INTERNATIONAL DIFFUSION RESEARCH: A PROPOSITIONAL INVENTORY FOR FUTURE RESEARCH

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Expanding into international markets and effectively introducing products abroad are topics of great interest to international marketers and managers. The research and information on diffusion, the procedure by which an innovation is disbursed, has been widely expanded throughout the last decade. Nevertheless international diffusion research remains limited, even in the midst of product expansion into international markets. This paper offers propositional theories consolidating the current research in the area of international diffusion in the form of an inventory. This inventory, along with its implications for management considering international product introductions and recommendations for future research, provides an updated view of international diffusion to aid in forecasting international marketing success.

INTRODUCTION

As international businesses expand their scope to target larger international regions operational approaches must be customized within these markets. Marketers recognize this need to understand international customers and individual, culture-specific needs. These issues have led to recognition of the need for more research in international product/innovation diffusion.

Many researchers have studied the diffusion process at the country (national) level, however, cross-national and therefore cross-cultural, diffusion research remains limited. Cross-national consumer behavior research has expanded throughout the past decades; yet studies which concentrate on the "diffusion patterns across countries and the differences in diffusion rates and market penetration" (Gatignon, Eliashberg and Robertson 1989; Helsen, Jedidi and DeSarbo 1993; Takada and Jain 1991; Kumar, Ganesh and Echambadi 1998, Putis, Balasubramanian, Kaplan and Sen 1997; Yaveroglu and Donthu 2002) are somewhat scattered.

An examination of the findings of existing research, both directly and tangentially related to international diffusion, will be presented in this paper through a propositional inventory concentrating on the factors that influence cross-national or cross-cultural diffusion. Given the importance of understanding the diffusion process for a successful international marketing strategy, the primary purpose of the paper is to establish a research agenda through which international diffusion research can be furthered.

DIFFUSION MODELS

This paper will gather existing literature and integrate these studies in a way that may be used to better understand the collective knowledge of international diffusion research as well as the impact of culture on diffusion. As such, this paper represents the first propositional survey that combines current research on the subject into a framework which describes what researchers have learned regarding the international diffusion process and how the synthesis of this information can best be applied to guide future research in the field.

The terms "international," "cross-national" and "cross-cultural" will be used interchangeably throughout this paper. Although they have

varying definitions, they are used in this way because this paper focuses on the international aspects of diffusion, as opposed to the national and boundary-tied diffusion that has received so much research attention. Instead, this propositional survey concentrates on the diffusion research that specifically focuses on the influences of diffusion across nations and cultures.

The Bass Model

Diffusion is traditionally defined as "the process by which an innovation spreads" (Rogers 1962), or alternatively, how an innovation "is communicated through certain channels over time among members of a social system" (Rogers 1983). The Bass model is traditionally the means by which the diffusion process is described (Bass 1969). Expressed as an equation, it predicts the spread of an innovation, the number of adopters of a new product, and when the consumers or adopters will adopt. The Bass model fundamentally illustrates the relationship between the two groups represented in the model: the innovators and the imitators. The two groups are seen to transfer new product information via external and internal influences using mass media, word of mouth, and other promotional mechanisms (Rogers 1983). The relationship between the groups and their influence is as follows: innovators generally are affected by external influences, such as advertising, and imitators are generally influenced by internal influences (social interaction and word of mouth). This leads to a probing question: how can this model be applied in an international context?

Diffusion occurs within a social system, thereby signifying that diffusion of innovations is influenced by cultural phenomenon (Yaveroglu and Donthu 2002). Culture clearly has a substantial impact on the adoption of an innovation and influences the pattern by which an innovation is adopted. The way in which a product is communicated through a social system and the characteristics of that social system have a role in the diffusion process of

innovations within that system (Yaveroglu and Donthu 2002).

However, the Bass model has garnered mixed results in international settings. One of the reasons for this is that the model is thought to be context-bound (i.e., U.S. domestic-bound) and therefore not flexible enough to represent the potential multiple diffusion processes that may occur in different cultural contexts (Gatignon et al. 2001; Yaveroglu and Donthu 2002). More directly, the "model does not incorporate market-specific variables in explaining diffusion patterns" and the model is not wholly accurate because it does not incorporate differing variables and values that account for variances in the socio-cultural environment (Gatignon et al. 2001).

