture the profitability and market share performance of 39 manufacturers of professional word processing software based upon the set of aforementioned variables. Consistent with the findings of Flaherty (1984) and Green and Ryan (1990), the results supported the impact of timing on market share, both directly (β=-0.022) and indirectly (β=-0.266) through the degree of magazine coverage of the product. While the total effect (β=-0.288) of timing of entry on subsequent market share was substantial, it should be noted that the major portion of this effect was classified as an indirect effect, expressing the impact of early entry upon editorial coverage. However, the second study charting the business graphics industry (44 entrants) resulted in a very different mix. Although the direct effect of timing of entry was also substantial (β=-0.282), the indirect effect of timing upon magazine coverage was the opposite of that noted in the first study (β=0.345). Consequently, Green, Barclay, and Ryans (1995) suggested the presence of a first-mover *dis*advantage in the business graphics industry because later entry garnered more benefits from the technological developments of the pioneers, demonstrating the "free rider" arguments advanced by Lieberman and Montgomery (1988). As a result, Green, Barclay, and Ryans (1995) asserted that pioneer advantage must not be a universal construct, but rather only one component of a firm's competencies that, in addition to many external market forces, determine market share performance. Despite the reliance on a significantly narrow industry and the resulting mixed results, the model proposed by Green, Barclay, and Ryans (1995) allowed for a more sophisticated understanding of potential factors influencing the long-term performance of a product entering a market. Consequently, the importance of the study is that it contributed, at least in part, to the rise in the conceptual

interpretations of the phenomenon to be discussed next. Specifically, as illustrated by the authors:

> "The results reinforced the recent findings that simple nostrums, such as early entry is best, can be a dangerous oversimplification. Both quality and value at entry have substantial direct effects on long-term performance . . . A product introduced prematurely, without the attributes necessary to establish a positive competitive position, may find the poor reputation resulting from its initial stance difficult to overcome." (p. 13-14)

The final study characterized by its strictly empirical examination of first-mover advantages in a specific industry is the 1996 work of Nehrt. Nehrt (1996) attempted to bridge the gap in the literature regarding the relationship between timing of entry and intensity of environmental investments by examining the investment timing and intensity conditions under which advantages might exist for first-movers in pollution-reducing manufacturing technologies. Similar to Mascarenhas (1992, 1997), Nehrt (1996) extended the paradigm of analysis to include international markets. Data from 50 producers of chemical-bleached paper pulp in eight countries were used to test the relationship between investment timing, intensity, and the interaction of those two on one hand, and growth in the firm's profits on the other. The analysis period was from the mid-1980s to the early 1990s. Nehrt (1996) noted the need to control for differing environmental regulations across the different countries – a key point in his argumentation. The central crux to the paper was a general departure from the conventional wisdom that pollution-reduction investments had a negative impact on firm performance. That is, conventional wisdom regarding these types of investments was that because pollution-reduction technologies were essentially nonproductive assets, they had no benefits to the firm other than mere adherence to regulation. Nehrt (1996) argued that such investments provided opportunities for first-mover advantages given the

inavailability and expense of such technologies. Nehrt (1996) therefore hypothesized that there was a positive relationship between timing and intensity of investments in these slow diffusion pollution-reducing technologies and a firm's financial performance. Accordingly, a set of multiple regression equations were formulated where percentage growth in real net income was a dependent variable and timing and intensity of pollution-reducing investments acted as independent variables. Also in consideration, Nehrt (1996) controlled for the effects of the timing of actual regulations, growth in real GDP, growth in wages, firm initial net income, and growth in sales. The results indicated a significant positive relationship between timing of investments and performance (β=152.9, t=1.939). However, corroborating the results of Mascarenhas (1997), the relationship between intensity of investment was not found be significant with regards to firm performance (β=-0.2, t=-0.058). In addition, the interaction between timing and intensity was also found to be insignificant (β=0.9, t=0.455). Nehrt (1996) attributed the insignificance of these variables to asset mass efficiencies as well as time compression diseconomies. That is, companies making larger investments may be attempting to assimilate several pollution-reducing process technologies at the same time. Without sufficient time to absorb the new technologies, the firms face time compression diseconomies that leave them unable to realize the full benefits of their investments, at least in the short term. This argument is consistent with the findings that the effect of environmental regulations was insignificant. Therefore, while Nehrt (1996) failed to find a significant relationship between intensity and performance, his study did provide some insights into a growing concern in the literature:

"Much of the first-mover literature relies on either upon volume-based measures associated with learning curve effects with large economies of scale, or, less often upon timing of investment. In fact, an assessment of both is necessary to obtain a fuller understanding of the conditions under which first-mover advantages may exist" (p. 544)

As previously discussed, the empirical study of first-mover advantage had its origins in industry-specific research which was designed to guide the formulation of governmental policy regarding the marketing of pharmaceutical drugs (Bond and Lean 1977) and cigarettes (Whitten 1979). Since that time, a wide range of industries have been used to address the nature of first-mover advantages. Also, a number of different methodologies employed in these studies were employed including but not limited to multiple regression (Mascarenhas 1992; 1997), logit regression (Mitchell 1991), accelerated event-time analysis (Mitchell 1989), Tobit analysis (Gannon, Smith, and Grimm 1992), and partial least squares (Green, Barclay, and Ryans 1995).

A point worth mentioning is that, in general, support for the first-mover hypothesis has been nearly unanimous from the industry-specific studies. That being said, a number of issues have been raised regarding the validity of these findings. One major concern has been the idiosyncratic nature of specific industry samples may present a major concern regarding the generalizability of results across other industries (Kerin, Varadarajan, and Paterson 1992). Consequently, arguments have been made that studies addressing the first-mover phenomenon using cross-sectional data drawn from larger sectors of the economy would provide a more comprehensive view and more importantly provide some universality to the empirical generalizations from industry-specific studies (Golder and Tellis 1993).

Cross-Sectional Research

Arguments for market pioneering generated from industry-specific research have been reinforced by empirical evidence drawn from cross-sectional data (Lieberman and Montgomery 1998). One of the major reasons for this has been the across-the-board support for the first-mover empirical generalization uncovered by studies based on data from the widely accepted PIMS database (Kerin, Varadarajan, and Peterson 1992; Golder and Tellis 1993). In general, first-movers were found to have a statistically significant market share advantage over later entrants (Kalyanaram, Robinson, and Urban 1995). The following section will provide a detailed discussion of those order-of-entry studies using the PIMS database as well other alternative databases such as ASSESSOR and BEHAVIORSCAN.

PIMS-Based Studies

The PIMS database was derived from the Profit Impact of Market Strategies research program. The project began in 1960 by Schoeffler and associates at General Electric (Anderson and Paine 1978). In 1972, the PIMS project was moved and is now housed in the Strategic Planning Institute (SPI). The PIMS program was created with the specific purpose of determining how key dimensions of strategy affect profitability and growth (Buzzell and Gale 1987). Since it's inception, the program has included annual data regarding product divisions or strategic business units from some 450 small and large North American and European corporations for periods ranging from 2 to 10 years. The resulting cross-sectional database has been used extensively by managers and planning specialists of participating companies in developing business plans, evaluating

forecasts and appraising possible acquisitions and divestures. Also, the PIMS database has provided academic scholars with a wealth of knowledge regarding general strategy issues and relationships. As will be discussed later in this chapter, the PIMS database does have its imperfections with regards to studying the first-mover phenomenon. Nonetheless, studies based on cross-sectional data from PIMS have presented important generalizations concerning the relationship between entry timing and firm performance (Kerin, Varadarajan, and Peterson 1992).

As mentioned previously, support for the first-mover hypothesis is almost unanimous when PIMS data is used. This is noteworthy since the PIMS database boasts a substantial amount of cross-sectional data from different industries and major first-mover advantage studies have been conducted using dissimilar and often varying sections of the database. That being said, three specific studies, drawing from different sections of the PIMS database, have provided the earliest accounts of the relationship between order of entry and market performance. These three studies provided important insights and have been cited extensively in later research (Golder and Tellis 1993). All three note the consistent differences regarding market share based on timing of entry. Table 2 shows that on average, pioneering firms have enjoyed a substantially higher market share than either early followers or later entrants.

Table 2
Market Share by Order of Entry from Early PIMS Studies

Study	Pioneers	Early Followers	Late Entrants
Robinson and Fornell (1985)	29%	17%	12%
Robinson (1988)	29	21	15
Lambkin (1988)	32	19	13

One of the earliest PIMS studies was Robinson and Fornell's (1985) investigation of pioneer advantage within mature consumer goods industries. Robinson and Fornell (1983) represented first-mover advantage as the indirect effect of order of entry upon market share. More specifically, as illustrated in Figure 3, the authors hypothesized that a firm would achieve a superior market share by entering the market early. The rationale being that market share is a product of a firm's relative marketing mix, relative direct cost, and relative consumer information advantages obtained through early entry. One of the major contributions of the study has been the introduction of a new element to the early entry paradigm; one based on the informational advantages directly linked to the consumer of the product. This provided a key foundation on which subsequent behavioral interpretations of the phenomenon were developed (Engelland and Alford 2000). Robinson and Fornell (1985) traced their inclusion of consumer information advantage to the work of consumer economist Schmalensee (1982) and argued that consumer learning, when based upon product usage, had the potential to provide the pioneer with an information advantage over subsequent entrants to the market. Robinson and Fornell's (1985) study involved the development of a theoretical model operationalized by a series of linear equations. The equations included five dependent variables - market share, product quality relative to competition, product line breadth relative to competition, price relative to competition, and direct cost relative to competition.

Using dummy variables to address the various sources of first-mover advantages, Robinson and Fornell (1985) classified each of the 371 businesses from the PIMS database as either a pioneer, an early follower, or a late entrant. The classification involved whether or not convenience goods were sold, shopping goods were sold,

seasonal products were sold, products were redesigned on an annual basis, or if the firm

participated in an advertising-intensive industry.

Figure 3
Three Sources of Market Pioneer Advantages
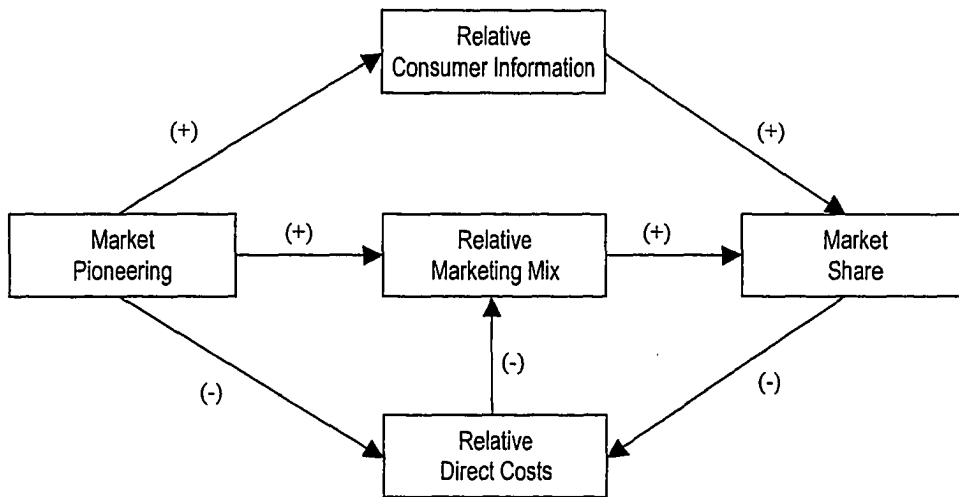
Adapted from Robinson and Fornell (1985)

Accordingly, Robinson and Fornell (1985) developed nine hypotheses that were

designed to test the proposed model. More specifically, the hypotheses were formulated

to test whether the premiums in market share illustrated in Table 2 were in fact associated

with the act of pioneering. The model was estimated by both two-stage and three-stage

least squares. Robinson and Fornell (1985) expressed their empirical results in the form

of a multiplicative product of the pioneer's effect on the variable in question as well as

that variable's contribution to market share. The resulting "Share Point Advantages" or

(SPA) supported a number of the hypotheses. First, pioneers were generally found to

possess higher product quality (*SPA*=2.94) and broader product lines (*SPA*=8.06) when

compared to later entrants. Second, foreshadowing the later findings of Tufano (1989),

both pioneers and later entrants were found to exhibit similar pricing strategies for goods

with relatively similar quality but varied widely in terms of the market shares they held

(*SPA*= 9.02). Third, market pioneers within industries where distribution played an

important role, such as those where goods were purchased frequently and at low price,

were found to have stronger market shares (*SPA*=7.87). Fourth, support was also found

for the consumer information hypothesis in industries in which purchase price and

purchase frequency were low (*SPA*=5.01). No share advantages were found, however, in

industries characterized by high advertising intensity or relatively frequent product line

changes. Finally, Robinson and Fornell (1985) found that early followers had

significantly higher market shares than late followers; however, the difference was much

smaller than the difference between first-movers and early followers. Therefore, general

support for the first-mover advantage hypothesis was found. As reported by Robinson

and Fornell (1985), the principle findings of their investigation strongly supported the

existence of first-mover advantages:

> "The empirical evidence indicates that both consumer-based and firm-based
> factors result in long-term market share advantages for pioneers relative to later
> entrants. Overall, the results suggest that order of entry is a major determinant of
> market share for a broad cross-section of consumer goods industries." (p. 305)

Robinson (1988) essentially replicated the earlier work of Robinson and Fornell

(1985) by extending the sample frame to 1209 business units in industrial goods

industries. As profiled in Table 2, pioneers in industrial markets also exhibited a market

share premium over later entrants. Similar to the earlier study (1985), Robinson (1988)

conceptualized market share advantage as an indirect effect of pioneering. However, switching costs were substituted for the consumer-based information advantage component of the first model (1985). Robinson (1988) argued that while pioneer brand name was still an important issue in industrial markets, switching costs played a more critical role in industrial buying decisions. That is, consistent with Porter (1980), switching cost advantages accrue to the pioneer as a result of increased transaction costs as well as industrial buyers' investment in dedicated assets and specialized plant and equipment. Accordingly, Robinson (1988) also replaced relative advertising and promotion expenditures adopted in the 1985 study with relative sales force expenditures in the 1988 study.

The findings of the second study suggest a number of similarities with the first study. First, pioneers were again found to possess higher levels of relative product quality (SPA=4.27) and relative product line breadth (SPA=3.83). Second, pioneer pricing strategy was not dissimilar from pricing strategy of later entrants (SPA=0.18). As with consumer markets, no significant relationship was found between industrial first-mover advantages and direct cost savings or more aggressive pricing. First-mover market share was, however, found to be positively related to industry value-added estimates (SPA=0.02) and negatively related to purchase amounts (SPA= -0.08). As noted by Robinson (1988), this suggested that firm strategy and industry structure might present moderating effects on first-mover advantages:

> "In a broad cross section of mature industrial goods businesses, market pioneers have important market share advantages over later entrants . . . These share advantages are influenced by both business and industry characteristics." (p. 93)

While there are major similarities between the two studies, a number of conclusions specific to the 1988 study warrant further discussion. First, Robinson (1988) found that pioneer share advantages were positively related to purchase amounts in excess of $10,000 in industrial markets (*SPA*=4.29). This was not the case in consumer markets, In fact, Robinson and Fornell noted that relatively stronger pioneer advantages were associated with purchase amounts under $10 (*SPA*=6.75). Therefore, as discussed by Robinson (1988), first-movers in industrial markets tend to benefit from larger product purchase amounts while in consumer markets first-movers tended to benefit from smaller purchases. The second major difference was that pioneer market share in industrial markets was found to be initially but much lower than that found in consumer markets. More specifically, consumer market pioneers in product categories that were relatively new (less than 20 years old), established, on average, a 23.56 market share point advantage over late entrants. That differential may be compared to the 17.16 market share point advantage found in industrial markets. However, Robinson (1988) noted that after two decades in the marketplace, industrial market pioneers exhibited a 13.01 market share point advantage versus a 12.75 share point advantage in consumer markets. This finding suggests that initial advantages obtained in consumer markets tend to decline over time while first-mover advantages accrued in industrial markets tend to last longer. This corroborates the suggestions put forth by Porter (1980) that such advantages are more sustainable over time in industrial markets than in consumer markets.

Building upon early PIMS-based studies (Robinson and Fornell 1985; Robinson 1988) and focusing more on the role of strategy in developing first-mover advantages, Lambkin (1988) examined the order-of-entry issue from the perspective of the entrant's

structure and strategic decisions. Struck by the parallels between the typical product life cycle (PLC) model and the population ecology framework described by Hannan and Freeman (1977), Lambkin (1988) attempted to utilize the ecology framework within the context of product-market competition. The study involved the PIMS start-up database (STR4) with a sample size of 129 start-up firms as well as the main PIMS database (SPI4) with a sample size of 187 adolescent corporate ventures. Both PIMS databases comprised a measure of order-of-entry identifying the three categories of pioneer, early follower, and late entrant. Utilizing ANOVA, Lambkin (1988) found that, for both samples, there was a general tendency for pioneers to achieve significantly higher market shares when compared to later entrants. Also, using multiple regression analysis, Lambkin (1988) found that the main effect of the order-of-entry variable on market share was relatively significant at the $p<0.001$ level ($R^2=0.13$ for STR4 data and $R^2=0.21$ for the SPI4 sample). The results compared favorably to the often-cited relationship between market share and profitability ($R^2=0.13$) uncovered in PIMS research (Buzzell and Gale 1987). In general, Lambkin was able to corroborate the earlier findings of Robinson and Fornell (1985). First-movers were found to possess broader product lines as well as a more extensive market distribution network. Secondly, first-movers were found to possess a substantial product quality advantage relative to later entrants together with higher levels of customer support services. Lambkin (1988) also found little evidence of differences in price levels between first-movers and later entrants. However, she did note that those differences did indicate that pioneers priced at a slight premium to their later counterparts. Lambkin (1988) argued these counter-intuitive pricing patterns were consistent with noticeably aggressive first-mover pursuit to slide down the experience

curve, a notion discussed in detail by Lieberman and Montgomery (1988). Nonetheless, Lambkin (1988) was able to corroborate the findings of Robinson and Fornell (1985) and Robinson (1988) in that first-movers obtained substantially higher levels of market share in comparison to later entrants:

> "The results of this study strongly support the basic premise that order of entry is systematically related to competitive performance ... these results confirm he general tendency observed in previous research that pioneers out perform all later entrants." (p. 137)

However, one particular element of Lambkin's (1988) analysis worth mentioning is her inclusion of a strategy component while examining the first-mover phenomenon. When Lambkin (1988) included firm strategy and structure into the model, the strength of the relationship between order-of-entry and market share and profitability increased substantially (R^2=0.59 vs. R^2=0.13 for the STR4 data and R^2=0.82 vs. R^2=0.21 for the SPI4 data). These results foreshadowed her later work (i.e., Lambkin 1992) as well as other studies focusing on the theoretical arguments regarding the moderating effects of firm characteristics on the order-of-entry/market share relationship (e.g., Kerin, Varadarajan, and Peterson 1992; Szymanski, Troy, and Bharadwaj 1995).

While the previous three studies provided the earliest insights regarding the issue of timing of entry using PIMS data, a number of other studies have expanded on their findings by utilizing other segments of the PIMS database to address more specific elements of the pioneering phenomenon. The first of these other studies is the 1989 work of Miller, Gartner, and Wilson. These scholars extended the research domain to entrepreneurial ventures by conducting an analysis of 119 new corporate ventures in the

consumer and industrial sectors primarily from the PIMS STR4 database. The study differentiated itself from earlier work in the field though its focus on new rather than mature corporate entities. More specifically, Miller, Gartner, and Wilson (1989) explored the extent to which order of entry determined not only market share, but also such competitive factors late entrant preemptive positioning and promotion Consistent with Lambkin's (1988) work on the role of strategy, Miller, Gartner, and Wilson (1989) found that pioneers had higher quality, broader product lines, and broader market scope (R^2=0.10, p<0.000). Also, based on the work of Porter (1980), the authors set out to examine the question of whether pioneers achieved significant differentiation and cost advantages over later entrants. Miller, Gartner, and Wilson opted to use ANCOVA because it controlled the effects of market share in order to isolate the effect of order-of-entry upon firm competitive strategy decisions. Differentiation was operationalized using a number of different variables including relative product quality, relative product differentiation, relative service quality, relative marketing expenditures, and relative R&D expenditure. Cost leadership was operationalized utilizing measures of both relative cost as well as relative price. A multivariate group test of significance was calculated with MANOVA, yielding a comparison of pioneer and late entrant group means on the measures in question. Consistent with previous results (e.g., Robinson and Fornell 1985; Robinson 1988), significant differences between pioneers and late entrants were found in terms of relative product quality (F=9.14, p<0.03) and relative service quality (F=5.14, p<0.025). The authors also found no significant differences between pioneers and late entrants regarding relative marketing expenditures. However, pioneers were found to have a significantly higher level of R&D (F=11.70, p<0.001). Miller, Gartner, and

Wilson (1989) asserted that this finding was not surprising given the competitive advantage of pioneers in product quality and service. On the other end, the results indicated that follower firms tended to compete based on lower prices when compared to pioneers ($F=2.60$, $p<0.110$), but that this pricing strategy was not associated with lower costs structures ($F=0.79$, $p<0.374$). This disparity in gross profit margin was thought to be important in increasing first-mover advantages since the greater profitability of pioneering firms could be translated into increased investments in continuous innovations in product quality and customer service. With later entrants found to have both differentiation and cost disadvantages, the authors portrayed late entry as a significant handicap in new corporate ventures. However, Miller, Gartner, and Wilson (1989) did note that because promotion did not appear to be a function of order-of-entry, it did provide the only potential source of competitive advantage for followers.

Also drawing upon the organizational economics literature of Porter (1980; 1985), Parry and Bass (1990) focused their research on the relationship between pioneering advantage and industry concentration. This focus is noteworthy since up to this point, significant emphasis had been based on the ability of the pioneering firm to erect barriers of entry that impeded follower firms' ability to achieve competitive advantages. Parry and Bass (1990) hypothesized that entry barriers were not solely responsible for pioneering advantages but rather only part of a larger notion of seller concentration within the industry in question. That is, first-mover advantages may differ depending on whether the market is concentrated or fragmented in nature. A concentrated or oligopolistic market, according to Parry and Bass (1990), is defined as a market where the aggregate market share levels of the four leading competitors exceed a threshold of

55%. Parry and Bass (1990) subsequently compared the direction and magnitude of pioneer advantage in concentrated versus fragmented markets in an effort to distinguish between those advantages stemming from a concentrated industry as opposed to coming solely from early entry. Parry and Bass (1990) studied two samples from the PIMS SPI4 database; the first consisted of 593 mature consumer goods business, and the second included 1287 industrial goods businesses. Utilizing the same methodology as Robinson and Fornell (1985), Parry and Bass (1990) developed a model and five simultaneous equations where the influence of pioneer advantage on market share, relative product quality, relative product line breadth, relative price, and relative direct cost were measured. The authors found, as with previous research, that pioneers had higher market shares when compared to followers. More importantly, however, the extent to which pioneers had such share advantages was found to depend on industry type (concentrated vs. fragmented) with stronger pioneer advantages found in concentrated markets. In both samples, Parry and Bass (1990) found that the presence of entry barriers in terms of relative industry concentration had a significant influence on the degree and direction of pioneer advantages. In concentrated markets, the coefficients were found to be positive and significantly lower (β=3.28 in consumer markets and β=2.22 in industrial markets), while in fragmented markets, the coefficients were found to be negative and significantly higher (β=-8.57 in consumer markets and β=-7.97 in industrial markets). Parry and Bass (1990) also confirmed the earlier results of Robinson and Fornell (1985) as well as Robinson (1988) regarding end user purchase amounts. Pioneers in concentrated consumer markets where average purchase price was low (less than $10.00) experienced an incremental share benefit of 4.55 share points while those pioneers operating in

concentrated industrial markets were found to experience an incremental share benefit of 7.07 share points as the amount purchase price increased.

Addressing a growing concern in the literature. Moore, Boulding and Goldstein (1991) argued that pioneering must be treated as an endogenous variable rather than as an exogenous variable. Based in part upon the earlier conceptual insights of Lieberman and Montgomery (1988), the authors hypothesized that a firm will consider its internal strengths, evaluate the potential environmental opportunity, and form its expectations about performance outcomes. The manner in which that outcome is achieved depends upon entry timing. That is, firms which possess internal strengths such as technological foresight, market research prowess, new product development skills, or simple good fortune have opportunities to create first-mover advantages. The central rationale for the study was somewhat revolutionary at the time because the endogenous interpretation of first-mover advantage held that firm skills and resources as well as random chance in the form of luck created market share advantages rather than simply the effect of timing of entry into the market. And because firms do not all possess the same set of managerial skills and resources, how first-mover opportunities are created are of considerable importance. Consequently, Moore, Boulding, and Goodstein (1991) hypothesized that overall magnitude of first-mover advantage may be confounded with differences in the skills and resources of the firm and therefore exogenous models of first-mover advantage such as those utilized by Robinson and Fornell (1985) and Robinson (1988) were flawed. This was because those studies did not control for the effects of the aforementioned managerial skills in estimating pioneer advantage and may have systematically overestimated the effects of order of entry for firms which do not possess the necessary

skills. Using a sample of 593 business from the PIMS database, a series of equations similar to those proposed by Robinson and Fornell (1985) were offered. While Moore, Boulding, and Goldstein (1991) did not address the question of what specific managerial skills and resources enable pioneering, they did find, using Hausman's (1978) specification test, that a statistically significant bias existed in Robinson and Fornell's (1985) exogenous pioneering model. Their assessment of the effect of pioneering on market share revealed substantive differences between exogenous pioneering estimates and endogenous pioneering estimates (F=1.88, p<0.05) and the need for further development of a model that answers *when* a firm should enter a market, given its skills and resources.

Robinson, Fornell, and Sullivan (1992) addressed the same endogenous versus exogenous debate associated with first-mover advantages albeit from a different perspective. Again, following the conceptual arguments advanced by Lieberman and Montgomery (1988), Robinson, Fornell, and Sullivan (1992) attempted to determine if market pioneers enjoyed long-term market share advantages simply because these firms were inherently more competitively endowed. Their interpretation of the endogenous versus exogenous issue was similar to that presented by Moore, Boulding, and Goldstein (1991). However, they conceptualized two basic, yet conflicting, advantages that were the focus of the study: absolute advantage and comparative advantage. According to Robinson, Fornell, and Sullivan (1992), the absolute advantage explanation of first-mover advantages held that the very act of market pioneering yields superior economic profits and that inherently stronger firms will employ this knowledge to enter the market before their weaker competitors. Based on this line of reasoning, the authors argued that

it was safe to assume that previous cross-sectional studies of order of entry systematically overestimated first-mover advantages by interpreting a firm's superior skills and resources as the act of pioneering. Comparative advantages, follow Abell's (1978) notion of a "strategic window" where the resource requirements for competitive advantages within any industry may shift radically with natural market evolution. Consequently, a comparative advantage arising from an order of entry, whether earlier or later, occurs only when a strategic fit arises between a firm's corporate resources and market opportunities it encounters. Therefore, contrary to their early research (Robinson and Fornell 1985; Robinson 1988), which held that market pioneers developed competitive advantage by moving first rather than later, the authors hypothesized that market pioneers may be intrinsically different from, but not necessarily stronger than later entrants. Robinson, Fornell, and Sullivan (1992) employed a multinomial logit model to estimate the probabilities of early entry given a set of skills a firm may possess. These skills included R&D, manufacturing, finance, and marketing. Robinson, Fornell, and Sullivan (1992) found that first-movers were characterized by relatively high levels of financial expertise (β=1.46, t=1.46) but were associated with relative expertise in R&D (β=0.10, t=0.19). It is worth noting that these findings were contrary to the conceptually-based expectations of pioneering put forth by Lieberman and Montgomery (1988). Robinson, Fornell, and Sullivan (1992) did concede that these contrary findings might have been due to the increased possibility of measurement error inherent in PIMS data. That being said, the authors implied that R&D intensity *measured against sales* was strongly associated with first-moverism. Robinson, Fornell, and Sullivan (1992) also found that increased corporate marketing skills significantly increased the probability of late entry

(t=-1.65), confirming the results of earlier empirical research (Robinson and Fornell 1985; Robinson 1988; Lambkin 1988). Overall, the differences in skill profiles among pioneers, early followers, and late entrants found in this study lent support to Abell's comparative advantage hypothesis. Also, while Robinson, Fornell, and Sullivan (1992) found that pioneers are intrinsically stronger than early followers and late entrants, they did acknowledge the role of luck, as mentioned by Lieberman and Montgomery (1988), and the situational nature of first-mover advantages in determining first-mover activity (Kerin, Varadarajan, and Peterson 1992). Therefore, they suggested further research in the area should be done to help illuminate the roles of each.

In 1992, Lambkin extended her earlier findings regarding the role of structure and strategy in explaining the nature of the magnitude of pioneer advantage. As with her previous research, Lambkin (1992) regressed the order of entry variable against market share and found a significant relationship (R^2=0.09, p<0.000), which was again compared in strength to the relationship between market share and return on investment (R^2=0.13) cited by Buzzell and Gale (1987). The research focus in this study however was based on some of the developments brought to light subsequently to her first study. Drawing on the theoretical insights of Lieberman and Montgomery (1988) and the empirical findings of Parry and Bass (1990), Lambkin (1992) developed a series of hypotheses which systematically tested the association between *successful* pioneers and characteristics of firms. Such characteristics were operationalized in terms of dimensions such as relative product quality, production scale advantages, broader product lines, access to greater corporate resources, superior quality, intellectual property rights, lower direct costs, and the participation in more concentrated industries. Utilizing a sample of 2746 consumer

and industrial firms from the SPI4 PIMS database, Lambkin (1992) evaluated differences among successful, average, and unsuccessful pioneers. Using ANOVA, Lambkin (1992) found that relative product quality, production scale advantages and customer support service had a statistically significant effect on the magnitude of a possible pioneer advantage (p<0.01). Less significant effects were found regarding the role of patents. Confirming a number of earlier findings (Robinson and Fornell 1985; Robinson 1988; Lambkin 1988), Lambkin (1992) found that successful pioneers were more likely to benefit from patent protection but only at the p<0.1 level. Also, a minor distinction in the degree of pioneer success was noted between consumer and industrial markets. However, the major contribution of Lambkin (1992) was the recognition that the variation of performance between pioneers and non-pioneers resulted from different production and marketing firm-specific advantages. This finding provided a significant empirical backdrop for future theoretical arguments (e.g., Golder and Tellis 1993; Szymanski, Troy, and Bharadwaj 1995; Vanderwerf and Mahon 1997).

In another effort to incorporate competitive strategy into the first-mover paradigm, DeCastro and Chrisman (1995) tapped into the organizational economics literature, namely Porter's (1980) concept of generic strategy in which a firm's strategic options involved one of cost leadership or differentiation. Specifically, DeCastro and Chrisman (1995) addressed the effect of order of entry on long-term profitability of firms. The focus on long-term performance in the form of return on investment (ROI) offered a different perspective on relevant measures of performance. Up to that point, performance, within the context of first-mover advantages, was widely considered in terms of a firm's relative market share. DeCastro and Chrisman (1995) noted findings regarding order of

entry and customer service, and broadening product lines reported in previous research. However, their study focused was on strategic decisions at the business level. Utilizing ANOVA and multiple comparison to evaluate data from a sample of 599 manufacturing firms competing in mature concentrated industries from the SPI4 PIMS database, DeCastro and Chrisman (1995) found no significant differences between pioneering firms adopting a differentiation strategy and pioneering firms adopting a cost leadership strategy when ROI was used as the performance measure. They did find, however, that a significantly greater number of pioneers chose to use differentiation strategies than use low cost strategies ($p<0.001$) and that a significantly higher proportion of followers than pioneers used low-cost strategies ($p<0.02$). These findings were consistent with the theoretical argumentation of Lieberman and Montgomery (1988) and Kerin, Varadarajan, and Peterson (1992). While this supported the conventional wisdom regarding these two strategies, the decision to use a cost or differentiation approach made little difference in the performance of pioneers. DeCastro and Chrisman (1995) attributed this finding to the *main* effects of competitive strategy on financial performance. Specifically, their empirical findings suggested that the effect of competitive strategy ($F=13.9$, $p<0.000$) is greater than the main effect of order of entry on ROI ($F=7.7$, $p<0.006$). These findings, while somewhat contradictory to previous research, did solidify the complex and contingent approaches first presented by Lieberman and Montgomery (1988) and Kerin, Varadarajan, and Peterson (1996).

The final empirical study focusing on first-mover advantage utilizing PIMS data was the 1996 work of Murthi, Srinivasan, and Kalyanaram. Building on the previous findings of Moore, Boulding, and Goodstein (1991), the authors proposed a mechanism

to systematically control for observed and unobserved managerial skills when determining the nature of first-mover advantage from an exogenous as well as an endogenous perspective. Utilizing a sample in excess of 2000 firms drawn from the PIMS database, they included two additional explanatory variables to capture the effects of the firm's resources and skills: relative marketing efficiency (*RME*) and relative production efficiency (*RPE*). Data envelopment analysis, a technique developed in the operations research literature (Charnes, Cooper, and Rhodes 1978), was utilized in the measurement of these two constructs. Consistent with the literature in management performance assessment (Bonama and Clark 1988), these two measures of marketing and manufacturing efficiency were viewed as surrogates for managerial skill. The results of this study found that pioneers had higher relative marketing efficiency scores (*RME*=0.94) than did late entrants (*RME*=0.92), suggesting that pioneers used their marketing resources better than late entrants. On the other hand, late entrants were found to enjoy an advantage regarding relative production efficiency (*RPE*=0.72 for late entrants vs. *RPE*=0.69 for pioneers). While Murthi, Srinivasan, and Kalyanaram (1996) concluded that these measures were unlikely to completely reflect the effect of a factor as subjective as managerial skill, their findings that pioneer advantages remained strong after controlling for management talent reinforced the empirical argument for first-mover advantage:

> "Within or without heterogeneity, we observe that pioneering advantage is strong...even with a detailed specification for observed and unobserved managerial resources, we find the effects of pioneering to be enduring." (p. 335)

Extending on their findings, the authors then considered the question of whether first-mover advantage was measurable when considered an endogenous phenomenon. By estimating a recursive model with pioneering specified as a function of managerial skills as well as corporate funding of research and development, Murthi, Srinivasan, and Kalyanaram (1996) found that the order of entry effect remained robust despite the endogenous orientation of the model. Specifically, pioneers were found to enjoy a market share advantage, on average, in excess of 11% over late entrants. The conclusions that may be drawn from this study are that after controlling for managerial skill and even accepting an endogenous interpretation of pioneering, first-mover advantages persist and are still robust.

Other Database Studies

Cross-sectional research regarding first-mover advantages has traditionally been dominated by PIMS-based studies (Golder and Tellis 1993). However, a number of studies have attempted to examine the effects of order of entry upon market performance utilizing a number of alternative databases. One of the most cited cross-sectional studies of first-mover advantages was the 1986 work of Urban, Carter, Gaskin, and Mucha. Two reasons are cited for the tremendous interest in this study. First, the authors' focused on a significantly different domain of analysis. Unlike previous studies, Urban *et al.* (1986) focused on the order of entry phenomenon at the *brand* level, rather than the traditional business or SBU level characteristic of the PIMS database. Second, the research findings were realized with the use of a pre-test market assessment procedure designed for

frequently purchased brands of consumer products. The resulting database, ASSESSOR, was a consummation of a series of mall intercepts in which 300 respondents were surveyed regarding evoked set, brand preferences, and product attribute ratings for 129 major brands across 36 distinct product categories. Urban *et al.* (1986) noted the need to address pioneer longevity when collecting data. Unlike with the PIMS data (e.g., Robinson and Fornell 1985. Robinson 1988, Lambkin 1988, 1992), pioneers in ASSESSOR were well established with an average life in the marketplace of 25 years. From the data, perceptual maps were developed based upon consumer preferences and ratings. Also, estimates of market share were developed based on responses regarding recent brand purchases. To obtain a more comparative figure for market share, Urban *et al.* (1986) redefined the original market share variable as market share *relative* to the market leader. The authors then formulated a log linear regression model in which relative market share was hypothesized to be the dependent variable while order of entry, lag between entry, advertising expenditures, and positioning were assumed to be independent variables. Urban *et al.* (1986) found that all variables were significant ($p<0.01$). However, order of entry ($\beta=-0.21$) was not found to contribute to market share as much as market positioning ($\beta=0.57$) and advertising expenditures ($\beta=0.44$). The authors argued that this significant but somewhat diluted effect of order of entry could be attributed to both the diminishing effect of first-mover advantages over time, but more importantly, to the ability of later entrants to "leapfrog" pioneers; a notion addressed in detail by Lieberman and Montgomery in later years. In fact, Robinson, Kalyanaram, and Urban (1994) addressed the issue and suggested that position quality and advertising expenditures, if held constant, would result in a relative share for the nth entrant equal to 1

divided by the square root of its order of entry. Nonetheless, despite the weak relationship found by Urban, Carter, Gaskin, and Mucha (1986), their finding that there is in fact a negative relationship between order of entry and relative market share utilizing other cross-sectional data corroborated previous PIMS-based findings.

Building on the work of Urban *et al.* (1986), and using the same ASSESSOR database, Brown and Lattin (1994) specifically addressed the relationship between pioneering advantages and time in the market. Brown and Lattin (1994) first reanalyzed the total data from the ASSESSOR database (129 brands in 34 different consumer goods categories) using a simple regression model identical to the one presented by Urban *et al.* (1986) while adding a variable regarding time in the market. Time in the market was found to be highly significant (β=0.256, t=3.08); lending further support to the relationship between pioneering advantage and time in the market. However, when time in market was added to the model, the coefficient of the order of entry term became statistically insignificant (β= -0.121, t=-1.26); this suggested that pioneering advantage dissipates substantially over the long run. According to Brown and Lattin (1994), this is because pioneers may tend to lose their cost advantages over time. This suggestion is consistent with Huff and Robinson (1994), in which the same ASSESSOR database was used to address the effect of *lead* time on market share. Using 95 observations from each of the 34 categories of the ASSESSOR database, Huff and Robinson (1994) again replicated the work of Urban *et al.* (1986) but included a lead time variable as well as *years of competitive rivalry* in the market for each pioneer. Lead time, according to Huff and Robinson (1994) was defined as the time between the first entrant and the next entrant. The log-linear OLS regression revealed that longer lead times would significantly

increase the pioneer's advantage (β=-0.36, t=-2.01). However, again, the advantage tended to decline over time with competition.

The findings of Huff and Robinson (1994) were consistent with the more recent work of Agarwal and Gort (2001). While not based on ASSESSOR data, their study suggested that the diminishing nature of first-mover advantages was the result of natural market evolution. The authors examined historical changes in the duration of the interval between the commercial introduction of a new product and the time when entry by later competitors began. Agarwal and Gort (2001) found, using archival data from 46 major product innovations, that the average time span was almost 33 years at the turn of the century and had declined to 3.4 years for innovations in 1967-86. They attributed the systematic decline to the lowering absolute cost advantages of first-movers resulting from easier transfer of knowledge and skills across firms and the usual growth of markets.

Finally, in an effort to bring together the findings of previous ASSESSOR-based studies of first-mover advantages, Vakratsas, Rao, and Kalyanaram (1998) attempted to address order of entry at a number of levels. First, the authors constructed a three-equation system in which relative positioning, elapsed time since last entry, and relative market share were set up as dependent variables. Specifically, the first equation involved order of entry and recency of the product category and determinants of relative positioning. The second equation also utilized the same independent variables but used elapsed time since last entry as the dependent variable. These two equations represented the follower's strategy. The third equation utilized relative market share as a dependent variable and was hypothesized to be a function of relative advertising, order of entry, elapsed time since last entry, relative positioning, and recency of the product category.

This third equation represented the market share penalty faced by the follower firm. Vakratsas, Rao, and Kalyanaram (1998) found that followers were more likely to react by changing their entry timing than by changing both their entry timing and positioning. Also, in recent categories, followers entered more rapidly than older product categories. This is consistent with the findings of Huff and Robinson (1994). However, Vakratsas, Rao, and Kalyanaram (1998) found that the reduction in the time of entry in recent product categories did not completely overcome the higher-order-of-entry penalty in these categories.

Building on the popularity of the ASSESSOR methodology, Kalyanaram and Urban (1992) also focused on the effects of order of entry across a sample of frequently purchased consumer products. Their research however, extended the work of Urban *et al.* (1986) on a number of levels. First, in addition to the use of cross-sectional data similar to ASSESSOR data, Kalyanaram and Urban (1992) used a time-series database to address the dynamic nature of order of entry. Second, Kalyanaram and Urban (1992) employed a number of the behavioral dimensions of first-mover advantages first suggested by Carpenter and Nakamoto (1989). In doing so, the authors examined the effects of order of entry on trial penetration and repeat purchase behavior based upon BEHAVIORSCAN consumer panel respondents. The third differentiating characteristic of this study was the use of Universal Product Code (UPC) scanner data, thereby allowing a direct analysis of price, promotion, and distribution effects as opposed to the self-reporting and relative data from PIMS-based studies. Kalyanaram and Urban (1992) used 69 weekly observations across 28 brands in 8 consumer product categories. The categories included tarter control toothpaste, gel toothpaste, high-fiber cereal, microwave

popcorn, frozen orange juice, wine coolers, frozen pineapple juice, and ibuprofen pain relievers. Three equations were developed where market share, trial penetration, and repeat purchase were used as dependent variables. Market share was hypothesized to be a function of order of entry, distribution, price, promotion, advertising, and product quality. The two latter equations were structured to allow order-of-entry penalties for both trial and repeat purchase when all other variables were held constant. Using an exponential model and non-linear least squares, Kalyanaram and Urban (1992) found highly significant results for the first model (R^2=0.905) as well as a significant order-of-entry penalty for follower brands (β=-0.396, p<0.01). They concluded that later entrants had lower asymptotic performance levels. However, the rate of approach of later entrants to their lower asymptotic performance measures was either equal to or faster than early entrants and provided evidence of a compensating partial effect accrued by later entrants.

Building on the findings of previous work, Kalyanaram and Wittink (1994) also addressed the order-of-entry concept at the brand level. However, these authors focused on the issue of heterogeneity inherent in the BEHVAIORSCAN product categories with regard to the order of entry variable. That is, Kalyanaram and Wittink (1994) noted the need for comparability across product categories through the use of market share and marketing variables relative to those of the first entrant. As with the earlier work of Kalyanaram and Urban (1992), a log-linear regression model was specified where relative market share was hypothesized to be a function of order of entry, time between entry, and other marketing mix variables. Again, using a sample derived from the BEHAVIORSCAN database, 220 weekly aggregate observations across eight cities for five packaged goods categories with 3-5 brands in each (19 brands total) were analyzed.

Statistical significance at $p<0.01$ was found for 4 of the 5 product categories. Ibuprofen was the sole expectation with $p<0.10$. The results indicated that, as with the findings of Kalyanaram and Urban (1992), market share was negatively related to order of entry and time between successive entries. However, the magnitude of the entry effects must be assumed to be specific to the product category. In other words, according to Kalyanaram and Wittink (1994), there is inherent heterogeneity in entry effects across categories and therefore must be addressed in future research.