Thus, differences in social system characteristics that vary by country cannot be incorporated in the Bass model, making it a less than ideal model for cross-cultural diffusion research (Gatignon and Robertson 1985; Gatignon et al. 2001). Further, the Bass model requires that multiple data points be available or the model can become unstable. For example, if there is not a sufficiently long time series of data, problems arise for estimating diffusion models in an international context (Heeler and Hustad 1980; Gatignon et al. 2001).

One of the first studies to concentrate on the Bass model's use in an international setting (Dowling 1990) observed that the adoption rate of people in various countries, of course, varies. The Bass model's parameters measured points of inflexion, either points of concavity or points of convexity, in the diffusion curve that signaled an imitative process (concavity) or an innovative process (convexity), signaling a higher proportion of independent sales with faster initial sales rates (Dowling 1990).

The study (Dowling 1990) provides initial insight into how the Bass model may be used to classify diffusion patterns and thus profile the range of new product purchasing behaviors of people within large and complex social systems

(i.e., cross-national or cross-cultural social systems). However, while the behaviors of markets can be predicted using the Bass model, it remains to be seen if it has any usefulness as a "diagnostic and strategy development device," especially in an international context (Dowling 1990).

P1: While the Bass model does not effectively model cross-national diffusion patterns, it does provide useful criteria to classify cross-cultural diffusion patterns when used with variables such as the initial sales rate, the percentage of independent sales, and the percentage of people in each adopter category.

Cultural Anchoring Model

An alternative to the Bass model in explaining the international diffusion process is the Cultural Anchoring model. The Cultural Anchoring Diffusion/Assimilation Model suggests that, over time, certain innovations may foster a highly involving psychological dependence that goes beyond recognition of previous product inadequacies. In this scenario, the individual's self-concept becomes strongly linked to his or her adoption of a new product (LaTour and Roberts 1992).

For a product to be culturally anchored, it must become part of the consumer's lifestyle and sociocultural surroundings. Interacting with that product then becomes an important part of that individual's "self concept" (LaTour and Roberts 1992). When that occurs, that product is "culturally anchored." The traditional diffusion development process includes the steps noted by LaTour and Roberts (1992): 1) recognition by the marketer of a problem or need, 2) basic and applied research focused on the assessment of consumer market potential, 3) product prototype development and testing, 4) commercialization/ product introduction, 5) penetration of the product into the target group, and 6) evaluation of post-diffusion consequences.

The cultural anchoring process addresses step five of the traditional model and then "collapses" the first four phases while expanding on the fifth phase. The resulting model is comprised of: 1) the innovation process (corporate process of developing new products), 2) the trial/adoption process (initial trial and continued assessment by individual consumers), 3) the diffusion process (large-scale adoption by the target population), 4) the assimilation/cultural anchoring process (product becomes linked to the individual's self-concept and ego needs), and 5) the aftermath/consequences process (assuming successful anchoring), in which the individual will experience increasing ego involvement and dependency over time, leading to a greater susceptibility to replacement or "re-anchoring" by the next generation of technological innovation (LaTour and Roberts 1992).

The cultural anchoring model helps explain the tendency of a culture to become "attached" to a product. The culture becomes perceptually dependent upon the new product offering resulting in the culture being a "hooked" or anchored user. According to LaTour and Roberts (1992) once individuals have experienced the ego involvement associated with anchoring, they are even more susceptible to the next generation of product offerings which hypothetically would promote future product diffusion of related products within that culture and create an atmosphere of ever-increasing diffusion cycle-time.

The addition of the cultural anchoring model provides a valuable tool for marketers to understand or distinguish a variety of markets that would be ideal for the newest generation of technological innovations and potentially allow firms to design products for maximum anchorability in any given market.

P2(a): The Cultural Anchoring Model explains the psychological dependence of a culture on a product or innovation that goes beyond recognition of previous products.

P2(b): Anchorability could be used to determine areas for future new product diffusion across countries and/or cultures.

LEAD/LAG TIME EFFECT

The limited number of studies in cross-national diffusion research point to two possible factors for explaining the differences in cross-national diffusion patterns (Yaveroglu and Donthu 2002). The first, the time effect in cross-national diffusion, has been examined by several studies. Lead and lag time relate to where the product was first introduced (lead time) and the timing associated with introducing subsequent products in different countries (lag time). Takada and Jain (1991) conducted one of the first studies involving international lead and lag time patterns using the theoretical foundation established by Rogers (1983).

These authors (Takada and Jain 1991) investigated the lead and lag time relationship involving cross-national differences. The study illustrates how certain factors accelerate the diffusion process. In relation to the lead-lag time effect, Takada and Jain conclude that countries which experience a lag time, or extra time available for potential adopters to adopt a product, will have more opportunity to better understand the advantage of the product, to use the product, to assess the benefits, and to eventually adopt. A positive relationship between the time lag and diffusion rate in the lag country was established (Takada and Jain 1991). Talukdar, Sudhir and Ainslie (2002) also found a strong positive relationship between introductory lag and the coefficient of internal influence (Talukdar et al. 2002).

P3: There is a positive effect of time lag on diffusion rate in lag markets.

There is still evidence that time lag does influence the diffusion pattern across countries as shown by Takada and Jain (1991). However, more conclusive research is needed

to explain the underlying influencing factors that could help establish causal relationships.

P4: Time lag effect is significant in explaining differences in diffusion patterns across countries.

Ganesh and Kumar (1996) attempted to clarify these findings by concentrating on learning effects. Learning effect refers to the opportunity for lag countries to learn from the experiences of a leading country's adoption of new products. Ganesh and Kumar (1996) studied the adoption rate of store bought scanners in eleven countries. The results support the notion that the opportunity to learn from previous adopters in other countries does exist, and that the lead country has greater influence on the diffusion rate when a product is introduced later in a lag country (Kumar et al. 1998).

P5: Countries that adopt products through a lagged introduction tend to have an increased acceleration of diffusion of the product within their country.

The effect of time lag on the learning process in conjunction with country characteristics and product/innovation characteristics is also an important foundational component in the diffusion process (Ganesh, Kumar and Subramaniam 1997). While learning effect and the learning process appear similar, the distinction lies in the fact that the learning process is the means by which individuals in one country learn from another country. This represents the initiation point in the diffusion process. Learning effect represents the impact that being a lead or a lag country has on the rate of diffusion. Ganesh et al. (1997) investigated the diffusion pattern of four consumer durables -- the VCR, the microwave oven, the home computer, and the cell phone in relation to the learning process using a sample of twelve European countries.

This research (Ganesh et al. 1997) examined the relationship between lead and lag countries in the following areas: geographical proximity,

cultural similarity, economic similarity, time lag, type of innovation, and existence of technical standards. The following factors between countries exhibited a positive supportive influence on the learning process: the effects of cultural similarity, economic similarity, time lag, type of innovation and existence of technical standards. Geographical proximity was not significant in three out of the four product categories and therefore remained inconclusive.

P6: Cultural similarity, economic similarity, type of innovation and accepted technical standards are factors that influence the learning process that occurs between countries.

P7: Geographical proximity does not significantly affect the learning process that occurs between countries.

COUNTRY-SPECIFIC INFLUENCES IN CROSS NATIONAL DIFFUSION

Country characteristics have long been considered influencers of the diffusion process. From a practical perspective, if diffusion patterns are similar for countries that fall into the same characterized categories, then marketers could use country-based segmentation schemes to determine the next potential market for product introduction. A number of studies have addressed the effect of these country-specific influencers on the diffusion process. The various areas of country-specific diffusion research can be divided into five categories: 1) country effects; 2) country characteristics and variables; 3) influences across countries; 4) Hofstede and country characteristics; and 5) developing versus developed country factors.