This heterogeneity of entry effects provided the basis for the 1996 work of Kerin, Kalyanaram, and Howard. In this study, role product hierarchy, brand strategy, and brand trial penetration were hypothesized to have an effect on the formation of pioneering advantages. While the study utilized the same product category data from the BEHAVIORSCAN database as that of Kalyanaram and Wittink (1994), Kerin, Kalyanaram, and Howard asserted that their research approach offered two significant extensions that justified their study. First, the popular measure of preference, namely market share was replaced with a more consumer-level measure, namely brand trial penetration. This, according to the authors, allowed for more behavioral interpretations of pioneer advantages. Second, they used brand extensions versus the use of new brands in the formation of order-of-entry effects, which is not only consistent with Kalyanaram and Urban (1992), but also consistent with hierarchy theory. As with Kalyanaram and Urban (1992), Kerin, Kalyanaram, and Howard (1996) developed a log-linear regression model in which product hierarchy and brand strategy were assumed negligible in the formation of first-mover advantages. Three more models were then created to explore the effects of product hierarchy, brand strategy, and a combination of the two factors on the dependent

variable. Highly significant results were reported for the three models (R^2_1=0.85, R^2_2=0.91, and R^2_3=0.92), thereby strongly supporting the assertion that greater insight into order of entry may be achieved through the consideration of brand strategy and product hierarchy. The hypothesis that the first-mover advantage effect was greater for pioneers in the new product class was also strongly supported (t=59.2, p=0.001) as was the hypothesis that order of entry effect would be greater for pioneers adopting brands extension strategy (t=24.0, p<0.001). In general, the Kerin, Kalyanaram, and Howard (1996) study provided evidence in support of the complex nature of the first-mover phenomenon. Specifically, the notion that the magnitude of order-of entry effects on trial penetration depended on whether the pioneer entered the market with a new product class, product form, or a brand extension has significant implications for the development of the behavioral interpretations of first-mover advantages.

Limitations of Empirical Documentation of First-Mover Advantages

A number of studies have presented strong arguments against the strictly empirical nature of the first-mover advantage research stream during its early stages (e.g., Kerin, Varadarajan, Peterson 1992; Golder and Tellis 1993, Szymanski, Troy, and Bharadwaj 1995). And while the literature stream itself has included both proponents and opponents of first-mover advantages, both sides have identified major limitations ranging from the over-reliance on the evidently flawed PIMS database to the definitional and methodological aspects of the advantage itself. Because the clear majority of support for first-mover advantages was arrived at using PIMS data, the discussion in this section will begin with a thorough investigation of the limitations of the PIMS database within the

context of first-mover advantages. Following this section, a discussion will be devoted to the limitations regarding other definitional and methodological problems that plagued the empirical justifications for first-moverism.

Critique of PIMS-Based Research

The cumulative evidence from the PIMS data leaves little doubt of a substantial market share reward from pioneering (Golder and Tellis 1993). However, the PIMS database presents a number of problems when utilized within the context of first-mover advantages. Specifically, concerns have been raised regarding both the *definitional* aspects of first-moverism within the PIMS project as well as the *nature* of the firms that make up its database.

Several scholars have noted the lack of clarity when defining first-mover status in PIMS. According to Kerin, Varadarajan, and Peterson (1992), the PIMS definition of first-mover is plagued with two distinct but related definitional problems. The first is associated with how the data is developed. That is, the methodology used to collect data, one based on key informant self-reporting (Buzzell and Gale 1987; Golder and Tellis 1993), lacks a concrete ability to determine actual order of entry. Because respondents themselves are allowed to choose in which order-of-entry category their firm lies, the resulting data is often too vague and erroneous to provide a solid definition on which subsequent research is based. The implication of this PIMS definition is that the identified first-mover may or may not have been first. To illustrate, the actual PIMS questionnaire question in determining order of entry status is as follows:

"At the time your business entered the served market, it was viewed as:"

1. .... One of the pioneers

2. .... An early follower

3. .... A later entrant

Actually, Buzzell and Gale (1987) reported that half of the reporting firms in the PIMS database classified themselves as pioneers. The apparent redundancy is most evident in several cases where competitors within the same product category identified themselves as pioneers. According to Kerin, Varadarajan, and Peterson (1992), this ambiguity clearly underscores the concern over the use PIMS. That is, because the inherent self-perception bias presents a potential measurement problem, key informants new to the reporting firms may or may not know if in fact the firm was a pioneer. Therefore, self-perception bias may lead respondents in dominant but later entry firms to classify themselves as pioneers (Golder and Tellis 1993). The definitional problem is not a concern solely in the question of determining first-mover status. PIMS respondents are also allowed a significant amount of discretion in defining their business units and area of competition. This self-definition may lead to problems in comparing the level of aggregation of different SBU product line and brands (Buzzell and Gale 1987). For example, pioneers may have defined their market shares relative to substitutes from other industries and thus have understated their relative advantage (Miller, Gartner, and Wilson 1989).

The second definitional problem associated with using PIMS data, according to Kerin, Varadarajan, and Peterson (1992), is the actual operationalization of the order-of-

entry variable itself. Typically, order of entry has been operationalized as a dichotomous (pioneer, follower) or, as in the case of PIMS, a trichotomous (pioneer, early follower, late entrant) variable. While this categorization is by no means unique to PIMS-based studies, the use of these types of scales is of major concern. This is because, by their very nature, ordinal scales allow for rank/order relationships but do not allow for determining of absolute differences among the various ranks (Hair, Bush, and Ortinau 2003). That is, if the variable is structured in the typical form of first, second, third, and so forth, more often than not, there will be a major loss of captured variance and a significant distortion in the estimate of association between order of entry and market share (Szymanski, Troy, and Bharadwaj 1995; Vanderwerf and Mahon 1997).

In addition to the two previous definitional concerns, a second broad set of criticisms of the PIMS database have been discussed in the first-mover advantages literature. This set of concerns details the nature of the firms that make up the enormous database and the appropriateness and representativeness of such firms in providing valid and robust generalizations regarding the first-mover phenomenon. The first of these considerations is the so-called *survival* problem. In very minimal terms, the PIMS database suffers from selection bias because it contains data from only firms that have lived to tell about it. That is, these firms may or may not have been the first to pioneer. Firms that pioneered a product and subsequently failed are not included in the PIMS sample, leading to a potentially overstated advantage for first-movers (Kerin, Varadarajan, and Peterson 1992). In fact, Golder and Tellis (1993) specifically note the failure of pioneers in major project categories and the rise of followers to take their place as the "presumed" pioneer. While this is definitely a major concern regarding the validity

of previous PIMS-based findings, some scholars have suggested that the notable failure to include unsuccessful *pioneers* may be offset by the absence of unsuccessful *later entrants* who may have also withdrawn from the market at the time of analysis (Robinson and Fornell 1985; Kerin, Varadarajan, and Peterson 1992). Some scholars have even suggested that the inability to represent *all* possible pioneers and later entrants is due primarily to the natural progression in competitive strategy. For example, Kerin, Varadarajan, and Peterson (1994) argued that the successful pioneers may in fact voluntarily choose to exit a market which they developed as the level of competitive rivalry increases, product margins decline, and potential more attractive markets arise elsewhere. That being said, the withdrawal of such successful pioneers would downwardly bias the order-of entry effect. Therefore, the presumed selection bias would be somewhat limited. Given this rationale, what emerges from analysis of PIMS data is not one of general pioneer performance vs. general follower performance but rather *surviving* pioneer performance vs. *surviving* follower performance. Nonetheless, noting the potentially distorting role of selection bias, other cross-sectional studies based on alternative databases such as ASSESSOR (Urban, Carter, Gaskin, and Mucha 1986; Brown and Lattin 1994; Huff and Robinson 1994) and BEHAVIORSCAN (Kerin, Kalyanaram, and Howard 1996) have attempted to accommodate the survival problem by including both survivors as well as non-survivors in their analysis, thereby avoiding criticism regarding the survivorship issue that has constantly beleaguered PIMS-based research of first-mover advantages. As previously discussed, most of these alternative database studies have still managed to find support for the first-mover hypothesis.

The second critique of PIMS-based first-mover advantage research revolving around the nature of the firms included in the database is one of firm *size*. The PIMS database consists of more that 3000 strategic business units drawn almost exclusively from large North American and European corporations. The data would therefore be representative of some but not all possible competitive situations. That is, while the PIMS database may represent competitive scenarios popular in so-called "Fortune 500" situations, it may not provide adequate representation of strategy in smaller entrepreneurial markets where market maturity levels and structure differ significantly from the ones that make up the database (Schnaars 1994). In fact, conventional wisdom leads one to believe that it is usually smaller entrepreneurial firms that are pioneers within their markets before being bought out or absorbed by bigger more dominant firms. Also, with respect to first-mover advantages, many scholars have specifically argued that the potential for such advantages is a function of differing exogenous forces specific to a certain market (e.g., Green, Barclay, and Ryans 1995; Moore, Boulding, and Goodstein 1991; Vanderwerf and Mahon 1997). Therefore, results obtained using PIMS data would only be valid in Fortune 500 circumstances. In fact, in his examination of pioneer advantage within industrial manufactures, Robinson (1988) cautioned against the generalizability of his findings based upon the composition of the database.

> " Because, firms in PIMS tend to have strong skills and resources, the findings do not necessarily apply when a relatively weak pioneer is challenged by established giants in related markets. The outcome of this competitive battle hinges on the force of brute-strength strategies versus the pioneer's first-mover advantage." (p. 93)

Another serious concern regarding the composition of the PIMS database is one of the *heterogeneity* of industries. That is, PIMS project pools together data from a cross-sectional sample of dissimilar industries. Previous arguments for the use of cross-sectional data were based on the lack of representativeness of industry-specific studies. However, given the contextual nature of first-mover advantages, the use of too many heterogeneous industries, as is the case of PIMS, may call into question the validity of reported relationships in general and specifically between entry order and market share (Kerin, Varadarajan, and Peterson 1992). While previous industry-specific studies have dealt with this heterogeneity problem by limiting the samples to mature consumer goods industries (e.g., Robinson and Fornell 1985) or mature industrial product manufactures (e.g., Robinson 1988; DeCastro and Chrisman 1995), the heterogeneity issue remains a significant problem for order-of-entry research built upon PIMS data (Parry and Bass 1990).

Other Critique

While there is no shortage of critics noting the limitations of PIMS-, ASSESSOR-, and BEHAVIORSCAN- based studies, additional areas of concern have been noted with regards to other sampling designs and research methods (Vanderwerf and Mahon 1997). The most notable have been limitations associated with samples drawn from unique industries (Kerin, Varadarajan, and Peterson 1992). As illustrated earlier in the chapter, early studies addressing the first-mover phenomenon relied heavily on industry-specific data. The generalizability of the relationships identified from these types of research must

be interpreted with care (Kerin, Varadarajan, and Peterson 1992; Szymanski, Troy, and Bharadwaj 1995; Vanderwerf, and Mahon 1997).

As one of the harshest critics of first-mover advantages, Schnaars (1994) argued that the early support for pioneering advantage was based on idiosyncratic industries and therefore lacked the generalizability necessary to view pioneering as a general business phenomenon. In fact, according to Schnaars (1994), the benefits of pioneering " . . . have been grossly oversold" (p. 1). Using a series of 28 cases to illustrate that pioneers surrender market leadership to later entrants over time, Schnaars claimed that findings based on the pharmaceutical industry (Bond and Lean 1977) failed to take into account the increased role of patent protection, which is significant in that type of market. Similarity, Schnaars (1994) criticized the use of the cigarette industry (Whitten 1979) based on the idiosyncratic nature of the industry as well as Whitten's assertion that price was an irrelevant factor. Drawing upon historical data from industries as diverse as audited teller machines, light beer, credit cars, microwave ovens, commercial jet aircraft, and computer software, Schnaars (1994) identified three generic imitation strategies by which later entrants may overcome first-mover advantage. The first of these is cost leadership and is based on the free-rider effect where the later entrant "piggybacks" upon the research and market development investment of the first-mover and exploits the cost differential between the groundbreaking expenses of the pioneer and its imitation by the later market entrant. The second generic strategy proposed by Schnaars (1994) involves leapfrogging the technological standards of the market pioneer and changing the perceived ideal attributes of the product while encumbering the pioneer with a clearly outdated standard. A third generic imitation strategy is based upon market power and

suggests the use of superior advertising, branding, and distribution skills and resources to overcome the first-mover advantage of the market pioneer. However, Schnaars' (1994) book has not been immune to criticism. Morgan (1995), in a somewhat brutal review of the book, emphasized Schnaars' unbalanced approach and overreliance on convenience sampling. He also noted that Schnaars lacked the credible evidence to back his claims regarding imitative strategies:

> " ... the evidence, though interesting, is largely anecdotal, consisting of a convenience sample and secondary qualitative data. What the cases are not is a strong scientific basis for (or test of) many of the claims for imitation strategies and pioneering advantages put forth by the book." (p. 105)

Nonetheless, while Schnaars (1994) failed to provide empirical evidence to support his claims, he did shed light on major shortcomings regarding the existing empirical justifications of first-mover advantages. It is worth noting that his arguments regarding the idiosyncratic nature of some of the industries studied were not original (Morgan 1995). In fact, Kerin, Varadarajan, and Peterson (1992) argued earlier that Flaherty's (1984) support for pioneering advantages in the semiconductors industry also lacked the generalizability needed due to the close working relationships between vendors and buyers in that particular industry. Kerin, Varadarajan, and Peterson (1992) specifically contended that the close working relationships between the parties in the semiconductor industry may create switching costs, thereby erecting a significant barrier to entry for later entrants which may not be available in other industries. Therefore the potential for the pioneer advantage is a function of the industry's nature. The same argument can be made regarding Mascarenhas' (1992; 1997) study of pioneer advantages

in the semi-submersible oil-drilling market where partnership with governmental authorities is the essential to enter into the market (Robinson, Kalyanaram and Urban 1994). However, unlike Kerin, Varadarajan, and Peterson (1992), Kalyanaram, Robinson, and Urban (1995) noted that generalizations regarding pioneering advantages may be made if, and only if, such generalizations are extended to relevant domains of analysis such as business-to-business or other industrial buying situations where switching costs are much more prevalent than in consumer markets (Porter 1980).

Another area of concern raised by several researchers focused on the appropriateness of using market share as a measure of first-mover advantages (Lieberman and Montgomery 1988; Kerin, Varadarajan, and Paterson 1992). Based on the findings of an extensive meta-analysis, Vanderwerf and Mahon (1997) argued that tests using market share as the primary performance measure were sharply and significantly more likely to find a first-mover advantage than using other measures (such as profitability or survival). Even so, these findings, according to Vanderwerf and Mahon (1997) raise a few significant questions that the literature has fallen short of answering. If it can be proven that market share increases, does that affect the bottom line - profitability? The existing empirical literature has often been criticized for being too vague in establishing this relationship. Because of the difficulty of establishing comparable profitability measures across industries, the reigning methodology for empirical measurement of first-mover advantages has been to use market share as a proxy for profitability (Vanderwerf and Mahon 1997). One reason why this method is so widespread is that significant linkages between market share and profitability have been found based on PIMS data (Buzzell and Gale 1987). However, given the noted limitations of the PIMS database, previous

findings suggesting that market share advantages resulting from early entry imply profitability advantages resulting from early entry must be addressed and interpreted with caution. Noting the flawed nature of the market share measure of first-mover advantages, a few empirical studies (e.g., Lambkin 1988; DeCastro and Chrisman 1995) have attempted to examine the direct impact of order of entry on profitability (whether measured as return on investment or return on assets) as opposed to market share. Both studies found that there was a negative relationship between order of entry and profitability, thereby corroborating other evidence based on the market share measure. That being said, both studies were based on PIMS data and therefore the generalizations presented were beset with the definitional and methodological problems discussed previously. Despite these findings and the inherent problems with PIMS, the vast majority of other empirical studies still rely on market share leadership, as opposed to profitability, as the primary measure of first-mover advantage. This is surprising given the fact that profit maximization is the appropriate objective of the corporation (Lieberman and Montgomery 1988).

In an effort to address the major definitional and methodological problems discussed previously, Golder and Tellis (1993) investigated the impact of first-mover advantages on long-run performance. The significance of the study has been well-cited for a number of reasons. First, Golder and Tellis (1993) estimated the rewards of pioneers after controlling for the survival bias inherent in PIMS data by studying successful *and* unsuccessful pioneers. Second, the study also examined rewards in three areas: success rates, market share, and market leadership. Finally, Golder and Tellis (1993) used historical archival data to illustrate potential relationships between order of entry and

their performance measures. These researchers argued that historical analysis was best suited to analyzing the rewards of order-of-market entry because it focused on information collected at the time the new product category was emerging. That is, the methodology provides a *prospective* look at pioneering because information is based on records written as the product category developed. On the other hand, Golder and Tellis argued that surveys or interviews with current survivors, as is the case with PIMS studies, might be considered *retrospective* because the respondents report on events that occurred decades previously. Also, historical analysis uses multiple narratives of neutral observers such that reporters, experts, and students of the market. In contrast, surveys tend to rely on self-reports of one or two informants in the firms being studied. Thus, according to Golder and Tellis (1993), the historical approach is more likely to collect data that is factual rather than interpretive.

Drawing from histories of numerous industries including, but not limited to, video recorders, microwave ovens, dishwashers, personal computers and light beer, Golder and Tellis (1993) repeatedly illustrated a pattern in which the innovation and thus market pioneer was surpassed by later entrants. Within their overall sample (50 product categories), Golder and Tellis (1993) found an average market share for the pioneer that was 10% less than those reported in previous studies (e.g., Robinson and Fornell 1985; Urban, Carter, Gaskin, Mucha 1986; Robinson 1988). However, while the analysis provided evidence of a systematic overstating of pioneering advantages, Golder and Tellis (1993) have been criticized on a number of levels. First, according to Robinson, Kalyanaram, and Urban (1994), the findings are based on historical analysis of a set of convenience samples and therefore lacked the necessary representativeness. More

specifically, the first of these sequential samples consisted of consumer goods drawn from 17 recently-developed product categories. The second sample consisted of seven product categories, each of which contained a widely acknowledged market pioneer. The third sample frame was nonrandomly drawn from the *Advertising Age* (1983) list of 25 long-term market leaders cited earlier, deleting those older product categories where identification of the pioneer would be pragmatic. Golder and Tellis (1993) did note, however, perhaps in anticipation of this criticism, that their sample was chosen in a manner which deliberately biased the results towards finding a pioneer advantage. A second area of concern that Robinson, Kalyanaram, and Urban (1994) noted was that Golder and Tellis (1993) did not require their product pioneer to reach a competitive level of commercialization in order to earn the pioneer status in the study. That is, more conventional definitions of pioneering incorporated the concept of significant market entrance and when this more widely accepted definition of pioneership is applied to the Golder and Tellis (1993) sample, first-mover advantages are identified much earlier. Similarly, Golder and Tellis' (1993) study also indicated another definitional aspect that was criticized, namely product category definitions. By way of illustration, Rosenbloom and Cusumano (1986) conceptualized the VCR industry as two distinct categories – the consumer and professional markets – while Golder and Tellis (1993) interpreted the market as a single category with *Ampex* as its pioneer. However, in their analysis of technological development of mass market VCR, Rosenbloom and Cusumano (1987) presented compelling evidence for distinct differences in the underlying technologies between the commercial and home products. On fact, Rosenbloom and Cusumano (1986) credited *JVC* and *Sony* with the development of the mass market VCR product category

and, thus were identified in there study as pioneers. Nevertheless, the Golder and Tellis (1993) study identified high market share with the early market leader (though often not the product pioneer). Therefore, as with earlier studies criticized in their own study, Golder and Tellis found themselves in the same "catch 22" scenario arising from the definitional ambiguity of pioneer *status* inherent in PIMS studies. Finally, another consideration of Golder and Tellis' (1993) research is that long-term competitive advantage may be a function of positional advantage, managerial skills, and product-market contingencies, an insight which has been extensively developed by the contingency extension school (Kerin, Varadarajan, and Peterson 1992; Szymanski, Troy, and Bharadwaj 1995). Golder and Tellis (1993) failed to attribute the differing market share positions of the pioneers and followers utilized in their study to any of these aforementioned factors but merely provide contradicting evidence of the complexity of first-mover advantages and the shortcomings of the strictly empirical research stream.

As has been detailed across the previous discussion, critics of empirical order-of-entry research have focused on sample validity issues (Kerin, Varadarajan, and Peterson 1992), methodological issues (Moore, Boulding, and Goodstein 1991), and measurement issues (Szymanski, Troy and Bharadwaj 1995). Prominent among the concerns regarding sampling frames are the inherent limitations of the PIMS database and the idiosyncratic nature of several of the industry-specific samples, such as the pharmaceutical and cigarette industries (Schnaars 1994). Nevertheless, as Robinson, Kalyanaram, and Urban (1994) have emphasized, multiple research efforts across multiple databases utilized diverse methodological tools have largely produced convergent results supportive of the first-mover hypothesis. Concerns regarding the measurement question have largely

focused on the survivor problem and the timing of measurement issues question. While preliminary evidence from the research into survivor problem does not necessarily challenge the findings of PIMS-based research, this limitation must be kept in mind when evaluating substantial portions of order of entry research. Research specific to the timing of measurement issue (Brown and Lattin 1994; Huff and Robinson 1994, Agarwal and Gort 2001) has largely concluded that initial market share advantages, while persistent, may be diminished with the passage of time. Critics of order-of-entry research based upon the methodological grounds has ranged from problems regarding definitional issues (Golder and Tellis 1993) to model specification concerns (Moore, Boulding, and Goodstein 1991). Finally, the contrary evidence collected by Schnaars (1994) as well as other (e.g., Golder and Tellis 1993) results in the acknowledgment of a possible first-mover *dis*advantages and the multidimensional nature of the order of entry question. All of these concerns point towards the need for a more multifaceted and comprehensive evaluation of first-mover advantages (Kerin, Varadarajan, and Peterson 1992).

Therefore, taken as a whole, the industry-specific and cross-sectional empirical research streams present an impressive body of knowledge supportive of the first-mover hypothesis. However, as illustrated by Golder and Tellis (1993), Schnaars (1994), and others, too much contradictory evidence exists regarding pioneers that have failed to achieve competitive advantages from simply entering before others. More importantly, others have asked that if competitive advantages may be accrued based on timing of entry, can intentionally entering later constitute a viable competitive strategy or are firms not graced with the ability to enter early simply doomed to a life of competitive disadvantage? Such a question illustrates the complex nature of first-mover advantages.

The existing empirical evidence has fallen short of addressing these concerns. Consequently, more recent studies of the phenomenon have attempted to provide more contingent explanations which go beyond simply stating a possible relationship between order of entry and some performance measure but answer why such a relationship may exist. That is, some scholars have argued that the empirical literature does not explain how or when first-moverism is beneficial. The emergence of the contingency extension understanding the first-mover advantage offers an opportunity to synthesize the internal tension between the advocates and critics of pioneer advantages.

The Contingency Approach

Despite the enormous amount of empirical evidence regarding the role of order-of-entry on firm performance, most early studies failed to establish a general paradigm of analysis that acknowledges both the contradictory evidence suggesting that pioneering is not some normative strategy that should be pursued in all situations as well as the implication that the potential for pioneering advantages is a function of numerous factors other than simply order of entry. This so-called "contingency" approach or extension has been of extreme importance to the literature stream for two reasons. First, the contingency approach has acted as a bridge between the empirical documentation of early first-mover advantages studies and the more recent theoretical-based explanations. Second, the approach stresses the importance of managerial skills, firm resources, and product-market characteristics in determine the potential advantages associated with timing of entry. That is, unlike previous studies, the contingency approach focuses on the

advantages of entering early as well as the advantages of entering later and suggests the appropriateness of each accordingly (Szymanski, Troy, and Bharadwaj 1995)

The pivotal study which focused on the contingent approach is the 1992 work of Kerin, Varadarajan, and Peterson. The authors noted that the existing literature was developed in the absence of a unified conceptual framework and set out to identify the principle factors that constitute potential sources of competitive advantages and product-market contingencies that moderate first-mover advantages. Based in part on the elements of competitive advantage advanced by Day and Wensley (1988), Kerin, Varadarajan, and Peterson (1992) presented a conceptual framework (Figure 4) that extended the first-mover advantage paradigm in three ways. First, the framework explicitly included the fit between environmental opportunity and organizational skills and resources that afford a feasible market opportunity from the firm's standpoint. Second, because the purpose of strategy is to achieve sustainable competitive advantage, the competitive strategies of the first-mover and later entrant are explicitly addressed. That is, order of entry is treated as one of a multiplicity of factors contributing to overall competitive advantage. Finally, the notion that first-mover advantages are fundamentally positional advantages (cost and differentiation) is elaborated upon and contingencies that enhance or mitigate these advantages are delineated.

Figure 4
A Conceptual Framework of First-Mover Advantages

Environmental Opportunity Attractiveness

Competitive Strategy

First-Mover
- Distinctive Competencies
- Resources

Late Entrant
- Distinctive Competencies
- Resources

Competitive Strategy

First-Mover Positional Advantages

Cost ←--→ Differentiation

| Economic Factors | Preemption Factors | Technological Factors | Behavioral Factors |

Later Entrant Advantage
- Imitation Costs
- Free-Rider Effects
- Scope Economies
- Learning from Pioneer's Mistakes

Moderators

Demand Uncertainty

Entry Scale

Efficient Scale-to-Market Size

Advertising Intensity

Response Time

Scope Economies

Moderators

Preemptive Investment

Product Characteristics

Moderators

Technological Innovation Characteristics

Technological Changes & Discontinuity

Moderators

Nature of Good

Market Types

Market Evolution

Buyers' Investment in Cospecialized Assets

(+)   (+)   (+)   (+)   (+)   (-)   (-)

Overall Magnitude of First-mover Advantages

Market Share Performance
- Absolute
- Relative

Profitability Performance
- Return on Assets
- Return on Sales

Contingency theory holds that the act of pioneering offers a possibility, though not certainty, of creating an order of entry competitive advantage based upon four distinct categories of factors. According to Kerin, Varadarajan, and Peterson (1992), the first of these were groups of conceptual explanations for first-mover preeminence which may be termed economic factors and included scale and experience economies as well as market cost asymmetries. The second category of explanation is comprised of pre-emption factors including cost asymmetries in factor inputs and differentiation advantage through spatial pre-emption. The third conceptual basis for first-mover advantage may be termed technological factors, which enable the pioneer to differentiae itself from its competitors through product and/or process innovations that are difficult or illegal to imitate. The fourth basis for first-mover advantage may be classified as behavioral factors a such as switching costs, category protypically, reputation effects, the role of the first-mover in industry standardization and social coordination, and consumption experience asymmetries. Drawing broadly from the marketing strategy literature as well as previous findings of order-of-entry research, Kerin, Varadarajan, and Peterson (1992) argued that each of these four categories of conceptual explanations may be affected by a number of moderators that govern the particular competitive situation and therefore the presence or absence of these moderators may affect the magnitude and direction of pioneer advantage. More specifically, according to the authors, the criticality of economic factors may be moderated by the level of demand uncertainty, the presence of scope economies for the first-mover as well as other insure participants, the response time of later competitors, and the advertising intensiveness of the industry. Pre-emption factors are moderated by product characteristics such as technological complexity or the necessity of

channel members inventorying significant levels of spare parts. Technological factors supportive of pioneer advantage, such as patents and trade secrets, may be rectified by the inefficiency of intellectual property rights legislation or enforcement. The behavioral basis for first-mover advantage may be moderated by nature of the good or the buyer's investment in co-specialized assets. And while Kerin, Varadarajan, and Peterson (1992) do not empirically test the proposed model, they provide an extensive propositional inventory outlining the basic relationships in the model. That being said, their major contribution to the field has been the identification and argument that first-mover advantage is a more complex phenomenon than the empirical literature suggests:

> "Indeed, the belief that entry order automatically endows first-movers with immutable competitive advantages and later entrants with overwhelming disadvantages is naïve in light of conceptual and empirical evidence . . . Market pioneering is not a normative strategic behavior conductive to superior performance for all firms . . . Market pioneering can only provide opportunities for gaining positional advantages. Actual competitive advantages depend on product-market contingencies and the actions of the first-mover and later entrant." (p. 48)

Noting, the lack of empirical verification of the contingency framework put forth by Kerin, Varadarajan, and Peterson (1992), Szymanski, Troy. And Bharadwaj (1995) conducted a two-part study consisting of a meta analysis of the empirical order-of-entry research as well as an examination of the contingency perspective of order of entry effects. In the first study, Szymanski, Troy, and Bharadwaj uncovered 23 studies that modeled the relationship between order of entry and market share. Noting that the qualitative contingency framework hypothesizes the existence of moderating variables, 16 of the 23 studies (70%) reported a total of 64 unstandardized regression coefficients

capturing the effect of order of entry on market share. The values and other relevant information surrounding the 64 coefficients were coded and entered into the database developed for the meta-analysis. The resulting database was confined to third-factors which has been coded across at least 20% of the performance models and formed the basis for the meta analysis. The conceptual framework that guided the meta-analysis attempted to demonstrate that estimates of pioneering advantage might be influenced by three factors. The first of these may be described as the omission of the relevant predictor variables such as marketing expenditures, product line breadth, and relative price. Second, the model holds that sample characteristics such as industrial versus consumer markets and the level of aggregation may influence estimation of first-mover advantages. Thirdly, Szymanski, Troy, and Bharadwaj (1995) conceptualized the estimate of pioneer advantages influenced by measurement factors such as the operationalization of order of entry items (ordinal versus dichotomous) as well as the operationalization of market share itself (relative versus absolute). Regarding methodology, two analyses were performed on the sample. The first of these was univariate and focused upon the range and central tendency of the pioneering effects. The second was multivariate and utilized analysis of covariance. The univariate results reported that the sample size weighted mean was positive (U=4.21) and statically significant (p=0.05). The findings supported the central tendency of a 4.21% long-term pioneer advantage in market share across the 16 empirical studies. Another significant finding of the multivariate aspect of the meta analysis was that the extend of the estimated first-mover advantage was moderated by all three influence sources: potential-omitted predictor variables, sample characteristics, and measurement factors. However, two model specification errors were seen as critical:

whether market expenditure level was included as an independent variable and whether relative breadth of product line was included in the model. Szymanski, Troy, and Bharadwaj (1995) found that exclusion of these two variables led to a consistent overestimation of the influence of order of entry upon market share and therefore a potential overstatement of first-mover advantage. Regarding sample characteristics, estimates of first-mover advantage were found to be higher when entire business units rather that individual brands were examined, potentially illustrating the role of scope economies in manufacturing and marketing. In terms of measurement factors, whether order of entry was operationalized by actual order or treated as pioneer/later entrant dichotomy had significant effect on the estimate of pioneer market share. Szymanski, Troy, and Bharadwaj (1995) found, as indicted in the previous section regarding limitations of empirical research, that estimates of first-mover advantages were potentially overstated when the dichotomous measure was used, a finding often alluded to in order of entry research. However, when a dichotomous measure pioneer/early follower/late entrant – was used to capture order of entry, the mean pioneering effects were comparable to those captured as actual order of entry (p=0.05).

Therefore, taken as a whole, Szymanski, Troy, and Bharadwaj (1995) found strong support for the empirical evidence of the first-mover hypothesis: that order of entry does create a significant and positive direct effect on market share. However, the magnitude of this order-entry advantage may be overestimated through the omission of other predictors variables as well as measurement factors and sample characteristics. More importantly, the authors provide valuable insights into the need for a more contingent view of the phenomenon; one based on more theoretical justifications and not

just a myopic evaluation of possible relationships between order of entry and some performance measure. That is, while order of entry does create a significant and positive effect on market share, the interaction effects of order of entry, firm resources, and product-market contingencies may provide much more robust interpretations of pioneer advantages when taken together rather than individually.

This examination of the debate surrounding the validity of first-mover advantage has attempted to present the issue in terms of thesis, antithesis, and synthesis. The incorporation of managerial skill, firm resources, and product-market contingencies suggested in the synthesis conceptualization offered by Kerin, Varadarajan, and Peterson (1992) and empirically demonstrated by Szymanski, Troy, and Bharadwaj (1995) supports a broadened understanding of pioneer advantage and it complexity, Although the purest expression of first-mover hypothesis has been modified to fit the contingency framework, the broadened concept of first-mover advantage has gained increasing currency with the marketing strategy research community (Robinson, Kalyanaram, and Urban 1994). Noting the consistency of empirical results over nearly two decades of investigation, recent retrospectives of order of entry have described the negative relationship between order of entry and market share as an established empirical generalization (Robinson, Kalyanaram, and Urban 1994; Kalyanaram, Robinson, and Urban 1995). While the robustness of pioneer advantage has received growing recognition, the underlying mechanisms which are responsible for creating this form of competitive advantage remain only partially understood and are of great interest to strategy research (Kalyanaram, Robinson, and Urban 1995). The literature describing the conceptual basis of first-mover advantage is subsequently presented for the reader.

CONCEPTUAL EXPLANATION OF FIRST-MOVER ADVANTAGE

As discussed earlier in this chapter, first-mover advantage has traditionally been considered an empirical issue. However, a considerable body of literature exists justifying the existence of pioneer advantage from a theoretical-conceptual perceptive. Two categories of theoretical-analytical support have been offered to explain first-mover advantages: (1) economic theory and associated analyses that have used the barriers-to-entry concept and a firm's utility function to explain first-mover advantage and (2) an amalgamation of behavioral theories describing likely consumer responses to pioneering brands and later entrant brands. Extensive studies in the fields of strategic management as well as marketing strategy have borrowed from both explanatory categories in an attempt to isolate the mechanism of first-mover advantages (Lieberman and Montgomery 1988; Kerin, Varadarajan, and Peterson 1992). And while the approach based upon economic barriers to entry largely originated in the industrial organizational comics literature (Bain 1958; Porter 1980; 1985), the contemporary behavioral explanations of first-mover advantages can be traced to the consumer economic work of Schmalensee (1982). The purpose of this section of the chapter is to provide a detailed discussion of the major studies of first-mover advantages within both the economic and behavioral literature streams.

Economic-Analytic Sources of First-mover Advantages

Considerable theoretical and analytical literature in industrial organizational economic pertains to first-mover advantages. Economists generally approach this

phenomenon from the perspective of sequential market entry by firms or business units (Lane 1980) and offer several reasons why a first-mover might obtain competitive advantages due to entry barriers (Tellis and Golder 1996). The study of barriers to entry was pioneered by Bain (1956). More recently, however, Von Weizsacker (1980) defined a barrier to entry as "a cost of producing which must be borne by the firm which seeks to enter an industry but is borne by firms already in the industry." Within the context of market pioneering, an entry barrier implies that additional resources must be expanded by a nonpioneering firm (beyond those required under conditions of simultaneous entry) to compete effectively in the marketplace relative to the first-mover (Kerin, Varadarajan, and Peterson 1992). With the existence of entry barriers, lead-time between a firm's head start and the response by followers is lengthened thereby allowing the first-mover to benefit in two ways. First, during the time when there is no competition, the first-mover is by definition, a monopolist, and may use this status to gain higher profits than would be possible in a competitive marketplace and/or increase the size of the total market (von Hippel 1984). Second, after the entry of the competitors, the first-mover has established market position and learning curve economies, which may allow it to retain a dominant market share and higher margins than imitators (MacMillan 1983). Rooted mainly in the organizational economics work of Porter (1980; 1985) and based on the typology of Lieberman and Montgomery (1988), conceptual explanations of first-mover advantage based upon the economic barriers-to-entry literature may be categorized into four general areas: learning curve rationale, technological and other government-enforced barriers, the informational asymmetry of the incumbents, and consumer switching costs.

Learning Curve Rationale

The first economically-based conceptual interpretation of first-mover advantages is based upon the role of learning curve economics or more specifically, the cost advantage of incumbents. In the standard learning curve model, unit production costs fall with cumulative output. This cost advantage in turn generates a sustainable cost advantage for the early entrant if learning can be kept proprietary and the firm can maintain leadership in market share (Lieberman and Montgomery 1988). This so-called "experience" argument, first popularized by the Boston Consulting Group during the 1970s, provided the basis for a number of arguments for early entry. In fact, Spence (1981) theoretically demonstrated than when learning can be kept proprietary, the learning curve can generate substantial barriers to entry. Therefore, fewer firms may be able to compete profitably. Within the context of first-mover advantages, firms that do enter early may initially sell below costs in an effort to accumulate greater experience, and thereby gain long-term costs advantages. Such competition sharply reduces profits for later entrants.

The learning curve argument has also been utilized to express the importance of entering early, albeit from a different point of view. Some scholars have argued that the temporary monopoly afforded by the first-mover may allow the firm an opportunity to achieve critical mass and make efficient plant and market investment decisions, leading to direct cost savings relative to later entrants in the areas of manufacturing, marketing, and distribution (Robinson and Fornell 1985). This "preemption" argument, first developed by Lieberman and Montgomery (1988), suggests that the enlarged capacity of the incumbent's investment serves as an indication of commitment to maintain greater

output following entry. Therefore, if this argument holds, later movers will perceive the market as potentially unprofitable and thus the incumbent may successfully deter new entry in the market all together. As optimistic as this line of reasoning may seem for potential first-movers, evidence of such investment tactics do not seem to be particularly important in practice.

Gilbert (1986) argued that most industries lack the cost structure required for preemptive investment to prove effective. Lieberman (1987) actually showed that preemptive investments by incumbents was seldom successful in deterring entry into chemical product industries. One exception was magnesium, where Dow Chemical maintained a near-monopoly position for several decades, based largely on investments (threatened or actual) in plant capacity (Lieberman 1987). The role of scale economics is intentionally de-emphasized in the role of preemption into plant and equipment. When scale economics are large, first-mover advantages are typically enhanced, with the limiting case being that of natural monopoly. However, outside of public utilities, scale economies approaching the natural monopoly level are seldom observed in U.S. manufacturing industries (Lieberman and Montgomery 1988). In a theoretical treatment, Schmalensee (1982) indicated that in most realistic industry settings, scale economies provide only minor entry barriers and hence potential for enhanced profits. Therefore, the learning curve rationale argument presents a theoretically-justified reason for first-moverism but is seldom backed by practical evidence.

Technological and Government-Sanctioned Leadership

A second category within the barriers to entry literature is technological leadership. When technological advantage is largely a function of R&D expenditures, pioneers can gain a sustainable competitive advantage if technology can be patented or maintained as trade secrets (Lieberman and Montgomery 1988). And while the basic premise of this argument illustrates the prevailing conventional wisdom regarding the importance of patents and trade secrets in establishing a sustainable competitive for pioneers, some scholars have empirically tested this notion and found that, such patent-induced competitive advantages seem to be important in only a few industries, such as pharmaceuticals. (Macmillan 1983).

In most industries, patents confer only weak protection, are easy to "invent around," or have only transitory value given the pace of technological change (Lieberman and Montgomery 1988). For example, Mansfield, Schwatrz, and Wagner (1981) studied 48 patented product innovations in the pharmaceutical, chemical and electrical industries. The authors found that, on average, imitators could duplicate patented innovations for about 65 percent of the innovator's cost. They also found that imitations could be reached fairly quickly, with 60 percent of the patented innovations limited within 4 years. In his study of industrial mature markets, Robinson (1988) found that while significantly more pioneer firms claimed to benefit from patent or trade secret than followers (19 percent vs. 13 percent). The results still indicated a very small proportion actually benefited from patents. In fact, ANOVA between the market performance of those pioneers who attested to the benefits of patent protection and those who did not led to statistically insignificant results, therefore suggesting that patents and trade secrets had little impact with regards to

competitive advantages stemming from early entry. Robinson's (1988) results were later corroborated by Lambkin's (1992) investigation of the role of patents where she found that very insignificant differences existed between patent-holding and nonpatent-holding pioneers at the $p<0.1$ level.

The second barrier to entry stemming from government sanctioning is that represented by brand names and trademarks. Historically, protecting consumers from the "likelihood of confusion" was the basic theoretical background underlying trademark law (Cohen 1991). The primary economic benefit of trademarks to consumers is the lowering of consumers' "search costs" (Landes and Posner 1987). However, companies have realized the benefits stemming from the ability of such trademarks to present barrier to entry (Krouse 1984). When a pioneering firm is the first to copyright a brand name or accrue a trademark associated with the product, a significant barrier to entry is developed where later entrants do not have access to the same benefits that come with government-backed control of brand names (Cohen 1991). In fact, the head of research at Coca-Cola declared, " The major assets of the Coca-Cola Company are its trademarks" (Baldinger 1990).

Information Asymmetry

Asymmetric information has been seen as a potential source of pioneers advantage as a first-movers may gain access to market information leading to the pre-emption of strategic inputs factors (Lieberman and Montgomery 1988) or other aspects of the value chain (Macmillan 1983). If the first-mover has superior information, it may be

able to purchase assets at market prices below what will prevail later in the evolution of the market. Such assets include natural resources deposits and prime retailing or manufacturing locations. Here, the returns garnered by the first-mover are pure economic rents (Lieberman and Montgomery 1988). A first-mover with superior information can, in principle, collect all such rent earned on nonmobile assets such as resource deposits and real estate. The first-mover may also be able to appropriate some of the rent that accrues to potentially mobile assets such as employees, suppliers and distributors (Macmillan 1983). Following a similar line of argument, first-movers may also deter later entry through strategies of *spatial* preemption, Because, in many markets there is room for only a limited number of profitable firms, the first-mover can often select the most attractive niches and may be able to take strategic actions that limit the amount of space available for subsequent entrants. In fact, Lieberman and Montgomery (1988) argued that preemptive "space" can be interpreted broadly to include not only geographic space, but also shelf space and niches for product differentiation. However, empirical evidence suggests that successful preemption though geographic space is rare. In their study of the cement industry, Johnson and Parkman (1983) found no evidence of successful geographic preemption even though structural characteristics of the industry suggest that such strategies would be likely. In his study of local Iowa newspapers, Glazer (1985) found no difference in survival rates between first- and second-mover firms. One explanation for these findings is that firms in the cement and newspaper industries have similar technologies and entry opportunities, so preemptive competition for preferred "space" actually drives profits to zero. In other words, there were no initial asymmetries in timing or information to be explored. Nonetheless, Robinson and Fornell

(1985) found that new consumer product pioneers initially held product quality superiority over imitators and subsequently developed advantages in the form of broader product line. Thus, there is some evidence that pioneers try to reinforce their early lead by filling product differentiation niches.

Switching Costs

The final source of first-mover advantages based on economic explanations pertains to the role of buyer switching costs. According to thus notion, the first-mover has the opportunity to define the product category and its specifications, which the later entrant may be forced to follow. These product standards imposed by the pioneer become switching costs for the pioneer's customers (Porter 1980). With switching costs, late entrants must invest extra resources to attract customers away from the first-mover firm. Switching costs can arise from a number of specific conditions. First, switching costs can stem from initial transaction costs or investments that the buyer makes in adapting to the seller's product. This can include the time and resources spent in qualifying a supplier, the cost of ancillary products, and training of employees (Lieberman and Montgomery 1988). Second, switching costs can arise due to supplier-specific learning by the buyer. That is, the buyer adapts to the characteristics of the product and its supplier overtime and thus finds it costly to change over to another brand (Porter 1980). Finally, switching costs can arise from a simple contractual agreement that may be intentionally created by the pioneering firm. For example, frequent flyer programs in the airline industry and two-

year contractual agreements in cell-phone industry are not uncommon and are specifically drawn up by sellers to impose a hefty switching cost on the buyer.

Noting the importance of entry barriers and their impact on the market entry decision, Karakaya and Stahl (1989) analyzed executive perceptions of barriers to entry based on a sample of 137 executives in consumer and industrial goods markets. Using a simulated decision-making exercise, these researchers measured executive perceptions and modeled the relative weight of these perceptions through an orthogonal transformation. Karakaya and Stahl (1989) found that all six barriers to entry examined played a significant role in the market entry decision ($p<0.01$). To test whether there were differences in the importance of each barrier to entry with regards to the market entry decision, MANOVA was used to test the hypotheses regarding the relative weights associated with the six distinct barriers. The analysis indicated a difference in importance (Wilks' $\lambda= 0.870$; $F= 5.746$, $p<0.01$). Duncan's multiple range test was then utilized to compare the relative weights of market entry barriers across the four market entry decisions examined. As expected, for late entrants in both consumer markets and industrial markets, the most significant perceived barriers to entry was found to lie in the incumbent's cost advantage ($MRW=0.217$ and $MRW=0.238$ respectively). This corroborated the previous discussion regarding the role of the experience effects curve and the effects of scale. However, with regards to switching costs, the perceived effects were found to be more important in industrial ($MRW= 0.149$) rather than consumer markets ($MRW= 0.130$), validating the earlier empirical work of Robinson (1988) and theoretical perceptive of Porter (1980). And while, Karakaya and Stahl's (1989) research did not specifically address the issue of timing of entry, the findings of their survey have

been cited extensively in the first-mover advantage literature because of the support it offers regarding the role of entry barriers and the contention that economically-based explanations offer fertile grounds on which first-mover advantage research can be built (Lieberman and Montgomery 1988; Kerin, Varadarajan, and Peterson 1992).

In a more recent study, Makadok (1998) specifically addressed the role of entry barriers on the *sustainability* of first- and early-mover advantages. Specifically, Makadok (1998) examined whether first-mover and early-mover advantages can be sustainable in an industry where the barriers to entry are generally low and new product innovations can be easily imitated – namely, the money market mutual fund (MMMF) industry. Using a simultaneous-equation supply-and-demand model of panel data from a variety of money market fund product categories, Makadok (1998) found a price advantage that was statistically significant for the first-, second-, third-, and fifth-movers, but only marginally statistically significant ($p=0.0599$) for fourth-movers. The magnitudes of these price advantages ranged from 1.7 basis points up to 6.7 basis points. Likewise, Makadok (1998) found a strongly statistically market share advantages for first- though fifth-movers, with magnitudes in the range of 2.9-8.2 percentage points of market share. Despite these findings that go against previous assertions of the ability of barrier to entry to allow for first-mover advantages, Makadok (1998) asserted that erasing advantages of first- and early-movers may require a large number of new entrants - often more entrants than can be supported by the product category, thereby leaving the first- and early-movers with the ability to sustain a substantial portion of their initial advantages. That is, while the MMMF industry exhibits such remarkable sustainability in its market-entry timing advantages despite very minimal barriers to entry/imitation, other more "implied"

resource position barriers unique to the industry exist and make it difficult for later entrants to overcome initial advantages by the early entrant. In other words, there is almost nothing preventing a new competitor from entering the MMMF industry or from imitating the pioneering fund families in emerging MMF product categories, but once it has entered it is difficult for the entrant to match the performance of the pre-existing incumbents in terms of economies of scale in "back-office" functions like transfer agency/shareholder servicing or portfolio accounting. Thus the barrier-to-entry argument for first-mover advantages discussed in the previous section still holds.

Behavioral Sources of First-Mover Advantages

The economic explanations of first-mover advantage provide the field with an impressive amount of information regarding the conceptual underpinnings of first-mover advantages. However, a number of scholars have suggested that behavioral interpretations of the phenomenon could provide a robust source of conceptual explanations. The fundamental premise of the explanation is that first-mover advantages transcend the economic-based explanations, and are moreover the result of being first into the *mind* of the consumer (Engelland and Alford 2000). That is, a consumer's preference distribution shifts towards the first innovation in a category so that it becomes the prototype of that category (Carpenter and Nakamoto 1989). While still in its infancy, the behavioral paradigm itself has its roots in the economic explanations discussed previously. In fact, the need to address the behavioral tendencies towards the phenomenon has been noted in the literature as early as Bain's (1956) examination of

barriers to entry. Bain notes the existence of possible "nature barriers" that later entrants must overcome:

> "... the advantage to established sellers ensuring from buyer preference for their products as opposed to potential entrants products is on average larger and more frequent in occurrence at large values than any other barriers to entry." (p. 216)

As mentioned, the behavioral interpretation of early entry is primarily based on psychological process by which consumers interpret and develop category leaders based on the sequence by which they are exposed to new products. That being said, as illustrated in Figure 2, existing studies within the behavioral paradigm have been dominated by four distinct consumer-related theoretical foundations: diffusion of innovation, consumer risk aversion, learning/series positioning effects, and attitudinal models. The following is a detailed discussion of the major investigations and respective findings within each category of studies.

Diffusion of Innovation

Arguments can be made that the earliest behavioral reasoning for first-moverism lie in the early work on new product diffusion into the market place (Zhang and Markman 1998). More specifically, behavioral interpretations of the benefits of first-mover activity can be based on the "diffusion of innovation" theory first developed by Rogers (1971). Roger (1971) defined the process as the spread of a new idea from source of invention or creation to its ultimate users or adopters. Accordingly, Rogers (1971) contends that adoption of a new product is best represented by a normal distribution, in which different categories of consumers accept the product at differing times based on

where they fit within a number of established types of consumer groups – innovators, early adapter, early majority, late majority, and laggards. Figure 5 illustrates this process.

Figure 5
Adoption Categorization Based on Relative Time of Adoption of Innovations
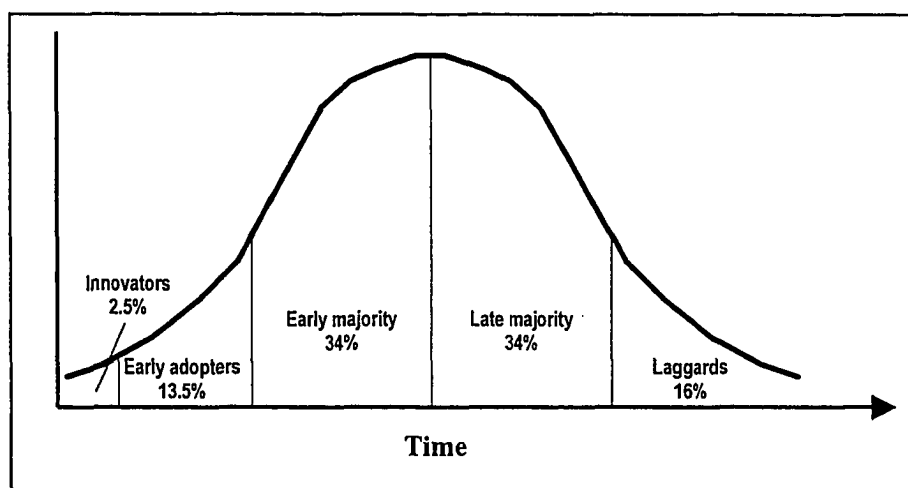
Adapted from Kerin, Berkowitz, Hartley, and Rudelius (2003)

While not specifically focusing on the issue of entry timing, the model does encompass a particular assumption that may be relevant to the first-mover paradigm. A case in point, one of the fundamental premises of diffusion of innovation theory is that the eventual penetration (diffusion) of a new product (innovation) into a particular population rests on the adoption of the product by both innovators and early adaptors (Kotler 2003). That is, the pioneer is often able to "skim off" the innovators and early adopters. By definition, these consumers are more profitable because they will provide less resistance to the new product. Also, innovators and early adopters, by definition, exhibit greater influential power in terms of their ability to set trends and act as reference groups to later buyers (Hawkins, Best, and Coney 2004). Therefore, once innovators and

early adopters adopt the innovation, the product will be seen as the category standard for later adopters. This would leave later entrants with potential customers less predisposed to purchasing the new product. (Kerin, Varadarajan, and Peterson 1992) unless they are guided by earlier adopters. Fershtman, Mahajan, and Muller (1990) provided specific reference to the diffusion of innovation theory within the context of first-mover advantages. More importantly, they identified the influence of innovators and early adopters on later consumers' purchase behavior:

> "If, for example, consumers who are innovators adapt the durable product first and they are few in number, the pioneer will enjoy the benefits that these innovators bring along, mainly their relatively high word-of-mouth confidence. Latecomers will have to content with less effective groups. These groups, such as early and late majority, are inferior in terms of their opinion leadership, social involvement, and other variables that all sum up to the word of mouth confident. This will certainly have a short-term effect, and it might have a long-term effect as well." (p. 914)

While early use of diffusion of innovation theory has been utilized to illustrate the necessity to enter early, more recently, a number of studies have attempted to utilize the theory to shed light on the ability to achieve competitive advantages from entering later. Noting evidence regarding the success of late entrants in a number of markets, Shankar, Carpenter, and Krishnamurthi (1998) addressed the actual mechanisms through which innovative later movers outsell pioneers. The authors developed a brand-level model in which brand sales were decomposed into trials and repeat purchases. More specifically, the proposed model attempted to capture the role of diffusion and market mix effects on brand trials and included the differential impact of innovative and noninnovative competitors' diffusion on these effects. Accordingly, six sets of hypotheses were formulated to address how diffusion and marketing mix parameters of the brands differ

by order of entry (pioneering, innovative late entry, and noninnovative late entry). In order to test for innovativeness, data on 13 brands from two categories of ethical drugs primarily used to treat chronic ailments during the 1970s and 1980s was utilized. The innovativeness of the brand was determined via a survey of 32 physicians who prescribed the drugs in each category. Innovativeness was measured as an average of four primary dimensions: dosage, efficacy, side effects, and range of indications. Shankar, Carpenter, and Krishnamurthi (1998) found that overall innovativeness of the second entrant in each category was significantly higher than the pioneer's innovativeness, whereas the innovativeness of the other late entrants in each category were found to be either significantly lower than or equal to that of the pioneer. The authors make one note regarding another marketing mix component, namely price. Price was excluded from the analysis because there was no evidence that a drug's price made a difference on whether or not a physician would prescribe it. This is consistent with the earlier assertion put forth by Whitten (1979) regarding the nature of the pharmaceutical industry. Using iterative non-linear least squares (INLLS), Shankar, Carpenter, and Krishnamurthi (1998) estimated the model and found that an innovative late mover, across all 13 brands addressed, could create a sustainable advantage by enjoying a higher market potential (M=24,777) and higher repeat purchase rates (ρ=0.066) than either the pioneer or noninnovative late movers. The authors noted that while these results were consistent with Kalyanaram and Urban's (1992) findings on repeat rates, the results on innovative late movers suggested a source of advantage for innovative late movers relative to other brands. Thus, noninnovative late movers are indeed disadvantaged with respect to pioneers, while innovative late entrants are advantaged relative to pioneers with regards

to repeat purchase. That is, with higher repeat sales, more trial of innovative late movers are converted to repeat purchases, which means the cost of building sales is significantly lower for innovative late entrants than for other brands. Shankar and Carpenter, and Krishnamurthi (1998) note that their findings regarding the ability of late movers to outsell pioneers stems from an ability to disrupt a pioneer's diffusion of innovation:

> " Our analysis shows that innovative late entry can produce an advantage relative to pioneers, have higher market potential, and have higher repeat rates. In addition, innovative late entry can have a more fundamental impact on a pioneer. It can slow the pioneer's growth and reduce its market spending effectiveness. Thus, innovative late entrants are advantaged compared with pioneers." (p. 66)

Consumer Economics/Risk Aversion

The second conceptual source of first-mover advantage originated with Schmalensee' (1982) work on risk aversion. Schmalensee (1982) argued that erecting barriers to entry, while proven to be critical in establishing first-mover advantages, did not provide the only cause for the advantage. Later entrants, according to Schmalensee (1982), must also overcome consumer perceptions of the pioneering brand as the standard for the industry. Therefore, the ability of a new entry to establish its own unique identify is critical to success and depends on consumer acquisition and use of information rather than the more narrow analysis of the role of advertising. Consequently, Schmalensee (1982) hypothesized that a rational consumer will develop brand loyalty for a brand if the initial experience with that product was satisfactory and there was no reason to believe that the product's quality would change. This brand loyalty would result in a natural barrier for later entrants. Specifically, the adoption of the pioneer brand creates a level of perceived risk when considering the purchase of a later entering brands for which the

consumer has imperfect information about its product quality (Schmalensee 1982). And if the quality of the product can only be determined through experience, the degree of perceived risk will be a major factor when considering another brand. Schmalensee's experimental study also examined the process by which consumers evaluated sequentially entering brands of experience goods and found that preferences towards the first entrant actually existed after initial use. This is especially the case among goods that have low frequencies of purchase and low unit costs as well as convenience goods where little product information is provided. That is, Schmalensee (1982) found that first entrant brands were initially viewed skeptically by consumers because of perceived risks and lack of perfect information but subsequently become the standard by which later brands were judged:

> "When consumers become convinced that the first brand in any product class performs satisfactorily, that brand becomes the standard against which subsequent entrants are rationally judged. It then becomes harder for the later entrant to persuade consumers to invest in learning about their qualities than it was for first brand. We have thus found a product differentiation advantage of early entry that has notion to do with advertising or consumer irrationality." (p. 360).

Within this notion of risk aversion, Schmalensee (1982) also noted that pioneering advantages might be attributed to the existence of switching costs. The total costs involved in the purchase of the product may be both financial as well as time and effort in obtaining the good. Schmalensee (1982) asserted that rational consumers will attempt to minimize these costs if that consumer has satisfactory experiences with the pioneer brand, therefore creating loyalty towards the brand.

In a direct effort to expand on the findings of Schmalensee (1982), Conrad (1983) hypothesized and found that the first brand in a market had a price advantage over

imitative entrants because consumers had more information regarding its quality. Conrad suggested that this initial price advantage enabled the established brand to enjoy an extended market share advantage over its rivals. Consequently, this price advantage would lead to two successive market-correcting actions. The first position is one of effective monopolization of the market by the first-mover. This state was later empirically corroborated by von Hippel (1984). The second state is one of gradual diminishment of the market share advantage over time as consumers become more willing to sample competitive products as more and more information about the category becomes available and the perceived risks tend to decline as that product category matures.

Learning Theory and Sequential Information Exposure

Early work by Rogers (1971) on diffusion of innovation and Schmalensee's (1982) work on risk aversion both helped shed light on some of the specific theoretical underpinnings of consumer-based first-mover advantages. However, more recent studies have sought to develop alternative behavioral explanations of the pioneering phenomenon. The clear majority of these explanations have been based on learning theory and how learning affects consumer preference formation and therefore brand loyalty. The study that best articulated this approach is the work of Carpenter and Nakamoto (1989). In recognition of its merit, the paper was awarded the 1994 William F. O'Dell Award. The distinguished award is presented annually to the article published five years previously in the *Journal of Marketing Research* that was judged to have made the greatest contribution to the field. In their pivotal study, Carpenter and Nakamoto (1989)

conceptualized pioneering advantages as a function of consumer learning with special emphasis on attribute preference formation. In contrast to previous studies (e.g., Schmalensee 1982), Carpenter and Nakamoto (1989) argued that first-movers have a higher degree of control over the *manner* in which consumers evaluate the attributes of a new product, especially in the case of discontinuous innovations. More specifically, Carpenter and Nakamoto (1989) proposed a model that interprets consumer learning and preference formulation for a product category based on the brand attributes of the pioneer. The ability to accrue a pioneering advantage, according to the authors, is based on two distinct but related elements. First, the lack of clutter in a new market presents a pioneer with an opportunity to define the category by preempting of the preference structure, thereby leading to a durable competitive advantage. Based on a quasi-experimental study, Carpenter and Nakamoto (1989) developed perceptual maps and found that salient attributes of the pioneer product influenced the preference structure of the consumer. More importantly, the product positioning of the first-mover actually became the ideal preference point within the category. The second behavioral interpretation of pioneer advantages stem from the rational consumer's learning process. That is, as consumers experience the product, the pioneer brand becomes strongly associated with the entire product category and becomes the standard by which later entrants are judged. This so-called "prototypicality" may result in a fundamental distinction of the first-mover from later entrants. In fact, Carpenter and Nakamoto (1989) specifically assert that because the pioneer brand is so synonymous with the category, the pioneer may be protected from price competition; a strategy implemented by later entering imitative "copycat" brands.

To empirically test the effects of learning on preference formation, Carpenter and Nakamoto (1989) conducted a series of experiments. The first experiment involved 48 MBA students and their evaluations of six hypothetical variants of a computer software package in a new market. No brand specific skills were developed and the packages differed based on the attribute levels they offered. Order of entry for the software brands was then manipulated for the different groups of respondents. This resulted in a 2 × 2 factorial design with 12 subjects given each possible combination. Using multiple dimensional scaling and ANOVA, Carpenter and Nakamoto (1989) found that pioneer brands enjoyed a larger preference share regardless of brand characteristics ($t=1.91$; $p<0.05$) suggesting that the pioneer will gain the largest preference share when the ideal point is ambiguous. To examine prototypicality, Carpenter and Nakamoto (1989) used the *nearest neighbor* statistics of *centrality* and *reciprocity* developed by Schwarz and Tversky (1980) and Tversky and Hutchinson (1986). The statistics were computed for each subject and treated as repeated measures in ANOVA with pioneering and ideal point ambiguity as between-subjects factors. The interaction of pioneering and ideal point ambiguity was found to be significant ($F=4.45$, $p<0.05$), supporting the notion of prototypicality and challenging the assumption that consumer preferences are fixed. The second set of experiments involved 55 MBA students and utilized conjoint analysis and ANOVA to support the concept of first-mover advantages and its relationships with preference structure formation with regards to 4 different brands of quilts. Carpenter and Nakamoto (1989), using a methodology similar to the first experiment but resulting in a 2 × 3 factorial design, found that only pioneering was a significant factor in predicting rank ($F=20$; $p<0.01$). Overall, these results suggest that experience with the pioneer has in fact

an important role in the formation of preferences for all brands and that the original brand

is perceived as prototypical of the product category and close to the ideal preference

point:

> "We suggest that pioneering advantage, under certain conditions, depends importantly on the biases in buyer's preferences...the pioneer occupies a favorable perpetual position that is difficult to imitate and costly to complete against, shielding a powerful competitive advantage." (p. 298)

Carpenter and Nakamoto (1994) later reflected on their earlier study and

suggested that their findings reflect the behavioral nature of pioneering advantages and

the need to view order of entry as a major component of competitive strategy:

> " Our work suggest that consumer preference are, at least in part, the *outcome* of competition. Lacking fixed, exogenous preferences, buyers learn their preferences trough trial and error - on the basis of the available alternatives, prices, and positions – making inferences about what they do and do not like. Thus preference for attributes evolve with consumer experience. Competition, therefore can be viewed in part as a race to shape the nature of consumer preferences." (p. 571)

Building on the work of Carpenter and Nakamoto (1989) and tapping into

Schmalensee's (1982) work regarding switching costs, Gabszewicz, Pepall, and Thisse

(1992) presented a theory of brand loyalty based on the switching costs of consumer

learning and applied this model to the development of pioneer advantages. Restricting the

model to a experiential good in which consumer learning is essential, such a software

application, Gabszewicz, Pepall, and Thisse (1992) found that the optimal pricing

strategy of a first-mover was a penetration price designed to build a large customer base.

As competitive firms enter the market, the initial low price could be increased to

represent the brand loyalty created by the learning differential advantage.

Another significant study that focused on the role of learning was the work of Kardes and Kalyanaram (1992). Kardes and Kalyanaram (1992) extended the work of Carpenter and Nakamoto (1989) by introducing the role of sequential exposure to information and arguing that early *exposure* to the brand, whether through media channels or word-of-mouth, may create lasting competitive advantages because of the strength of the product novelty (Alpert and Kamins 1994). More specifically, Kardes and Kalyanaram (1992) hypothesized that differential learning as a function of order of entry would result in greater recall of pioneer features that are shared with later entrants and greater recall of pioneer features that are unique. In order to test these hypotheses, Kardes and Kalyanaram (1992) conducted two longitudinal experiments to investigate judgmental mechanisms that contribute to the advantage. In the first experiment, 24 MBA students were exposed to Consumer Reports attribute information for three different hypothetical brands (brand A, brand B, and brand C) over a four-week period. Pretest results verified the equivalency of brands A, B, and the relative superiority of brand C. Subjects received information pertaining to the pioneer brand in the first session, and two later entrants were introduced two weeks later in the second session. A third session was conducted two weeks after the second session. Memory and judgment measures were administered in each session. By examining the attribute preference of the students over the three separate sessions, significant support ($F=25.33$, $p<0.001$) was demonstrated for the first-mover advantage. Also, this advantage was found to increase over time ($F=16.47$, $p<0.001$) and with repeated exposures ($F=3.23$, $p<0.05$) – arguing for the role of learning in pioneer advantage. However, one notable finding was that order of entry actually influenced learning about products even when the amount of product information

was held constant for successive brands. Greater recall for pioneer attributes – both shared (F=22.98, p<0.001) and unique (F=2.79, p< 0.007) was also noted, strengthening the potential involvement of learning and memory with first-mover advantage through differential learning patterns predicted upon pioneer newness. Extending their research to the issue of brand evaluation, Kardes and Kalyanaram (1992) found differential learning as a function of order of entry. That is, on average, differential learning indicated a more favorable evaluation of the first-mover as opposed to later entrants (F=12.42, p<0.001). Strengthening their argument, the researchers were able to replicate the results while varying the order of entry from A→B→C to B→A→C and endowing C with superior attribute levels. In the second experiment, Kardes and Kalyanaram (1992) solicited the participation of 40 MBA students drawn from the same population and replicated the procedure from experiment 1 but presented the three bands simultaneously. The preference structure changed in favor of brand C and its superior attribute levels. That is, order-of-entry effects on consumer memory and judgment were found to be eliminated when information about the set of brands was not presented sequentially. Therefore, in summary, as with Carpenter and Nakamoto (1989), Kardes and Kalyanaram's (1992) work suggests that pioneer status influences learning, which then affects attitudinal and preference judgment which in turn can be translated into first-mover advantage:

> "Our results and the result of Carpenter and Nakamoto (1989) indicate that consumer learning is an important mediator of the effects of order of entry on pioneering advantage. When brand-specific preferences are ambiguous (and category preferences are unambiguous), order of entry influences learning about brands in a manner that benefits the pioneer. When brand category preferences are ambiguous (and brand-specific preferences are unambiguous), order of entry influences learning about a category in a manner that benefits the pioneer (Carpenter and Nakamoto 1989). Though different learning processes are involved in the acquisition of brand-specific knowledge and category-level

knowledge, sequential information processing appears to benefit the pioneer in both cases." (p. 354)

Building on the findings of Carpenter and Nakamoto (1989) and Kardes and Kalyanaram (1992), Kardes, Kalyanaram, Chandrashekaran, and Dornoff (1993) noted the need to integrate the role of information processing and the consumer multistage decision process. Specifically, the authors examined the effects of pioneering on brand retrieval, consideration set composition, and ultimately consumer choice. Noting recent research at the time (e.g., Nedungadi 1990), Kardes, Kalyanaram, Chandrashekaran, and Dornoff (1993), argued that brand choice could be influenced without altering brand evaluations. That is, if brand retrieval and brand consideration processes can produce effects on brand choice that are independent of the effects of brand evaluation on brand choice, determining the effects of pioneering becomes important. To investigate this issue, a within-subject longitudinal experiment involving 115 MBA students was designed and conducted. The experiment simulated order of entry into a hypothetical market for good-tasting, low-calorie chocolate bars. To control for prior knowledge effects, hypothetical brand names were manipulated and subjects were tested at periodic intervals over a four-week period constituting the learning process. In order to test the four hypotheses of the study, a sequential logit model was utilized to analyze the data gathered during the four sessions. Throughout the relevant stages of the decision model, pioneering was found to be a significant factor. Specifically, pioneer brands outperformed follower brands in their inclusion in brand retrieval (β=3.065, $p<0.0001$), brand consideration set (β=4.025, $p<0.01$), and brand choice (β=1.279, $p<0.05$), thereby substantiating the theoretical research in serial positioning and brand name recall in an

experimental environment. Moreover, Kardes *et al.* (1993) found that consumers are more likely to bypass consideration set formation when the choice decision is simple (vs. complex). In such a case, the pioneering brand was still found to outperform followers at each of the two remaining stages.

Illustrating this point is the 1995 study by Alpert and Kamins, in which brand name recall for 5 product categories was examined using members of the Arkansas Household Research Panel. In an effort to eliminate the effect of current market share effect on consumer brand recall, Alpert and Kamins (1995) used actual product categories where the pioneer, after an initial period of market leadership, no longer dominated the market. Alpert and Kamins (1995) found that pioneer brand name retrieval was significantly higher than for other brands in three of the five product categories. The study and the findings of the Alpert and Kamins (1995) study will be discussed in detail in the upcoming section.

In a more recent study, Zhang and Markman (1998) addressed the role of alignable and nonalignable differences within the context of pioneering advantages. Noting that previous studies of order of entry effects used brands that were differentiated either by alignable differences, as in the Carpenter and Nakamoto's (1989) study, or by nonalignable differences, as in Kardes and Kalyanaram's (1992) study, Zhang and Markman (1998) attempted to shed light on the role of these differences on the ability of later entrants to overcome pioneering advantages. Again tapping into learning theory, Zhang and Markman (1998) proposed that learning about new brands is influenced by the way the attributes of later entrants compare with attributes of the first. That is, those aspects of the new brand that are highlighted by the comparison will be incorporated into

the representation of the new brand. As a result, the representation of the new brand will be influenced by its similarity to the previous brand. Zhang and Markman (1998) assert that consumers make similarity comparisons between brands using a structural alignment process that gives rise to three types of representative properties: *commonalties*, which are matching elements between a pair of items; *alignable differences*, which are corresponding aspects of a pair that differ; and *nonalignable differences*, which are aspects of one object that have no correspondence with the other. The authors suggest that based on learning theory, there are several related aspects of alignable differences that will lead them to be preferred to nonalignable differences. First, by focusing on alignable differences (and, to a lesser extent, on commonalties), the alignment process will ensure that all brands from the same class have a comparable representational structure. Second, the comparability of alignable differences could enhance the importance of these comparable attributes. As a result, alignable differences become the focus of comparison, which makes them more likely to be encoded deeply than nonalignable differences. Third, because alignable differences are differences along some common aspect, they are likely to receive elaboration during encoding as a result of comparison of the new brand with existing brands. This increased elaboration makes them more likely to be retrieved from memory than nonalignable differences. Fourth, alignable differences are easier to evaluate than nonalignable differences. Consumers are more likely to decide, either subjectively or objectively, which contrasting value is better along a common dimension. In contrast, to evaluate a nonalignable difference, the consumer must know how good a particular attribute is on some global scale Finally, because an alignable difference involves contrasting values from different products, the

value from one brand may serve as a retrieval cue for the corresponding value in another brand. No such cueing effect occurred for nonalignable differences. Based on these factors, Zhang and Markman (1998), argued that previous suggestions that late entrants were competitive only when they are well differentiated from the early entrant (e.g., Carpenter and Nakamoto 1989) and implications that is difficult to differentiate a late entrant from an early entrant (because people have difficulty remembering the distinctive features of late entrants) were essentially misleading since these suggestions stem from studies with different ways of operationalizing distinctive features.

Therefore, based on reminder-based brand learning theory, Zhang and Markman (1998) suggested that consumers would be less able to recall the distinctive features of the late entrant if the differences between the brands were all nonalignable differences, which are not the focal output of the comparison. On the other hand, if the distinctive features are alignable differences, then a comparison between new brands and existing brands will highlight these properties, and the differences will be remembered. To test the corresponding eight hypotheses, three experiments based on the participation of 22 students were conducted. The two primary independent variables were found to be order of entry (first entrant, late entrant, enhanced late entrant) and attribute type (commonality, alignable difference, nonalignable difference). Both of these factors were run within subjects. The third within-subjects factor was the actual session (Sessions 2 and 3). Between subjects, the brand that served as the first entrant was manipulated. There were three main dependent variables: brand evaluations, proportions of features recalled, and preference judgments. The results was a 3×3×2×2 (order of entry × attribute type × session × presentation order) mixed design. Using two one-way ANOVAs, Zhang

and Markman (1998) found that enhanced late entrant was allocated more points in the preference judgment task suggesting that an objectively superior late entrant could be recognized as superior to the first entrant. In support of this logic, participants were found to recall more alignable differences of the brands than either commonalities or nonalignable differences. Therefore, in direct contrast to Carpenter and Nakamoto (1989), Zhang and Markman's (1998) findings suggest that greater recall of alignable differences overcomes any recall advantage the first entrant might have as a result of the prominence it gains in the category because of its novelty. Zhang and Markman (1998) then provided additional support for their results via two more similar experiments albeit with different student samples (50 students in experiment 2 and 55 students in experiment 3). The results of both experiments corroborated the results of experiment 1 with preference judgements found to be proportional to the amount of types of attribute information recalled. Zhang and Markman note the distinct nature of their findings and role of alignable and nonalignable differences:

> "... in a familiar product class, consumers are more likely to prefer an objectively superior late entrant than earlier entrants when that late entrant has alignable differences with earlier entrants, but not when it has nonalignable differences with earlier entrants. Alignable differences, which have been shown to be central to people's ability to make comparisons, are well recalled for all entrants, whereas nonalignable differences, which are generally not focal outputs of comparison, are not well recalled. Because consumers' judgments of preference are based on the attributes they can recall, superior late entrants are preferred only when many of their attributes can be recalled (as occurs when they have many alignable differences) and compared with those of the early entrant." (p. 423).

Building on the early work of Roger (1971; 1983) and the more recent work of Kardes, Chandrashekaran, and Dornoff (1993), Engelland and Alford (2000) also expanded on the role of consumer learning on pioneering advantages. Specifically, the

authors examined the basis for the primacy advantages that pioneers enjoy, then applied it to the strategic plight of followers. The authors developed and tested a contingency *Model of Innovation Learning* that attempts to explain how individuals relate their understanding of new products to those with which they have had previous exposure. The basic premise of the model was that the decision-maker already has stored information (knowledge) about a prior innovation. When presented with communications regarding some new innovation, the mental processing function assesses the information and determines its distinctiveness. This processing function itself is mediated by three person-related variables: (1) familiarity (or "habit strength"), (2) category expertise, and (3) personal innovativeness, and two product-related variables: (1) message complexity and (2) relative advantage. Consistent with the work of Carpenter and Nakamoto (1989) and Zhang and Markman (1998), the perceptual location where information is stored is viewed to be contingent upon the perceived distinctiveness of the attended innovation. If the new information is sufficiently indistinct so that it fails to exceed the decision-maker's contrast threshold, the information will not be stored. If the new information is marginally distinctive, it will be stored in perceptual proximity to the information stored previously. If the distinctiveness is great, the information will be stored at perceptual separation from the innovation's information. According to Engelland and Alford (2000), whether the information is stored separately or in proximity makes a difference upon recall. Information stored together will be recalled together in a hierarchy that places the innovation in a primary position; information stored apart is recalled apart. Engelland and Alford (2000) derived six hypotheses based upon the proposed model. The proposed model was tested during the period when the Coca-Cola Company was engaged in the

early launch of a new beverage named Surge that was targeted toward college-age youth. At the time of the study, several of the company's introductory advertising spots had just aired on the Super Bowl, and Surge had been made available in the traditional retail beverage outlets and vending machines. Engelland and Alford (2000) argued that because consumers frequently purchase soft drinks and were just beginning to form impressions about this new product, Surge could be considered a typical innovation and thus appropriate in terms of the study. Data from a total of 193 undergraduate students was used. Data was analyzed using LISREL structural equation modeling. The overall model displayed an acceptable level of fit (χ^2=329.68, GFI= 0.95 p=0.14). The results indicate that relative advantage (β= 0.47, t=5.32) and category expertise (β=0.19, t=1.93) had positive effects on perceived distinctiveness between the innovations, while product familiarity (β=-0.20, t=-2.33) had a negative effect on perceptual separation. The results also indicate that perceived distinctiveness (β=0.35, t=3.76) acts as an intervening variable to fix a consumer's perceptual separation between two innovations. As indicated in the results section, four of the effects predicted by the model were supported by the data, while two were not. One product-related characteristic (relative advantage) and two person-related characteristics (familiarity and expertise) influenced the perceived distinctiveness of the innovation. According to Engelland and Alford (2000), consumer brand familiarity and expertise changes over time, and therefore followers would do well to capitalize on differences in both variables. That is, followers who follow quickly after the pioneer should reach consumers while they still have a low level of familiarity associated with the pioneering brand. This timing would lessen the negative effect of familiarity on perceived distinctiveness. On the other hand, quickly following a pioneer is

not always feasible. In this case, marketers would desire expertise among consumers in order to develop their ability to discriminate among choice alternatives. Communication programs launched with innovation should strive to inform consumers about the key attributes concerning the products and how to assess the products. This way consumers will be better prepared to evaluate the products and marketers and thus take advantage of the positive relationship between expertise and perceived distinctiveness.

Attitudinal Processes

The final distinct research stream that focused on consumer psychological processes within the context of first-mover advantages is that of attitudinal approaches. While studies focusing on the role of learning and brand retrieval have dominated the existing behavioral literature, the use of attitudinal models to interpret and explain first-mover advantages has been a more recent approach in the field. Attitudinal interpretations focus on how consumers formulate attitudes towards pioneering and followers in an effort to ultimately predict purchase intention (Alpert, Kamins, Sakano, Onzo, and Graham (2001). Therefore, due to the nature of this literature stream and in direct contrast with learning-based studies, attitudinal examinations have been dominated by non-experimental methodological designs.

One of the earliest attitudinal interpretations of first-mover advantages was the 1992 work of Alpert, Kamins, and Graham. Noting the growing power of channel members, Alpert, Kamins, and Graham (1992) examined the effects of order of entry on reseller buyer beliefs and attitudes. More specifically, the authors hypothesized that reseller buyers held more favorable global attitudes towards pioneering brands than

follower brands. Based in part on the Fishbein and Ajzen's (1975) theory of reasoned action, the study attempted to explain first-mover advantages by decomposing intention to purchase pioneering brands as a function of beliefs regarding salient attributes and global attitudes towards the brand. Alpert, Kamins and Graham (1992) conducted 10 exploratory interviews with retail and wholesale buyers in the Los Angeles Area. Ten relevant attributes critical to attitude formation were identified. In turn, these attributes were tested via a survey of 145 food industry buyers. ANOVA techniques were utilized to analyze the data. The results revealed that there were significant differences between pioneer and follower brands in terms of overall global attitude (F=179.23, $p<0.0001$). Alpert, Kamins and Graham (1992) also found that, based on the multi-attribute measure, significant perceptual measures explaining pioneer advantages were credited to the failure of late entrants to meet unmet needs, generate shopping excitement, and achieve high sales volumes. To link the various components of the model a causal model was constructed which explicitly links reseller buyer beliefs to global attitudes to purchase intentions (entry order $\rightarrow$ beliefs $\rightarrow$ attitude $\rightarrow$ behavior). Alpert, Kamins and Graham (1992) used PLS, rather than the more common LISREL structural equation modeling, arguing that PLS allows for the use of formative indicators to model the beliefs construct. A general test of the model indicated that entry order had substantial direct effects on overall attitude (β=-0.30, $p<0.05$) and behavior (β=-0.27, $p<0.05$). An effect of beliefs on behavior (β=0.05, $p<0.05$) was also found. Consequently, strong support was found that reseller buyer behavior was a function of attitudes based on order of entry.

In 1994, Alpert and Kamins attempted to synthesize most of the findings and suggestions put forth by studies focusing on the behavioral aspects of pioneer brand

advantages. Alpert and Kamins (1994) formulated a conceptual framework integrating the various sources of pioneer brand information, corresponding psychological process by which consumers act upon that information, and their effects on initial global attitude/preference for the pioneering brand. Accordingly, they also formulated a number of theoretically-based propositions designed to stimulate future research. And while consumer market beliefs about pioneer and follower brands represented only one of the components affecting attitudes, Alpert and Kamins (1994) noted the importance of such belief structures when interpreting pioneering advantages:

> "People may be aware of pioneership and have special product/attribute beliefs about pioneer brands that become salient when a brand is identified as a pioneer . . . . (that is) . . . some consumers may believe that pioneer brands tend to be of higher quality than follower brand or that the brand that has been around the longest is the most dependable. These beliefs can also be explained in terms of Schema theory. Schema relates to an individual's tendency to categorize beliefs about stimulus into a cohesive whole to facilitate information processing. A favorable schema for pioneer brands should be composed of mostly positive beliefs towards pioneers. If such favorable schemas were widely held then it would be advantageous to be known as the pioneer brand." (p. 249)

In an exploratory research to provide preliminary evidence of the role of Schema theory, Alpert and Kamins (1994) applied the standard belief elicitation task commonly used in attitude research for generating a list of belief statements (Ajzen and Fishbein 1980). They found that for pioneer brands, beliefs were linked to quality, status, and innovation. For follower brands, however, the key belief was related to lower costs. To address how widely held the market beliefs generated related to brand entry order, a small subset of the beliefs was appended onto a questionnaire for an unrelated experiment. Utilizing the responses of 105 undergraduate student, and using univariate *t*-tests for the null hypothesis of the population mean equal to zero, the authors found that

only one belief statement (i.e. "Brands that are around the longest are the most dependable") was observed to be favorable to pioneer brands. Alpert and Kamins (1994) attribute the surprising findings to the preliminary structure of the data and the crude and exploratory nature of the methodology used.

Alpert and Kamins (1995) set out to empirically investigate some of the notions introduced in their earlier work (1994). This included a more detailed analysis of consumer memory, attitude, and perceptions towards pioneer and follower brands. Alpert and Kamins (1995) distinguished their study by noting the limitations of previous experimental approaches that used student samples (e.g., Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992) as well as the need to establish convergent validity to the study of the phenomenon. Alpert and Kamins (1995) conducted a series of quasi-experimental techniques as well as a survey approach of ultimate consumers (as opposed to the reseller buyers in the 1992 study) to address the behavioral underpinning of pioneering advantages. Working with a sample frame based upon the Arkansas Household Research Panel, Alpert and Kamins examined the cognition, attitudes, and purchase histories of 560 households. The authors attempted to empirically replicate the findings of Kardes, Kalyanaram, Chandrashekaran, Dornoff (1993) regarding the effects of order of entry upon brand recall and consideration set formation as well as measure consumer attitudes based on the Fishbein and Ajzen (1975) model. With regards to brand recall and consideration sets, Alpert and Kamins (1995) set out to choose categories that would have reasonably broad recognition and in which the pioneership was fairly well known during the product's introduction, though no longer dominated the market at the time of the study. This would mean that any recall of the pioneer brand's name could not

be attributed entirely to its current market share. Alpert and Kamins (1995) selected five categories that fit the desired characteristics: VCRs, disposable diapers, video game systems, microwave ovens, and clear cola soda. A two-tailed pair-wise t-test revealed that the pioneer brand was retrieved at a rate significantly higher than that of follower brands in four of the five product categories despite the fact that the pioneer no longer held a major market share. Additionally, in a test of unaided recall the pioneer was identified by the consumer sample as a rate significantly greater than chance. With the categories being wine coolers, personal computers, low calorie beer, family soap bars, and color televisions, the pioneer brands was recalled in three out of the five product classes. To test for global and multi-attribute-based attitudes towards pioneer and follower brands, Alpert and Kamins (1995) first measured overall attitude towards the concept of the pioneer and follower brand based on the measures developed by Marks and Kamins (1988). Second, attitude towards the concept of a pioneer and follower brand was measured on a composite basis though the use of 16 bipolar general adjectives scale compiled from both the *Marketing Scale Handbook* (Bruner and Hensel 1992) regarding attitude towards the product or brand as well as an exploratory study of 32 students. At the global level, Alpert and Kamins (1995) found a significant difference in global attitudes for the pioneer over follower brands (t=3.94, p<0.0001). At the multiattribute level, a significant difference was found for 15 of the 16 attributes. To link both measures together, a multiple regression model was formulated and results indicated that the attribute set significantly predicted overall attitude towards the brand (R^2=0.398, p<0.0001). And while Alpert and Kamins (1995) did not test causal relationships between the various cognitive, affect, and cognitive constructs in the study, the results of

their investigation provide some empirical evidence to previous theoretical explanations within the behavioral paradigm of first-mover advantages as well as an expansion of the paradigm to include attitudinal explanations:

> " . . . our findings contribute evidence for new explanations for pioneer brand advantage (1) beyond that explained in the economics and analytical literatures and (2) beyond the key early learning effects from the first studies on the consumer psychology of pioneer advantage (e.g., category prototype, shaping attribute preference structure, information integration, retrieval set advantage). Our findings support the existence of conscious pioneering effects based on positive general perceptions and attitudes towards pioneer brands that are attribute- and image-based." (p. 43)

In summary, the behavioral paradigm of analysis, while still in its infancy, has provided a robust foundation on which the study of first-mover advantages can be based. All four distinct theoretical streams not only illustrate the complex nature of the consumer psychological process, but scholars focusing on such processes have been able to link consumer behavior to the competitive advantages stemming from early entry. The following section of the chapter will focus on two more literature streams that are pivotal to this dissertation. The first of these research streams is the internationalization of first-mover advantages and the need to address so-called emerging markets. The second of the research streams will focus on the origins and concern regarding Behavioral Intention (BI) models including the Fishbein and Ajzen (1975) theory of reasoned action.

FIRST-MOVER ADVANTAGES WITHIN AN INTERNATIONAL CONTEXT

Based on the earlier discussion of the major research streams and findings of first-mover advantages studies, it is obvious to the reader that there is no shortage of knowledge with regards to the relationship between order of entry and market performance. However, as mentioned in Chapter I, only a few studies within this vast pioneering advantage literature have addressed the concept in an international setting. This is surprising given the contextual nature of any sustainable competitive advantage, including pioneering advantage. More recently however, a number of scholars have acknowledged the importance of this issue and have set out to expand on the first-mover advantage literature to include data from countries other than the United States (e.g., Lilien and Yoon 1990; Rettie *et al.* 2002). And while this particular literature stream is still relatively fragmented and underresearched, some studies have provided important insights on the role of pioneering advantages across dissimilar countries. The following is a detailed discussion of the few studies focusing on first-mover advantages within an international context. Some of the studies have adopted economic explanations while others have focused on the behavioral paradigm of analysis. Following this discussion, a detailed examination of the major limitations of these studies will be presented, thereby allowing for a discussion of the gaps in the literature and the need to address first-mover advantages in emerging markets.