Country Effects

Takada and Jain (1991), in addition to their research on time effect, elaborated on the country effect in influencing cross-national diffusion. Using Hall (1976) and Rogers (1983) as a framework for their country specific

studies, Takada and Jain (1991) brought together the concepts of high context and low context cultures, with the principle of human communication, to suggest that information moves faster between individuals that possess similar characteristics. Takada and Jain (1991) found a positive relationship between the rate of diffusion and the overlapping characteristics of groups. The conclusion would be that communication will be faster in high context cultures where individuals possess similar characteristics (Yaveroglu and Donthu 2002) when compared to low context cultures.

P8: Countries that have a high concentration of individuals with similar cultural characteristics will have a faster and higher rate of diffusion than those countries that have diverse individual cultural characteristics.

In a country segmentation study, Helsen, Jedidi and DeSarbo (1993) researched the relationship between macro-level country segmentation and diffusion-based segmentation. These authors determined that if diffusion patterns are comparable for countries that fall in the same macro-level country characteristics based segment international marketing managers could use a traditional country segmentation approach to assess target markets (Helsen et al. 1993).

COUNTRY CHARACTERISTICS: VARIABLES

Additional studies have identified relationships between country segmentation characteristics in the area of social communication variables (i.e., cosmopolitanism and mobility), and the role of women in the labor force. Gatignon, Eliashberg and Robertson (1989) found that these variables relate to a country's propensity to innovate and imitate. Concentrating their investigation on durable goods data from 14 European countries, they found that countries with relatively high degrees of cosmopolitanism have a greater propensity to innovate, those with greater mobility have a greater propensity to imitate, and that the

number of women in the work force is negatively related to the country's propensity to innovate for time consuming innovations, and positively related to the propensity to imitate when the work context provides a level of similar cultural influences, depending on the product (Yaveroglu and Donthu 2002).

P11(a): Country characteristics such as cosmopolitanism positively affect a country's propensity to innovate.

P11(b): Mobility positively affects a country's propensity to imitate.

P11(c): The number of women in the workforce negatively affects a country's propensity to innovate for time consuming innovations and positively affects a country's propensity to imitate in regards to products that are dissimilar to current product usage patterns.

A study by Lee (1990) which was aimed at outlining the country specific determinants of innovativeness found similar findings with regard to cosmopolitanism and other country characteristics that affect the diffusion process. Contrary to looking at the innovator as an individual, this author investigated the innovator at the aggregate country level to determine nation-related factors that lead to innovativeness. His research found that earlier adopter countries tended to exhibit higher levels of economic development, have higher literacy rates, less authoritarian societies and more favorable attitudes towards science and education, and be more cosmopolitan (Lee 1990).

P12: Countries can be segmented regarding their innovativeness according to a variety of country variables including: wealth, industrialism, rate of literacy, authoritarianism, emphasis on science and education and cosmopolitanism.

Across Countries

Kumar, Ganesh and Echambadi (1998) incorporated factors from previous studies (Takada and Jain 1991; Helsen, Jedidi and DeSarbo 1993; Gatignon, Eliashberg and Robertson 1989; Yaveroglu and Donthu 2002), including country specific effects, the lead-lag effect, and cultural variables, to study diffusion parameters across countries. Combining the data collected from previous studies and incorporating annual sales data for five product categories (VCRs, microwave ovens, cellular phone, home computers, and CD Players) across 14 countries, they were able to determine that country specific characteristics can identify the differences in diffusion patterns across nations and innovations. The study suggests that the timing of entry, geographical proximity and cultural or economic similarity influence the clustering of countries and help to identify country characteristics (Kumar et al. 1998). Taking into account that some of their findings mirror those of previously cited studies, any areas of duplication have been left out to reduce replication of propositions. However, the new areas were highlighted in the study (Kumar, Ganesh and Echambadi 1998) as being key areas of international diffusion.

P13: The average of the coefficient values of country-specific and time lag variables across existing innovations can be used to generate forecasts for a new innovation.

P14: Forecasts for existing innovation in a new country can be generated using a cross-sectional, country specific, time series framework.

In related work, Putis et al. (1997) studied the mixing pattern in relation to new product adoption. The mixing pattern explains how an adoption of a product in one country affects the adoption in another country (Putis 1997; Yaveroglu and Donthu 2002). Their study also used data from previous studies to conclude that mixing behavior does indeed affect new product diffusion and is an important variable

to consider when explaining the diffusion process across countries.