Cross-National Studies

One of the earliest investigations involving entry timing in an international setting is Lilien and Yoon's (1990) study of a cross-sectional sample of 91 new industrial

products from 52 French firms. While not explicitly addressing how their domain of analysis differs from previous domestically-based studies (e.g., Robinson and Fornell 1985; Robinson 1988), Lilien and Yoon (1990) have been cited on a number of occasions for their early illustration of the nature of first-mover advantages in international markets (e.g., Kerin, Varadarajan, and Peterson 1992; Golder and Tellis 1993; Tellis and Golder 1996). More importantly, however, the authors' contribution to the field revolved more around their definition of the competitive advantage derived from the timing of entry. Specifically, as discussed previously, most earlier studies had relied on measures such as market share or profitability (ROI or ROE) to indicate first- or later-mover advantages. Alternatively, Lilien and Yoon (1990) defined success as a dichotomous variable operationalized as whether or not the product introduced grew into a product group for the firm that developed it. Based on the suggestions of Cooper and Kleinschmidt (1986), Lilien and Yoon argued that this measure of success was more appropriate in industrial markets because a firm might base a new product's entry timing not only on projections of the products' short-term performance (in the form of market share or profit), but also, either on its long-term projected impact on the company's product portfolio or on the possibility that the new product would open a new product category or new market for the firm.

Drawing from the earlier work of Levitt (1966) and Schnaars (1986), Lilien and Yoon (1990) developed and tested a series of propositions designed to address the relationships between various entry-time measures and a long term performance measure for new industrial products. The authors identified three key entry-time correlates that relate to the market success of a new product: order of entry, stage of the product life

cycle, and product development time prior to market entry. To address entry time and long-term performance, three life-cycles stages (introductory, growth, and maturity) and six entry orders (from the first to the sixth entrant) were compared. The results indicated that the likelihood of success was higher when the product was introduced into an early life-cycle stage market and when the order of entry was third to fifth. More specifically, Chi Square tests suggested that: (a) the likelihood of success was about the same between the introductory stage (65.6%) and the growth stage (68.4%) ($\chi^2=0.0601$, $p=0.8065$) and (b) the likelihood of success during either the introductory or growth stage tended to be higher than during the maturity stage (52.4%) ($\chi^2=0.9531$, $p=0.1645$ in case the of introductory vs. maturity stage, and $\chi^2=1.5314$. $p=0.1080$ in case of growth vs. maturity stage). Also, Lilien and Yoon (1990) found that the likelihood of success for the first and second entrant (50.0%) tended to be lower than that for the third and fourth entrants (76.0% ($\chi^2=2.4806$, $p=0.0577$) and that the likelihood of success for the third and fourth entrants tended to be higher than that for the fifth and sixth entrants (55.6) ($\chi^2=1.9175$, $p=0.0831$). While these findings were evidently contrary to the findings of the majority of previous studies in the area, Lilien and Yoon (1990) argued that their findings were a direct result of the performance measure used in the study but also that, unlike previous studies, their investigation takes into account both the advantages *and* disadvantages of early entry:

> The strategic choice between pioneering and following is a problem of balancing the advantages and disadvantages of the pioneer and follower. The tactical decision of entry time is a problem of balancing the risks of premature entry and the missed opportunity of late entry . . . (therefore we suggest) . . . (1) enter earlier when the expected return is higher, (2) enter later when the market is evolving more rapidly: the first entrant sees higher returns it he is successful, but bears the risk of lower likelihood of success than later entrants." (p. 580)

Another study addressing first-mover advantages within an international context is the well-cited work of Song, Benedetto, and Zhao (1999). Song, Benedetto, and Zhao (1999) extended the domestic pioneering paradigm by focusing on the potential differences between manufacturing and service firms. Unlike earlier studies of international first-mover advantages (Lilien and Yoon 1990; Mascarenhas 1992; 1997), Song, Benedetto, and Zhao (1999) explicitly noted the contextual nature of first-mover advantages and therefore the potential for cross-cultural differences in perceptions of the possible benefits (and risks) associated with entering early. More specifically, the authors developed a series of hypotheses aimed at analyzing the perceptions of managers of manufacturing firms and service firms regarding the benefits and post-entry risks of pioneering and the cost and differentiation advantages accruing to the pioneering firm in nine-countries/regions: The United States, The United Kingdom, Germany, Japan, China, Taiwan, South Korea, and Singapore. Consistent with Alpert and Kamins (1995), Song, Benedetto, and Zhao (1999) argued that secondary archival data lacked the convergent validity necessary to achieve robust results. They also argued that survey data provided more sound results because studying of managerial opinions would allow for established benchmarks that may be useful for perspective new entrants into international markets. Based on the research design put forth by Douglas and Craig (1983) regarding international research, a survey designed for senior managers was constructed and data from 2,419 firms representing all nine countries and both industrial sectors was gathered and analyzed using MANOVA test of differences of means. The results indicated, at the $p<0.05$ level, that managers from all countries perceived pioneering to be associated with higher market share and/or profitability. Also, manufacturing firm managers were found

to perceive pioneering risks to be significantly more important than do service firm managers. Cost and differentiation advantages of pioneering were, for the most part, more significant to manufacturing than to service firm managers. However, manufacturing firm managers perceived cost advantages to be more important than Asian Pacific manufacturing firm managers. The one hypothesis that has not been supported concerned the relative advantage of differentiation advantages to Asian Pacific and Western managers. Findings suggested that the differentiation advantages of pioneering were perceived to be important to Asian Pacific as well as western respondents.

Song, Benedetto, and Song (2000) later replicated their earlier work (Song, Benedetto, and Zhao 1999), albeit relying on a different theoretical backdrop. In their second study, a theoretical framework of pioneering advantage with respect to the new service development process was built. The primary argument being that service characteristics will affect the extent of a sustainable competitive advantage obtained by the pioneer and will, therefore, affect the desirability of pursuing a strategy of new service pioneering. The framework was based on the distinguishing characteristics of services while taking into consideration the Kerin, Varadarajan, and Peterson (1992) classification of pioneering advantages: economic, preemptive, technological, and behavioral advantages. The authors proposed that all types of pioneering advantages are important to service managers, and that managers perceived that pioneering resulted in improved firm performance. However, due to the distinguishing characteristics of services such as intangibility and heterogeneity, service managers will not perceive the risks on pioneering in a service industry to be severe. In addition, the authors proposed that certain types of pioneering advantages will be more important to service managers in

Western countries than in Asian Pacific countries due to cultural and business environmental differences. In particular, service managers from Western firms will perceive preemption advantages of pioneering to be more important than do their Asian Pacific counterparts, and service managers from Asian Pacific firms will perceive behavioral advantages of pioneering to be more important than do their Western counterparts.

To empirically test the proposed hypotheses, Song, Benedetto, and Song (2000) used the same methodology as in the first study and analyzed 982 senior managers' perceptions in service industries across the same nine countries. Based again on simple MANOVA analysis, the results indicated several significant cross-cultural differences consistent with the hypotheses. Support was found for all the hypotheses except the one regarding the importance of technological advantages. Technological advantages were found to be less important to service managers than the other pioneering advantages. However, there were other surprising findings from the study. First, service managers were found to distinguish between the market-share payoffs and the profitability payoffs of pioneering, agreeing for the most part that pioneers end up with a market share advantage but not necessarily an advantage in terms of return on investment. The authors argue that this may be due to the nature of service industries. That is, a competitor may be able to enter a service industry with relatively low investment in capital and equipment, and may still be able to catch up to the pioneer in terms of ROI quickly. A second surprising finding concerned the behavioral pioneering advantages. Service managers did not believe the later entrant had to surpass the pioneer in terms of product quality, advertising, or promotion to overtake the pioneer. This interesting observation

provides indirect evidence that service managers perceive entry barriers to service industries to be relatively low, and consequently, pioneering advantages to be more difficult to sustain. This is in complete contrast to earlier arguments regarding the role of entry barriers in establishing pioneering advantages (e.g., Bain 1956, Lieberman and Montgomery 1988). Again, this may be attributed to the fact that earlier studies were based on manufacturing firms and rarely included services. This led Song, Benedetto, and Song (2000) to argue that while service pioneers did accrue some advantages, and the risks are perceived to be low, the longevity of these benefits may not be as sustainable as they might be in a manufacturing industry setting. However, the most surprising finding was that regarding technological pioneering advantages. Song, Benedetto, and Song (2000) noted that service pioneers might gain technological advantages for several reasons. In a technology-intensive service industry, establishment of a technological leadership position would seem to be an important pioneering advantage. In other service industries, cospecialized assets or extensive infrastructure may make it difficult for followers to copy a pioneer. Despite these arguments, virtually no agreement was found for the pioneering advantages in any of the countries. Song, Benedetto, and Song (2000) argued that, given the particular service industries represented in the study, it is perhaps not surprising that they did not think patent protection was an important pioneering advantage. Interestingly, though, the respondents did not believe that higher quality services (resulting from improvements in technology) led to a higher price-cost margin.

> "Our cross-national results suggest that Western and Asian Pacific service provider managers perceive the advantages of pioneering a new service quite differently. First, a Western manager cannot expect that his or her counterparts in the Asia Pacific region share beliefs and perceptions about the advantages of pioneering. Although the U.S. manager is more concerned about preemption advantages, the Asian Pacific managers are by and large more likely to build

brand image, and to seek to tie in customers via high switching costs. Second, we observe that among the Asian Pacific countries, there are interesting differences. Hong Kong managers are much more like Western managers in their perceptions, whereas other more subtle differences exist between Taiwan, China, South Korea, and Singapore." (p. 390).

In an effort to address the impact of economic and cultural determinants of internationalization on entry timing decisions, Mitra and Golder (2002) formulated a model that considers the impact of a firm's own operations in similar markets on subsequent entry decisions. More specifically, the authors introduced the concept of near-market knowledge to reflect the learning process and experience gained by firms operating in markets that are culturally and economically similar. Mitra and Golder (2002) proposed three distinct questions that guided the formulation of the appropriate hypotheses. First, after other factors are controlled for, does cultural distance affect when firms enter foreign markets? Second, is there an impact of economic similarity on entry decisions? Third, what is the relative importance of various economic and cultural factors? The authors argued that previous research focused on either economic factors or cultural distance but did not considered them simultaneously. In order to test the hypotheses, the authors conducted an extensive data gathering process. The result was a comprehensive multi-country, multi-firm data set that included 722 entry observations from 19 multinational firms and their subsidiaries.

Using a hazard model, Mitra and Golder (2002) found that in contrast to previous research, cultural distance from the domestic market was not a significant factor. However, higher near-market cultural knowledge was associated with higher probability of entry. Therefore, culture still played an important role with regards to entry decisions. However, cultural knowledge generated in similar markets seemed to be more important

than cultural knowledge from the home market. The researchers argued that this result seems logical, because companies should be more successful when they transfer knowledge from countries that are more similar. Accordingly, near-market cultural knowledge may be a better measure than cultural distance for the impact of culture on foreign market entry timing. With regards to near-market economic knowledge, Mitra and Golder (2002) found that companies' entry decisions were partially determined by more similar countries in which the firm already operates. That is, companies seem to base their entry timing decisions on economic knowledge gained in similar markets, with high-potential markets being entered earlier than other. In addition, near-market economic knowledge and economic prosperity distance affect entry timing. Even though near-market cultural knowledge is also significant, results indicate that economic factors are more important determinants of foreign market entry timing.

Limitations of Existing Cross-National Studies

While the preceding studies have unquestionably provided insights into the nature of first-mover advantages in international domains of analysis, closer inspection of these studies reveals a number of concerns worth noting. The following discussion will focus on these concerns and detail other general limitations which provide rationalization for this study.

The first major limitation of current international first-mover advantage studies is the reliance on so-called "proxy" samples. International first-mover advantage studies have utilized data gathered from surveys of key informants within the firm. Therefore, the domain of analysis has essentially been from the perspective of the firm and not the

consumer. As mentioned in the discussion of the limitations of PIMS-based studies, self-reporting methodologies have a tendency to provide data that is often ambiguous or misleading because the reporting informant may or may not know the actual information. To illustrate, Lilien and Yoon (1990) created a database of 91 industrial products based on a series of telephone and personal interviews. Data regarding variables such as new product introduction, product/market entry strategy, and level of competition were collected from key informants in the respective firms. The major concern has been the discretion allowed to these respondents in identifying what actually constitutes a *new* product and the respective competitive domain of the firm. Even if the products in question can in fact be classified as "new" to the firm, does this automatically indicate "new" to the market? This highly unlikely scenario is thus based on a definitional question regarding *actual* pioneer status rather than *reported* pioneer status. The answer to such a question can only be answered if there is consistency amongst the firms regarding competitive domain of analysis which is seldom achieved with self-reporting techniques.

A second limitation stemming from the reliance on key informants is specific to both the studies of Song, Benedetto, Zhao (1999) and Song, Benedetto, and Song (2000). In these studies, the major focus was on senior management perceptions of the benefits of early entry. And while the insights from these papers revealed some of the differences across countries/regions, the major concern is that manager's perceptions may not actually reflect the "true" pioneering advantages. Perhaps in anticipation of future criticism, Song, Benedetto, and Zhao (1999) made an effort to note the relationship between perceptions of managers and the underlying beliefs on which those perceptions

are built. That is, according to Song, Benedetto, and Zhao, managerial perceptions are a function of the beliefs they hold given what they observe or experience within the firm's business domain. While this may be true to some degree, two concerns are worth mentioning. First, managerial perceptions do not explain why or how pioneering advantages are arrived at and second, the ability to establish national citizenship is by no means a surrogate for cultural identity (Hofstede 1980; Kumar 2000; Arnold 2004). That is, there is no attempt to identify the managers has actually reflective of the cultures in which they work. This is a major concern because as noted by Rao and Hashimoto (1996), managers educated in a different country may have different perspectives regarding business strategy and tactics. Therefore, cross-national perceptions of order-of-entry benefits would evidently be flawed.

A third concern regarding previous international first-mover advantage studies is the over-reliance on relatively simple analytic methodologies. The clear majority of studies have relied on simple *t*-tests and chi-square analysis to illustrate differences (or similarities) within or among countries. Very little effort has been made to provide a comprehensive theoretically-based set of causal relationships that addresses why differences between countries may exist with regards to pioneering advantage.

A final concern regarding the international research stream of first-mover advantages is one of underlying theoretical backdrops. That is, a notable parallel across the previous studies is the implicit assumption that competitive advantages accruing from early (or late) entry are based solely on the *economic* rationalizations discussed earlier in the chapter. None of these earlier studies have attempted to incorporate behavioral dimensions into the analysis and have relied primarily on the economic-analytic

explanation of sequential market entry by firms and the subsequent learning curve effect of entering early. This is very surprising for two reasons. First, there is no shortage of practitioners and/or researchers calling for a greater cross-cultural understanding of consumer behavior in an effort to improve international marketing efforts (McCort and Malhotra 1993; Briley, Morris, and Simonson 2000). To be exact, scholars have noted the palpable relationship between local consumer behavior and potential firm performance in international markets (e.g., Douglas and Craig 1983). Consequently, international first-mover advantage studies failing to recognize such a relationship and the role of firm strategy, including the entry-timing decision would definitely fall short of providing a comprehensive view of the phenomenon. Second, as discussed previously, behavioral interpretations of first-mover advantages have been cited extensively as a robust theoretical background for studying first-mover advantages (Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992). This is because the underlying importance of relating pioneer advantage to consumer behavior is the ability to explain *why* pioneer advantages persist, and suggests management strategies that can exploit its potential. That being said, two studies recently addressed the issue of international first-mover advantages by extending domestic behavioral models to different domains of analysis.

The first study was an effort to extend the 1992 work of Alpert, Kamins, and Graham regarding reseller buyer attitudes towards order of brand entry. In their study, Alpert, Kamins, Sakano, Onzo, and Graham (2001) focused on establishing universality and replication of the 1992 findings via a comparative study of Japanese and U.S. grocery store managers' attitudes based on order of entry. Alpert *et al.* (2001) hypothesized that compared with US retail buyers, Japanese retail buyers will have at minimum an

equivalently favorable attitude (measured in both a global and a multi-attribute format) toward pioneer brands and at minimum an equivalently unfavorable attitude toward follower brands. Also, Alpert *et al.* (2001) tested the chain of causality formulated in the 1992 study. Specifically, they hypothesized that for Japanese retail buyers, a chain of causality will be determined beginning with entry order causing differences in attribute beliefs, which will cause differences in overall attitude and ultimately purchase behavior. These causal linkages were hypothesized to be consistent with previous US results. Based on a sample of 103 Japanese and 139 U.S. grocery store respondents, and utilizing simple *t*-tests, Alpert *et al.* (2001) found no statistically significant differences (at $p < 0.05$) between Japanese and US attitudes based on order of entry. Testing of the causal model via PLS analysis indicated that entry order had a significant direct effect upon overall attitude ($\gamma = -0.12$ for the Japanese data; and -0.30 for the US data, $p < 0.05$) as well as behavior ($\gamma = -0.41$ for the Japanese data; and -0.27 for the US data, $p < 0.05$), increasing the variance explained by the latent constructs. However, no significant effect of beliefs on behavior ($\beta = 0.06$ for Japan and $\beta = 0.05$ for the US) were found.

The second study, Rettie, Hilliar, and Alpert (2002) also relied on behavioral interpretations of first-mover advantages to extend the research domain of analysis to international markets. In an effort to replicate and extend the work of Alpert and Kamins (1995), the researchers addressed pioneer brand recall and the role of pioneer communication in the United Kingdom. Because the original product categories utilized in the original Alpert and Kamins (1995) study were considered too immature in the UK, four other product categories were introduced. All brands selected had been launched within the previous 20 years, so as to ensure that respondents could feasibly recall their

pioneer status. In half of the categories selected, the pioneer was still the brand leader. As with the previous study, pioneer market leaders that were so dominant as to be generic were excluded from the study. Rettie, Hilliar, and Alpert (2002) found, using data gathered from 359 UK consumers, that most respondents recalled the pioneer brand ($p<0.01$) in all four categories. In cases where the pioneer brand was not the market leader, higher recall levels were reported in three of the four categories ($p<0.01$) versus three of the five categories in the U.S. Study. In the U.S. respondents misidentified the pioneer 38.1 percent of the time while in the UK this was lower at 17.2 percent. With regards to communicating the pioneer status, Rettie, Hilliar, and Alpert (2002) found that labeling the product with pioneering terms such as "new" and "the original" achieved a significant increase in claimed purchase interest. This was again similar to the results presented by Alpert and Kamins (1995). However, while the U.S. study illustrated a decline in the impact of pioneer status overtime, Rettie, Hilliar, and Alpert (2002) found that the effectiveness of pioneer status actually increased over time. Therefore, both studies provide strong support for consumer-based pioneer advantage. However, as noted by Rettie, Hilliar, and Alpert (2002), differences between the two countries may have an impact on interpreting of the results:

> "The cross-cultural strength of the pioneership effect is established by the UK results being broadly similar to those from the USA. However, interesting and significant differences were found between the two countries, suggesting that culture does moderate the effect of pioneership on consumers." (p. 909)

To the best of the researcher's knowledge, these two studies provide the only evidence of international first-mover advantages via a behavioral interpretation. However, while valuable starting points, both studies have a number of inherent

limitations. First, both studies are replications of previous work. And while replication is an important contribution to the field (Hubbard and Armstrong 1994), very little effort was made in the two studies to address *why* the replication of findings in another country was important. More importantly, very little effort is made to address the appropriateness of the domestic model in a different country. With the exception of a few test-instrument modifications and translation, both behavioral studies did not address the unique nature of respective local consumer behavior and how such behavior may be too complex (or simple) given the domestic frameworks of earlier studies. Finally, the major limitation associated with international first-mover advantages studies is the virtual lack of empirical evidence regarding first-mover advantages in so-called emerging markets. This will be the focus of the following section.

EMERGING MARKETS: THE NEW FRONTIER

Companies have been turning more and more to newly emerging markets (EMs) for business expansion (Nakata and Sivakumar 1997; Arnold and Quelch 1998). Consequently, emerging markets have been christened the "new frontier" in the global economy (Garten 1997). But like all frontiers, emerging markets present entering firms with a complex mix of opportunities and risks. Scholars have acknowledged the unique nature of emerging markets and, as a result, a significant amount of research over the past two decades has been devoted to the collectively unique characteristics of emerging markets and how such characteristics may benefit or hinder firm performance. More recently however, the academic interest in these types of markets has been fueled by new

perceptions towards these countries. The phrase "emerging markets" is being adopted in place of the previous lexicon of "less-developed countries," "newly-industrializing countries," or even "Third World countries," which emphasized the countries' sources of cheap raw materials and labor rather than their markets. Even so, there is still no commonly accepted definition of "emerging markets." In one of the most cited studies in the field, Czinkota and Renkainen (1997) suggested that there are three aspects of a country's economy that often underlie various definitions. First is the absolute level of economic development, usually indicated by average GDP per capital, or the relative balance of agrarian and industrial/commercial activity. This overlaps with the other categorizations such as "less-developed countries" (LDCs) or "Third World countries." Second is the relative pace of economic development, usually indicated by the GDP growth rate. This criterion is intuitively closer to the sense of change implied by the term "emerging". EMs are defined as those countries enjoying growth rates attractive to an investor. More specifically, most emerging markets have had average annual GDP of more than 5 percent since 1990, with rates nearer to 10 percent in East Asia (Arnold and Quelch 1998). It is noteworthy that several countries frequently described as EMs have failed this test; Russia, for example, has suffered a shrinking economy for most of this period. The third criterion is far less easily defined but critically important to prospective firms. It involves the system of market governance and, in particular, the extent and stability of a free-market system. If the country is in the process of economic liberalization from a centrally-planned economy, it is sometimes defined as a "transitional economy." Given the inconsistencies among current definitions and this researcher's focus on long term market potential, a broad definition of EMs,

encompassing all three of the aforementioned criterion will used in this study. In the last decade, ten major emerging markets - Mexico, Brazil, Argentina, South Africa, Poland, Turkey, India, South Korea, the ASEAN region (Indonesia, Thailand, Malaysia, Singapore, and Vietnam), the Chinese Economic Area (China, Hong Kong, and Taiwan) – have been relatively consistent in their adherence to the three-point definition adopted in this study (Garten 1997).

As illustrated from the previous introduction, most common interpretations of emerging markets are dominated by financial and economic indicators and aggregate variables to verify inclusion or exclusion from a set group of countries. However, such indicators rarely provide reasons *why* emerging markets are attractive, especially within the context of marketing and management. According to Nakata and Sivakumar (1997), emerging markets provide firms with attractive opportunities for several reasons. One is the potential for immediate added sales. Firms that have strong global reputations can sometimes gain new customers relatively quickly in markets they have not distributed directly to, as word of mouth spreads and products from neighboring countries spill across the border. Another reason is that while developed markets still constitute the primary revenue sources for many business, economic recession or stagnation and changing demographics (aging populations, low fertility rates) have led to flat or declining sales. Finally, emerging markets are moving up the ranks with regards to average disposable income. Emerging markets offer significant and growing number of buyers with the ability to pay for a broad range of goods and services. At the same time, emerging markets present significant detractors for entering firms. Among these challenges are political risk, which manifests in threats of civil disorder, creeping

expropriation, mercurial governmental policies, and funds restrictions (Friedman and Kim 1988). None of the outcomes favor business development. Sizable pockets of severe poverty, often accompanied by illiteracy, poor health, and non-existent social security, also mean narrower market segments compared to countries where per capita income and welfare were higher. Additionally, a lack of or underdeveloped infrastructures, such as inadequate phone networks, railways, postal services, electric power, and water supplies, can severely impede a wide range of commercial activities. Given both attractions and detractions, an important question is whether or not it pays for firms to be first in emerging markets.

First-Mover Advantages in Emerging Markets

As indicated by earlier discussions in this chapter, considerable research on pioneering strategies and outcomes has been conducted in the fields of economics, business strategy, management, and marketing (e.g., Bond and Lean 1977; Whitten 1979; Robinson and Fornell 1985; Lambkin 1988; Alpert and Kamins 1994). Generally, however, the work has not been geographically specific or presumes developed market conditions (Nakata and Sivakumar 1997). Similarly, studies have been completed on various dimensions of business operations in emerging markets, including channels of distribution (e.g., Samiee 1993), marketing strategies (e.g., Wortzel 1983), and organizational structuring (e.g., Jorgensen, Hafsi, and Kiggundu 1986). Yet entry strategies in general and first-mover advantages in particular seem to have been ignored.

To the best of the researcher's knowledge, only two studies have explicitly addressed emerging market conditions and their impact on first-mover advantages. The

first of these studies is the well-cited work of Nakata and Sivakumar (1997). In their study, Nakata and Sivakumar (1997) presented a conceptual framework which relates the different emerging market conditions and the role such conditions have on the magnitude and direction of the different types of pioneering advantages. Based on an extensive literature review, the authors grouped emerging conditions into five distinct environmental factors: economic, technological, socio-cultural, legal-political, and competitive-marketing. The result is an intuitively appealing schema for describing emerging markets. Nakata and Sivakumar (1997) classify pioneering advantages, based on the Kerin, Varadarajan, and Peterson (1992) typology into four types: economic, pre-emptive, technological, and behavioral. Nakata and Sivakumar (1997) justify their adoption of the Kerin, Varadarajan, and Peterson (1992) typology on two grounds. First, the typology stems from a very comprehensive synthesis of the first-mover advantage literature, and second, it parsimoniously reflects a full range of relevant empirical and conceptual learning. While Nakata an Sivakumar (1997) did not provide empirical evidence to back up their conceptual framework, they do provide an extensive propositional inventory suggesting that economic, legal/political, technical, competitive/marketing, and socio-cultural conditions have a complexity of positive and negative influences on the four kinds of pioneering advantages. More importantly, the framework is the first attempt to illustrate that by weighing the different influences, firms can better evaluate the viability of early entry rather than blindly assumes that first is always best. As they noted, emerging market conditions can work in favor or against first-mover advantages.

In another conceptual, albeit less-cited study, Rahman and Bhattacharyya (2003) also attempted to identify the distinctive features of emerging markets and how these features affect the first-mover advantage hypothesis. Unlike Nakata and Sivakumar (1997), Rahman and Bhattacharyya categorized emerging market conditions into two broad groups – those that help a first-mover *create* value and those that, if taken care of, help the firm *capture* value. In the first category of features, the authors identified less clutter, skewed product diffusion process, increasing urban dwelling, increasing purchase power of the middle class, and volatile government relations as reasons for early entry into emerging markets. On the other hand, Rahman and Bhattacharyya (2003) contend that longer product lines, underdeveloped distribution networks, and consumer willingness to pay premium prices are features that affect a firm's ability to retain value in the event of early entry. Rahman and Bhattacharyya (2003) do not provide empirical evidence of the role that such moderators have on first-mover advantages. However, their discussion provides insight into the importance of considering the unique conditions of emerging markets.

While both studies provided numerous theoretical justifications for early entry into emerging markets, there is an obvious lack of empirical analysis. The goal of this dissertation is to empirically address the differences between emerging and mature market consumer attitudes and intentions based on order of entry. In order to proceed further, one final limitation of the previous international studies must be addressed. This limitation is consistent with previous calls on part of several scholars regarding the need for more theoretical justifications for or against first-moverism. It is obvious from previous discussions that a huge amount of theoretical knowledge has been developed to

address the first-mover advantage hypothesis in a domestic context. However, international studies have relied primarily on empirical documentation and nothing more. With the exception of Alpert *et al.* (2001) and Rettie *et al.* (2002), there has been no theoretical justifications for the research endeavor. That being said, both behavioral studies have only used partial theories of consumer behavior.

BEHAVIORAL INTENTION MODELS

Modeling consumer behavior for predictive purposes has been a primary concern of marketing researchers. The most commonly used class of models is behavioral-intention (BI) models (Fishbein and Ajzen 1975; Mittal, Kumar, and Tsiros 1999; Cronin, Brady, and Hult 2000). These models originate from learning theory and assume that behavior toward a particular object is approximated by an intention to perform that behavior. According to Eagly and Chaiken (1993, p.168), intention represents "a person's conscious plan to exert effort to carry out a behavior". These models thus focus on behaviors that are discretionary in nature (Bagozzi 1982).

Arguably the most well-known behavioral intention model is the Fishbein and Ajzen (1975) Theory of Reasoned Action (TRA). The model has received considerable and, for the most part, justifiable attention within the field of consumer behavior (e.g., Ryan and Bonfield 1975, 1980). Drawing heavily on the earlier work of Rosenberg (1956), Fishbein (1967) developed a computational model of multiattribute attitude where attitude was a function of beliefs about attributes and evaluative aspects of those beliefs. While this simplistic model provided a valuable breakdown of the individual components of consumer attitude formation (Bass and Talarzyk 1972), Fishbein and

Ajzen (1975) noted the discrepancy between attitudes and corresponding behavior. Fishbein and Ajzen (1975) argued that this gap was due to inadequate conceptualization and measurement and the need to consider "other variables" in addition to attitudes in order to predict behavior better (Ryan 1982). Fishbein and Ajzen (1975) dealt with this issue by introducing a variable described as the "subjective norm", which is designed to capture the social influences of relevant others. The basic Fishbein and Ajzen paradigm is that behavioral is affected by behavioral intent which, in turn, is affected by attitude and the subjective norm. Thus, the central equations in the theory appear as follows:

$$B \approx BI = (A_{act})w_1 + (SN)w_2$$

where

$$A_b = \sum_{i=1}^{n} W_i E_i \quad \text{And} \quad SN = \sum_{j=1}^{n} NB_j MC_j$$

The model hypothesizes that a person's behavioral intention (BI) is determined by an *attitudinal* or personal component and a *normative* or social component. The personal attitude towards the behavior refers to the person's judgment of being in favor of or against performing the behavior. The subjective norm is a person's perceptions of the social pressure to perform the behavior in question. In the context of consumer behavior, the basic paradigm of the Fishbein behavioral intention model is that consumption behavior (B) is affected by behavioral intentions (BI), which, in turn, are affected by attitude (A_b) and a subjective norm (SN). The first component, attitude toward the brand (A_b), is a function of the evaluative aspect or belief towards a salient attribute i for brand

b (E_i) and the perceived consequences (or importance) people associate with that attribute i (W_i). The second component, the subjective norm (SN), is represented as a function of belief about the expectations of the important referent others (NB), and his/her motivations to comply with these referents (MC).

According to Fishbein and Ajzen (1975), the behavioral intention measure will predict the performance of any voluntary act, unless intent changes prior to performance or unless the intention measures does not correspond to the behavioral criterion in terms of action, target, context, time-frame and/or specificity. However, Fishbein and Ajzen also suggested that in practice, the latter two constraints can be minimized by paying careful attention to the correspondence between the performance criterion and the wording of the attitude, subjective norm, and intention questions, and by administering the measures of attitudes, subjective norms, and intentions as closely as possible to the performance time. That being said, the Fishbein and Ajzen (1975) model appears to hold quite well within the constraints they defined. Not only does the model appear to predict consumer intentions and behavior quite well, it also provides a relatively simple basis for identifying where and how to target consumers' behavioral change attempts. Support for the model is rather extensive in both the social psychological (e.g., Ajzen and Fishbein 1977, 1980) and marketing literatures (e.g., Ryan and Bonfield 1975; Ryan 1982; Oliver and Bearden 1985). In fact, Sheppard, Hartwick, and Warshaw (1988) conducted two extensive meta-analyses to investigate the effectiveness of the model and found strong overall evidence for its predictive utility.

However, some more recent studies have questioned the applicability of the model in different cultures. Though well supported in US samples, it has been argued that

the model contains Western cultural biases (Bang, Hadimarcou, and Traichal 2000; Tuten and Urban, 1999). For example, Cote and Tansuhaj (1989) used the model to compare American, Thai, and Jordanian students on the prediction of academic behavior. In their study, 27.2 percent of the discrepancy in behavioral intention toward academic behavior was attributable to differences in culture variables. In a bicultural study of the model using structural equation modeling, Lee and Green (1990) found that the model had a lower chi-square statistic, higher goodness-of-fit statistic, and higher R^2 for a US sample than a Korean sample. This prompted Lee (1990) to propose an alternative Confucian conceptualization of the normative constructs in the model. In fact, Lee and Green (1991) later applied a combined etic-emic approach to the operationalization of both the attitudinal and normative components of the model and found, using structural equation modeling, that the cross-cultural validity of the model held, since a similarly good fit was found for both the U.S. and Korean samples. The same conclusion was drawn by Chan and Lau (1998) in their investigation of the model under a Chinese cultural setting. And while general conclusions of the universal applicability of the model have been hard to come by, Malhotra and McCort (2001) theoretically and empirical investigated the cross-cultural validity of five various behavioral intent models across U.S. and Hong Kong samples and found that the Fishbein and Ajzen (1975) model held extremely well when, and only when, measures that reflect culturally-sensitive operationalizations of the underlying latent constructs were used. As will be discussed in detail in the following chapter, a culturally-adapted Fishbein and Ajzen (1975) model will be utilized to address differing attitudes towards pioneer and follower brands across two countries.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Chapter III will provide a comprehensive presentation of the research design and methodology to be used in the study. The chapter will begin with a presentation of the specific research hypotheses derived from the research literature and to be tested in the study. After the hypotheses are presented, a detailed discussion of the research design will make up the remainder of the chapter. The proposed research design will provide a general framework for the study including details on the research approach, research method, sampling design, data collection methods, and measurement issues. Following this discussion, an exhaustive presentation of the operationalization of constructs and development of the test instrument along with psychometric assessment is presented. Finally, a discussion of the analytical methods to be employed will be detailed.

STATEMENT OF RESEARCH HYPOTHESES

As mentioned previously, one of the most influential and widely researched models in the marketing literature is the Fishbein and Ajzen (1975) Theory of Reasoned Action (Burnkrant and Page 1982). The model not only appears to predict consumer intentions and behavior quite well, but it also provides a relatively simple basis for identifying where and how to target consumers' behavioral intentions (Sheppard, Hartwick, and Warshaw 1988). Empirical studies of global and multiattribute attitudes towards pioneering brands have employed, at least in part, the Fishbein and Ajzen (1975) model to reinforce the theoretical basis for first-mover advantage in mature markets (e.g.,

Alpert, Kamins, and Graham 1992; Alpert and Kamins 1995, Rettie, Hilliar, and Alpert 2001). For these reasons, this model serves as the foundation for this study. However, before the actual causal relationships illustrated by the model are addressed, a number of hypotheses specific to the potential similarities and differences between the two countries regarding pioneer and follower brands are developed.

Attitudes and Intentions Based on Order of Entry

The primary focus of this study is to address whether consumers in emerging markets hold differing attitudes toward brands based on their order of market entry and if so, whether these attitudes differ significantly from those in mature markets. This general question therefore lends itself to a distinction between *automatic* and *conscious* learning effects. In the case of automatic effects, category prototype status arises automatically from being the first brand experienced by consumers, regardless of whether they know that brand is in fact the true pioneer (Carpenter and Nakamoto 1989). With the exception of a few studies, prior research has focused on such explanations (Alpert and Kamins 1994). The problem with this approach is the rudimentary assumption that there is little a pioneering firm can do to achieve or maximize the pioneer advantage. In contrast, a number of studies have suggested that *conscious* knowledge of the pioneership status itself can be a more critical factor in consumer attitude formation (e.g., Alpert and Kamins 1994; Rettie Hilliar, and Alpert 2001; Alpert, Kamins, Sakano, Onzo, and Graham 2002). The underlying rationale here is that the benefits that are derive from consumer awareness of pioneer status would be harder for competitors to take away

because illegitimate pioneership claims constitute false advertising (Alpert and Kamins 1995). More importantly, as Porter (1985) noted:

> "A firm that moves first may establish a reputation as the pioneer or leader, a reputation that emulators have difficulty overcoming. Leadership places a firm, at least temporarily, in the position of being unique, which can produce long term image benefits not available to other." (p. 186-187)

Accordingly, consumer attitudes should differ towards two or more identical brands if those brands were known to have entered the market at different times.

Overall (Global) Attitude

Domestic experimental research on pioneer advantages comes to the general conclusion that attitudes will be favorable towards pioneer brands (e.g., Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992). Alpert and Kamins (1995) hypothesized and found that American consumers recognize and react favorably to the construct of pioneership, because, as a manifestation of innovation and progress in the product realm, it taps into core American values. In the case of emerging markets, newly entered foreign brands have always been desirable, because the import of consumer goods have been severely restricted in the past (Maxwell 2001). In the specific case of India, the few imports that did enter "created a powerful image among the upper-middle to upper class that foreign goods were exotic, showy and better than Indian-made products" (Bullis 1997, p 64). Therefore it is conceivable to presume that, as in the case of U.S. consumers, Indian consumers will also exhibit favorable global attitudes toward pioneer brands. Thus, the first hypothesis seeks to determine whether survey respondents in both

countries are more favorably inclined towards pioneer brands as opposed to follower brands:

> H$_1$: Both mature market (U.S.) and emerging market (Indian) consumers' global attitudes are more favorable toward pioneer brands than follower brands.

The previous hypothesis addresses the assumed *directional* similarity of consumer attitudes in both countries based on order of entry. However, the *magnitude* of any attitudinal difference between pioneer and follower brands in the two countries is of particular interest. Since consumer attitude formation, as a general psychological process, is a function of the context in which it is being forged (Lee and Green 1991; Malhotra and McCort 2001), the environmental conditions critical to how these attitudes were arrived at must be brought to light. Of importance here are the factors that may affect attitudes towards pioneer and follower brands. Two specific environmental conditions unique to emerging markets may allow for a conjecture that emerging market consumers' attitudes towards pioneer brands are much more positive when compared to their U.S. counterparts.

First, emerging markets, by their very nature, lack an established communication infrastructure (Arnold and Quelch 1998; Luo and Peng 1998; Arnold 2004; Samli 2004). What most firms would consider basic marketing infrastructure is often absent in emerging markets (Fletcher and Melewar 2001). Emerging markets vary in both the availability of certain media and the extent to which that media are controlled by the government and hence are available to the firm's promotional team. Such conditions make it difficult to quickly reach and communicate effectively with the consumers. Therefore, the lack of this infrastructure can severely impede a wide range of commercial

activities (Arnold and Quelch 1998). However, the lack of clutter associated with a poor communication infrastructure may provide a first-mover with the opportunity to enjoy certain differential advantages otherwise difficult to secure in more developed markets (Rahman and Bhattacharyya 2003). More precisely, promotional messages that are communicated in such environments have less competing messages to deal with, thus shaping consumers' perceptions to its advantage and eventually becoming the category standard (Nakata and Sivakumar 1997; Luo and Peng 1998; Hawkins, Best and Coney 2004). To illustrate, in 1967, Bisleri, an Italian company first brought the idea of selling bottled water to India. Today, the brand has become the generic name for the product category in India and the brand enjoys 60 percent market share of the bottled water market in the country. Another example illustrating an underlying preference for the pioneer brand in India is the case of laundry detergents. Surf, promoted by Unilever in 1959, was the first detergent powder in the Indian market. Procter and Gamble entered the Indian detergent market as late as 1990. Despite heavy promotion, the company's Ariel brand detergent has failed to surpass Surf Excel, which is still Indian's largest selling brand (Rahman and Bhattacharyya 2003). This is remarkable given Procter and Gamble's history in more mature markets. In fact, Procter and Gamble, again relying heavily on promotion, was able to surpass the original product pioneer brand, Reychler, in the U.S. market with their Tide brand (Golder and Tellis 1993). Both examples not only depict a more dominant role for entry timing in emerging markets, but also portray an underlying sustainable advantage from entering the market first (Arnold 2004). These advantages suggest that emerging market consumers' attitudes based on order-of-entry

are generally much more positive and firmly grounded in structural circumstances of the market (Shama 1992).

The second environmental factor critical to attitude towards pioneer and follower brands relates to a much more recent trend in emerging markets. After years of isolationism, emerging markets tend to exhibit substantial pent-up demand for previously unavailable but known brands (Arnold and Quelch 1998; Arnold 2004). Traditional diffusion of innovation theories, as discussed in Chapter II, presume that the diffusion of a new product approximates a bell shaped curve (Rogers 1971, 1983). Still, typical conditions that firms encounter in the introductory stages of the Product Life Cycle in more developed markets, where slow diffusion of product awareness and familiarity often result in slow sales take-offs after launch, may not apply in emerging markets (Cosmas and Sheth 1980; Arnold 2004). A number of studies suggest that the diffusion process in emerging markets can therefore be represented by a curve which is asymmetrical with consumers falling under categories of innovators, early adopters, and early majority being more in number than those who comprise the remaining categories of consumers (e.g., Yaveroglu and Donthu 2002; Rahman and Bhattacharyya 2003). That is, once the innovator starts using a new product, other groups of consumers quickly follow suit to avoid the discomfort of being left out. Such a skewed diffusion process implies a significantly more positive attitude towards pioneering brands. Indeed, the rapid popularity of foreign brand goods among the high-income earners and teenagers in India after economic liberalization (Nicholls et al. 1994; Kumar 2002) bears testimony to this rationale.

Given the aforementioned differences between mature and emerging markets, it can be inferred that emerging market consumers will have a significantly more favorable attitude towards pioneering brands when compared with their U.S counterparts. Thus, the following hypothesis is presented:

H_2: Emerging market (Indian) consumers' global attitudes toward pioneer brands are significantly more positive compared to those of mature market (U.S.) consumers.

Multiattribute Attitude

According to Burnkrant and Page (1982), a multiattribute attitude measure provides a highly robust predictor of global attitude and consequently consumer intentions. That is, a global attitude towards a brand is a function of the beliefs a consumer holds on salient attributes attached to a brand along with the importance or weight that particular attribute holds (Bass and Wilkie 1973; Ryan and Bonfield 1982). With regards to order-of-entry, global attitude towards pioneer brands should be shaped by generally positive *attribute*-based perceptions of pioneer brands (Alpert and Kamins 1995). Existing empirically-based research has found that global attitude favoring the pioneer brand over follower brands does exist and can be broken down into a multiattribute item set that reveals significantly more favorable perceptions of pioneer brands than for follower brands (e.g., Alpert, Kamins, and Graham 1992; Alpert and Kamins 1994, 1995; Lin 1999). For instance, an exploratory study by Alpert and Kamins (1994) reported various attribute-specific beliefs held by student samples about pioneer and follower brands and found that for pioneer brands, beliefs were linked to quality, status, and innovation. For follower brands, however, the key belief was related to lower

costs. Furthermore, research by Carpenter and Nakamoto (1989) and Hoch and Ha (1986) suggest that this is the case for attributes that are ambiguous or subjective in nature. For such attributes, it was found that simple heuristics, such as pioneer status, play an important role in product evaluation. Accordingly, the assumption is made that attribute-specific perceptions towards the pioneer brand will be favorable and will emanate from a generally favorable attitude:

> H_3 : Both mature market (U.S.) and emerging market (Indian) consumers' overall attitudes as calculated by a multiattribute attitude model are significantly more favorable toward pioneer brands than follower brands.