P15: An important variable to consider when explaining new product diffusion is the mixing behavior of the countries studied.

Hofstede and Country Characteristics

Yaveroglu and Donthu (2002) studied the country-specific effects and cultural effects on diffusion using Hofstede's study of cultural dimensions. Hofstede's study classifies cultural dimensions that show demographic, geographic, economic and political relationships within a society. These authors used Hofstede's cultural dimensions in conjunction with Hall's high/low context conceptualization to explain the effect of the cultural dimension on diffusion of innovations.

The study (Yaveroglu and Donthu 2002) used cross-country new product data, and data from previous studies such as Ganesh and Kumar (1996), Takada and Jain (1991), and Ganesh, Kumar and Subramanian (1997) for 19 countries averaged across 17 product categories, in conjunction with Hofstede's data on the four dimensions of culture. Correlational analysis between the country classifications given by Hall (1976), the low context/high context classifications used by Takada and Jain (1991) and the culture context data of Hofstede (1991) matched the countries with their average values.

These results produce the following propositions:

P16: Countries with a high level of uncertainty avoidance have a higher propensity to innovate and a lower propensity to imitate.

P17: Countries with a high level of power distance are low on innovation.

P18: Individualism is positively correlated with innovation and societies that are

high on individualism have a higher propensity to innovate.

This research is also significant theoretically in that it shows links between Hofstede's values and Bass' Model. The Bass model suggests that those countries that are highly innovative, or that have a high coefficient of innovation, should be entered first when introducing a new product to the market. The study suggested that countries that were high on individualism, low on uncertainty avoidance and low on power distance should be entered first considering that their coefficient of innovation is relatively high. Those countries that are imitators, according to Bass, or that in this case are low on individualism and high on uncertainty, should be entered later because they would be hesitant to accept or adopt a new product until it proved successful in other markets. By using the characteristics of each country as ranked by Hofstede's value dimensions and Bass' model, Yaveroglu and Donthu (2002) suggest that each country could be ranked and those that exhibited high individualism, low uncertainty avoidance, and low power distance could be considered first for product introduction.

Developed vs. Developing Countries

Exploring a different avenue, Talukdar, Sudhir and Ainslie (2002) addressed the issue of the diffusion process in emerging economies by studying the diffusion of six products in 21 developed and developing countries in Europe, Asia and North and South America. Their findings highlight the fact that developing countries have, on average, a penetration potential that is about one third the rate of penetration for developed countries. The study also found that the average time to peak sales for developing countries versus developed countries was 17.9 percent longer, meaning it takes developing countries approximately three years longer to achieve peak sales.

P19: Product penetration potential and diffusion speed in developing markets is lower and slower than that of developed markets.

ROLE OF THE INNOVATOR AND OTHER ADOPTER CATEGORIES

The final area recognized as an important influencer in the diffusion process is the role of the innovator or the adopter. The innovator and the adopter categories are key elements of the multinational diffusion process. These areas are generally referred to as the key consumer "change agents" in that the innovator or early adopter gives the new concept initial market visibility and the opinion leader, a typical, key innovator, acts as a credible information source whose social role is to evaluate a new product and transmit product information and usage experience to their peer group (Baumgarten 2001).

The role of the innovator in the diffusion process is based on a broad spectrum of variables related to societal culture. Some of these variables influencing adoption of innovations are belief systems, cultural traditionalism, cultural homogeneity, and socialization of individual actors (Wejnert 2002).

Rogers (1962; 1983) was one of the first to investigate societal roles and influencers in the diffusion process. He noted that cultural values influence the original adoption, or rejection, of an innovation and also how the new idea will be integrated into the existing way of life. Thus, the innovation process is at least partially determined by the culture. Rogers (1983) explains that there are two types of norms that are barriers to change and can influence the diffusion of new ideas: modern and traditional norms.

Modern norms are more innovative, more progressive, more developed, and economically more rational than traditional norms. Individuals that possess these norms favor adopting new ideas more rapidly, and favor innovations more than traditionalists. A modernist welcomes change, while a traditionalist resists change. These norms reflect the social system in which the modernist lives. The modernist's social system is classified by better-developed technology, a more complex division of labor, more urban and more scientific values and education, and stronger economic rationale (Rogers 1962; 1983).

Traditionalists, on the other hand, are less developed and less complex. They have a tendency to have lower literacy and education rates, as well as lower economic rationality. A traditionalist begins to play with a complete plan, has a set of answers and choices for every possibility, and his or her alternatives are selected and prescribed by the "authority of an eternal yesterday" (Rogers 1962; 1983).

Individuals in either of the two norm categories usually play only one role and seldom change. However, the categories are not exclusive. Rather they tend to exist on a continuum with the two defined norms at opposite endpoints (Rogers 1962; 1983).

Rogers (1962; 1983) argues that the norms of a social system are expected to affect the behavior of members of the social system. This would mean that individuals in a social system will exhibit the same behavior, and presumably the same diffusion characteristics, as the behavioral norms of the society. Knowing which type of system the innovator belongs to aids in understanding the propensity of that individual toward being innovative. Therefore, the innovativeness of those at the individual level is related to a modern rather than a traditional orientation. Community norms seem to affect/explain variation in individuals' innovativeness not explained by other variables such as social characteristics and an individual's innovativeness varies directly with the norm of their social system's innovativeness.

P20: An individual's innovativeness is directly related to the norms of his or her social system, which is directly related to the individual's culture. Therefore belief systems and culture affect the adoption of innovations.

As noted, other studies have found similar ties between innovativeness and the individual's social system. When an innovation conflicts with a societal culture's belief system or values, Herbig and Miller found that those groups of individuals are less likely to adopt new concepts (Herbig and Miller 1991). Conversely, when an innovation is in line with the group's cultural values and norms, the group's belief system variables are strongly linked to the group's adoption and the adoption ceiling for the innovation (Herbig and Miller 1991).

P21: The consistency of an innovation with a culture's belief system will directly affect the adoption of the innovation within that culture and the adoption ceiling for that innovation.

In addition, culture affects consumer innovativeness, defined as the predisposition to buy new and different products and brands rather than remain with previous choices and consumption patterns (Steenkamp, Hofstede and Wedel 1999). Consumer innovativeness is an important factor to consider when studying international diffusion and diffusion in general because the construct of consumer innovativeness is central to the theory of the diffusion of innovations (Midgley and Dowling 1978; Steenkamp, Hofstede and Wedel 1999). To better understand the diffusion process, it is important to understand how consumer innovativeness varies in the international, or cross-national, environment.

The adoption of new products by adopters is influenced, in a generalized manner, by consumer innovativeness (Midgley and Dowling 1978; Steenkamp, Hofstede and Wedel 1999). As opposed to the study by Yaveroglu and Donthu (2002), which incorporated Hofstede's cultural value dimensions to categorize and define diffusion patterns across countries, Steenkamp, et al. (1999) used those dimensions to research the interaction between individual consumer innovativeness and national culture in a cross-national arena.

After conducting their research across eleven European Union countries, these authors (Steenkamp, Hofstede and Wedel 1999) found general support for the notion that consumer innovativeness is affected by value orientations as well as by consumer-context-specific dispositions (Steenkamp, Hofstede and Wedel 1999). These findings highlight that the differences in innovativeness between countries, which arguably could be related to cross-national diffusion, is highly dependent on the role of national cultural variables (Steenkamp, Hofstede and Wedel 1999).

Individual innovativeness is influenced by national culture, and the researchers' (Steenkamp, Hofstede and Wedel 1999) combination of studying individual, as well as national-level variables, helps to understand why some variables may not affect consumer innovativeness across countries. This, in turn, may indicate that those countries might not be receptive to such innovations because consumers in the identified countries are not affected by those specific innovativeness variables (Steenkamp, Hofstede and Wedel 1999). Since innovativeness affects the rate of diffusion of new products, these findings could help researchers to better understand international diffusion by better understanding the innovativeness of a country's consumers at the national and individual levels.