As with earlier arguments regarding global attitudes, there is reason to believe that knowledge of pioneer status will have a significantly greater value to Indians when determined at the multidimensional level. Information asymmetries are common and product assessment is a difficult process in emerging markets (Fletcher and Melewar 2001; Kumar 2002). Compared with more mature markets, an emerging market has few vigilant and independent agencies, which can warn consumers of unscrupulous business activities (Rahman and Bhattacharyya 2003). Consumers, therefore, strive for any signal that may provide some information about the brand or at least help alleviate the ambiguity and subjectiveness associated with salient attributes (Hult, Keillor, and Hightower 2000; Bandyopadhyay 2001). In India, where the quality of local unbranded products varies widely because most products are manufactured by small, dispersed and often uncoordinated manufactures and retailers (Maxwell 2001), the pioneership construct, once identified, provides some assurance of standardized quality and a perception of innovativeness. Therefore the following hypothesis is suggested:

H_4: Emerging market (Indian) consumers' overall attitudes toward pioneer brands as calculated by a multiattribute attitude model are significantly more positive compared to those of mature (U.S.) consumers.

General Preference

Given the cognitive and affective advantages discussed previously, favorable attitudes towards pioneer brands (global and multiattribute) should translate into a preference advantage by way of a measurable intent to purchase the pioneer brand over follower brands. Domestically-based experimental studies involving MBA students have disclosed that such a preference exists (e.g., Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992). More recently, a number of international survey-based investigations found that Japanese (Alpert *et al.* 2001) and U.K. (Rettie *et al.* 2002) consumer preferences for the pioneer brand over the follower brand were also highly significant. Therefore it may be presumed that, under *ceteris paribus* conditions, both emerging market consumers and mature market consumers will prefer to purchase pioneer products rather than follower brands:

H_5 : Other things being equal, mature market (U.S.) and emerging market (Indian) consumers' prefer pioneer brands in terms of product purchase preference.

If as expected, emerging market consumers exhibit significantly more positive attitudes (globally and using a multiattribute model) than their U.S. counterparts, this should reflect a significantly more positive preference for the pioneering brand. Therefore the following hypothesis is presented:

H_6: Emerging market (Indian) consumers' preference for pioneer brands are significantly more positive compared to those of mature (U.S.) consumers.

It is important to note that other things are not always equal, As observed in previous studies (e.g., Kerin, Varadarajan, and Peterson 1992; Golder and Tellis 1993; Schnaars 1994), pioneer advantage is a complex multifaceted phenomenon, and the pioneer brand does not always "stay on top." As noted by Alpert and Kamins (1995), the effects discussed previously can only be determinative when the consumer needs a reason to choose and there is no clear reason for him or her to favor the follower brand (e.g. a follower may be favored when it alone has a preferred feature). These hypotheses thus are built on the assumption that the pioneership cue alone may be enough to determine purchase intention.

Causal Relationships (The Fishbein and Ajzen Model)

Up to this point in the chapter, hypotheses have been proposed that address potential differences between Indian and U.S. consumers regarding attitude and behavioral intent towards pioneer and follower brands. These hypotheses are consistent with previous domestic studies of behaviorally-based pioneering advantages. However, as mentioned previously, in order to obtain a full understanding of the nature of the consumer attitude and intent formation, an explicit test of the causal relationships between the three constructs (overall attitude, multiattribute attitude, and intent) is extremely important for both theoretical and managerial perspectives (Alpert, Kamins, and Graham 1992; Alpert et al. 2001). The Fishbein and Ajzen (1975) model allows for this test. As illustrated earlier, the model is structured to include both attitudinal and normative components. The idea is that behavioral intent is a function of attitudes towards the action *and* the overall perceptions of what reference groups or individuals

167 of 300

think the individual should do (Ryan 1982). Both factors are of relevance here. The following set of proposed hypotheses attempts to address these causal relationships and the differences in the strength and direction of these causal relationships between the two types of markets.

Attitudinal (Personal) Antecedents

Overall attitude towards a brand is a function of a consumer's perception of the product on salient attributes. Alpert, Kamins, and Graham (1992) and later Alpert et *al.* (2001) developed and tested a causal model as part of an examination of retail buyer attitudes towards pioneer and follower brands. Relying solely on this cognitive component of the Fishbein and Ajzen (1975) model, these scholars confirmed a link between a brand's entry order and retailer buyer beliefs about the brand, and ensuing attitude and behavior towards that brand. More specifically, the linkages led to a higher rate of acceptance for pioneer brands and lower acceptance for follower brands. In addition, Alpert, Kamins, and Graham (1992) used the multiattribute model to corroborate and help explain the retail buyer's favorable attitude towards pioneer brands and dislike for me-too followers. Based on their work and following the causal relationships suggested by the Fishbein and Ajzen (1975) model, the following hypothesis is presented:

H_7: For both mature market (U.S.) and emerging market (Indian) consumers, a chain of causality will be determined beginning with multiattribute-based attitudes, which will cause differences in overall attitudes and ultimately purchase intention.

Normative (Social) Antecedents

Previous studies of attitudes based on order of entry that utilized the Fishbein and Ajzen (1975) model (e.g., Alpert and Kamins 1994; 1995, Rettie, Hilliar, and Alpert 2002; Alpert et *al.* 2001) have virtually ignored the role of normative beliefs on the overall behavioral intent towards pioneer brands. Some scholars have argued that the exclusion of normative beliefs in determining intent in U.S. populations is not surprising given the individualistic nature of American consumers (Lee and Green 1991). However this argument is based on a perspective rooted in cultural differences between countries and not the situational context of the pioneering status. According to U.S. literature, family, friends, and salespeople who may be knowledgeable about an object of interest are valuable sources of information (Feick and Price 1987; Murray 1991; Lascu and Zinkhan 1999), particularly when few non-personal sources are available (Murry 1991), or when the product class has symbolic or communicative value (Srinivasan and Ratchford 1991). Furthermore, when information acquisition is viewed as difficult, people seek out the opinions and help of other experienced shoppers (Formisano, Olshavsky, and Tapp 1982). The pioneer status during early market development presents an environment that encompasses such situational factors. Previous studies have suggested that pioneer brands are in fact status-related and more difficult to evaluate (Alpert and Kamins 1994; 1995), thereby increasing the need for addressing normative beliefs in U.S. markets.

Also the omission of normative beliefs cannot be overlooked in the case of emerging markets. In fact, there is reason to believe that such normative beliefs will have an even more significant effect on consumer behavioral intent in emerging markets. First,

while marketing and management studies acknowledge that culture is bound by more than national boundaries (Czinkota and Ronkainen 2004), emerging markets, on average, generally exhibit certain cultural traits that are important within the context of the Fishbein and Ajzen (1975) model. Based on the dimensions put forward by Hofstede (1980) and as illustrated in Table 3, emerging markets exhibit much greater degrees of both power distance (i.e. acceptance of hierarchy and inequality as the natural order of things) and collectivism (i.e. the identity and worth of the individual is rooted in the social system) (Hofstede 1980; Fletcher and Melewar 2001). These dimensions, by their very definition, provide motivating forces behind a consumer's tendency to conform to the norms of the group rather than the pursuit of individualized goals (Czinkota and Ronkainen 2003; Johansson 2003). Both dimensions suggest an amplified influence of normative beliefs and thus social norms on consumer behavior.

Table 3
A Comparison of Developed and Emerging Markets based on Hofstede's Cultural Dimensions

	Developed Markets[1]	Emerging Markets[2]
Power Distance	38	72
Uncertainty Avoidance	58	59
Individualism	72	24
Masculinity	59	47

[1]Australia, Austria, Canada, Denmark, France, Germany, Great Britain, Italy, Japan, New Zealand, Spain, Sweden, Switzerland, USA

[2]Africa East, Africa West, Costa Rica, Guatemala, India, Jamaica, Malaysia, Mexico, Pakistan, Panama, Peru, Philippines, Thailand, Uruguay

Adapted from Fletcher and Melewar (2001)

The second notion is one that also has its origins in the culture of a society but is becoming more apparent in emerging markets as these markets become more open and consequently local consumers become more materialistic (Ger and Belk 1996; Arnold

2004). The concept of "face" is particularly salient in people of emerging markets, especially amongst the middle class (Maxwell 2001). There is more of a concern with other peoples' perceptions of themselves and with maintaining one's status in society (Malhotra and McCort 2001). Face is lost when conduct or performance falls below the minimum acceptable standard or when some essential requirements corresponding to one's social position are not satisfactorily met (Ho 1977). The individual in such a situation has no choice but to satisfy these requirements; failing to do so would threaten one's standing in society. Thus, emerging market consumers have a strong motivation not to "lose face" that is reflected in their consumption patterns (Gong 2003). They exhibit a strong tendency to purchase a product whose price, brand and package match their social position and reputation in order to not lose face (Lee 1990). This is reflective in the skewed diffusion of innovation curve mentioned previously.

In the case of India, the need to not "lose face" is reflected, in part, by the hierarchical nature of the society and the constant need to perform according to one's status. For example, the psychologist Roland (1988) writes that "urban Hindu women of the middle class in the householder stage of life spend a great deal of time dressing up – much more than US women do – so they will reflect well on their family" (p. 123). In fact, Bullis (1997) asserts that "prestige precedes practicality in consumer decision making" (p. 66) in Indian urban markets. Finally, emerging markets, including India, exhibit weakly established communication infrastructure and relatively unsophisticated consumers (Kumar 2002; Ramachandran 2000). By definition, such a market would therefore suggest the increased need for consumers to gather information via personal means and word of mouth in order to make rational consumption decisions (Johansson

2003). Following the causal relationships suggested by the Fishbein and Ajzen (1975) model and the previous conceptual arguments, the following hypotheses are presented:

H_8: For both mature market (U.S.) and emerging market (Indian) consumers, a chain of causality will be determined beginning with normative beliefs and their motivation to comply with those beliefs will cause differences in social norms which will ultimately affect purchase intention.

H_9: Emerging market (India) consumers normative beliefs regarding purchase of pioneer brands and their motivation to comply with those beliefs will be more positive in comparison to their U.S. counterparts.

Overall Model

Finally, as implied from the previous discussion, mature market (U.S.) consumers and emerging market (Indian) consumers exhibit major differences with respect to normative cultural aspects relevant to the Fishbein and Ajzen (1975) model (Lee and Green 1991). Americans' individualistic nature is clearly manifested by their resentment of conformity (Hui and Triandis 1986). In their well-cited work on cross-national value orientation, Kluckhohn and Strodbeck (1961) note that in Western cultures the individual's goals significantly outweigh group goals. This is in direct contrast to the Indian group-oriented way of life, which strongly emphasizes interdependency and conformity to group norms. Therefore, the following hypotheses are suggested:

H_{10}: For mature market (U.S.) consumers, overall attitude will affect behavioral intention more than social norms.

H_{11}: For emerging market (Indian) consumers, social norms will affect behavior intention more than overall attitude.

H_{12}: Based on overall fit, the Fishbein and Ajzen model will predict behavioral intentions towards pioneer brands better in the Indian market than in the U.S. market.

RESEARCH DESIGN

Any scientific endeavor must begin with a structure or plan that defines the number and type of entities or variables to be studied and their relationship to one another (Spector 1981). Such a structure is dubbed the research design. The intent of this study is to essentially test a theoretical model across cultural boundaries in an attempt to understand differences between consumers based on order of entry. Thus, considerable effort must be designated in research design to the development of an adequate research approach and consequently the evaluation of data equivalency and comparability across dissimilar cultures (Malhotra, Agarwal, and Peterson 1996). The following section outlines in detail the basic boundaries of this study's research design. This will include a detailed presentation of the research approach, research methods, sampling design, data collection techniques, operationalization of the constructs, and proposed analysis to be conducted in an effort to address the gaps in the literature and test the proposed hypotheses.

Research Approach

Because of the cross-cultural nature of the study, the particular research approach selected must reflect an appropriate conceptualization of culture as a knowledge system that is represented in cognitive processes and expressed in behavior (Triandis 1984). More specifically, the attitudinal and normative components of the Fishbein and Ajzen model being tested require a *combined* research approach. According to Malhotra, Agarwal, and Peterson (1996), a combined cognitive/psychological approach seems most appropriate in this situation because it allows for practical understanding of basic

processes of perceptions, cognition, emotion, and motivation behind local consumer behavior. Specifically, the *cognitive* perspective allows the external stimuli (order of entry) and internal psychological constructs (attitudinal component) to be conceptualized in terms of cognitive structures and the process of interpretation to be evaluated via an explicit theory (the Fishbein and Ajzen model). The *psychological* perspective allows for personalized social influences (normative component) of a respondent's own cognitive structure.

The second issue that must be discussed in the development of the research approach is more of a general methodological issue that deals with the comparability of data in any cross-national study (Malhotra, Agarwal, and Peterson 1996; Singh 1995; Mullen 1995). This so-called *etic-emic* dilemma refers to the difficulty of obtaining observations that are both adequate within the cultural description of a phenomenon as well as cross-culturally comparable (Berry 1969). The *emic* approach examines the phenomenon from within the system, investigates only one culture, and the criteria adapted are relative to internal characteristics of the culture (Malhotra, Agarwal, and Peterson 1996). In contrast, the *etic* approach examines the phenomenon from a position outside the system, investigates many cultures, and the criteria adapted are considered absolute or universal (Hunt 1991). When these universals are assumed, they have been termed *imposed-etic* or *pseudo-etic* (Berry 1969). This *pseudo-etic* approach has often been embraced when doing research in cross-cultural domains of analysis (Kumar 2000; Arnold 2004). This is especially true in comparisons between countries where cultural differences are assumed be to minimal, as is the case between North American and European mature markets (Album and Peterson 1984; Malhotra and McCort 2001).

However, with regards to emerging markets, significant cultural differences have been reported in comparison to mature markets (Fletcher and Melewar 2001). A variety of antecedents to culture, most prominently education, ecology, language, and family socialization, can result in differences in modes of thought (McCort and Malhotra 1994), making the universality of psychological models, such as the one used in this study, questionable (Pepitone and Triandis 1987; Amir and Sharon 1987). An *imposed-etic* approach would therefore lack the measurement equivalencies needed to make meaningful comparisons between mature and emerging consumers. The accepted resolution to this challenge is to use measures that are composed of both cross-national *etic* indicators and culture-specific *emic* indicators (Lee and Green 1991; Malhotra, Agarwal, and Peterson 1996, Malhotra and McCort 2001). That is, latent constructs are best operationalized with different measures in different cultures (Malhotra and McCort 2001). Therefore, a combined *etic/emic* viewpoint is adopted in the operationalization of the model components and development of the test instrument.

Research Method

Research methods may be described as either experimental or non-experimental. The difference between the two concerns the degree to which the investigator controls what he or she is studying (Spector 1981). An experimental design takes place when the subjects (people or social systems) and/or conditions (events or situation) to be studied are manipulated by the researcher. Non-experimental research includes work where the researcher does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulatable.

Because the beliefs and attitudes of consumers towards pioneering brands are beyond the control of the researcher in this particular study, non-experimental research methods can be considered appropriate and are utilized in the research. Also, because of the retroactive nature of consumer beliefs and attitude formation, survey methodology is viewed as most appropriate. Survey questionnaires allow for the eliciting of information from participants after the fact (Graziano and Raulin 1989). Also, while survey methodology has often been criticized for a number of reasons, including the lack of control over timeliness, the potential for low response rates, and the limited ability for in-depth probing (Hair, Bush, and Ortinau 2003), a number of research methodologists have noted its usefulness in academic marketing research for a number of reasons:

(1) Surveys provide researchers with the ability to accommodate large sample sizes, thereby increasing the generalizability of results (Hair, Bush, and Ortinau 2003).

(2) Surveys enable researchers to study large, geographically-dispersed populations at an efficient cost and in an effective manner (Kumar 2000).

(3) Surveys may be adapted to almost any research environment (Kumar 2000; McDaniel and Gates 2004).

(4) Surveys allow for the ability to identify small differences across samples (Hair, Bush, and Ortinau 2003).

(5) Surveys may be checked for the validity of the data (Graziano and Raulin 1989).

Due to the nature of the research problem and the aforementioned justifications for using survey methodology, a survey test instrument is used to collect data relevant to consumer attitudes towards pioneering brands and therefore allow for testing of the aforementioned hypotheses.

Sampling Design

In this section, three basic issues regarding the sample to be used in the study are discussed. First, the primary unit of analysis is discussed within the context of sample comparability. Second, the methodology for selecting the samples is revealed. Finally, the suggested sample size is presented.

The unit of analysis is the primary object, individual, or group under investigation (Graziano and Raulin 1989). In the case of cross-cultural research, the unit of analysis must be defined at both the macro level and the micro level. Macro-level units comprise larger segments, such as countries and cities. Micro-level units may consist of firms, customers, and specific market segments (Kumar 2000). Obviously, there must be a consistency in levels to be compared, but the difficulty of establishing such a consistency is most evident in countries such as India, where tremendous heterogeneity of culture across geographic regions is the norm (Malhotra, Agarwal, and Peterson 1996). Naroll (1970) suggested the use of so-called "cultunits" as the unit of analysis between countries. The cultunit is defined as people who are domestic speakers of common distinct language and who belong to the same state or same contact group. Because the purpose of the study is to determine differences between the U.S. and India (macro-level), individual consumers that best represent local consumer behavior in those countries (micro-level) served as the unit of analysis.

Given this unit of analysis, it is important to ensure that the samples exhibit some degree of comparability. In cross-cultural research, sample comparability is a critical issue because non-comparable samples would lead to alternative explanations for any differences in results across two cultures (Adler 1983; Douglas and Craig 1983). Based

upon the suggestions of Green and White (1976), this issue is addressed in the present study by selecting respondents from the same "occupational" group in each country. The use of such a subgroup of the population essentially limits the generalizability of the findings. However, these subgroups provide an indication of the types of similarities and differences that exist *between* the nations, this being the purpose of the dissertation. A sample of undergraduate college students is therefore employed in the study and deemed appropriate for two major reasons.

First, an adequate level of sample equivalence is maintained across cultures on key demographic variables (Lee and Green 1991; Malhotra and McCort 2001). According to Manaster and Havighurst (1972), cross-national researchers should attempt to hold four basic demographic variables constant across samples: age, sex, social class, and rural-urban residence. This can be accomplished with the use of student samples where both average age of college students and composition of male/female students are already comparable in both the U.S. and India (Maxwell 2001). In the case of social class and rural-urban residency, this shouldn't be an issue with the use of college students. This is due to the fact that, while the Indian market exhibits higher levels of social stratification, the government heavily subsidizes college education. That is, most students are usually admitted based on academic achievement alone, regardless of social class and family income level. That being said, it is important to note that, on average, students in lesser-developed nations have been found to draw from higher levels of social strata than students in more advanced countries (Green and White 1976). This concern will be discussed in more detail when presenting and interpreting results.

The second reason a student sample is utilized stems from the difficulty of gathering valid data from consumers in emerging markets. This difficulty usually stems from lower literacy rates (Kumar 2000; Johansson 2003; Samli 2004). The use of college students allows for similar education status across countries (Malhotra and McCort 2001). But also, as will be discussed in detail later, students are more likely to make their own purchase decisions, a key requirement to establish an acceptable degree of functional equivalency (Lee and Green 1991; Malhotra, Agarwal, and Peterson 1996). Accordingly, to make the groups as comparable as possible, only responses from unmarried, full-time students under the age of 30 were analyzed. This is consistent with the work of Maxwell (2001) on the differing consumption patterns between U.S. and Indian consumers. This grouping is important, since being a student is a distinct life stage for Indians (Maxwell 2001). As with their U.S. counterparts, once Indians move into a householder's stage, they assume different responsibilities, which affect their consumption and saving behavior (Jain and Joy 1997). Statistical comparisons (*t*-tests and chi-square tests) will be conducted to test for differences in age, sex, education, and living status (i.e. at or away from home).

The diverse nature of the Indian population and the distinct cultural differences across geographic locations presents researchers with a number of challenges regarding the representativeness of potential samples (Maxwell 2001). To achieve comparability in sample composition and representativeness, it may be desirable to use different sampling techniques in different cultures (Malhotra, Agarwal, and Peterson 1996). Due to the lack of basic data collection infrastructure (e.g., reliable mail and telephone services) in less-developed markets, the services of a specialized marketing research firm were utilized to

gather data in India. The research firm has a presence in 13 cities in India and has associate offices in Sri Lanka, Bangladesh and Nepal. The firm operates an incentive-based panel of some 20,000 participants largely representative of the whole Indian Subcontinent. Although panel data has been previously criticized, Churchill (1988) favorably compares the "representativeness" of a continuing household panel with data gathered from randomly selected telephone samples. His results showed that population inferences drawn from the two data collection approaches did not differed significantly. This led Churchill (1988) to deduce that "marketing questions can be addressed very effectively through controlled mail panels" (p. 7). Therefore, the firm, based on the requirements of the study, employed a cluster sampling technique from its pool of 20,000 panel members based on the key demographic variables previously mentioned. College students from approximately five geographically dispersed Indian universities who are members of the panel were included in the sample.

In the case of the U.S., a convenience sample of full-time undergraduate students registered for business courses at a mid-size regional university were used. The rationale behind utilizing this sampling technique stems from the low cost of conducting the survey and the availability of the information in a very short span of time, both issues being critical to the researcher's budgetary and time constraints. That being said, convenience sampling has often been criticized on the basis of overall reliability and validity, especially in the case where the sample might not be representative of the population (Hair, Bush, and Ortinau 2003). Also, convenience samples do not allow the researcher to assess the representativeness of the population because sampling error cannot be accurately determined. However, as mentioned previously, the critical

sampling concern to the study is one of comparability between two *similar* samples across *different* categories of countries. This is achieved even if two different sampling techniques are used (Green and White 1976; Malhotra, Agarwal, and Peterson 1996).

The final consideration regarding sampling design is one of adequate sample size. Statistical estimation of sample size in cross-national studies is often difficult, as estimates of the population variance may be unavailable or may differ from country to country (Malhotra, Agarwal, and Peterson 1996). And while no particular sample size works best in all contexts, the researcher relied on two qualitative considerations in deciding on the appropriate sample size in this study. The first deals with sample sizes customarily used in previous studies in the area. Previous cross-cultural studies of attitude formation and Behavioral Intention (BI) models have relied primarily on sample sizes between 100-250 (e.g., Lee and Green 1991; Chan and Lau 1998; Malhotra and McCort 2001). Second, because Structural Equation Modeling (SEM) will be used to analyze the causal relationships and test the later hypotheses, special consideration was given the sample size requirements noted in the methodology literature. More specifically, while individual observations are not needed, sample size plays an important role in the estimation and interpretation of SEM results (Byrne 2001). The critical question of sample size in SEM depends on the estimation procedure used. Maximum Likelihood Estimation (MLSE), the most common estimation procedure, has been found to provide valid results with sample sizes as small as 50, but is not recommended (Hair, Anderson, Tatman, and Black 1998). However as the sample size becomes too large (exceeding 400 to 500), the SEM becomes "too sensitive" and almost any difference is detected, making all goodness-of-fit measures indicate poor fit (Carmines and McIver

1981; Marsh, Balla and McDonald 1988). Therefore, while there is no correct sample size, recommendations are for a size ranging between 100 and 200. Hoelter (1983) recommends testing the model with a sample size of 200, no matter what the original sample size was, because 200 is proposed as being the "critical sample size." To be consistent with this approach, and accommodate for any missing data or incomplete surveys, a target sample of 250 was deemed appropriate for each country.

Data Collection

Data collection in India, as with most emerging markets is often the most difficult part of research (Kumar 2000). As mentioned previously, for a fee, the services of a specialized marketing research firm were utilized to gather the data. Previous discussions with firm representatives have resulted in a general consensus as to the requirements of the study and the sample needed. The particular sample requirements in terms of demographic composition (age requirements, full-time student status, and marital status) were communicated to the firm. The finalized and pretested questionnaires were submitted electronically to the firm. The firm's fieldwork staff administrated the survey via face-to-face/self-administered questionnaires in universities throughout the country. The use of face-to-face/self-administered questionnaires offers a number of distinct benefits to the researcher. First, the flexibility of face-to-face administered questionnaire allows for general questions to be answered by the test administrator. Second and more importantly, the use of face-to-face surveys allows for higher sample control resulting in elevated response rates and very limited non-response bias (Malhotra 1988, 1991; Kumar 2000). Finally, while the costs associated with personal interviews in the U.S. are

relatively high, these costs are significantly lower in India due to considerably lower interviewer costs. Data collected was prepared and delivered to the researcher in spreadsheet format for analysis. In the case of the U.S., the researcher of this study administered the questionnaire to students in the United States.

MEASUREMENT

The most popular definition of measurement is that provided by Stevens (1951) in which "measurement" was defined as "the assignment of numbers to objects or events according to rules" (p. 22). The problem with this definition, from the point of view of social scientists, is that many of the phenomena to be examined are typically too abstract to be adequately characterized as either objects or events. A more relevant definition of measurement, for social sciences purposes, is illustrated by Carmines and Zeller (1979). They defined measurement as "a process of linking abstract concepts to empirical indicants" (p. 10). This process, while apparently straightforward, is deceivingly more complicated than expected. Having said that, the difficulties associated with measurement in social sciences are only exaggerated when the research is cross-cultural in nature. This is because the validity and reliability of a cross-cultural comparison is a function of the degree of *equivalency* established for scales and measures used to obtain data from those cultures.

Equivalency

Equivalence is defined, in the context of cross-cultural research, as the degree to which constructs or measures are the same across cultures (Malhotra, Agarwal, and

Peterson 1996). Based on the work of Drasgow and Kanfer (1985), Malhotra, Agarwal, and Peterson. (1996) provided a typology of construct equivalence. Figure 6 illustrates the four basic types of equivalencies that must be addressed in cross-cultural research: functional, conceptual, instrument, and measurement equivalence.

Figure 6
Construct Equivalence in Cross-Cultural Research
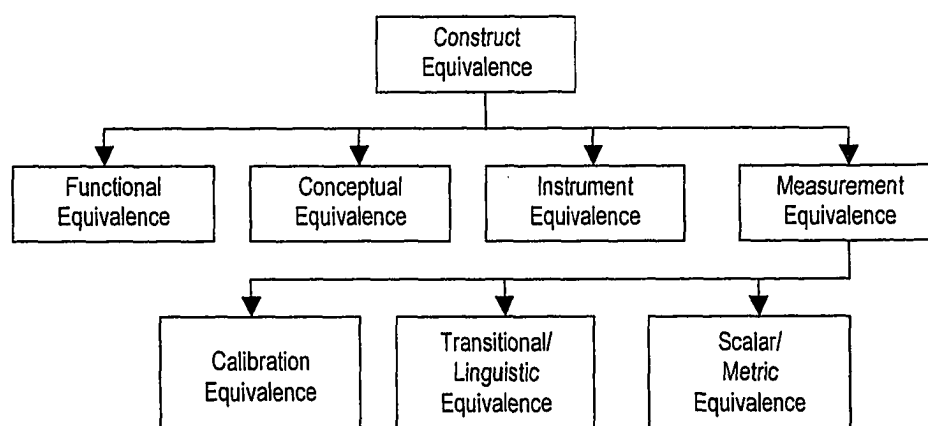
Adapted from Malhotra, Agarwal, and Peterson (1996)

Functional equivalence examines whether a given phenomenon serves the same role or function in different cultures. Functional equivalence is particularly critical in the cross-national testing of consumer behavior theory (Green and White 1976; Green and Alden 1988). This is because the actual act of purchasing may be defined differently in dissimilar cultures. In the context of this study, functional equivalence was achieved by addressing intent to purchase pioneer brands via college students. More specifically, because the purchase decisions by these groups are usually made more autonomously when compared to other potential samples, functional equivalence is achieved (Lee and

Green 1991 Malhotra and McCort 2001). *Conceptual* equivalence deals with whether the concept or construct is expressed in similar attitudes or behaviors across cultures. Problems in conceptual equivalence might arise in cross-national consumer research when testing the role that certain sociological or psychological constructs play in purchasing behavior (Green and White 1976; Hamill 1990). More specifically, cultural studies of thought processes suggest that differences in reasoning can occur (Zebrowitz-McArthur 1988). However, these studies do not suggest that individual capacities for basic processes differ (e.g., the processes of learning, categorization, or inference); rather they claim that contextual factors shape cognitive structures, so that the "ways of thinking" vary in accordance with cultural parameters (Kleine and Kernan 1991). That is, cognitive processes are universal, yet contextual factors impact the nature of a construct and likelihood of the application of particular theories in particular situations. In the case of the Fishbein and Ajzen (1975) model, a number of scholars have illustrated the model's ability to predict behavioral intention in different cultures when a student sample is used (e.g., Lee and Green 1991; Chan and Lau 1998; Malhotra and McCort 2001). Therefore, conceptual equivalence was achieved within the context of the model being tested in this study. *Instrument* equivalence deals with whether the scale items, response category, and questionnaire stimuli such as brands, products, consumer behavior, and marketing effort are interpreted identically across culture. This type of equivalency is addressed in the following section focusing on the development of the test instrument.

Measurement equivalence examines whether each scale item measures the underlying construct equivalently in cross-cultural data. As mentioned previously, the general problem of measurement equivalency is typically addressed by using or

establishing measures that are composed of a set of cross-national *etic* indicators and a set of culture-specific *emic* indicators. According to Malhotra, Agarwal, and Peterson (1996), such a combination would result in a scale with improved reliability and validity in different cultures. That is, the measurement is equivalent to the extent to which the scale furnishes homogenous indices from various cultures. Measures for specific cultures are equivalent to the extent to which the culture-specific *emic* measures are related to the identical *etic* measures. However, measurement equivalency also consists of calibration, translational, and scalar equivalence. *Calibration* equivalence examines whether the units of measurement are the same in different cultures. In this study, an effort is made to use established scales that are free of cultural biases. As suggested by Malhotra, Agarwal, and Peterson (1996), the Osgood, Suci, and Tannenbaum (1957) semantic differential scale is used to measure the constructs. While the Semantic Differential scale is by no means universally applicable, it is considered to be relatively pan-cultural. Furthermore, the scale has been tested in a number of cultures and has produced similar results (Malhotra, Agarwal, and Peterson 1996). In fact, Maxwell (2001) asserts that the semantic differential scale is most appropriate for the measuring of attitudes towards brands in India because it allows for a neutral point where respondents are not forced to make a choice if they do not have an opinion. This issue is critical to the validity and reliability of the results. Also, the use of the semantic differential scale allows for reduction of response bias and the detection of any cross-cultural tendencies in responses. Both issues are discussed in detail when interpreting the results of the study. With the exception of one construct to be explained later, all scoring methods employed a (+3 to -3) bipolar response continuum. Anchor points on these response continuums were

periodically reversed as a control for response set bias. *Translational/linguistic* equivalence refers both to the spoken and the written language forms used in scales, questionnaires, and interviews. The scales and other verbal stimuli should be translated so that they are readily understood by respondents in different cultures and have equivalent meaning. In the context of this study, India's educational system is a heritage from British colonial rule, with advanced English-language instruction that is the envy of many other developing countries (Johansson 2003). Indian participants in the study were therefore assumed to be fluent English speakers. Thus translation equivalence was generally achieved by conducting research among college students (Maxwell 2001). That being said, subtle comprehension issues regarding "American" wording in the instrument may arise in the case of foreign students (Rettie, Hilliar, and Alpert 2002). Therefore, based on the suggestions of Mullen (1995), a number of Indian students were asked to interpret the original test instrument and note any discrepancies that may cause confusion among future survey participants. The specific discrepancies are noted during the upcoming section discussing the development of the test instrument. *Scalar (metric)* equivalence examines whether the psychometric properties of data from the various cultures exhibit the same coherence or structure. This type of equivalency is associated with whether the scores obtained from respondents in different cultures have the same meaning and interpretation. This involves demonstrating that two individuals from different cultures with the same value on some variable will score at the same level on the same test. The specific scale or scoring procedure used to establish the measure should be equivalent. Scalar equivalency will be discussed in detail when interpreting the results.

Operationalization

Operationalization is a process that focuses on the design and use of questions and scale measurements to gather data often on latent or unobservable constructs (Hair, Bush, and Ortinau 2003). When it comes to the original Fishbein and Ajzen (1975) model, a major criticism has been the use of single-item measurements to operationalize the major components of the model (Ryan and Bonfield 1975; Shimp and Kavas 1984). Previous research has argued the need for multiple measures of these constructs primarily to allow for assessment of reliability and measurement error (Bagozzi 1981, 1982). However, justifications for using multiple-item scales in the context of the Fishbein and Ajzen (1975) model go beyond these methodological issues. Theoretical explanations suggest that cognitive elements regarding the consequences of a particular behavior may reasonably be expected to be qualitatively different, variable specific, and in general, not organized psychologically into a singular scheme, script, category, or other cognitive unit (e.g., Shimp and Kavas 1984). That is, attitude formation is a function of a number of attributes, too numerous to be to be captured by a single measurement (Burnkrant and Page 1982). In similar fashion, there is need for a multi-dimensional normative structure. The rationale is that internalizations of others' views may vary greatly in significance and meaning and therefore may not be organized systematically into a single, coherent cognitive unit. Research by Ryan and Bonfield (1980) offers empirical support for this multidimensional representation. Their principal component analysis of four referents identified "family" and "nonfamily" referents as distinct factors. That being said, most multi-item measures that have been employed by previous researchers in the area, at least

those to be used in this study, have been shown to possess high reliability and both convergent and discriminate validity in cross-cultural settings (Lee and Green 1991).

Test Instrument

The following discussion is a presentation of the initial selection of indicants that will be used in pre-testing the survey instruments (Exhibits A and B). Respondents were told that the survey is designed to measure attitudes towards pioneer and follower brands. In order to elicit honest responses and reduce socially-desirable answers, the voluntary nature of student participation and the anonymity of the respondent were both emphasized. The initial items of the instrument (Section "A") are designed to capture demographic information and ultimately ensure sample comparability as previously mentioned. Participants are asked to complete information regarding nationality, age, gender, marital status, and education level

Following the initial section, Section "B" provides two working definitions of the two order-of-entry terms: "pioneer" and "follower" brands. Respondent comprehension of these definitions is critical to the validity and reliability of data to be gathered from the later parts of the survey (Rettie, Hilliar, and Alpert 2002). Pioneer brands are defined as "the very first brand of a new type of product that enters the market." Follower brands are defined as "all brands of the same type of product that enter the market after the pioneer brand." Both definitions are consistent with previous work on attitudes based on order of entry (Alpert and Kamins 1995), but more importantly have been used in cross-cultural studies of first-mover advantages (e.g., Alpert, Kamins, Sakano, Onzo, and Graham 2001). While a number of other studies have made the distinction between "first me-too"

follower brands and "later me-too" follower brands (e.g., Alpert, Kamins, and Graham; Alpert, Kamins, Sakano, Onzo, and Graham 2001), these distinctions were found to be evident only in the case of industrial or retail buying situations. As in the case of Alpert and Kamins (1995), conventional wisdom suggests a lower level of consumer awareness of such distinctions and consequently are more difficult to make in consumer markets. Therefore, only two categories are presented to respondents.

The second part of Section "B" provides measures of global attitude towards pioneer and follower brands and is designed to address H_1 and H_2. Drawing on the work of previous studies in the field (e.g., Marks and Kamins 1988; Alpert and Kamins 1995), a general question of consumer attitudes towards both pioneer brands and follower brands is offered. The three-item scale is provided to determine internal consistency and provide a manipulation check. The summed score of the three bipolar items composing the scale indicates the respondent's overall attitude toward pioneer and follower brands. Alpert and Kamins (1995) report a Cronbach's Alpha of .81 for pioneer brands and .77 for follower brands using the scale.

In order to obtain a measure for attitude on a component specific basis, the researcher followed the example set by Alpert and Kamins (1995) in determining the salient attributes critical to attitude formation regarding pioneer and follower brands. First, because attitude towards a pioneer or follower brand is essentially attitude towards a product or brand, a number of items from the widely used scale of the same name presented in *Marketing Scales Handbook* (Bruner and Hensel 1992, scale #31, p.82), were utilized. In their discussion, Bruner and Hensel (1992) note the compilation of the scale from various studies but also recognize that different configurations may represent a

slightly different conceptualizing of the construct. However, previous studies have reported highly satisfactory levels of reliability in most configurations (e.g., Droge 1989; Hastak and Olsen 1989). That being the case, only items relevant to the concept of attitude towards pioneer and follower brands were selected.

Second, an exploratory study was conducted to elicit salient attributes regarding pioneer and follower brands. To accommodate the *etic-emic* dilemma and establish a level of measurement equivalency, these exploratory studies were conducted separately. The *etic* concepts are salient attributes in both cultures, but these *etic* concepts are operationalized *emically* for both the U.S. and India by eliciting them separately for each cultural group. For the U.S., 37 undergraduate students at a medium-sized urban state university were asked open-ended questions regarding the advantages and disadvantages of pioneer brands. To ensure a "U.S." sample, foreign students' responses were disregarded when obtaining the salient attributes, resulting in a sample of 32 U.S. students. This method of standard belief elicitation is commonly used in attitude research for generating a list of belief statements (Ajzen and Fishbein 1980). Respondents were instructed not to make up beliefs on the spot that might sound logical but rather to write down what they personally thought of pioneer brands and follower brands. Owing to budgetary constraints which prohibited the researcher from conducting an exploratory study in India, 14 members of the same university's Indian Student Association where asked to participate in an identical exploratory study. Only students who had been home to India in the past year and make most of their own purchasing decisions were used in the study. Both sets of responses were analyzed by the procedure reported by Ryan (1982) in which natural breaks in the frequencies of mentioned items are used to separate

salient from non-salient attributes towards pioneer and follower brands. Participants from both exploratory studies identified 9 salient attributes that were both the same across countries and consistent with those taken from the *Marketing Scales Handbook* scale in previous studies (Alpert and Kamins 1995). However, four attributes differed across the samples: "Technology" was unique to the U.S. sample and "Service," "Riskiness," and "Functionality" were unique to the Indian sample. Two distinct points are made regarding the attributes. First, the relatively high number of attributes attained goes against Fishbein and Ajzen's (1975) statement that a person's attitude towards an object is primarily determined by no more that five to nine beliefs about the object" (p. 218). However, a number of studies in the field of first-mover advantages have identified the saliency of up to 16 beliefs with relatively high reliability levels (e.g., Alpert and Kamins 1995; Alpert, Kamins, Sakano, Onzo, and Graham 2001). Second, the relative congruency of the attributes between both samples verifies functional equivalence of pioneer and follower brands across the two cultures (Lee and Green 1991).

The respective attributes regarding attitude towards pioneer and follower brands were used in developing the measures of Beliefs (E_i) and Weights (W_i) in the final questionnaire given to the samples. Section "C" is designed to elicit measures of consumer beliefs regarding pioneer and follower brand attributes. Based on the suggestions of Alpert and Kamins (1995), the strength of respondent beliefs about the pioneer brand are measured via a 7-point bipolar attribute scale, measured on a scale of −3 to +3. Evaluations or importance corresponding to the salient beliefs (Section "D") are then measured by asking respondents to assign an importance weight to each attribute on

a seven-point "important-unimportant" scale (Malhotra and McCort 2001). Both Sections "C" and "D" are designed to address H_3 and H_4.

In order to establish a measure for normative beliefs (NB), the same students who participated in the exploratory study designed to capture salient attributes were also asked to identify those referents relevant to them in purchasing pioneer or follower brands. The two samples were again similar on certain aspects but different on others. The U.S. respondents indicated the three most influential individuals or groups to be, in decreasing order of frequency, friends, family, and significant other. The Indians sample identified family, friends, and sales/marketing people to be most influential. The lack of "significant other" as a major referent in the Indian sample reflects some of the points made earlier regarding cultural variations between India and the United States. Such a distinction could be attributed to the conservative nature of Indian society where interaction between the sexes is usually frowned upon (Maxwell 2001). Also, the identification of sales/marketing-people as major referents may point to the lack of consumer sophistication in India along with the general difficulty in identifying valuable sources of information on which to make decisions (Feick and Price 1987; Samli 2004). Section "E" is therefore designed to elicit responses regarding normative beliefs based on the referents identified in each country. Based on the suggestions of Lee and Green (1991), subjects are asked to indicate on a 7-point "likely-unlikely" scale the likelihood that each referent (i.e. friend, family and significant other/salespeople) thinks they should buy the noted pioneer or follower brands.

Section "F" is concerned with motivation to comply with referents (MC). Motivation to comply is measured on a 7-point "very much-not at all" scale by having

subjects indicate how much they want to do what the respective referents think they should do. A unipolor scoring (1 to 7) instead of the usual (-3 to +3) scoring method was used because, according to Fishbein and Ajzen (1980), people are highly unlikely to be motivated to do the opposite of what their salient referents think they should do. Overall subjective norms (Section "G") are measured using two measures based on the suggestions of Lee and Green (1991) in their cross-cultural examination of the Fishbein model. The first uses the standard Fishbein and Ajzen (1975) 7-point measure using the wording: "Most people who are important to me would think I (definitely should/definitely should not) buy the pioneer/follower brand." The second measure employed the 7-point measure proposed by Shimp and Kavas (1984) in their application of the model to coupon use: "Most people who are important to me probably consider my purchase of pioneer/follower brands to be . . . (foolish/wise). Finally, behavioral intentions (BI) to purchase a pioneer brand (Section "H") is measured by two methods with 7-point "strongly agree-strongly disagree" scales. Respondents are asked to indicate if they will "consider" buying a pioneer brand and if they "intend" on buying a pioneering brand (H_5 and H_6).

The U.S. survey instrument was empirically tested using 47 students at the university (different from those who participated in the exploratory study). Based on the pretest respondents, minor modifications were made to ensure or at least increase the readability and clarify any problems that came up. Preliminary results suggested acceptable levels of reliability of the utilized scales. Also, for the Indian survey instrument, pretest results from 23 Indian students at a Middle Eastern university were evaluated. Appropriate modifications of the instrument were conducted. This included a

change and clarification of the belief items regarding "complexity" as well as the need to change the anchors for one of the scale items measuring social norms (SN) from "Foolish-Wise" to "Appropriate-Not Appropriate." Again, preliminary results suggested acceptable levels of reliability. Results from both pretests were not used in the empirical analysis.

Psychometric Assessment

Reliability is a tendency towards consistency found in repeated measurements of the same phenomenon. The more consistent the measurements, the higher the reliability of the measuring procedure; conversely, the less consistent the results, the lower the reliability. Therefore reliability refers to the "extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials" (Carmines & Zeller 1979, p .11). In general, any measurement device is valid if it does what it intends to do. Any indicator of some abstract concept is valid to the extent that it measures what it claims to measure. Therefore, while reliability focuses on a particular property of empirical indicators, validity is defined as the extent to which these indicators provide consistent results across repeated measurements (Hair, Anderson, Tatham, and Black 1998). That is, validity is concerned with the crucial relationship between concept and indicator. One must note that it is quite possible for the measuring instrument to be valid for measuring a phenomenon in one context while being entirely invalid for assessing the same phenomenon in another context. Thus one validates not the measuring instrument itself but the measuring instrument *in relation* to the purpose for which it is being used. In

general, there are three types of validity that researchers must be aware of: criterion-related (predictive) validity, content validity, and construct validity

Malhotra, Agarwal, and Peterson (1996) noted a general lack of concern with reliability and validity issues in cross-cultural marketing research. Davis, Douglas, and Silk (1981) showed that two sources of measure unreliability (assessment method and nature of the construct) can confound the comparability of cross-cultural findings. Thus substantive relationships among the constructs must be adjusted for unequal reliabilities before valid inferences can be drawn. According to Parameswaran and Yaprak (1987), in order to compare reliabilities of measures across cultures, the internal consistency of the construct indicators (usually Cronbach's Alpha) is calculated, the sample in each culture is split into subsamples, and then various constructs are used as repeated measures in a mixed (between-subjects and within-subject) ANOVA analysis. In the case of Structural Equation Modeling, assessment of the measurement model is measured by construct reliability and is calculated as:

$$\text{Construct Reliability} = \frac{(\Sigma \text{ standardized loadings})^2}{(\Sigma \text{ standardized loadings})^2 + \Sigma \varepsilon_j}$$

Where the standardized loadings are obtained directly from the software output, and the ε_j is the measurement error for each indicator. The measurement error is 1.0 minus the reliability of the indicator, which is the square of the indicator's standardized loading. The indicator reliabilities should exceed .50, which roughly corresponded to a standardized loading of 0.7 (Hair, Anderson, Tatham, and Black 1998). An extensive analysis of validity and reliability was conducted and results are reported in Chapter IV.

ANALYSIS

The data generated from the survey will be analyzed using a number of techniques. First, data specific to attitude differences will be analyzed using simple t-tests of paired samples to address the presumed significant differences *within* each country. Multiple Regression Analysis will be used to address any significant differences *between* the two countries. Second, Structural Equation Modeling (SEM) is used to address the overall model and test the latter hypotheses related to causality. This form of analysis has several advantages over traditional regression methods of testing the Fishbein model, especially with respect to cross-national research:

1. SEM allows for a simultaneous examination of a system of hypothesized equations involving multiple dependent variables (Byrne 2001; Singh 1995). That is, as a multi-group approach, SEM allows for a simultaneous estimation of a system of equations in multiple datasets (Singh 1995).

2. SEM permits the evaluation of the performance of the model as a whole (Bagozzi 1981, 1982; Ryan 1982). Specifically, SEM provides multivariate goodness-of-fit statistics including an overall chi-square statistic, and several other goodness-of-fit indices that allow the researcher to assess the correspondence of the actual input with proposed model (Hair, Anderson, Tatman, and Black 1998)

3. SEM allows the researcher to control measurement error for each construct in each cross-national data set by using its estimated alpha reliability via an "adjustment" factor (Bollen 1989; Hair, Anderson, Tatman, and Black 1998; Mackenzie 2001). This procedure is desirable because the estimated path coefficients are correlated for unequal reliability (Singh 1995).

4. SEM allows for "restricted" models with systematic constraints on hypothesized relationships across the cross-national datasets. A key implication is that the models can be tested that restricts all or selected path coefficients to be equal for cross-national datasets. This is useful for comparative analysis and yields a reasonable control on overall error rate (Lee and Green 1991).

While SEM is considered superior on a number of aspects, SEM does share three assumptions with other multivariate methods (Hair, Anderson, Tatham, and Black 1998): independent observations, random sampling of respondents, and the linearity of all relationships. In addition, SEM is more sensitive to the distributional characteristics of the data, particularly the departure from multivariate normality or strong skewness in the data. Generalized least squares (GLS), an alternative estimation method, can adjust for these violations, but the method quickly becomes impractical as the model size and complexity increases (Hair, Anderson, Tatham, and Black 1998). This has been a major concern in previous studies applying the Fishbein and Ajzen (1975) model (Ryan 1982; Malhotra and McCort 2001).

Figures 7 and 8 illustrate the measurement and structural models to be tested in the U.S. and India. Table 4 summarizes the itemized measures of these latent constructs in each model. The U.S. model indicates thirteen measures of two independent variables, which includes ten measures of W_iE_i and three measures of NB_jMC_j. For the Indian model, there are a total of 15 measures of the two independent variables, including twelve for W_iE_i and again three for NB_jMC_j. For both models, seven dependent measures are employed in the analysis: three measures of global attitude, two measures of subjective norms, and two measures of behavioral intention. Using the conventions of LISREL devised by Joreskorg and Sorbom (1986) to solve path diagrams, the figures employ the Greek notation to depict parameters to be estimated, circles to represent latent constructs, and boxes to present measures. Notwithstanding the notation, the models will be tested using AMOS 4.0 due to its user-friendly nature (Byrne 2001). Table 5 provides a detailed analysis of the hypotheses and the proposed statistical analysis to be used.

Figure 7
Measurement and Structural Model (US)
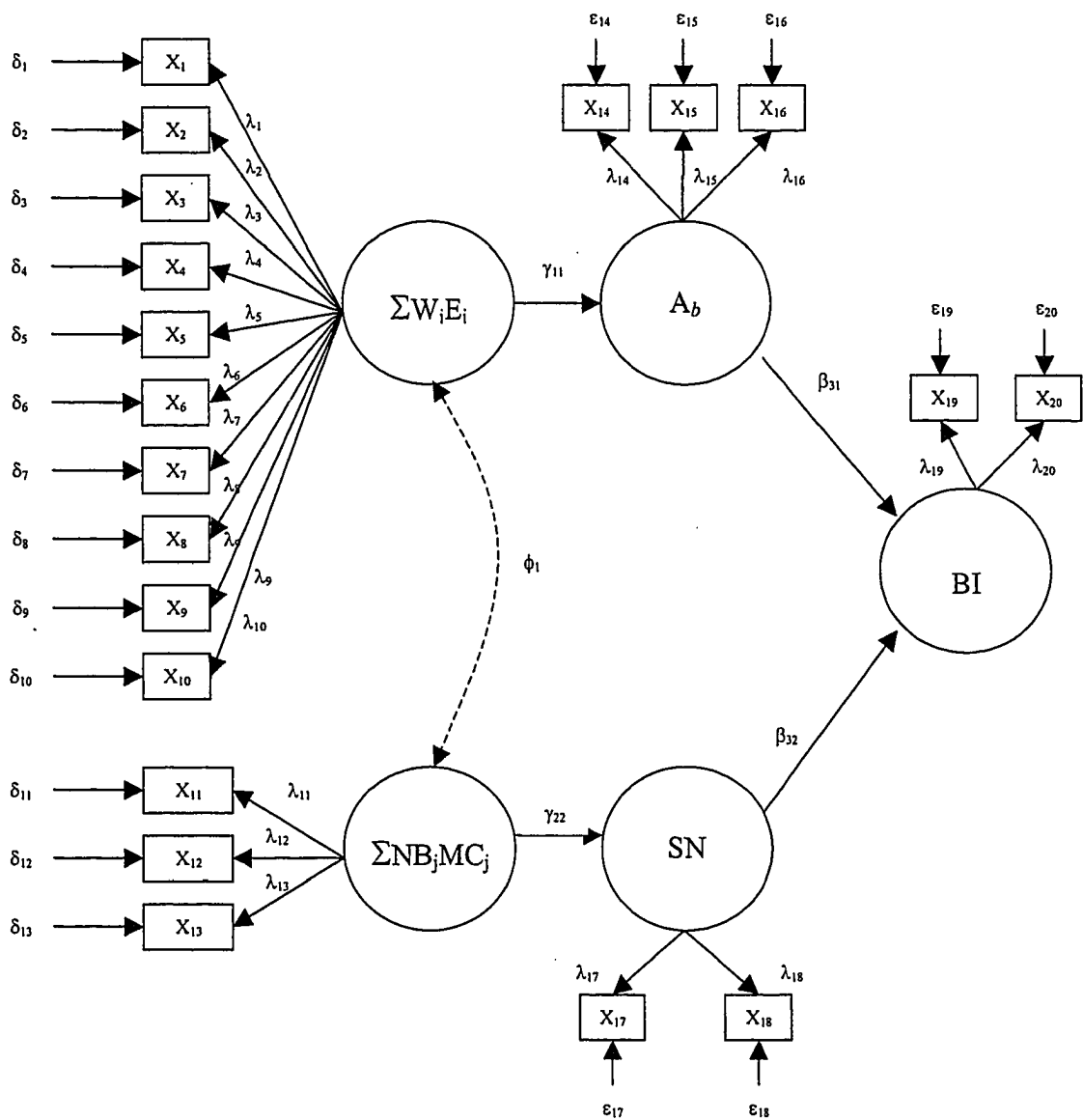
Figure 8
Measurement and Structural Model (India)
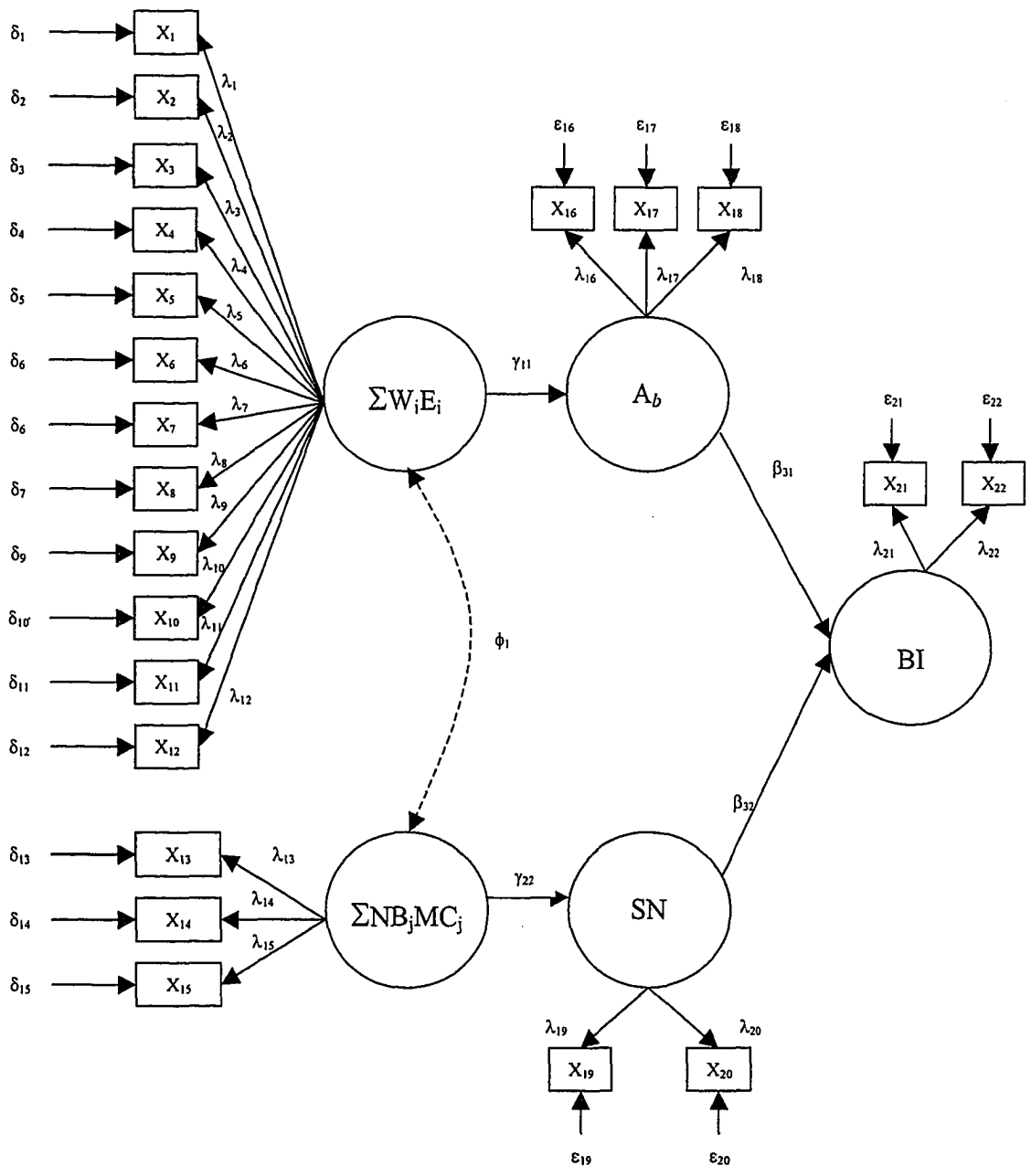
Table 4
Measures of the Proposed Models

Figure 7 (U.S.)	Variable	Measure
Independent Variables	$X_1 =$	W_1E_1 for belief "Quality"
	$X_2 =$	W_2E_2 for belief "Distinctiveness"
	$X_3 =$	W_3E_3 for belief "Inexpensive"
	$X_4 =$	W_4E_4 for belief "Status"
	$X_5 =$	W_5E_5 for belief "Reliability"
	$X_6 =$	W_6E_6 for belief "Superior"
	$X_7 =$	W_7E_7 for belief "Complex"
	$X_8 =$	W_8E_8 for belief "Good"
	$X_9 =$	W_9E_9 for belief "Desirable"
	$X_{10}=$	$W_{10}E_{10}$ for belief "Low Tech"
	$X_{11} =$	NB_1MC_1 for Referents "Family"
	$X_{12} =$	NB_2MC_2 for Referents "Friends"
	$X_{13} =$	NB_3MC_3 for Referents "Boyfriend/Girlfriend"
Dependent Variables	$X_{14} =$	Direct measure of attitude (A_b) on a "favorable-unfavorable" scale
	$X_{15} =$	Direct measure of attitude (A_b) on a "dislike-like" scale
	$X_{16} =$	Direct measure of attitude (A_b) on a "positive-negative" scale
	$X_{17} =$	Direct measure of attitude subjective norms (SN) "Should"
	$X_{18} =$	Direct measure of attitude subjective norms (SN) "Good"
	$X_{19} =$	Direct Measure of behavioral intent (BI) "Consider"
	$X_{20} =$	Direct Measure of behavioral intent (BI) "Intend"

Figure 8 (India)	Variable	Measure
Independent Variables	$X_1 =$	W_1E_1 for belief "Quality"
	$X_2 =$	W_2E_2 for belief "Distinctiveness"
	$X_3 =$	W_3E_3 for belief "Inexpensive"
	$X_4 =$	W_4E_4 for belief "Status"
	$X_5 =$	W_5E_5 for belief "Reliability"
	$X_6 =$	W_6E_6 for belief "Superior"
	$X_7 =$	W_7E_7 for belief "Complex"
	$X_8 =$	W_8E_8 for belief "Good"
	$X_9 =$	W_9E_9 for belief "Desirable"
	$X_{10}=$	$W_{10}E_{10}$ for belief "Service"
	$X_{11}=$	$W_{11}E_{11}$ for belief "Riskiness"
	$X_{12}=$	$W_{12}E_{12}$ for belief "Functionally"
	$X_{13} =$	NB_1MC_1 for Referents "Family"
	$X_{14} =$	NB_2MC_2 for Referents "Friends"
	$X_{15} =$	NB_3MC_3 for Referents "Salespeople"
Dependent Variables	$X_{16} =$	Direct measure of attitude (A_b) on a "favorable-unfavorable" scale
	$X_{17} =$	Direct measure of attitude (A_b) on a "dislike-like" scale
	$X_{18} =$	Direct measure of attitude (A_b) on a "positive-negative" scale
	$X_{19} =$	Direct measure of attitude subjective norms (SN) "Should"
	$X_{20} =$	Direct measure of attitude subjective norms (SN) "Good"
	$X_{21} =$	Direct Measure of behavioral intent (BI) "Consider"
	$X_{22} =$	Direct Measure of behavioral intent (BI) "Intend"

Except for MC, all observed variables were measured on a 7-point semantic Differential Scale with −3 and +3 as anchor points.

MC was measured on a 7-point scale with 0 and +6 as anchor point (Ajzen and Fishbein 1980).

Table 5
Hypotheses, Test Items, and Proposed Statistical Analysis

H_1 : Both mature market (U.S.) and emerging market (Indian) consumers' global attitudes are more favorable toward pioneer brands than follower brands.

Test Item	Variable	Statistical Analysis
$B1_{(US)}$, $B2_{(US)}$	A_b (Pioneer, US), A_b (Follower, US)	Paired samples t-test
$B1_{(India)}$, $B2_{(India)}$	A_b (Pioneer, India), A_b (Follower, India)	Paired samples t-test

H_2: Emerging market (Indian) consumers' global attitudes toward pioneer brands are significantly more positive compared to those of mature market (U.S.) consumers.

Test Item	Variable	Statistical Analysis
$B1_{(India)}$, $B1_{(US)}$	A_b (Pioneer, India), A_b (Pioneer, US)	Multiple Regression Analysis

H_3: Both mature market (U.S.) and emerging market (Indian) consumers' overall attitudes as calculated by a multiattribute attitude model are significantly more favorable toward pioneer brands than follower brands.

Test Item	Variable	Statistical Analysis
$C1_{(US)} \times D_{(US)}$, $C2_{(US)} \times D_{(US)}$	$\Sigma W_i E_i$ (Pioneer, US), $\Sigma W_i E_i$ (Follower, US)	Paired samples t-test
$C1_{(India)} \times D_{(India)}$, $C2_{(India)} \times D_{(India)}$	$\Sigma W_i E_i$ (Pioneer, India), $\Sigma W_i E_i$ (Follower, India)	Paired samples t-test

H_4: Emerging market (Indian) consumers' overall attitudes toward pioneer brands as calculated by a multiattribute attitude model are significantly more positive compared to those of mature (U.S.) consumers.

Test Item	Variable	Statistical Analysis
$C1_{(India)} \times D_{(India)}$, $C1_{(US)} \times D_{(US)}$	$\Sigma W_i E_i$ (Pioneer, India), $\Sigma W_i E_i$ (Pioneer, US)	Multiple Regression Analysis

H_5: Other things being equal, mature market (U.S.) and emerging market (Indian) consumers' prefer pioneer brands in terms of product purchase preference.

Test Item	Variable	Statistical Analysis
$H1_{(US)}$	$BI_{(US)}$, Null	Paired samples t-test
$H1_{(India)}$	$BI_{(India)}$, Null	Paired samples t-test

H_6: Emerging market (Indian) consumers' preferences for pioneer brands are significantly more positive compared to those of mature (U.S.) consumers.

Test Item	Variable	Statistical Analysis
$H1_{(India)}$, $H1_{(US)}$	$BI_{(India)}$, $BI_{(US)}$	Multiple Regression Analysis

H_7: For both mature market (U.S.) and emerging market (Indian) consumers, a chain of causality will be determined beginning with multiattribute-based attitudes, which will cause differences in overall attitudes and ultimately purchase intention.

Coefficient	Relationship	Statistical Analysis
$\gamma_{11\ (US)}$	$\Sigma W_i E_i \rightarrow A_b$	Statistical Significance of
$\beta_{31(US)}$	$A_b \rightarrow BI$	parameters using MLE
Coefficient	**Relationship**	**Statistical Analysis**
$\gamma_{11\ (India)}$	$\Sigma W_i E_i \rightarrow A_b$	Statistical Significance of
$\beta_{31(India)}$	$A_b \rightarrow BI$	parameters using MLE

Table 5 (Continued)

H_8: For both mature market (U.S.) and emerging market (Indian) consumers, a chain of causality will be determined beginning with normative beliefs and their motivation to comply with those beliefs will cause differences in social norms which will ultimately affect purchase intention.

Coefficient	*Relationship*	*Statistical Analysis*
$\gamma_{22\ (India)}$	$\Sigma NB_j MC_j \rightarrow SN$	Statistical Significance of
$\beta_{32(India)}$	$SN \rightarrow BI$	parameters using MLE
Coefficient	*Relationship*	*Statistical Analysis*
$\gamma_{22\ (US)}$	$\Sigma NB_j MC_j \rightarrow SN$	Statistical Significance of
$\beta_{32(US)}$	$SN \rightarrow BI$	parameters using MLE

H_9: Emerging market (India) consumers normative beliefs regarding purchase of pioneer brands and their motivation to comply with those beliefs will be more positive in comparison to their U.S. counterparts.

Test Item	*Relationship*	*Statistical Analysis*
$E_{(India)} \times F_{(India)}, E_{(US)} \times F_{(US)}$	$\Sigma NB_j MC_{j(Pioneer,\ India)}, \Sigma NB_j MC_{j(Pioneer,\ US)}$	Multiple Regression Analysis

H_{10}: For mature market (U.S.) consumers, overall attitude will affect behavioral intention more than social norms.

Coefficient	*Relationship*	*Statistical Analysis*
$\beta_{31(US)}, \beta_{32(US)}$	$A_b \rightarrow BI, SN \rightarrow BI$	Comparison of standardized estimates; Statistical significance between relative weights of A_b and SN; Assuming equal weights and effect on goodness-of-fit measures (i.e. Chi-square change).

H_{11}: For emerging market (Indian) consumers, social norms will affect behavior intention more than overall attitude.

Coefficient	*Relationship*	*Statistical Analysis*
$\beta_{31(India)}, \beta_{32(India)}$	$A_b \rightarrow BI, SN \rightarrow BI$	Comparison of standardized estimates; Statistical significance between relative weights of A_b and SN; Assuming equal weights and effect on goodness-of-fit measures (i.e. Chi-square change).

H_{12}: Based on overall fit, the Fishbein and Ajzen model will predict behavioral intentions towards pioneer brands better in the Indian market than in the U.S. market.

Coefficients	*Relationship*	*Statistical Analysis*
Goodness-of-fit measures $_{(India,\ US)}$	Entire Model	Structural Equation Modeling

CHAPTER IV

EMPIRICAL ANALYSIS

Chapter IV provides a detailed presentation of the data analysis. First, an initial discussion is devoted to the data collected in both the U.S. and India. Following this discussion, preliminary data analysis that includes an assessment of validity and reliability is presented. The final section of the chapter focuses on the testing of the hypotheses developed and presented in Chapter III.

SAMPLING AND DATA COLLECTED

A total of 465 surveys were collected, 249 in the U.S. and 217 in India. In the U.S., 32 were rejected due to age, marriage, or not being a full-time student. Nine other surveys were discarded because of excessive missing data. This left 208 usable U.S. responses. The U.S. data was collected from undergraduate students at a public mid-size regional university. On the other hand, selecting an appropriate sample and subsequent data collection in India was a more complicated matter. A country of over a billion people, India is a very diverse society, with vast differences in regional economic levels, caste, and religious-based composition (Kumar 2000; Johansson 2003). For example, as illustrated in Table 6, significant differences in the penetration of consumer durable goods exist across geographic regions.

Table 6
Regional Differences in Penetration of Consumer Durable Goods in India

Product	North	East	South	West
Refrigerators	40	18	15	27
Color Televisions	18	17	23	28
Washing Machines	13	1	4	4

From: Pathfinders Market Research Firm, "Venturing in India: Opportunities and Challenges" cited in *Business Today* (February 22, March 6, 1993).

Given these and other significant regional differences, a sample of college students from one university was deemed unrepresentative of the entire Indian population. Accordingly, data was collected via the fieldwork of a specialized marketing research firm at five geographically-dispersed public universities in India. Specifically, data was collected from universities in the major cities of New Delhi, Bangalore, Calcutta, Bombay, and Kanpur. As discussed in Chapter III, the use of *public* universities is essential to minimize differences in social stratification levels across the two countries. More specifically, because the Indian government heavily subsidizes public universities, admission to these institutions is often based on academic achievement rather than by income level. That said, Green and White (1976) note that college students in less-developed countries exhibit higher levels of social strata than in more advanced nations. This issue is discussed in detail in the limitations section of this study. Of the 217 surveys administered in India, 23 were rejected because of marriage and/or excessive missing data. This left 194 usable responses. Table 7 provides a summary of demographic characteristics associated with the final samples in both countries.

Table 7
Demographic Data of Samples

		U.S.	India
N		208	194
Age:			
	Mean	22.97	20.28
	Median	23.00	20.00
	Std. Deviation	2.57	1.56
	Range	11	7
	Minimum	18	17
	Maximum	29 ·	24
Sex:			
	Male	95	109
	Female	113	85
	Std. Deviation	.501	.241

Because sample comparability is critical to this study, a series of t- and chi-square tests were conducted to identify potential differences in sample demographics. Insignificant statistical differences emerged for education levels. However, both male/female composition as well as age failed to be held constant across the two samples. The U.S. sample was predominantly female (54.32%); whereas the Indian sample was predominantly male (56.18%). Average age was also a significant factor (22.97 in the U.S., 20.23 in India). Accordingly, direct comparisons across groups (H_2, H_4, and H_6) using independent t-tests would be inappropriate. To accommodate the affects of age and gender composition, a series of linear regression models were developed where respective differences in attitude and intention based on order of entry (pioneer vs. follower) acted as dependent variables and age, sex, and country (U.S. and India) acted as independent variables. The direction and significance of the resulting beta coefficients allow the relevant comparative hypotheses to be tested. Also, a one-way ANOVA confirmed that both sex and age have statistically significant relationships with some measures of the proposed models. As suggested by Lee and Green (1991) and Malhotra and McCort (2001), statistical control of the effects of these variables was accomplished by computing the partial correlations of the model components holding sex and age constant before further statistical testing. The resulting partial correlation matrix was used as input to the structural equation model needed to address the latter sets of hypotheses (H_7-H_{12}).

Finally, to simplify interpretation of the results, all scale items were recoded from the −3 to +3 bipolar continuum to a 1 to 7 response continuum, with 4 representing the mid-point. This was especially important in the case of both E_iW_i and NB_jMC_j, where a

response of zero on any of the individual components that make up the multiplicative score would result in a zero and therefore a misleading score for any particular attitudinal dimension or referent normative beliefs (Chan and Lau 1998).

PRELIMINARY ANALYSIS AND PSYCHOMETRIC ASSESSMENT

Reliability is a tendency towards consistency found in repeated measurements of the same phenomenon. On the other hand, any measurement device is *valid* if it does what it is intended to do. Therefore, while reliability focuses on a particular property of empirical indicators, validity is defined as the extent to which these indicators provide consistent results across repeated measurements (Hair *et al.* 1998). The following discussion represents a detailed look at these issues within the context of this study.

Validity

According to Carmines and Zeller (1979), two specific types of validity are relevant to social sciences: (1) construct validity and (2) criterion-related (predictive) validity. Construct validity " . . . is most directly related to the question of what the instrument is in fact measuring; what construct, trait, or concept underlies a person's performance or score on a measure" (Churchill 1979, p. 70). On the other hand, criterion-related validity is an issue when the purpose is to use an instrument to estimate some important form of behavior that is external to the measuring instrument itself (Nunnally (1978). Both types of validity are of particular importance in this study because the constructs of the study are based on multidimensional scales and the proposed models hypothesize a number of causal (predictive) relationships.

Little previous work on attitudes toward pioneer and follower brand explicitly addresses the issue of validity. Scholars suggest the use of exploratory factor analysis to address the issue of construct validity (e.g., Alpert and Kamins 1995; Alpert et *al.* 2001). However, the use of EFA, in most cases, seems to produce many more dimensions than can be conceptually identified (Churchill 1979). Thus, the use of factor analysis in a confirmatory fashion would appear more suitable, especially in cases where a theoretical foundation guides the development of the hypotheses (Malhotra and McCort 2001). Using structural equation modeling, Burnkrant and Page (1982) examined the construct and predictive validity of the Fishbein and Ajzen (1975) model and found evidence of both. Therefore, following the recommendations of Burnkrant and Page (1982) and Gerbing and Anderson (1988), confirmatory factor analyses of the proposed models presented in Chapter III were conducted using AMOS 4.0 software.

Table 8 illustrates preliminary parameter estimates of the models developed for the U.S. and India. Overall goodness-of-fit measures for both models were relatively weak. The U.S model exhibited a chi-square estimate of 547.822 ($p<0.000$) at 165 degrees of freedom and a goodness-of-fit measure of .812. For India, a chi-square estimate of 329.880 ($p<0.000$) at 204 degrees of freedom and a goodness-of-fit measure of .870 were found. A more detailed look indicates the insignificance of several parameters specific to measurement of the multiattribute attitude construct. Specifically, λ_3 (Price) was insignificant in the U.S., while λ_3 (Price), λ_7 (Complexity), and λ_{11} (Riskiness) were insignificant in India. Consequently, before measures for model respecification are administered and presented, a more specific analysis of this particular

construct is needed to establish acceptable levels of construct and criterion-related validity.

<div align="center">

Table 8
Parameter Estimates for Proposed Models

</div>

	U.S.				India			
Parameter	Unstandardized Estimate		Critical Ratio	Standardized Estimate	Parameter	Unstandardized Estimate		Critical Ratio	Standardized Estimate
λ_1	1.000[a]			.799	λ_1	1.000[a]			.540
λ_2	0.375	(.090)[b]	4.165	.300	λ_2	0.705	(.158)[b]	4.451	.380
λ_3	0.099	(.092)	1.084[c]	.079	λ_3	0.102	(.144)	0.707[c]	.055
λ_4	0.216	(.091)	2.373	.173	λ_4	0.436	(.149)	2.919	.235
λ_5	0.857	(.083)	10.281	.684	λ_5	1.568	(.210)	7.458	.846
λ_6	1.125	(.080)	14.075	.898	λ_6	1.342	(.193)	6.959	.724
λ_7	-0.607	(.088)	-6.926	-.484	λ_7	-0.233	(.145)	-1.607[c]	-.126
λ_8	0.785	(.085)	9.259	.627	λ_8	1.475	(.202)	7.290	.796
λ_9	0.778	(.085)	9.168	.621	λ_9	0.851	(.165)	5.161	.459
λ_{10}	0.191	(.091)	2.090	.152	λ_{10}	0.320	(.147)	2.185	.173
					λ_{11}	-0.098	(.144)	-0.683[c]	-.053
					λ_{12}	0.391	(.148)	2.641	.211
λ_{11}	0.753	(.061)	12.249	.722	λ_{13}	0.917	(.091)	10.092	.650
λ_{12}	0.848	(.059)	14.492	.813	λ_{14}	0.923	(.091)	10.152	.654
λ_{13}	1.000[a]			.959	λ_{15}	1.000[a]			.709
λ_{14}	1.000[a]			.956	λ_{16}	1.000[a]			.869
λ_{15}	0.782	(.055)	14.148	.747	λ_{17}	0.958	(.069)	13.929	.833
λ_{16}	0.902	(.048)	18.833	.862	λ_{18}	1.001	(.069)	14.610	.870
λ_{17}	0.997	(.098)	10.164	.850	λ_{19}	0.993	(.051)	19.392	.893
λ_{18}	1.000[a]			.853	λ_{20}	1.000[a]			.900
λ_{19}	1.000[a]			.921	λ_{21}	1.000[a]			.860
λ_{20}	0.954	(.061)	15.657	.875	λ_{22}	1.039	(.068)	15.295	.894
γ_{11}	0.741	(.085)	8.738	.619	γ_{11}	0.521	(.142)	3.667	.324
γ_{22}	0.496	(.068)	7.321	.558	γ_{22}	1.463	(.117)	12.499	1.152
β_{21}	0.662	(.053)	12.418	.721	β_{21}	0.222	(.049)	4.480	.228
β_{32}	-0.332	(.060)	-5.498	-.322	β_{32}	0.786	(.060)	13.196	.837
ϕ_1	.045	(5.08)	.009[c]		ϕ_1	1.726	(2.31)	.746[c]	

Overall Fit Measures

						Overall Fit Measures		
χ^2 (df)	547.822	(165)			χ^2 (df)	329.880	(204)	
GFI	.812				GFI	.870		
NFI	.778				NFI	.843		

[a] Parameter constrained to this value
[b] Standard error of the estimate
[c] Not statistically significant at 0.05 level

The operational indicator of the degree of correspondence between a test and a criterion can be estimated by the size of their correlation (Carmines and Zeller 1979). The Fishbein and Ajzen (1975) model hypothesizes that global attitudes are a function of the multiattribute construct. That is, attitude towards pioneer and follower brands is assumed to be measured via either a 3-item global scale or a multi-attributional construct. This implies that both are essentially designed to measure the same construct (Ryan 1982; Shimp and Kavas 1984). According to Churchill (1979), evidence of convergent validity of the measure " . . . is provided by the extent to which it correlates highly with other methods designed to measure the same construct" (p. 70). Therefore, analyzing the bivariate correlations between the multiattribute model and the summated scale of global attitudes allows for an assessment of validity. Ajzen and Fishbein (1980) suggest that satisfactory thresholds of criterion validity for the multiattribute attitude model begin with absolute correlation values in the range of 0.3. As seen in Table 9, mean differences in global attitudes toward entry order were correlated with mean differences in entry order attitude drawn from the multiattribute attitude model for both countries.

Table 9
Correlation of Global and Multiattribute Attitudinal Differences Based on Order of Entry

U.S.				
Order of Entry	Global Attitude Mean	Multiattribute Mean	Correlation Coefficient	P-Value H_o: r=0
Pioneer - Follower	4.264	30.923	.520	.000

India				
Order of Entry	Global Attitude Mean	Multiattribute Mean	Correlation Coefficient	P-Value H_o: r=0
Pioneer - Follower	7.829	43.138	.322	.038

For both countries, the null hypothesis that there is no correlation between both constructs is rejected at the .05 level. This suggests that the construct of global attitude is

related to the multiattribute attitude construct. However, despite illustrating an adequate level of predictive validity, Ajzen and Fishbein (1980) note the inherent inability of this type of correlation analysis to pinpoint potential problems associated with individual dimensions that make up the multiattribute construct. Consequently, as recommended by Fishbein and Ajzen (1980), a correlation analysis that focused on the mean attitudinal differences between pioneers and followers based on *individual* indicators of the multiattribute construct was conducted. Table 10 outlines the correlations between these individual components and the summated global attitudinal mean scores.

Table 10
Correlations of Individual Components of the Multi-Attribute Model and
Global Attitudinal Measure Based on Order of Entry

	Scale Item	Mean Score of Item	Mean Global Attitude Score	Correlation Coefficient	P-Value H_0: r=0
	U.S.				
X_1	Poor Quality – High Quality	11.908	4.264	.589	.000
X_2	Not Distinctive – Very Distinctive	13.187	4.264	.218	.002
X_3	Expensive – Inexpensive	12.031	4.264	.035	.613
X_4	Not a Status Symbol – Status Symbol	13.211	4.264	.149	.032
X_5	Unreliable – Reliable	5.504	4.264	.541	.000
X_6	Inferior – Superior	5.716	4.264	.546	.000
X_7	Complex - Simple	11.094	4.264	-.079	.642
X_8	Bad – Good	-0.721	4.264	.453	.000
X_9	Undesirable – Desirable	8.375	4.264	.436	.000
X_{10}	Low Tech – High Tech	17.862	4.264	.179	.012
	India				
X_1	Poor Quality – High Quality	12.469	7.829	-.100	.046
X_2	Not Distinctive – Very Distinctive	14.510	7.829	.039	.085
X_3	Expensive – Inexpensive	12.822	7.829	.015	.837
X_4	Not a Status Symbol – Status Symbol	15.216	7.829	.015	.087
X_5	Unreliable – Reliable	13.051	7.829	-.089	.021
X_6	Inferior – Superior	5.860	7.829	.151	.036
X_7	Complex - Simple	9.982	7.829	-.090	.211
X_8	Bad – Good	6.118	7.829	.045	.034
X_9	Undesirable – Desirable	10.288	7.829	.043	.078
X_{10}	Poor Service – Excellent Service	6.396	7.829	-.023	.043
X_{11}	Risky – Not Risky	17.513	7.829	-.013	.754
X_{12}	Not Functional – Functional	2.726	7.829	-.013	.057

The null hypothesis that there is no correlation between individual dimensions and the global attitude score was rejected at the 0.05 level for the U.S. data on all but three dimensions. Only X_3 (Expensive-Inexpensive), X_7 (Complex-Simple), and X_{10} (Low Tech-High Tech) had insignificant correlations with the global attitude construct. That is, more positive global attitudes towards the pioneer (or follower) are associated with more positive perceptions of the pioneer (or follower) in terms of quality, distinctiveness, status, reliability, superiority, goodness, and desirability. In the case of India, less than desirable correlations were found. The null hypothesis was rejected at the 0.05 level on only four of the twelve correlations. At the 0.10 level, however, nine of the twelve correlations were significant. Three dimensions exhibited insignificant correlations with the global attitude score. Specifically, the correlations of X_3 (Expensive-Inexpensive), X_7 (Complex-Simple), and X_{11} (Risky-Not-Risky) were insignificant with the global attitude score. As with the U.S. sample, global consumer attitudes towards the pioneer (or follower) are associated with more positive perceptions of quality, distinctiveness, status, reliability, superiority, goodness, desirability, service, and functionality. Based on these strictly empirical results, elimination of the potentially dampening variables may be desirable. However, Churchill (1979) suggests that the decision to eliminate any dimension must be based on subsequent calculations of reliability measures and, more importantly, theoretical justification.

Both sets of results suggest that the respective attributes in question may not be salient to consumers when forming an attitude based on order of entry. Fishbein and Ajzen (1975) suggest that a person's attitude towards an object is " . . . primarily determined by no more than five to nine beliefs about the object " (p. 218). That is, under

most circumstances, a person's beliefs and subsequent attitudes are based on only those that are salient at a given time. This is not to say that consumers never take them into consideration when forming an attitude towards a brand. Indeed, Fishbein and Ajzen (1975) note that, given time and incentive, a person may take a much larger set of attributes into account, while salient beliefs themselves may strengthen or weaken or be replaced by new ones over time.

Previous studies on attitude formation suggest that pricing of the product becomes less important when order of entry is known (e.g., Bond and Lean 1977; Whitten 1979; Carpenter and Nakamoto 1989; Rettie et *al.* 2002). More specifically consumers, through prior exposure and successful outcomes associated with the pioneer brand, develop a particular preference structure based primarily on positive perceived quality and distinctiveness, but not on price. Price becomes a relevant issue to the pioneer only " . . . as the second entrant becomes increasingly differentiated" (Carpenter and Nakamoto 1989, p. 297). In this study, consumers reported their beliefs towards the attributes based on two products differentiated solely by order-of-entry. Therefore, it may not be surprising that price is not a relevant factor in terms of formation of attitudes toward pioneer (or follower) brands. Indeed, a number of scholars have found that the growing middle class in India exhibit less price sensitivity in their purchase decisions (Bandyopadhyay 2001; Maxwell 2001; Rahman and Bhattacharyya 2003).

In the case of product complexity and degree of technology, Carpenter and Nakamoto (1994) imply that such variables may be irrelevant to consumers. They note that in mature markets pioneers may attempt to differentiate their products on attributes that *appear* to be valuable but upon closer examination are irrelevant to consumers in

terms of attitude formation and development of a preference structure once order-of entry is known. They term this *meaningless differentiation*. Also, Alpert and Kamins (1995) note that both product complexity and technology level tend to slow down the diffusion of innovation process (Rogers 1971). As discussed in Chapter III, diffusion of innovation theories rarely apply in emerging markets like India. Evidence suggests that emerging markets exhibit very asymmetric diffusion curves with more consumers making up earlier categories of innovators, early adapters, and early majority. Such a case implies that both attributes might not be relevant to consumers in these types of markets. This could also explain the irrelevance of "Riskiness" with the Indian sample.

Irwin et *al.* (1977) note one final point regarding validity that is of interest to this study. Specifically, Irwin et *al.* (1977) identified three types of validity that are relevant to construct and criterion validity in cross-cultural studies: (1) imposed *etic* validity, (2) *emic* validity, and (3) derived *etic* validity. Support for imposed *etic* validity can be demonstrated by correctly predicting an outcome in a culture based on a theory imposed from another. *Emic* validity is established when prediction can be made in a culture based on a theory or construct derived from that same culture. The final validity, derived *etic* validity, can be demonstrated only after the first two validities have been established. That is, the use of *emic* content to measure an *etic* construct would establish derived *etic* validity (Davidson et *al.* 1976). Extensive evidence for the predictive validity of the Fishbein and Ajzen (1975) model in cross-cultural settings exists (e.g., Cote and Tansuhaj 1989; Lee and Green 1991; Malhotra and McCort 2001). However, this evidence suggests that such validity is contingent on the use of *emically*-derived measures of the *etic* constructs presented by the model. As mentioned in Chapter III,

model constructs were operationalized using this combined etic-emic approach, therefore suggesting that the models in this study exhibit criterion-related validity. The upcoming discussion of the hypotheses will empirically corroborate this notion.

Reliability

Having addressed validity, the next discussion focuses on the reliability of the study's constructs. Reliability is an assessment of the degree of consistency between multiple measurements of a variable. The most commonly used measure of reliability is *internal consistency*, which applies to the consistency among the variables in a summated scale. The rationale for internal consistency is that the individual items or indicators of the scale should all be measuring the same construct and thus be highly intercorrelated (Hair *et al.* 1998). Three diagnostic measures of internal consistency are addressed here. First, there are several measures relating to each *separate* item, including the item-to-total correlation (the correlation of the item to the summated scale score) and the inter-item correlation (the correlation among the items). The rationale is that if all items in a measure are drawn from the domain of a single construct, responses to those items should be highly interrelated (Churchill 1979). On the other hand, low item-to-total and item-to-item correlations indicate that some items are not drawn from the appropriate domain and are producing error and unreliability. Rules of thumb suggest that the item-to-total correlations should exceed .50 and the inter-item correlations should exceed .30 (Robinson, Shaver, and Wrightsman 1991). For both samples, item-to-total and item-to-item correlation thresholds were met for all construct scale items except for some of those specific to multiattribute attitudes toward pioneer and follower brands. Tables 11 and 12

illustrate the inter-item and item-to-summated scale correlations of belief items in the multiattribute measure of attitude. As expected, X_3 (Expensive-Inexpensive), X_7 (Complex-Simple), and X_{10} (Low Tech-High Tech) exhibited insignificant item-to-total correlations with the summated scale $\Sigma W_i E_i$ for both pioneer and follower brands in the U.S. sample. For India, X_3 (Expensive-Inexpensive), X_7 (Complex-Simple), and X_{11} (Risky-Not Risky) demonstrated low item-to-total correlations for both types of brands. These results provide empirical evidence of variable instability and the potential for reducing construct reliability (Carmines and Zeller 1979). Therefore, special attention was given to these indicators during the investigation of reliability scores.