P22: Consumer value orientations, as well as consumer oriented national cultural variables, affect the innovativeness of consumers, which in turn affects the rate of diffusion.

Further research into adopter categories has been done in areas such as opinion leadership and the role of the opinion leader in the diffusion of innovations across cultures. A fairly recent study by Cosmas and Sheth (2001) looked at the definition and structure of opinion leadership across different cultural groups. The results noted that there is in fact a set of common features that distinguishes and assesses opinion leaders and that these features vary by culture. The more similarity between

two cultures, the more likelihood there is that they will consider similar characteristics to be measurements of opinion leadership.

P23: The definition of an opinion leader varies across cultures; however, similar cultures have similar definitions of an opinion leader.

IMPLICATIONS

What managerial implications can be drawn from this propositional approach to international diffusion? The models used to explain international diffusion and to outline the process of adoption in an international context, as currently represented in the marketing literature, are generally not fully developed in an international sense. A limited number of studies showed some progress in researchers' attempts to use the Bass model to classify and categorize international diffusion patterns. Dowling's (1990) study in particular showed that the Bass model is currently able to provide information to classify cross-cultural diffusion patterns when used with information. This information could be used to classify diffusion patterns across a wider range of social systems, perhaps across multiple countries.

Dowling concentrated on showing how single product diffusion patterns indicated a broad sociocultural difference among countries and domestic markets (Dowling 1990). He also suggested that more generalized results could be obtained by looking at multiple products in multiple segments. The Bass model, therefore, could be a very valuable tool for the international marketer, because it offers a well-structured, mathematical diffusion of innovations paradigm, an easy-to-use model capable of estimating model parameters using a minimal number of data points, and a huge potential for determining knowledge to help with market determination and pre-launch forecasting (Dowling 1990). However, current research appears to lack these connections. As suggested in this study, if the Bass model included more cultural variables, it could be

more effective as an international decision-making tool.

With regard to the cultural anchoring model, management could use this framework to design products for maximum anchorability and also to help induce trial and exposure to insure anchoring (LaTour and Roberts 2001). Designing a product that can be anchored into a cultural group's lifestyle would increase benefits for marketers because those products could potentially become staples in that market, thereby creating potential dependencies and long-term profitability for producers. Additionally, LaTour and Roberts (2001) suggest using the anchorability model in conjunction with trial usages, credible endorsers, and explicit samplings of the product to better understand product anchorability across cultures. Such an application could foster greater anchorability simply by increasing usage and visibility of the product within a given culture.

Lead /Lag Time Effect

While studies pertaining to the lead and lag time effect have great implications for management as well as for future diffusion research, it is important to understand that the product itself plays a key role in the ability to accurately use the time effect in explaining the diffusion rate of a product in a "lagging country". The factors of time lag, innovation type, and the existence of a technical similarity or standard had a positive influence on the learning curve. This information could be used to introduce similar products in countries that have similar cultures and economic conditions and expect to experience similar learning curves for those products.

Country-Specific Influences in Cross National Diffusion

Country-specific influences are very broad in their scope and therefore equally broad in their implications. The basic underpinnings of the country specific research imply that if managers have some idea as to how to classify countries

according to specific factors or characteristics, they could then determine what each country's diffusion patterns are as they pertain to that specific country's categorization. Most of the studies in this area, however, have achieved mixed results, implying that further research is needed in order to establish a link between country specific factors and diffusion.

The findings that have identified a link imply that country-specific factors can be used to influence product introductions in a new market. For example, countries that are more cosmopolitan have a tendency to be more innovative and those that are more mobile have a propensity to be more imitative. In addition, separating countries into clusters based on their country specific influencers could help to understand the underlying potential causes for country differences in their diffusion patterns. Some of the factors that could be used to separate countries into similar diffusion segments might include the timing of product entry in a given country, geographical proximity to the home country and cultural and economic similarities.