Table 11
Internal Consistency Based on Item-to-Total & Intra-Item Correlations of Beliefs
(U.S.)

| | Pioneer Brands | | | | | | | | | | |
	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	$\Sigma W_i E_i$
X_1	1.000										
X_2	.217	1.000									
X_3	.133	.061	1.000								
X_4	.112	.288	-.138	1.000							
X_5	.553	.239	.052	-.117	1.000						
X_6	.720	.278	.112	.102	.639	1.000					
X_7	-.399	.121	.136	.022	-.464	-.400	1.000				
X_8	.546	.324	.103	-.212	.668	.544	-.442	1.000			
X_9	.161	.257	-.237	.164	.397	.301	-.155	.419	1.000		
X_{10}	.094	.067	.038	.076	.211	.082	-.450	.232	.081	1.000	
$\Sigma W_i E_i$	.686	.620	.228	.518	.688	.745	-.234	.693	.554	.280	1.000

| | Follower Brands | | | | | | | | | | |
	X_{21}	X_{22}	X_{23}	X_{24}	X_{25}	X_{26}	X_{27}	X_{28}	X_{29}	X_{30}	$\Sigma W_i E_i$
X_1	1.000										
X_2	.253	1.000									
X_3	-.225	-.015	1.000								
X_4	.208	.381	.113	1.000							
X_5	.639	.152	-.047	.297	1.000						
X_6	.543	.250	.155	.403	.557	1.000					
X_7	.115	.051	-.065	-.132	-.036	-.039	1.000				
X_8	.240	.444	.217	.190	.165	.434	-.008	1.000			
X_9	.395	.200	.175	.506	.499	.610	-.162	.456	1.000		
X_{10}	.291	.166	.119	.341	.173	.393	-.357	.380	.391	1.000	
$\Sigma W_i E_i$	.632	.598	.265	.610	.618	.784	.081	.653	.774	.419	1.000

Table 12
Internal Consistency Based on Item-to-Total & Intra-Item Correlations of Beliefs
(India)

Pioneer Brands

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	$\Sigma W_i E_i$
X_1	1.000												
X_2	.202	1.000											
X_3	.067	.058	1.000										
X_4	.195	.498	-.078	1.000									
X_5	.463	.246	.020	-.013	1.000								
X_6	.601	.302	.137	.182	.638	1.000							
X_7	-.053	-.034	.190	-.027	-.135	-.064	1.000						
X_8	.428	.314	.069	.011	.675	.537	-.089	1.000					
X_9	.116	.262	-.200	.201	.388	.270	-.052	.412	1.000				
X_{10}	.021	.217	-.131	.156	.116	.096	-.134	.189	.052	1.000			
X_{11}	-.009	-.015	.002	.048	-.053	-.050	-.019	-.008	-.102	.088	1.000		
X_{12}	.134	.274	.171	.031	.128	.135	.133	.181	.103	-.068	-.019	1.000	
$\Sigma W_i E_i$	.569	.535	.021	.524	.662	.668	.080	.717	.570	.584	.217	.568	1.000

Follower Brands

	X_{23}	X_{24}	X_{25}	X_{26}	X_{27}	X_{28}	X_{29}	X_{30}	X_{31}	X_{32}	X_{33}	X_{34}	$\Sigma W_i E_i$
X_1	1.000												
X_2	.036	1.000											
X_3	-.121	-.094	1.000										
X_4	-.042	.050	.031	1.000									
X_5	.265	.158	.013	-.075	1.000								
X_6	-.130	.229	-.060	.232	-.008	1.000							
X_7	-.066	-.040	.092	-.083	-.085	.006	1.000						
X_8	.093	.095	.060	.035	.416	.037	-.053	1.000					
X_9	-.060	-.005	-.121	-.002	-.005	.004	-.091	-.112	1.000				
X_{10}	.049	.103	-.119	.008	-.098	.060	-.137	-.093	.090	1.000			
X_{11}	-.035	.017	-.090	-.004	.041	-.025	-.031	-.028	.026	.094	1.000		
X_{12}	-.044	.224	.068	-.021	.064	.179	.176	-.026	-.058	.041	-.016	1.000	
$\Sigma W_i E_i$	.601	.536	-.091	.592	.580	.690	.193	.556	.556	.640	.342	.554	1.000

The second and more common type of diagnostic measure is the reliability coefficient that assesses the internal consistency of the *entire* scale, with Cronbach's Alpha being the most widely reported measure. The generally agreed upon lower limit for Cronbach's Alpha is .70 (Robinson, Shaver, and Wrightsman 1991). However, in a more detailed interpretation of Cronbach's Alpha scores, DeVellis (1991) suggested that the appropriate guidelines for alpha scores should be: "below .60, unacceptable; between .60 and .65, undesirable; between .65 and .70, minimally acceptable; between .70 and .80, respectable; between .80 and .90, very good" (p. 85). As the next section illustrates, all

constructs exhibit acceptable levels of reliability as measured by Cronbach's Alpha. However, as expected, Cronbach's alpha scores for the multiattribute attitude construct were less than desirable when the entire set of scale items were used in the calculation. Alpha scores for the multiattribute attitude constructs ranged from "respectable" to "unacceptable." More specifically, Cronbach's alpha for the multiattribute attitude construct in the U.S. for pioneer brands was .6402 and .7285 for follower brands. On the other hand, scores were .6469 for pioneer brands and .5555 for follower brands in India.

As a result, a series of iterations of Cronbach's alpha calculations based on the deletion of each individual item from the multiattribute construct was conducted. As illustrated in Tables 13 and 14, reliability scores significantly improved with the elimination of certain common items. Specifically, the same three indicators were found to have a negative impact on reliability. Given the theoretical justifications mentioned previously, as well as the dampening effect of these indicators, a decision was made to delete X_3 (Inexpensive), X_7 (Complexity), and X_{10} (Low Tech) from the U.S. measure of multiattribute attitude and X_3 (Inexpensive), X_7 (Complexity), and X_{11} (Riskiness) from the Indian one.

Table 13
Reliability Analysis (Cronbach's Alpha) of Belief Dimensions for Pioneer and Follower Brands (U.S.)

Pioneer (Entire) Scale Reliability: α = .6402			Follower (Entire) Scale Reliability: α = .7285		
Variable	Dimension	Alpha if item is deleted	Variable	Dimension	Alpha if item is deleted
X_1	Quality	.5640	X_1	Quality	.6884
X_2	Distinctiveness	.5742	X_2	Distinctiveness	.7093
X_3	Inexpensive	.6578	X_3	Inexpensive	.7517
X_4	Status Symbol	.6303	X_4	Status Symbol	.6945
X_5	Reliability	.5608	X_5	Reliability	.6914
X_6	Superiority	.5424	X_6	Superiority	.6637
X_7	Complexity	.7391	X_7	Complexity	.7857
X_8	Goodness	.5441	X_8	Goodness	.6870
X_9	Desirability	.6086	X_9	Desirability	.6547
X_{10}	Technology	.6506	X_{10}	Technology	.7080

Table 14
Reliability Analysis (Cronbach's Alpha) of Belief Dimensions for Pioneer and Follower Brands
(India)

Pioneer (Entire) Scale Reliability: α = .6469			Follower (Entire) Scale Reliability: α = .5555		
Variable	Dimension	Alpha if item is deleted	Variable	Dimension	Alpha if item is deleted
X_1	Quality	.5977	X_1	Quality	.4898
X_2	Distinctiveness	.5918	X_2	Distinctiveness	.4979
X_3	Inexpensive	**.6651**	X_3	Inexpensive	**.5812**
X_4	Status Symbol	.6367	X_4	Status Symbol	.5242
X_5	Reliability	.5847	X_5	Reliability	.5486
X_6	Superiority	.5669	X_6	Superiority	.4366
X_7	Complexity	**.6729**	X_7	Complexity	**.5950**
X_8	Goodness	.5665	X_8	Goodness	.4599
X_9	Desirability	.6245	X_9	Desirability	.5346
X_{10}	Service	.6354	X_{10}	Service	.5492
X_{11}	Riskiness	**.6811**	X_{11}	Riskiness	**.5990**
X_{12}	Functionality	.6373	X_{12}	Functionality	.5313

Finally, as discussed in Chapter III, a third measurement of construct reliability may be obtained based on the standardized loadings obtained directly from the structural equation modeling output (Table 8). That is, a construct's reliability is measured as:

$$\text{Construct Reliability} \quad = \frac{(\Sigma \text{ standardized loadings})^2}{(\Sigma \text{ standardized loadings})^2 + \Sigma \varepsilon_j}$$

According to Hair et al. (1998), indicator reliabilities should exceed .50, which roughly corresponds to a standardized loading of .70. For the multiattribute construct, reliability was equal to .6736 in the U.S. and .6532 in India. Both scores are "undesirable" at best. Therefore, as with calculations of alpha coefficients, the three variables in question were dropped from the analysis. The result was a dramatic improvement in reliability to .7906 in the U.S. and .7454 in India. The final reliability scores (SEM construct reliability and Cronbach's Alpha) for all the model constructs are presented in Table 15. The scores indicate that the constructs are reasonably reliable for both groups.

Table 15
Reliability Scores of Constructs

U.S.

Construct	Scale Item	Measure	SEM Construct Reliability*	Cronbach's Alpha
Multiattribute Attitude (WiEi)			.7906	.7830
	$X_1 =$	W_1E_1 for belief "Quality"		
	$X_2 =$	W_2E_2 for belief "Distinctiveness"		
	$X_4 =$	W_4E_4 for belief "Status"		
	$X_5 =$	W_5E_5 for belief "Reliability"		
	$X_6 =$	W_6E_6 for belief "Superior"		
	$X_8 =$	W_8E_8 for belief "Good"		
	$X_9 =$	W_9E_9 for belief "Desirable"		
Normative Component (NBjMCj)			.8727	.8677
	$X_{11} =$	NB_1MC_1 for referents "Friends"		
	$X_{12} =$	NB_2MC_2 for referents "Family"		
	$X_{13} =$	NB_3MC_3 for referents "Boyfriend/Girlfriend"		
Global Attitude (Ab)			.8871	.8895
	$X_{14} =$	Direct measure of attitude (A_b) on a "favorable-unfavorable" scale		
	$X_{15} =$	Direct measure of attitude (A_b) on a "dislike-like" scale		
	$X_{16} =$	Direct measure of attitude (A_b) on a "positive-negative" scale		
Social Norms (SN)			.8441	.8444
	$X_{17} =$	Direct measure of attitude subjective norms (SN) "Should"		
	$X_{18} =$	Direct measure of attitude subjective norms (SN) "Good"		
Behavioral Intention (BI)			.8926	.9011
	$X_{19} =$	Direct Measure of behavioral intent (BI) "Consider"		
	$X_{20} =$	Direct Measure of behavioral intent (BI) "Intend"		

India

Construct	Scale Item	Measure	SEM Construct Reliability*	Cronbach's Alpha
Multiattribute Attitude (WiEi)			.7454	.7375
	$X_1 =$	W_1E_1 for belief "Quality"		
	$X_2 =$	W_2E_2 for belief "Distinctiveness"		
	$X_4 =$	W_4E_4 for belief "Status"		
	$X_5 =$	W_5E_5 for belief "Reliability"		
	$X_6 =$	W_6E_6 for belief "Superior"		
	$X_8 =$	W_8E_8 for belief "Good"		
	$X_9 =$	W_9E_9 for belief "Desirable"		
	$X_{10}=$	$W_{10}E_{10}$ for belief "Service"		
	$X_{12}=$	$W_{12}E_{12}$ for belief "Functionally"		
Normative Component (NBjMCj)			.7677	.7402
	$X_{13} =$	NB_1MC_1 for referents "Family"		
	$X_{14} =$	NB_2MC_2 for referents "Friends"		
	$X_{15} =$	NB_3MC_3 for referents "Salespeople"		
Global Attitude (Ab)			.8558	.8671
	$X_{16} =$	Direct measure of attitude (A_b) on a "favorable-unfavorable" scale		
	$X_{17} =$	Direct measure of attitude (A_b) on a "dislike-like" scale		
	$X_{18} =$	Direct measure of attitude (A_b) on a "positive-negative" scale		
Social Norms (SN)			.8884	.8743
	$X_{19} =$	Direct measure of attitude subjective norms (SN) "Should"		
	$X_{20} =$	Direct measure of attitude subjective norms (SN) "Good"		
Behavioral Intention (BI)			.8645	.8694
	$X_{21} =$	Direct Measure of behavioral intent (BI) "Consider"		
	$X_{22} =$	Direct Measure of behavioral intent (BI) "Intend"		

$$\text{*Construct Reliability} = \frac{(\Sigma \text{ standardized loadings})^2}{(\Sigma \text{ standardized loadings})^2 + \Sigma \varepsilon_j}$$

HYPOTHESIS TESTING

Attitudes and Intentions Based on Order of Entry

Hypothesis H₁

The first research hypothesis examined potential differences in global attitudes toward pioneer and follower brands among Indian and U.S. consumers. That is, the hypothesis addressed whether attitude towards a brand differs if the consumer consciously knows the brand's relative order of entry into the market. This construct was measured via a three-item scale presented by Alpert and Kamins (1995). Consumers were asked to state their attitudes toward both pioneer and follower brands based upon the three attitude measures. A consumer's response on the three is summed and composes his or her global attitude score towards the particular product category. The responses of consumers in the U.S. and India are shown in Table 16.

Table 16
Global Attitudes based on Order of Entry

Order of Entry	U.S.	India
Pioneer brand (Overall)	14.54 (4.21)*	17.21 (3.01)*
"Favorable-Unfavorable"	4.95 (1.59)	5.87 (1.09)
"Dislike-Like"	4.91 (1.41)	5.55 (1.15)
"Positive-Negative"	4.67 (1.63)	5.78 (1.11)
Follower brand (Overall)	10.27 (4.24)	9.38 (3.94)
"Favorable-Unfavorable"	3.27 (1.52)	3.06 (1.42)
"Dislike-Like"	3.48 (1.51)	3.22 (1.32)
"Positive-Negative"	3.52 (1.65)	3.10 (1.42)

* Standard Deviation

To test for attitudinal differences based on order of entry, a paired-sample *t*-test was conducted within the counties. Although age and sex were not constant across the two samples, the use of this univariate test is considered appropriate in this case. A paired *t*-test can be effective even when individuals show significant of variation from one to another. Since the statistical analysis concentrates on *changes*, it tends to ignore the (potentially confusing) variation in absolute levels of individuals. That is, a paired *t*-test is not distracted by individual variability in its methods to detect a systematic change (Siegal 2000).

As illustrated in Table 17, a statistically significant difference in global attitudes based on order of entry exists in both countries. Moreover, the positive sign of the differences suggests that consumers in both countries hold a more favorable global attitude towards pioneer brands compared to follower brands. Therefore, H_1 is supported.

Table 17
Global Attitudinal Differences based on Order of Entry

U.S.					
Pioneer Mean	Follower Mean	Mean Difference of Attitude	N	t-value	Prob t H: Mean = 0
14.54	10.27	4.27	208	8.787	.000

India					
Pioneer Mean	Follower Mean	Mean Difference of Attitude	N	t-value	Prob t H: Mean = 0
17.21	9.38	7.83	194	19.371	.000

Hypothesis H_2

The second hypothesis addresses the potential differences in global attitudes between consumers in the U.S. and India. Unlike H_1, this hypothesis involves a cross-cultural comparison. Therefore the issue of average age and sex inconsistency across

samples is relevant. An independent-samples *t*-test would be inappropriate to test the hypothesis because, unlike paired-sample *t*-tests, this statistical method fails to consider individual variability (Siegal 2000). Therefore results from this test may be distorted by sample differences. As mentioned earlier in the chapter, an alternative method of testing involves the use of multiple regression analysis. Specifically, testing for the significance of global attitudinal differences based on order of entry between the samples can be accomplished by setting "differences in global attitudes toward pioneer and follower brands" as a dependent variable and "age," "sex," and "country" as independent variables. Dummy variables are used to represent both "sex" (male=1, famale=0) and "country" (U.S.=1, India=0). The significance and direction of the resulting beta coefficient for the "country" variable will indicate the strength of global attitudinal differences between countries. As illustrated in Table 18, results of the regression analysis (R^2= .074, p=0.000) and, more specifically, the beta coefficient of "country" (β= -3.746, p=0.000) suggest that there is a statistically significant difference in global attitudes toward pioneer brands in the two countries. More importantly, because the U.S. was coded as a 1 and India as a 0, a negative beta coefficient for "country" implies that Indian consumer attitudes towards pioneer brands are significantly greater than those of their U.S. counterparts. Therefore, H_2 is supported.

Table 18
Coefficients of Regression Analysis – Difference in Global Attitudes based on Order of Entry

	Unstandardized Coefficient		Standardized Coefficient	t value	Sig.
	B	Std. Error	Beta		
Constant	6.218	2.806		2.216	.027
Age	.007	.136	.031	.550	.582
Sex	.161	.645	.012	.250	.803
Country	-.3.746	.745	-.283	-5.026	.000

Hypothesis H₃

H_3 addresses U.S. and Indian consumer attitudes (measured at the multiattribute level) based on order-of-entry. The multiattribute attitude model is composed of an elicited importance measure towards a relevant attribute for pioneer and follower brands (W_i) multiplied by an elicited belief measure for each attribute (E_i). The sum of these products may be interpreted as the multiattribute attitude score ($\Sigma W_i E_i$). Table 19 depicts the calculation of the multiattribute attitude score.

Table 19
Multiattribute Attitude Calculation and Differences based on Order of Entry

U.S.							
	Importance (Wᵢ)	Belief (Eᵢ)		Multiattribute Attitude Score (WᵢEᵢ)		t-test of difference	
		Pioneer	Follower	Pioneer	Follower	Difference	Prob t
Quality	6.130	5.476	3.563	33.673	21.764	11.91	.000
Distinctiveness	5.038	5.582	2.885	27.995	14.808	13.19	.000
Status Symbol	5.260	5.707	3.236	29.832	16.620	13.21	.000
Reliability	5.837	4.769	3.846	27.923	22.418	5.50	.000
Superiority	5.779	4.918	3.894	28.341	22.625	5.72	.000
Goodness	6.197	4.947	4.990	30.889	30.962	-.07	.931
Desirability	5.442	5.375	3.817	29.212	20.837	8.38	.000
ΣWᵢEᵢ				207.865	150.034	57.831	.000

India							
	Importance (Wᵢ)	Belief (Eᵢ)		Multiattribute Attitude Score (WᵢEᵢ)		t-test of difference	
		Pioneer	Follower	Pioneer	Follower	Difference	Prob t
Quality	6.108	5.591	3.646	34.861	22.392	12.47	.000
Distinctiveness	5.057	5.624	2.763	28.247	13.737	14.51	.000
Status Symbol	5.227	5.737	2.820	29.814	14.598	15.22	.000
Reliability	5.868	4.763	2.577	28.036	14.985	13.05	.000
Superiority	5.778	4.892	3.876	28.201	22.340	5.86	.000
Goodness	6.186	4.954	3.969	30.881	24.763	6.12	.000
Desirability	5.423	5.366	3.469	29.062	18.773	10.29	.000
Service	5.851	4.577	3.485	26.830	20.433	6.40	.000
Functionality	4.278	4.098	5.747	29.871	27.144	2.73	.000
ΣWᵢEᵢ				265.804	179.165	59.66	.000

Table 19 also reveals that for six of the seven salient attributes, a significant difference was evident from the individual measurements using a student's pair-wise *t*-test. The one exception was "goodness." In fact, the pioneer was rated more favorably than the follower on all six attributes, with the largest differences found in perceptions of pioneer quality, distinctiveness, and status symbol. Overall, multiattribute-based attitudes in the U.S. much more positive toward the pioneer brand ($\Sigma W_i E_i = 207.865$) than towards the follower brand ($\Sigma W_i E_i = 150.034$) at the .05 level. For India, the pioneer brand was perceived more favorably on all nine of the salient attributes, with the largest differences found in terms of quality, distinctiveness, status symbol, and reliability. Overall, Indian consumer attitudes toward the pioneer ($\Sigma W_i E_i = 265.804$) were significantly more positive than attitudes toward the follower ($\Sigma W_i E_i = 179.165$) at the .05 level. Consequently, H_3 is supported.

Hypothesis H_4

Following the same statistical analysis utilized to test H_2, a regression model was developed where "differences in multiattribute attitudes towards pioneer and follower brands" was set as the dependent variable and "age," "sex," and "country" were deemed independent variables. Table 20 indicates a significant relationship between "country" ($\beta = -31.7156$, *p*=0.000) and the dependent variable. Also, as with H_2, the negative beta coefficient for "country" indicates that Indian consumer attitudes toward the pioneer brand are significantly greater than those of their U.S. counterparts when measured at the multiattributional level. Therefore, H_4 is supported.

Table 20
Coefficients of Regression Analysis – Difference in Multiattribute Attitudes based on Order of Entry

| | Unstandardized Coefficient | | Standardized Coefficient | t value | Sig. |
	B	Std. Error	Beta		
Constant	61.885	21.121		2.930	.004
Age	1.166	1.023	.063	1.139	.255
Sex	1.918	4.858	.019	.395	.683
Country	-31.715	5.611	-.317	-5.652	.000

Hypothesis H$_5$

H$_5$ stipulates that both U.S. and Indian consumers will prefer the pioneer brand, rather than the follower brand, under conditions of *ceteris paribus* assumptions. In order to test this hypothesis, a one-sample *t*-test was conducted. As mentioned earlier in the chapter, all scores were recoded to a 1 to 7 continuum, with the mid-point (neutral point) being four. Because the construct BI is measured via a two-item scale, the mid-point of the summed scale will be eight. Table 21 illustrates the results of the one-sample t-test. For both samples, results indicate a preference for the pioneer brand (mean=9.05 for U.S., mean=10.86 for India) which was statistically significant when tested against the null hypothesis (*t*=4.421, *p*<0.000 for U.S., *t*=16.287, *p*<0.000 for India). Therefore, H$_5$ is supported.

Table 21
Consumer Preference (Intent) based on Order-of-Entry

U.S.					
	Mean	Std. Deviation	N	t-value	Prob t H: Mean = 8
BI (U.S.)	9.05	3.419	208	4.421	.000
India					
		Std. Deviation	N	t-value	Prob t H: Mean = 8
BI (India)	10.86	2.447	194	16.287	.000

Hypothesis H_6

H_6 stipulates that Indian consumer preferences for pioneer brands are significantly more positive compared to U.S. consumers. As illustrated in Table 22, results of the regression analysis (R^2= .085, p=0.000) indicate that there is a statistically significant difference in purchase intent based on order of entry between the two samples. Again, because of the coding of the "country" dummy variable, the negative sign of the coefficient (β=-1.97) indicates that Indian consumer intentions to purchase the pioneer brand are significantly greater than those of U.S consumers. This is not surprising given that Indian consumers generally report more positive perceptions (in terms of global and multiattribute attitudes) towards pioneer brands.

Table 22
Coefficients of Regression Analysis – Difference in Intent based on Order of Entry

	Unstandardized Coefficient		Standardized Coefficient	t value	Sig.
	B	Std. Error	Beta		
Constant	10.062	1.316		7.647	.000
Age	.004	.064	.035	.632	.528
Sex	-.002	.303	-.005	-.095	.925
Country	-1.97	.350	-.309	-5.514	.000

While the previous hypotheses provide insight into similarities and differences between the two countries, in terms of attitudes and intentions based on order of entry, a full understanding of how these attitudes and intentions were formulated rests on the testing the causal relationships suggested by the two proposed models.

Causal Relationships (The Fishbein and Ajzen Model)

The remaining hypotheses focus on the causal relationships suggested by Fishbein and Ajzen (1975) and applicability with regard to pioneer brands. Structural equation models were analyzed using AMOS 4.0. As explained earlier in the chapter, the models were respecified to account for the deletion of the three indicators from the multiattribute attitude in each country. Also, because of the effects of age and sex on model components, partial correlations were calculated via SPSS and input into the AMOS program. Graphical representations of the two respecified models are presented in Figures 9 and 10. Corresponding overall fit measures are shown in Tables 23 and 24. Finally, parameter estimates of the two models are presented in Table 25.

Overall model measurement fit measures indicate less than optimal results from a SEM perspective. For both samples, chi-square estimates (χ^2= 280.511, d.f.=114 for U.S., χ^2= 237.556, d.f.=147 for India) were statistically significant at the 0.05 level, with the model in India exhibiting slightly better fit than in the United States. These results, however, fall in the ranges found by previous researchers who employed structural equation modeling in testing the Fishbein and Ajzen (1975) model on American consumers. For example, the chi-square values of the past research were 674.89 with 364 degrees of freedom in Oliver and Bearden's (1985) study, 775.37 with 115 degrees of freedom in Shimp and Kavas (1984), and 259.91 with 116 degrees of freedom in the study by Ryan (1982). Moreover, the results are similar to those reported in earlier cross-cultural examinations of the model. For instance, Lee and Green (1991) found chi-square values at 114 degrees of freedom of 202.86 for a U.S. sample and 296.52 for a Korean sample. More recently, Malhotra and McCort (2001) reported chi-square values of 277.70

(at 62 degrees of freedom) for a U.S. sample and 104.77 for a Hong Kong sample. That being said, the chi-square statistic suffers from a number of limitations including sensitivity to sample size and model complexity as well as departure from the multivariate normality assumption (Lee and Green 1991; Hair et *al.* 1998). In recognition of these problems, three additional overall fit measures are provided: (1) a Goodness-of-Fit Index (GFI) developed by Joreskog and Sorbom (1984); (2) Bentler's Normed Fit Index (Bentler and Bonnet 1980) which compares a theoretical model's chi-square value with that obtained from the null model that constrains all parameters except the error coefficients to zero; and (3) the proportion of variance of BI explained by the model.

While no absolute threshold levels for acceptability have been established for the GFI index (Hair et *al.* 1998, p. 655), satisfactory values tend to be closer to 1, with .90 being the most accepted cut-off level (Byrne 2001). GFI values for the models were .874 for the U.S. and .890 for India. These levels, according to Hair et *al.* (1998) are "marginal". However, the results are relatively consistent with earlier cross-cultural research on the Fishbein and Ajzen (1975) model. Specifically, Lee and Green (1991) reported goodness-of-fit indices of .898 for their U.S. sample, and .866 for the Korean sample. As for Bentler's Normed Fit index, results indicate a .870 for the U.S. model and a .881 for the Indian one. On the other hand, Lee and Green (1991) reported a .872 for the U.S. and .712 for Korea. Finally, as the closest thing SEM offers to a coefficient of determination, the squared multiple correlation of the BI construct provides a measure of the proportion of variance of that construct explained by the model (Byrne 2001). The values from the analysis indicate a percentage of 62.6% in the U.S. and 76.3% in India.

Both results are similar to the earlier work of Lee and Green (1991), where the proportions were 74.6% in the U.S. and 68.4% in Korea.

Given these results, a number of efforts were undertaken to address possible modifications to the proposed models. This included an examination of the normalized residuals and the modification indices provided by the AMOS output. Hair et *al.* (1998) note the importance of theoretical support for any possible modification. As such, while a few indices indicated the correlation of a small number of error covariances ($\delta_3 \leftrightarrow \delta_{21}$, $\delta_1 \leftrightarrow \delta_{16}$, and $\delta_1 \leftrightarrow \delta_{16}$ for the U.S. and $\delta_6 \leftrightarrow \delta_{15}$, $\delta_2 \leftrightarrow \delta_4$ for India), the decision was made not to apply any correlations because of the absence of theoretical justification for these adjustments. Therefore, the previously reported results from the SEM analysis will be used to test the remaining hypotheses because, as Hair et *al.* (1998) note:

> "If model respecification is based only on the values of the modification indices, the researcher is capitalizing on the uniqueness of the . . . (data) . . . , and the result will most probably be an atheoretical, but statistically significant, model that has little generalizability and limited use in testing causal relationships." (p. 625).

Figure 9
Respecified U.S. Model
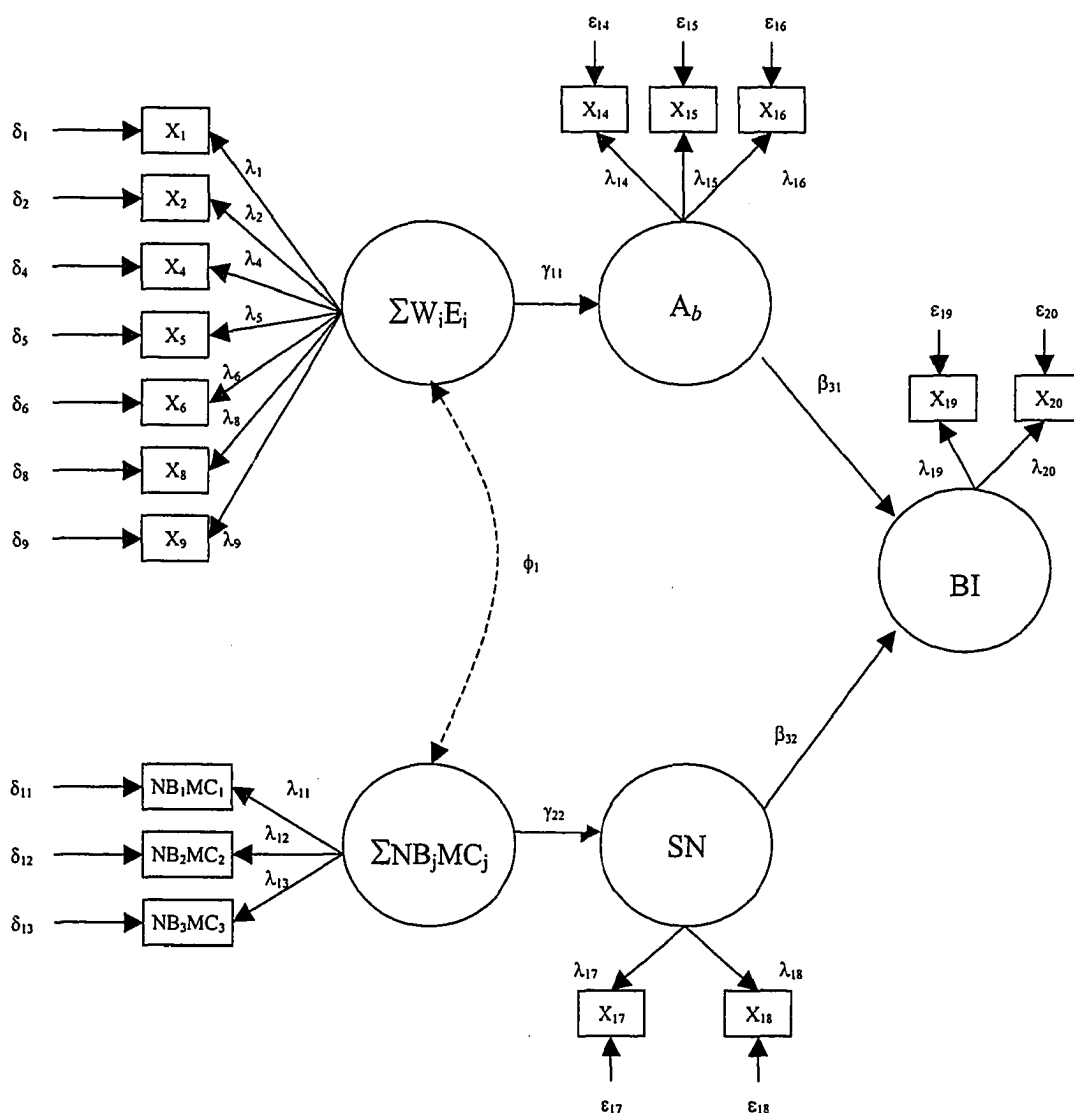
Table 23
Overall Model Fit Measures (U.S.)

Measure	Estimate
Chi-Square Statistic	280.511
(Degrees of freedom)	(114)
Goodness-to-Fit Measure	.874
(Adjusted GFI)	(.831)
Bentler's Normed Fit Index	.870
Proportion of Variance of BI (%)	62.6

Figure 10
Respecified Indian Model
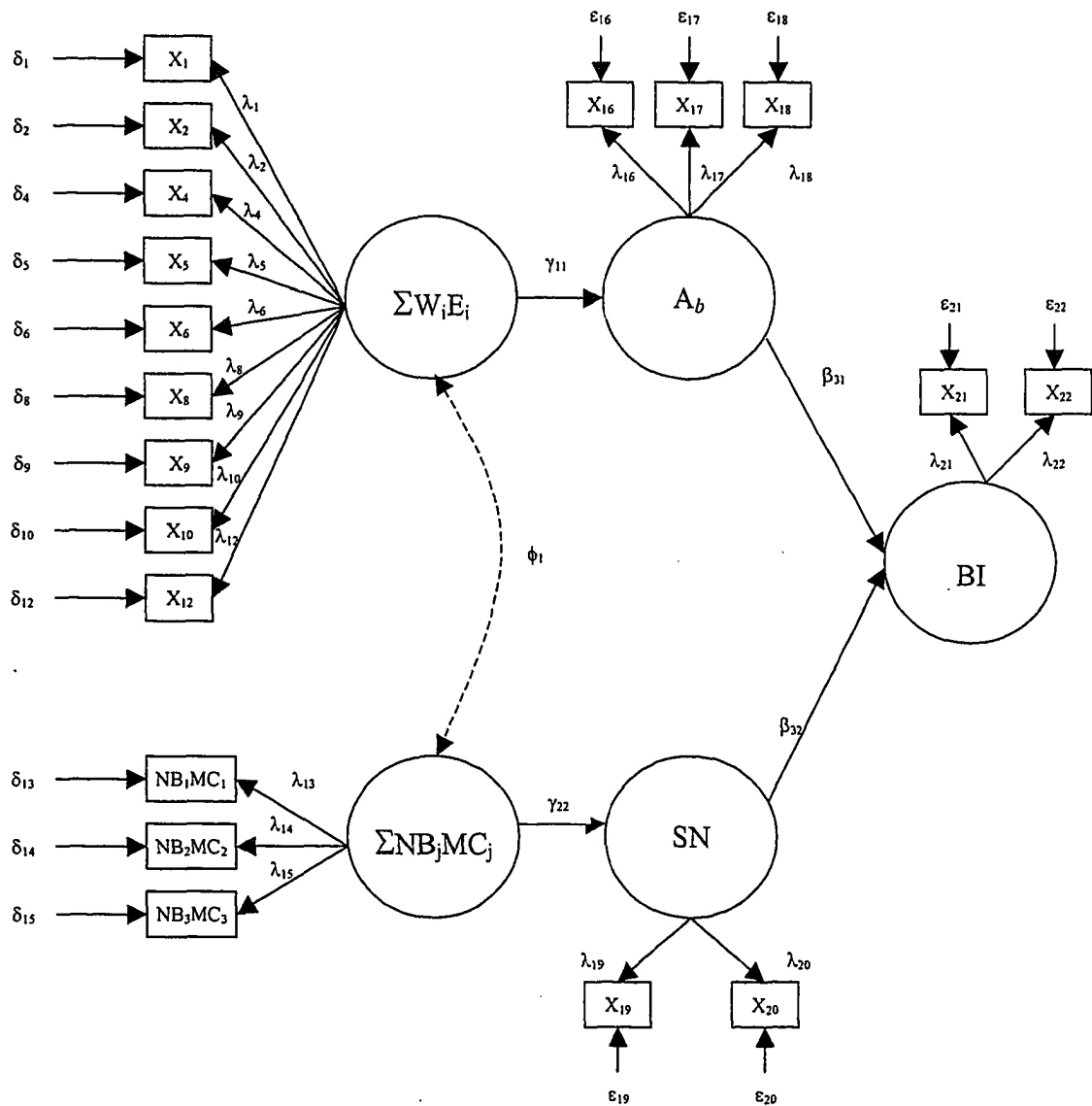
Table 24
Overall Model Fit Measures (India)

Measure	Estimate
Chi-Square Statistic	237.556
(Degrees of freedom)	(147)
Goodness-to-Fit Measure	.890
(Adjusted GFI)	(.858)
Bentler's Normed Fit Index	.881
Proportion of Variance of BI (%)	76.3

Table 25
Parameter Estimates for Respecified Models

	U.S.					India			
Parameter	Unstandardized Estimate		Critical Ratio	Standardized Estimate	Parameter	Unstandardized Estimate		Critical Ratio	Standardized Estimate
λ_1	1.000[a]			.792	λ_1	1.00[a]			.540
λ_2	.401	(.091)[b]	4.424	.318	λ_2	.706	(.158)[b]	4.454	.381
λ_4	.234	(.092)	2.553	.185	λ_4	.438	(.149)	2.935	.237
λ_5	.845	(.085)	9.970	.669	λ_5	1.567	(.210)	7.452	.845
λ_6	1.152	(.082)	14.007	.913	λ_6	1.341	(.193)	6.954	.724
λ_8	.768	(.086)	8.925	.608	λ_8	1.476	(.203)	7.289	.796
λ_9	.803	(.085)	9.398	.636	λ_9	.854	(.165)	5.173	.461
					λ_{10}	.320	(.147)	2.181	.173
					λ_{12}	.394	(.148)	2.660	.213
λ_{11}	.753	(.061)	12.250	.722	λ_{13}	.917	(.091)	10.091	.650
λ_{12}	.848	(.059)	14.492	.813	λ_{14}	.923	(.091)	10.152	.654
λ_{13}	1.000[a]			.959	λ_{15}	1.000[a]			.709
λ_{14}	1.000[a]			.952	λ_{16}	1.000[a]			.869
λ_{15}	.788	(.056)	14.184	.750	λ_{17}	.958	(.069)	13.929	.833
λ_{16}	.908	(.048)	18.806	.865	λ_{18}	1.001	(.069)	14.607	.870
λ_{17}	.997	(.098)	10.168	.850	λ_{19}	.993	(.051)	19.393	.893
λ_{18}	1.000[a]			.853	λ_{20}	1.000[a]			.900
λ_{19}	1.000[a]			.920	λ_{21}	1.000[a]			.859
λ_{20}	.956	(.061)	15.690	.876	λ_{22}	1.039	(.068)	15.294	.894
γ_{11}	.729	(.086)	8.492	.606	γ_{11}	.514	(.142)	3.622	.319
γ_{22}	.496	(.068)	7.320	.558	γ_{22}	1.463	(.117)	12.498	1.152
β_{21}	.667	(.054)	12.440	.724	β_{21}	.222	(.049)	4.482	.228
β_{32}	-.331	(.060)	-5.504	-.322	β_{32}	.786	(.060)	13.194	.837
ϕ_1	.013	(.057)	0.227		ϕ_1	.028	(.025)	1.124	

[a] Parameter constrained to this value
[b] Standard error of the estimate

Hypothesis H_7

The first hypothesis, that addresses the causal relationships between model components, focuses on the chain of causality associated with the *attitudinal* component of the Fishbein and Ajzen (1975). Namely, multiattribute-based attitudes are hypothesized to affect global attitudes and ultimately behavioral intention. As illustrated

in Table 26, the parameters of interest are significant in both countries. In the U.S, multiattribute-based attitudes are positively linked with global attitudes toward the pioneer (γ_{11}=.739, t=8.942). This corroborates earlier findings by Carpenter and Nakamoto (1989) and Alpert and Kamins (1995) who found consumer global attitudes toward the pioneer were a function of positive beliefs toward relevant attributes associated with the pioneer brand. With regard to the Fishbein and Ajzen (1975) model, global attitudes toward the pioneer brand are significant predictors of intention to buy that brand (β_{31}= .667, t=12.440) for the U.S. sample. In India, the same chain of causality was found. Indian consumers' global attitudes affect intention (β_{31}= .222, t=4.482) and are a function of multiattribute-based attitudes (γ_{11}=.514, t=3.622). Therefore, H_7 is supported.

<div align="center">

Table 26
Comparison of Parameter Estimates of Causal Paths

</div>

Coefficient	Parameter	U.S.		India	
		Estimate	t-value	Estimate	t-value
γ_{11}	$\Sigma W_i E_i \rightarrow$ Ab	.729	8.942	.514	3.622
γ_{22}	$NB_j MC_j \rightarrow$ SN	.496	7.320	1.463	12.498
β_{31}	Ab $\rightarrow$ BI	.667	12.440	.222	4.482
β_{32}	SN $\rightarrow$ BI	-.331	-5.504	.786	13.194

Hypothesis H_8

The eighth hypothesis focused on the chain of causality associated with the *normative* component of the Fishbein and Ajzen (1975) model. More specifically, intention to purchase the pioneer brand is affected by social norms, which, in turn, are a function of a consumer's expectations of important referents and his or her motivation to

comply with these referents. Returning again to Table 26, the findings of the SEM analysis suggests that such a causal relationship exists. In the U.S., consumer normative beliefs and their motivation to comply are significant antecedents of consumer social norms (γ_{22} = .496, t =7.320). In turn, social norms affect intention to purchase the pioneer brand (β_{32} = -.331, t=-5.504). The negative sign of the estimate implies that consumer social norms discourage the purchase of the pioneer brand and rather promote the purchase of the follower brand. Previous research on consumer intentions to purchase based on order of entry (e.g. Alpert and Kamins 1994, 1995) suggests that behavioral intention is solely a function of global attitudes. Accordingly, this finding that social norms may *adversely* affect intention to buy the pioneer brand suggests that previous research failed to consider the role of social norms even in the U.S., which is characterized by extreme individualism. This point is discussed in detail in Chapter V. Conversely, social norms are positively related to behavioral intention in India (β_{32}=.786, t=13.194). These social norms are affected by normative beliefs and motivation to comply with those beliefs (γ_{22}= 1.463, t=12.498). This finding is not surprising given the collectivist nature of Indian culture and the subsequent motivation of Indians to conform to the prevailing social norm. Therefore, given these findings, H_8 is supported.

Hypothesis H_9

H_9 addresses a direct comparison between U.S. and Indian consumers. Based primarily on the cultural and normative conditions discussed in Chapter III, it is hypothesized that Indian consumers' beliefs and their motivation to comply with those beliefs are more positive than their U.S. counterparts in regards to pioneer brands. As

with the multiattributional attitude construct, the normative component is operationalized by eliciting consumer responses regarding what they believe relevant referents want them to do in terms of purchasing the pioneer brand. A respondent's score on this measure is multiplied by a measure of their motivation to comply with the respective referent. The multiplicative values are summed and the resulting value is the normative component. Based on previous qualitative research, U.S. consumers identified, in order of importance, friends, family, and significant other as relevant referents. Indian consumers identified family, friends, and salespeople as relevant referents. Table 27 depicts the calculation of the normative component values in both countries.