Role of the Innovator and Other Adopter Categories

Finally, the roles of the innovator and adopter characteristics play a significant role in understanding multinational diffusion patters. Recent studies show (see above) that if a product clashes with an individual's societal culture and values that individual, and the society at large, will be less likely to adopt the given product. Understanding the culture, and thereby the values and beliefs of individuals in specific cultural contexts, is very important to gauge an understanding of an individual's, and by extension that society's, propensity to adopt. For a product to succeed, marketers must show that the product is in line with the culture's values and beliefs. In addition to the cultural differences that affect adoption, there are also the innovativeness characteristics that affect product diffusion and adoption.

Since innovativeness is a key variable in new product adoption, affecting the rate of diffusion of new products, managers would benefit from understanding the innovativeness of consumers to predict the diffusion rate of products (Steenkamp, Hofstede and Wedel 1999). An understanding of the relationships of consumer and national characteristics of consumer innovativeness is important to marketers who want to identify areas for product launches-- ideally those countries that have consumers with the characteristics that are more likely to be innovative.

Finally, the opinion leader, a key adopter in the diffusion process, is defined differently across cultures. This is important to take into account because it implies that marketers cannot assume that opinion leaders possess the same characteristics across cultures and/or nations. Current research regarding the roles of the innovator or adopter generally agrees that products should be positioned to attract the adopter based on specific culturally or nationally defined characteristics … a decidedly difficult task.

RECOMMENDATIONS FOR FUTURE RESEARCH AND EXTENSIONS

International diffusion research is an area of considerable opportunity for future research. In international diffusion modeling, working toward the development of a concise model outlining the international diffusion process, which takes into account cultural factors as well as the coefficients of imitation and innovation, as does the Bass model, is one area for potential future contribution. The diffusion of innovations is a culture- specific phenomenon, and the model for the diffusion process should take into account the cultural variances of the market. A more relevant model, which takes into account cultural factors, would enable marketers to predict which markets to enter first and which to enter after a delay.

The cultural anchoring model has explained those variables further, but more extensive research into the anchoring process is needed to

determine the extent to which anchoring can be leveraged across markets. If anchoring could be used to determine new areas of product diffusion, as current theory suggests, then matching countries which are most likely to anchor with particular product types would be a substantial contribution. For example, are there variables that categorize a country for being particularly receptive to product anchoring for specific innovations? Can anchored countries ever become un-anchored from a product and how long is the average anchoring cycle? These questions are all significant potential avenues for future cultural anchoring model research.

Considering the lead and lag characteristics, it is important to understand the relationship that exists between individual countries that might enable them to be innovators or imitators, with respect to one another, thereby creating product strategy synergies. It would be worthwhile to explore the relationship between countries that are consistently lagging in product adoption and diffusion relative to those that are considered to be more innovative or adoptive. The relationship between diffusion rate and time lag also suggests further research opportunities to explore possible explanations for the inconsistency of results in the existing literature. There are additional factors that may affect lag time and the diffusion process which might explain these mixed results. Research focused on product related factors of an innovation that are introduced with a lag, as well as the cultural factors of the studied countries, could provide valuable contributions to the current literature base.

More specific cultural factors, and their relationship to the diffusion process, is another area of potential research. With these large numbers of potential differences, it is often difficult to try to classify all nations regarding their diffusion pattern based on country, national, or cultural factors. Instead, future research should continue to try to classify countries along the lines of propensity to innovate, to imitate, to lead or to lag. The research on countries that have a propensity to

innovate and imitate based on their country-specific factors, could be broadened to include cultural factors, thereby, creating a factor-based model inclusive of cultural differences.

Finally, innovator and adopter characteristics greatly affect the diffusion process which can vary widely across cultures and nations. The role of the opinion leader is defined differently in different cultures. Such definitions for the innovator, as well as for imitators, could be explored in order to define each more explicitly so as to take into account international differences.

Future research studying international product adoption and diffusion may be the key to better understanding the process for successful and effective international market entry and expansion strategies, as well as developing better sales and demand forecasts for international consumers. The plethora of differences across, and within, cultures and countries poses a challenge for generating a consensus on many cross-national or cross-cultural diffusion studies. Nevertheless, through future research in the area of international product adoption and diffusion, international marketers should be better equipped to handle the global market and pursue successful product entry strategies in this global marketplace.

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