Table 27
Calculation of the Normative Component Construct

U.S.		
	Normative Belief (NB$_j$)	Motivation to Comply (MC$_j$)	Normative Component (NB$_j$MC$_j$)
Friends	4.081	4.668	19.298
Family	4.360	4.211	18.168
Significant Other	4.278	4.269	18.096
ΣNB$_j$MC$_j$			55.562

India		
	Normative Belief (NB$_j$)	Motivation to Comply (MC$_j$)	Normative Component (NB$_j$MC$_j$)
Family	4.211	5.365	22.701
Friends	4.061	5.278	21.396
Salespeople	5.201	3.546	18.567
ΣNB$_j$MC$_j$			62.664

In order to test H$_9$, and given the inconsistencies in age and sex across countries, a regression model similar to those formulated for testing H$_2$, H$_4$, and H$_6$, was developed. The construct "normative component" was the dependent variable and "age," "sex," and

"country" were independent variables. Again, "country" was coded at U.S.=1 and India=0. The analysis suggests a statistically significant model (R^2=.020, p=0.042). More importantly, as illustrated in Table 28, "country" was a statistically significant predictor of the normative component (β=-8.021, p=0.007). The negative sign of the coefficient indicates that Indian consumer's normative beliefs regarding purchase of pioneer brands and their motivation to comply with those beliefs are more positive in comparison to their U.S. counterparts. Therefore, H_9 is supported

Table 28
Coefficients of Regression Analysis – Normative Component

	Unstandardized Coefficient		Standardized Coefficient	t value	Sig.
	B	Std. Error	Beta		
Constant	55.330	11.168		4.955	0.000
Age	0.353	0.541	0.037	0.652	0.515
Sex	0.318	2.569	0.006	0.124	0.902
Country	-8.021	2.967	-0.157	-2.704	0.007

Hypothesis H_{10}

H_{10} argued that for the U.S. consumer, overall attitude is more important in behavioral intention formation than social norms. Two ways of testing this hypothesis are conducted. First, as seen in Table 26, the magnitude of the parameter estimates of the causal paths derived from the SEM analysis suggests that U.S. consumer intentions are affected more by global attitudes (β_{31}= .667) than by social norms (β_{32}=-.331). In order to determine whether the difference in the relative weights between A_b and SN are significant, a second iteration of the model is performed in which both components are assumed to have equal weights. As illustrated in Table 29, overall goodness-of-fit measures of the original and restricted models are compared. With an increase of one

degree of freedom, chi-square increased from 280.511 to 405.576. Also GFI fell from .874 to .816. The results suggest a deteriorating model fit and thus the difference in weights between A_b and SN is significant. Therefore, H_{10} is supported.

Table 29
Comparison of Overall Fit Measures of Original and Restricted Models

| | U.S. | | India | |
	Specified Model	Restricted Model	Specified Model	Restricted Model
Chi-Square Statistic	280.511	405.575	237.556	285.314
(Degrees of freedom)	(114)	(115)	(147)	(148)
Goodness-to-Fit Measure	.874	.8164	.890	.872
(Adjusted GFI)	(.831)	(.755)	(.858)	(.835)
Bentler's Normed Fit Index	.870	.811	.881	.858
Proportion of Variance of BI (%)	62.6	35.8	76.3	65.9

Hypothesis H_{11}

The same procedure used to test H_{10} was conducted to test H_{11}. Parameter estimates suggest that, social norms (β_{32}=.786) are more important for Indian consumers than global attitudes (β_{31}= .222). Based on the results reported in Table 29, the differences in the weights were significant with an increase in chi-square from 237.559 to 285.314. Also, GFI fell from .890 to .872. Therefore, unlike U.S. consumers, Indian consumers are more inclined to act based on social norms than on their personal attitudes. Therefore, H_{11} is supported.

Hypothesis H_{12}

The final hypothesis addresses differences in overall fit of the model in the two countries. As illustrated in Table 30, the Fishbein and Ajzen (1975) model actually predicts behavioral intentions better in India than in the United States. In addition to a

lower chi-square and higher GFI and NFI, the proportion of variance of BI explained by the model is higher in India than in the U.S. (76.3% vs. 62.6%). Therefore, H_{12} is supported.

Table 30
Comparison of Results of SEM Analysis Across Countries

Measure	U.S.	India
Chi-Square Statistic	280.511	237.556
(Degrees of freedom)	(114)	(147)
Goodness-to-Fit Measure	.874	.890
(Adjusted GFI)	(.831)	(.858)
Bentler's Normed Fit Index	.870	.881
Proportion of Variance of BI (%)	62.6	76.3

The finding that the model fits the data better in India than in the U.S. is in direct contrast to the findings of previous work on the cross-cultural applicability of the Fishbein and Ajzen (1975) model (e.g., Lee and Green 1991; Malhotra and McCort 2001). However, Malhotra and McCort note that the ability of the model to predict behavioral intention is contingent on the use of culturally-sensitive operationalizations of the underlying latent constructs. Every effort was made in this study to apply a combined *etic-emic* approach to the measurement process. The difference in model fit may also be attributed to the underlying cultural and structural differences between the two countries and depicted in the significant differences in respective attitudes and social norms. The results are discussed in detail in Chapter V.

In summary, a total of twelve hypotheses were tested utilizing various statistical methods. Statistically significant differences (and similarities) within and between the U.S. and Indian samples were revealed by the data analysis. Table 31 summarizes the results of the hypothesis testing.

Table 31
Summary of Hypotheses Testing

Hypothesis Tested	RESULT
H_1: Both mature market (U.S.) and emerging market (Indian) consumers' global attitudes are more favorable toward pioneer brands than follower brands.	SUPPORTED
H_2: Emerging market (Indian) consumers' global attitudes toward pioneer brands are significantly more positive compared to those of mature market (U.S.) consumers.	SUPPORTED
H_3: Both mature market (U.S.) and emerging market (Indian) consumers' overall attitudes as calculated by a multiattribute attitude model are significantly more favorable toward pioneer brands than follower brands.	SUPPORTED
H_4: Emerging market (Indian) consumers' overall attitudes toward pioneer brands as calculated by a multiattribute attitude model are significantly more positive compared to those of mature (U.S.) consumers.	SUPPORTED
H_5: Other things being equal, mature market (U.S.) and emerging market (Indian) consumers' prefer pioneer brands in terms of product purchase preference	SUPPORTED
H_6: Emerging market (Indian) consumers' preferences for pioneer brands are significantly more positive compared to those of mature (U.S.) consumers.	SUPPORTED
H_7: For both mature market (U.S.) and emerging market (Indian) consumers, a chain of causality will be determined beginning with multiattribute-based attitudes, which will cause differences in overall attitudes and ultimately purchase intention.	SUPPORTED
H_8: For both mature market (U.S.) and emerging market (Indian) consumers, a chain of causality will be determined beginning with normative beliefs and their motivation to comply with those beliefs will cause differences in social norms which will ultimately affect purchase intention.	SUPPORTED
H_9: Emerging market (India) consumers normative beliefs regarding purchase of pioneer brands and their motivation to comply with those beliefs will be more positive in comparison to their U.S. counterparts.	SUPPORTED
H_{10}: For mature market (U.S.) consumers, overall attitude will affect behavioral intention more than social norms.	SUPPORTED
H_{11}: For emerging market (Indian) consumers, social norms will affect behavior intention more than overall attitude.	SUPPORTED
H_{12}: Based on overall fit, the Fishbein and Ajzen model will predict behavioral intentions towards pioneer brands better in the Indian market than in the U.S. market.	SUPPORTED

CHAPTER V

CONCLUSIONS

The final chapter focuses on the conclusions drawn from the results of the statistical analyses. The chapter begins with a detailed summarization of the findings along with a discussion of the practical implications. Following this discussion, the contributions of the study are outlined. Finally, limitations of the study and suggestions for future research are presented.

Twelve major research hypotheses focusing on the role of order-of-entry in mature and emerging markets were developed and tested. Drawing primarily on the earlier work of Alpert and Kamins (1995), six hypotheses addressing the attitudinal and intention similarities and differences between consumers in the U.S. and India were developed and tested. The remaining hypotheses focused on the applicability of the Fishbein and Ajzen (1975) Theory of Reasoned Action within the context of order of entry. Extensive measures were employed to ensure sample comparability as well as construct equivalence. Also, despite employing established scales, various procedures were conducted to ensure the appropriateness of these scales including qualitative research and reliability and validity assessment. Multiple approaches were undertaken to test the hypotheses including paired-sample t-tests, multiple regression analysis, and structural equation modeling.

DISCUSSION

As mentioned in Chapter I, two primary questions acted as guides for this study: (1) Are there significant attitudinal and intentional differences between mature and emerging market consumers based on order of entry? (2) Would firms considering doing business in emerging markets be better off entering early despite all the start up difficulties, or postpone their entry until the pioneer gets "bloodied" and then enter, with the expectation of greater performance? Based on data collected from two countries (U.S. and India), the answer to the first question is yes. In other words, a number of distinct conclusions emerge that suggest that there are significant differences between these types of countries. The following discussion focuses on the conclusions drawn from the findings including an effort to elaborate on the answer to the first question. The answer to the second question is discussed as part of the managerial implications that may be drawn from the study.

A number of significant conclusions can be drawn from the statistical analyses. First, both mature (U.S.) and emerging (India) market consumers exhibit a significant attitudinal preference for the pioneer brand over the follower brand. That is, a clear behaviorally-based advantage is bestowed on the pioneering firm when it comes to conducting business in mature markets and/or emerging markets. The second major conclusion drawn from the study is that, while consumers in both countries possess favorable attitudes towards the pioneer, Indian consumers tend to exhibit more positive perceptions in terms of both global and multiattribute-based attitudes. This difference between the U.S. and Indian respondents is substantial, highly consistent, and statistically significant. Therefore, the need to enter the market early is substantially increased in the

case of emerging markets. The third outcome of the study is that such attitudinal preferences are positively related to intention to buy the pioneer brands. The notable attitudinal differences between the countries are reflected in a significantly more positive intention preference for the pioneer brand on the part of Indian consumers. Finally, in both countries, preference for the pioneer is a function of a series of causal relationships where attitudes and social norms play dominant roles. More specifically, in the U.S., individual attitudes play a more significant role in formulating purchase intention than the normative component. However, while U.S. consumers may have attitudes that suggest preference for the pioneer brand, societal norms tend to discourage the purchase of the pioneer brand. In the case of India, social norms play a more dominant role in intention formation. However, both components appear to work in the same direction, resulting in a more favorable purchase intention for the pioneer brand.

A series of hypotheses were developed and tested to reach the aforementioned conclusions. Nonetheless, a secondary question remains. Why would consumers in both countries have more positive attitudes and intentions towards the pioneer brand, and why is it that Indian consumers' attitudes and intentions are considerably more positive? The answer lies in a detailed examination of the hypotheses tested and the underlying theoretical arguments on which they were based.

The first of the study's hypotheses (H_1) was designed to address potential similarities in the two countries with regards to global attitudes based on product order of entry. Previous domestic studies report a significant global attitudinal preference for the pioneer (e.g., Carpenter and Nakamoto 1989; Alpert and Kamins 1994) because the pioneer brand exhibits traits associated with innovativeness and superiority, both of

which are core American values (Alpert and Kamins 1995). The results of this hypothesis testing suggest that this is the case ($p<.000$). However, Indian consumers also have favorable attitudes toward the pioneer (H_1) that are significantly more positive than those of their U.S. counterparts ($\beta=-3.756$, $p<.000$). Why is this the case despite the lack of these traits in India? A potential explanation for this difference may lie in the structural and environmental conditions prevalent in the typical emerging market. Consumers in such markets have traditionally dealt with a so-called seller's market. The result has been a significant amount of pent-up demand for products that were known but previously unattainable (Nakata and Sivakumar 1997). With the recent opening of these markets to new products, this pent-up demand manifests itself into a more skewed and expeditious diffusion of innovation process based on underlying attitudinal preference for the pioneer brand. Also, because of the lack of clutter associated with the early stages of economic liberalization, the pioneer brand is allowed the opportunity to enjoy certain differential advantages otherwise difficult to secure in more developed markets. The result is that the pioneer brand becomes the product standard by which other follower brands are evaluated (Carpenter and Nakamoto 1989).

Paralleling the same line of reasoning presented by H_1 and H_2, two hypotheses addressing the multiattribute-based attitudes of consumers in the two countries were developed. Testing of H_3 found that consumers in both the U.S. and India hold positive multiattribute attitudes toward pioneer brands over follower brands. The results corroborate earlier domestic findings that global attitude based on order-of-entry can be broken down into attribute-based perceptions towards the brand (e.g., Alpert et al. 1992; Alpert and Kamins 1994, 1995; Lin 1999). With a few exceptions, the salient attributes

were similar in both countries, indicating that the attitude formation process is relatively the same. However, testing revealed that overall attitudinal preference for the pioneer brand is more positive in India than in the United States (H4). The reason for this may be attributed to the role of simple heuristics. Previous studies suggest that in cases where product evaluation is a difficult process, pioneer status plays a more dominant role in attitude formation (Carpenter and Nakamoto 1989). In the case of India, the need to alleviate ambiguity and subjectiveness is greater. Compared to more mature markets, emerging markets have few vigilant and independent agencies that can warn of unscrupulous business activities. Furthermore, far fewer regulations govern the levels of important product dimensions such as quality or the truthfulness of advertising claims (Maxwell 2001). In such an environment, consumers strive for signals to help with the product evaluation process. Conscious knowledge of pioneer status provides assurance of standardized quality and/or perceptions of innovativeness.

Two hypotheses (H5 and H6) addressed conditions of *ceteris paribus*, in which consumers were asked if they would purchase the pioneer brand over the follower brand if other things were held equal. The testing of H5 finds that consumers in both countries, when faced with a decision between two products differentiated solely on order-of-entry, would prefer the pioneer brand over the follower brand. This conclusion is not surprising given the previous findings associated with attitudinal preferences (e.g., Alpert, Kamins, and Graham 1997; Alpert and Kamins 1995; Rettie et *al.* 2002). Also expected is the finding that more Indian consumers prefer the pioneer brand in terms of product purchase preference than U.S. consumers (H6). However, a detailed analysis of the behavioral intention literature suggests that intention formation is a complex process. Consequently,

the Fishbein and Ajzen (1975) Theory of Reasoned Action, which hypothesizes that intention is a function of personal attitudes *and* a normative component, was utilized to obtain a clearer explanation of the role of order-of-entry.

The first of the conclusions drawn from the analysis finds that multiattribute attitudes positively affect global attitudes and ultimately behavioral intentions in both countries (H_7). Previous domestic and cross-cultural studies (e.g., Alpert, Kamins, and Graham 1992; Alpert and Kamins 1995, Alpert et *al.* 2001) have, using regression analysis, illustrated these relationships among the three constructs. A second conclusion from the findings suggests that behavioral intention towards the pioneer brand is also a function of social norms associated with normative beliefs and consumer motivation to comply with those beliefs (H_8). In India, the normative component ($\Sigma NB_j MC_j$) was found to be significantly higher that in the U.S. (H_9). Because, the normative component is a function of two elements (NB_j and MC_j), a number of potential reasons may be attributed to this finding. First emerging markets, on average, exhibit significantly different cultural traits than those found in more mature markets (Fletcher and Melewar 2001). More specifically, greater degrees of power distance and collectivism are apparent in India (Maxwell 2001; Kumar 2000). These dimensions, by their very nature, provide motivating forces behind a consumer's tendency to conform to the norms of the group. Second, the prevalent concept of "saving face" and the constant need to act according to one's status is also a factor of consideration (Lee and Green 1991). Both elements suggest that consumers in India purchase a product that will allow them to be accepted by society (higher MC_j). However, this raises an important question. Why would a pioneer

brand be seen in this way by society? That is, are normative beliefs (NB_j) more positive toward the pioneer brand?

The answer lies in a better understanding of the Fishbein and Ajzen (1975) model and its definition of *beliefs*. Fishbein and Ajzen (1975) identified three types of beliefs; (1) Descriptive beliefs, derived from direct experience; (2) Information beliefs, formed by accepting information from a source; and (3) Inferential beliefs, derived through the process of inference from descriptive, informational, or other inferential beliefs (p. 131-135). The notion of inferential beliefs creates the possibility that the stimulus condition (pioneer status) may have an effect on not only attitudes but also normative beliefs (NB_j) as well. While not explicitly addressed in this study, the following example may shed light on this possibility.

As observed from the analysis, the typical consumer has generally positive descriptive and/or information beliefs with regards to the pioneer brand. These beliefs in turn increase his or her attitude toward this category of brands (again observed from the data). At the same time, this may lead him or her to *infer* that most relevant referents think similarly and have the same belief and attitude structures toward the pioneer brand. Once this is established, the person may infer that most important others think he or she should buy the pioneer brand. Therefore, a more positive normative belief structure towards the pioneer brand may be attributed to the respondent's *inference* of what others want them to do rather than what is *actually* reflected in society. The one way to correct for this contrast would be to ask all important referents identified by the consumer about what they think the respondent should do regarding the pioneer brand and not rely on inferences reported by the respondents. This of course is an extremely difficult process

that exceeds the scope of this study, but should be addressed in future research. Nonetheless, the results suggest that Indian consumers exhibit much more positive normative component towards pioneer brands that may be explained by either higher levels of compliance to social norms in the country or inflated inferences of what respondents think others want them to do in regards to the pioneer brand.

That being said, the testing of H_{10} finds that U.S. consumer behavioral intentions are more a function of attitudes than social norms. This result is expected given the individualistic nature of the American culture. However, what is surprising is the negative sign of the relationship between social norms and behavioral intention (β_{32}=-.331, t-value =-5.504). The inverse relationship between the two constructs suggests that, while American consumers prefer the pioneer brand from an attitudinal standpoint, most consumers believe that society actually discourages the purchase of the pioneer brand. This is a significant notion given the extensive amount of domestic research suggesting consumer preferences for the pioneer brand (e.g., Carpenter and Nakamoto 1989; Alpert and Kamins 1995). And while this component is much less of a factor when consumers purchase based on order of entry, an example of such a scenario comes to mind. Most automobile buyers show an interest in first-model vehicles. Individual attitudes toward these vehicles may be high and consumers may act accordingly, as illustrated by the higher levels of sales, despite common beliefs that most first-model vehicles tend to be "prototype-like" where problems and slight imperfections may not have been fully worked out until the second or third model are introduced into the market. This is only one possible explanation for social norms being more favorable toward the follower brand. Other reasons may be based on common perceptions that follower brands offer

more in order to overcome the pioneer's positive status (Lieberman and Montgomery 1988). An example could be *Avis* and their "We Try Harder" advertising campaign. While more consumers may believe that Avis offers more, *Hertz* still commands a higher market share of the automobile rental industry.

H_{11} also compares the relative strengths of the attitudes and social norms with regard to intentions, albeit in India. Indian consumers' intentions are affected more by social norms than by personal attitudes. This was expected given the cultural dimensions discussed previously. Indian consumers exhibit higher degrees of conformity to social norms (Maxwell 2001). Their purchase intentions, as found in the study, reflect this conformity and the tendency to act on social norms rather than individual preference.

Finally, H_{12} hypothesizes that the Fishbein and Ajzen (1975) model, when used to address pioneer brands, explains behavioral intentions better in India than in the United States. Previous studies find that the theory works better in Western cultures (e.g. Lee 1990; Lee and Green 1991; Malhotra and McCort 2001). However, most of these studies report that the model also works well in other countries, when constructs are operationalized *emically*, as was the case in this study. Therefore, better model fit in India could be because the model's causal (structural) relationships actually explain behavioral intention better in India and/or due to better and more culturally-sensitive operationalization of the constructs (measurement) in this study.

MANAGERIAL IMPLICATIONS

The results of this study provide an improved understanding of the benefits to firms of entering emerging markets early. That is, the question of whether it pays for firms to enter emerging markets early is answered affirmatively. As discussed earlier, a significant amount of domestic research notes the significance of first-mover advantages and thus the need to enter early (e.g., Bond and Lien 1977; Robinson and Fornell 1985; Lambkin 1988). This study corroborates this notion, albeit from a different theoretical perspective and based on a more expansive research domain. More specifically, pioneer brands benefit from more positive attitudes and intentions than follower brands. As such, a number of implications may be drawn from the results and conclusions of this study. The underlying theme of these implications is the idea that the potential for any competitive advantage stemming from entering early depends on consumer *knowledge* of pioneer status. Noteworthy here is that because the strengths of the attitudes and intentions based on order of entry are more significant in India than in the United States, the implications discussed here may be more critical to firms embarking on business activities in emerging markets than those entering more mature markets. Also, not all firms have the privilege of being the pioneer. The managerial implications of the study are thus presented based upon whether the firm preemptively enters early or whether the firm finds itself in a follower position.

Pioneer Firms

The results of the study suggest that firms must be the first to enter the market. However, not only should firms seek to enter the market early, they also need to

emphasize to consumers that they were in fact the first. That is, firms must be *perceived* by consumers to be the pioneer because the pioneer brand, by its very nature, holds positive attributes critical to consumer preference for the product. As Ries and Trout (1994) suggest, what ultimately matters most is who gets into the *mind* of the consumer first rather than who gets to the *marketplace* first. This is an even more important issue when entering an emerging market. The pioneer brand's first-exposure cognitive advantages could be strengthened by a positioning strategy that emphasizes the uniqueness of the brand from the consumer's point of view. For example, because benefits to being known as the pioneer brand exist, assigning a label to the pioneer brand that clearly communicates to consumers that it is the pioneer should positively impact consumer attitudes. If this is true, then it would be useful to know which label has the greatest impact. That is, does the verbal terminology by which the pioneer brand is described to consumers affect the degree of pioneer advantage? A distinction can be drawn between the concept of a pioneer brand and the labels used to represent the concept. The pioneer brand could be labeled, for example, as "The pioneer brand," "The Original," or "The first ___" (what ever the new product is). The effect of label choice is important for managers, because they can easily select which label to use in their packaging and advertising. That being said, the decision whether to communicate pioneer status is probably more important than the decision of how that message is encoded (i.e. the concept has a greater effect than the particular label chosen). Another implication for pioneering firms revolves around the need to address the social norms prevalent in the market being entered. In the U.S., social norms toward the pioneer brand are negative. Firms entering mature markets have two way to deal with this. First, because of the

individualistic nature of consumers in such markets, emphasis may be put on the innovative nature of the pioneer brand and the status it conveys in terms of highlighting consumer lack of conformity. Second, pioneer firms can attempt to reverse common societal convictions that their brand is "prototype-like" and rushed to the market without proper research and development to back it up. In the case of emerging markets, the need to highlight pioneer status is even more critical. That is, success of pioneering firms in emerging markets rests on their ability to emphasize pioneer brand uniqueness and the ability of that brand to reinforce conformity to social norms. One point worth mentioning, however, is that this potential entry strategy is based solely on the behavioral benefits from entering early. Nakamoto and Sivakumar (1997) note that a pioneering strategy in emerging markets must be taken within the context of all environmental conditions, including those that may adversely affect the potential for competitive advantages stemming from early entry. The results of this study simply suggest emphasizing pioneer status may provide the firm with a sustainable competitive advantage. This advantage may (or may not) be offset by other pioneering disadvantages.

Follower Firms

The findings of the study imply that firms not graced with the opportunity to be a pioneer are at a significant disadvantage. While this may be true, there are a number of ways follower firms may overcome initial disadvantages associated with entering later. Certainly, if a follower brand is lucky enough to follow a slow-moving pioneer brand, it should move quickly to take advantage of this. The follower may attack the pioneer's prototype status. One of Carpenter and Nakamoto's (1989) experiments showed that two

follower brands were both more successful when they position themselves against each other instead of against the pioneer. Positioning against the pioneer may produce the undesirable consequence of reinforcing the pioneer's prototype status. Positioning against each other, in contrast, may weaken the pioneer's status and set the average attributes of the two followers as the category prototype (or, at least, the average of the attributes of all three, the two followers and the pioneers).

In addition, the follower may attack brand beliefs favorable to the pioneer and encourage brand beliefs favorable to followers. One problem is that the belief that follower brands tend to have lower price plays right into the hands of the low-price-positioned brand but does not help the full-price imitator. The full-price imitator may, however, combat the belief that pioneer brands are of higher quality by communicating that it has studied existing brands quite carefully and has combined that which is best in them, plus new insights, into itself.

CONTRIBUTIONS OF THE STUDY

There is little question regarding the importance of first-mover advantages (Luo and Peng 1998). The research field is vast and extensive. But, as mentioned in Chapter I, there is a notable gap in the literature regarding the role of order of entry in the formation of perceptions, attitudes, and intentions in emerging markets. Despite the significant risks associated with conducting business in emerging markets, such markets have become the "new frontier" for many firms. Also, existing academic research has acknowledged the importance of such markets (e.g., Nakata and Sivakumar 1997; Arnold and Quelch 1998). This study expands the current behavioral paradigm of analysis to include emerging

markets. To the best of the researcher's knowledge, this study provides the first empirical analysis of emerging market consumer attitudes toward pioneer and follower brands. More importantly, the study sheds light on the differences that exist between emerging market consumers and mature market consumers and how such differences affect the market timing decision.

LIMITATIONS OF STUDY

No study is without limitations and the present one is no exception. The findings of this study are limited on at least five broad dimensions. First, as illustrated in Chapter II, first-mover advantages, as a distinct literature stream, is extremely expansive and inclusive of various theories and perspectives. The majority of these theories are housed under either the traditional economic-analytical perspective or the more contemporary behaviorally-based perspective. This study focuses solely on the behavioral interpretation, which is grounded in the premise that benefits from early entry stem from consumer psychological processes. Within this behavioral perspective, a number of sources of first-mover advantages emanating from diffusion of innovation (e.g., Rogers 1973, 1981) and enhanced awareness and learning (e.g., Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992; Kardes et al. 1993) have been investigated and confirmed. At the center of this study, however, is the process of attitude formation and how consumers "perceive" a product based on order of entry. While, the results of this study suggest a preference for the pioneer brand, acknowledgement must be made that such results must be taken within the context of other sources of first mover advantages. That is, the potential for first-mover advantage may be "offset" or (at least influenced) by

potential first-mover *dis*advantage or late-mover advantage. Such is the crux of the so-called contingency perspective of first-mover advantages (Kerin et *al.* 1992; Szymanski et *al.* 1995). As such, acknowledgement must be made of other theoretical perspectives in the field, which may suggest that entering early does not guarantee a sustained competitive advantage, and the notion that the results of any theoretically-based empirical findings merely provide one or more pieces to a dynamic and extremely vast puzzle.

The second limitation of this study is that the data collection was based primarily on self-reported beliefs, perceptions, and attitudes toward an "abstract" construct compiled by way of survey research. A major critique of survey research is that people's responses may be made "on the spot" without prior thought. This creates a problem when reported attitudes and intentions may not reflect actual attitudes and intentions. For example, responses in this study could be based on the meaning of the terms involved (i.e. pioneer and follower brands). In other words, there may be a demand effect from the leading terms, such as positive connotations from the pioneer and negative connotations from the follower. Many precautions were taken to minimize biases, such as clearly defining the brand type and the use of semantic differential scales with a neutral point, which did not force a choice. Regardless, if consumers are to some degree reacting to the terms pioneer and follower, the managerial implications are still essentially the same: *Managers can tap into the positive associations with pioneership by promoting consumer attention to pioneership in marketing communications.*

A third limitation of the study revolves around *actual* purchase of the pioneer brand and the appropriateness of the theoretical models. Specifically, does a reported intention to purchase of the pioneer brand indicate actual purchase? Extensive evidence

exists regarding the ability of the Fishbein and Ajzen (1975) to predict behavior (e.g., Ryan 1982; Shimp and Kavas 1984). Nonetheless, behavioral intention was measured in this study based on respondents' claims and therefore may differ from actual behavior. This may especially be true in the case of India, where conformance to social norms and the need to provide socially acceptable responses may be heightened (Green and White 1976).

The fourth limitation of the study is rooted in the samples used. For example, the findings of the study are based on data gathered in two countries (U.S. and India) representing two separate categories of countries (mature and emerging). Conclusions regarding the generalizability of these findings are essentially limited to the two countries involved. That is, while the intent of the study was to provide insight into the similarities and differences between these two types of markets regarding the role of order of entry, caution must be taken with regards to the results being indicative of *all* mature or *all* emerging markets. Also, while every effort was made to select samples that were representative of the two countries as well as comparable, the samples exhibited significant differences in age and male/female composition. The Indian sample was much more homogenous (mean age = 20.28, range = 7) in comparison to the U.S. sample (mean age = 22.97, range 11). Extensive measures, such as the use of multiple regression analysis instead of independent-sample *t*-tests and the calculation of partial correlations for the structural equation models, were undertaken to alleviate the effects of these differences. Regardless, acknowledgement must be made of the potential problems associated with the generalizability of the findings of this study as a result of these differences. Also, the use of college students in both countries is based on the need to

establish similar samples across countries and achievement of functional equivalency with regards to the notion of product order of entry. Nonetheless, college students in emerging markets such as India have been known to come from higher social levels (Green and White 1976) and thus may only be indicative of educated Indian attitudes and intentions towards pioneer and follower brands.

A final limitation of the study revolves around the qualitative research conducted to elicit the attributes relevant to consumer formation of attitudes towards pioneer and follower brands and the referents on which social norms are based. Due to budgetary and time constraints, the elicitation process for Indian attributes and referents was conducted using a sample of students from an Indian Student Association based at a U.S. university. Of concern here is the appropriateness of this sample in identifying truly "Indian" attributes. A number of measures were adhered to in order to ensure that these students reflected prevailing views toward the relevant constructs. This included limiting the qualitative research to the responses of students who were new to the U.S. and/or who travel back to India on a regular basis. Nevertheless, students outside their home country may become acculturated to U.S. values in terms of how products are evaluated, including perceptions of pioneer or follower status. That is, the attributes and referents identified may (or may not) actually be those which would have been identified if the qualitative research was conducted in India. Indeed, Fishbein and Ajzen (1975) note that salient attributes are subject to change over time by either strengthening or weakening or being replaced all together.

SUGGESTIONS FOR FUTURE RESEARCH

An important conclusion of this study is that there are significant differences between mature and emerging markets with regards to the question of market timing. As such, there must be recognition of a need for further investigations into the role of order of entry in emerging markets.

The findings of this study are based on data collected from only two countries (U.S. and India). There is no question that replication in other emerging markets might find differing degrees of enthusiasm for pioneer brands. Future research expanding on the findings of this study should include other multi-country comparisons to either support (or refute) the conclusions drawn from this investigation of entry timing in emerging markets. Student respondents were utilized in this study to allow for comparability of samples across two different types of countries. However, students in emerging markets may not provide indications of dominant attitudes and intentions toward pioneer and follower brands in their countries because most tend to come from upper-middle and upper social classes (Green and White 1976). Therefore, future research in the area must attempt to replicate this research with the use of actual consumers.

As discussed previously, the field of first-mover advantage is inclusive of various theories and perspectives. This study provides the first empirical investigation of behavioral sources of first-mover advantage in emerging markets. A more comprehensive view of the phenomenon would not be attained without addressing other conceptual examinations of entering early in emerging markets. Future research must empirically examine the economically-based sources of entering early in these markets. Entering an emerging market is a very difficult process. Many environmental conditions may actually

propose that entering later would be a more viable strategy. Empirical examination of these conditions and how they affect the behavioral advantages of entering early suggested in this study provides a robust source of inquiry for future research.

Finally, one of the limitations of the study revolves around the use of self-reported beliefs, attitudes, and intentions to predict behavior. The theoretical models proposed in this study assume that behavior is positively affected by intention. Such an assumption can be confirmed by addressing actual purchase of pioneer and follower brands. That is, future research of first-mover advantage in emerging markets may use actual product categories where pioneer and follower brands are clearly identified. Previous experimental domestic studies in this area (e.g., Alpert and Kamins 1995) report that consumers actually purchase the pioneer over the follower when they are almost identical. This has yet to be addressed in emerging markets. Admittedly, identifying viable product categories for study is a much more difficult process in these markets. Nonetheless, the use of real products is a viable research direction because it will allow for the studying of actual behavior as well as an expansion of the research domain to include other psychological notions such as consumer retrieval and recall of pioneer brand names. That is, the distinction can be made between *actual* pioneer advantages and advantages achieved due to *presumed* pioneer status.

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APPENDIX

Exhibit A
Questionnaire (U.S.)

Dear Participant:

Thank you very much for taking part in this study. The purpose of this study is to measure and understand how consumers perceive pioneer and follower brands. Your participation is very important. Please try to answer the questions as completely and honestly as you can. There is no right or wrong answer to any questions. Please respond based on your own opinion. Your response will be completely anonymous and will be kept strictly confidential, so please be honest and forthright with your answers.

The survey will take approximately 10 minutes to complete. Your participation in the research is completely voluntary. Shall you feel uncomfortable continuing with the study, you are free to withdraw at any time. Your decision will in no way affect your status in the course or relationship with the university.

A. The following are questions to determine demographics:

Are you an American Citizen?
  Yes ☐   No ☐

Age: _____

Sex:
  Male ☐   Female ☐

Marital Status
  Single ☐   Married ☐

What is the highest education level you have attained?
  High school   ☐
  Some college credit   ☐
  College graduate   ☐
  Professional degree   ☐

B. The following questions relate to your beliefs and attitudes towards pioneer and non-pioneer (follower) products:

Pioneer brand: The very <u>first</u> brand of a new type of product that enters the market.

Follower brand: All other brands of that same type of product that enter the market <u>after</u> the pioneer brand.

1. My overall attitude towards purchasing **pioneer** brands is:

Extremely favorable	☐	☐	☐	☐	☐	☐	☐	Extremely unfavorable
Dislike very much	☐	☐	☐	☐	☐	☐	☐	Like very much
Extremely positive	☐	☐	☐	☐	☐	☐	☐	Extremely negative

2. My overall attitude towards purchasing **follower** brands is:

Extremely favorable	☐	☐	☐	☐	☐	☐	☐	Extremely unfavorable
Dislike very much	☐	☐	☐	☐	☐	☐	☐	Like very much
Extremely positive	☐	☐	☐	☐	☐	☐	☐	Extremely negative

C. 3. Please indicate your general perception of **pioneer** brands

Poor Quality	☐	☐	☐	☐	☐	☐	☐	High Quality
Not Very Distinctive	☐	☐	☐	☐	☐	☐	☐	Very Distinctive
Expensive	☐	☐	☐	☐	☐	☐	☐	Inexpensive
Not a Status Symbol	☐	☐	☐	☐	☐	☐	☐	Status Symbol
Unreliable	☐	☐	☐	☐	☐	☐	☐	Reliable
Inferior	☐	☐	☐	☐	☐	☐	☐	Superior
Complex	☐	☐	☐	☐	☐	☐	☐	Simple
Bad	☐	☐	☐	☐	☐	☐	☐	Good
Desirable	☐	☐	☐	☐	☐	☐	☐	Undesirable
Low Tech	☐	☐	☐	☐	☐	☐	☐	High Tech

4. Please indicate your general perception of **follower** brands

Poor Quality	☐	☐	☐	☐	☐	☐	☐	High Quality
Not Very Distinctive	☐	☐	☐	☐	☐	☐	☐	Very Distinctive
Expensive	☐	☐	☐	☐	☐	☐	☐	Inexpensive
Not a Status Symbol	☐	☐	☐	☐	☐	☐	☐	Status Symbol
Unreliable	☐	☐	☐	☐	☐	☐	☐	Reliable
Inferior	☐	☐	☐	☐	☐	☐	☐	Superior
Complex	☐	☐	☐	☐	☐	☐	☐	Simple
Bad	☐	☐	☐	☐	☐	☐	☐	Good
Desirable	☐	☐	☐	☐	☐	☐	☐	Undesirable
Low Tech	☐	☐	☐	☐	☐	☐	☐	High Tech

D. 5. How important is it that a product be of relatively high quality?

| Not Very Important | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | Very Important |

6. How important is it that a product be unique when compared to others?

| Not Very Important | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | Very Important |

7. How important is it that a product be relatively inexpensive?

| Not Very Important | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | Very Important |

8. How important is it that a product be a status symbol?

| Not Very Important | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | Very Important |

9. How important is it that a product be reliable?

| Not Very Important | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | Very Important |

10. How important is it that a product be superior to others?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

11. How important is it that a product be more complex than others?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

12. How important is it that a product be good?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

13. How important is it that a product be desired by others purchasing the product?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

14. How important is it that a product be low tech?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

E. 15. Rate the extent to which your *friends* think you should buy a pioneer brand
Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

16. Rate the extent to which your *family* thinks you should buy a pioneer brand
Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

17. Rate the extent to which your *significant other* thinks you should buy a pioneer brand
Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

F. 18. How much do you want to do what your *friends* think you should do?
Very much ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all

19. How much do you want to do what your *family* thinks you should do?
Very much ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all

20. How much do you want to do what your *significant other* thinks you should do?
Very much ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all

G. 21. Most people who are important to me think I_____ purchase the pioneer brand rather than a follower brand
Definitely should ☐ ☐ ☐ ☐ ☐ ☐ ☐ Definitely should not

22. Most people who are important to me probably consider my purchase of a pioneer brand rather than a follower brand to be
Foolish ☐ ☐ ☐ ☐ ☐ ☐ ☐ Wise

H. 23. Other things being equal (e.g., price, quality, performance), I would consider buying a pioneer brand rather than a follower brand.
Strongly Agree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Disagree

24. Other things being equal (e.g., price, quality, performance), my intention is to buy a pioneer brand rather than a follower brand.
Strongly Agree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Disagree

Thank you very much for your participation

Exhibit A
Questionnaire (India)

Dear Participant:

Thank you very much for taking part in this study. The purpose of this study is to measure and understand how consumers perceive pioneer and follower brands. Your participation is very important. Please try to answer the questions as completely and honestly as you can. There is no right or wrong answer to any questions. Please respond based on your own opinion. Your response will be completely anonymous and will be kept strictly confidential, so please be honest and forthright with your answers.

The survey will take approximately 10 minutes to complete. Your participation in the research is completely voluntary. Shall you feel uncomfortable continuing with the study, you are free to withdraw at any time. Your decision will in no way affect your status in the course or relationship with the university.

A. The following are questions to determine demographics:

Are you an Indian Citizen?
Yes ☐   No ☐

Age: _____

Sex:
Male ☐   Female ☐

Marital Status
Single ☐   Married ☐

What is the highest education level you have attained?
High school   ☐
Some college credit   ☐
College graduate   ☐
Professional degree   ☐

B. The following questions relate to your beliefs and attitudes towards pioneer and non-pioneer (follower) products:

Pioneer brand: The very <u>first</u> brand of a new type of product that enters the market.

Follower brand: All other brands of that same type of product that enter the market <u>after</u> the pioneer brand.

1. My overall attitude towards purchasing **pioneer** brands is:

Extremely favorable	□	□	□	□	□	□	□	Extremely unfavorable
Dislike very much	□	□	□	□	□	□	□	Like very much
Extremely positive	□	□	□	□	□	□	□	Extremely negative

2. My overall attitude towards purchasing **follower** brands is:

Extremely favorable	□	□	□	□	□	□	□	Extremely unfavorable
Dislike very much	□	□	□	□	□	□	□	Like very much
Extremely positive	□	□	□	□	□	□	□	Extremely negative

C. 3. Please indicate your general perception of **pioneer** brands

Poor Quality	□	□	□	□	□	□	□	High Quality
Not Very Distinctive	□	□	□	□	□	□	□	Very Distinctive
Expensive	□	□	□	□	□	□	□	Inexpensive
Not a Status Symbol	□	□	□	□	□	□	□	Status Symbol
Unreliable	□	□	□	□	□	□	□	Reliable
Inferior	□	□	□	□	□	□	□	Superior
Complex	□	□	□	□	□	□	□	Simple
Bad	□	□	□	□	□	□	□	Good
Desirable	□	□	□	□	□	□	□	Undesirable
Excellent Service	□	□	□	□	□	□	□	Poor Service
Safe	□	□	□	□	□	□	□	Risky
Functional	□	□	□	□	□	□	□	Not Functional

4. Please indicate your general perception of **follower** brands

Poor Quality	□	□	□	□	□	□	□	High Quality
Not Very Distinctive	□	□	□	□	□	□	□	Very Distinctive
Expensive	□	□	□	□	□	□	□	Inexpensive
Not a Status Symbol	□	□	□	□	□	□	□	Status Symbol
Unreliable	□	□	□	□	□	□	□	Reliable
Inferior	□	□	□	□	□	□	□	Superior
Complex	□	□	□	□	□	□	□	Simple
Bad	□	□	□	□	□	□	□	Good
Desirable	□	□	□	□	□	□	□	Undesirable
Excellent Service	□	□	□	□	□	□	□	Poor Service
Safe	□	□	□	□	□	□	□	Risky
Functional	□	□	□	□	□	□	□	Not Functional

D. 5. How important is it that a product be of relatively high quality?

Not Very Important	□	□	□	□	□	□	□	Very Important

6. How important is it that a product be distinctive when compared to others?

Not Very Important	□	□	□	□	□	□	□	Very Important

7. How important is it that a product be relatively inexpensive?

Not Very Important	□	□	□	□	□	□	□	Very Important

8. How important is it that a product be a status symbol?

Not Very Important	□	□	□	□	□	□	□	Very Important

9. How important is it that a product be reliable?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

10. How important is it that a product be superior?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

11. How important is the complexity of the product?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

12. How important is it that a product be good?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

13. How important is it that a product be desired by others?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

14. How important is it that the service that comes with the product be excellent?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

15. How important is it that the product be safe?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

16. How important is it that the product be functional?
Not Very Important ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very Important

E. 17. Rate the extent to which your *family* thinks you should buy a pioneer brand
Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

18. Rate the extent to which your *friends* think you should buy a pioneer brand
Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

19. Rate the extent to which *salespeople* think you should buy a pioneer brand
Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

F. 20. How much do you want to do what your *family* thinks you should do?
Very much ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all

21. How much do you want to do what your *friends* think you should do?
Very much ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all

22. How much do you want to do what *salespeople* think you should do?
Very much ☐ ☐ ☐ ☐ ☐ ☐ ☐ Not at all

G. 23. Most people who are important to me think I_____ purchase the pioneer brand over the follower brand
Definitely should ☐ ☐ ☐ ☐ ☐ ☐ ☐ Definitely should not

24. Most people who are important to me probably consider my purchase of a pioneer brand over a follower brand to be
Not Appropriate ☐ ☐ ☐ ☐ ☐ ☐ ☐ Appropriate

H. 25. Other things being equal (e.g., price, quality, performance), I would consider buying a pioneer brand over a follower brand
Strongly Agree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Disagree

26. Other things being equal (e.g., price, quality, performance), my intention is to buy a pioneer brand over a follower brand
Strongly Agree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Disagree

Thank you very much for your participation

VITA

Dr. Tarek T. Mady is currently an Assistant Professor of Marketing at Alexandria University (Egypt). He received a Ph.D. in Business Administration with a concentration in Marketing from Old Dominion University in 2004, a Masters of Science in Finance from Louisiana State University in 1999, and a Bachelor of Science in Business Administration from Alexandria University (Egypt) in 1995. His research interests include international marketing strategy, emerging markets, and cross-cultural consumer behavior. Dr. Mady has served as an Adjunct Faculty Instructor and Visiting Instructor of Marketing at Old Dominion University where he has won a number of teaching awards. He has taught various undergraduate and graduate marketing courses, including the introductory MBA marketing course to U.S. Navy Officers aboard the USS Kitty Hawk and USS Blue Ridge via live video conferencing as part of Old Dominion University's TELETECHNET distant learning program.

Dr. Mady's professional services include acting as a reviewer for a number of conference tracks focusing on international marketing and marketing strategy issues. He has also been a reviewer for a special issue of the *International Marketing Review*. Dr. Mady's honors include consortium fellowship at both the 38th Annual AMA Sheth Foundation Doctoral Consortium (2003) and Society for Marketing Advances Doctoral Consortium (2002). He has also received the "Best Student Paper Award" in Marketing Strategy Track at the SMA Annual Conference (2002).