The Effects of Localisation Decisions on New Product Superiority and Performance: Empirical Research on Consumer-Goods Subsidiaries

Firmanzah*

New products, while essential, are risky and expensive for subsidiaries. The main objective of this research is to determine success factors for new product launch (NPL) by subsidiaries operating in developing countries. It is argued that localisation of NPL decisions contributes positively to new product superiority and commercial performance, with partial least squares used to test the hypothesis. The results show that localisation of innovation decisions increases localisation of branding and commercialisation decisions in the local market. However, localisation of commercialisation decisions positively influences new product superiority, while localisation of innovation decisions reduces this superiority. Finally, hypothesis testing reveals that localisation of commercial decisions and new product superiority both increase the commercial performance of new products in the local market.

Keywords: Subsidiary, localisation, new product, new product superiority, commercial performance

Introduction

One stream of research in MNC decision making argues that localisation of decisions adapting local market environments can increase MNC local market performance (Hill & Still, 1984; Wind, 1986; Douglas & Wind, 1987). The long existing cultural, political, and economic differences among nations require that marketing programs must be adapted to the local market conditions (Boddewyn et al., 1986, Wind, 1986). The diversity of host-country environment cannot be treated with a single procedure. Each country needs treatment differently. Standardization of decision reduces competitive advantage in the local market. Thus, this research evaluates the effect of localisation of NPL decisions on new product performance. It is argued that the degree of adaptation in NPL decisions can increase the performance of new products launched by subsidiaries in local markets. Each NPL decision must adapt and consider the specificity of local characteristics. Since NPL involves several decisions, this research tries to test the effect of localisation in each decision on new product performance in the local market.

Subsidiary, itself, represents an important context of international study (Paterson & Brock, 2002). It is subsidiaries in the MNC organisation structure that interact daily with the domestic (local) environment. The global competitive advantage of MNCs is a function of competition in domestic markets (Bartlett & Ghoshal, 1986; Doz & Prahalad, 1991). Consequently, subsidiaries play an important role in creating and maintaining MNC global competitive advantage (Rugman & Verbeke, 2001; Birkinshaw et al., 1998). Subsidiaries are not only entities in the MNC network that benefit from firm-specific advantages originating in the parent company (Rugman & Verbeke, 1993), but also build competitive advantage by dealing with local business competition.

Subsidiaries operate in local environments with different characteristics that are sometimes contradictory to the environment in the MNC home country. Despite increasing globalisation,
the need for localisation of NPL decisions is still apparent, since variations between countries in areas such as consumer needs, use conditions, purchasing power, commercial infrastructure, culture and traditions, laws and regulations, and technological developments are still great; this requires adjustment of the firm’s marketing strategy to the idiosyncratic circumstances in each country (Terpstra & Sarathy, 2000). Furthermore, Onkvisit and Shaw (1990) argued that the ultimate objective of a firm is not cost reduction through standardisation, but long-term profitability through sales accrued from better exploitation of different consumer needs across countries. Without familiarising themselves with the local language, business customs, legal requirements and marketing procedures, foreign producers might find themselves at a disadvantage compared to local firms (Behrman, 1972). Simmonds (1985) contended that for survival in the face of intense international competition, MNCs must be responsive to market segments that demand unique treatment by virtue of institutional or customer idiosyncrasies. In brief, host-country environments must be a primary consideration during NPL decisions.

Consequently, launch of a new product in a local market should consider local market characteristics. Innovation, branding and commercialisation decisions for a new product cannot be fully standardised and adopted according to instructions and guidelines decided in headquarters. Thus, in this research it is assumed that the degree of NPL adaptation and localisation increases the performance of new products launched by subsidiaries (Behrman, 1972). Simmonds (1985) contended that for survival in the face of intense international competition, MNCs must be responsive to market segments that demand unique treatment by virtue of institutional or customer idiosyncrasies. In brief, host-country environments must be a primary consideration during NPL decisions.

Three Types of NPL Decisions

Recently, many researchers have reported that NPL decisions cover a wide range, from strategic through to tactical decisions (Biggadike, 1979; Hultink et al., 1998, 2000; Guiltinan, 1999; Di Benedetto, 1999). Strategic decisions are those that are important, difficult to change, orient NPD, and are decided before NPD and the commercialisation process. In contrast, tactical launch decisions are those made to bring a new product to the market. Strategic decisions are based on the firm’s strategy in relation to innovation, market entry and competitive stance. On the other hand, tactical decisions are related to the commercialisation of a new product in the market. Therefore, tactical decisions are those with a direct linkage to the market, for example, in pricing, promotion, advertising, product distribution, and time-to-launch decisions.

However, this classification of NPL decisions into two categories seems to be inadequate to describe the complexity of subsidiary operations. Instead of two types of decisions, Firmanzah (2005) found that in the subsidiary context, NPL decisions are of three types: innovation, branding and commercialisation decisions. He argued that these three decisions range from strategic to
more tactical decisions. Innovation decisions can be classified as strategic, since such decisions underlie and give an orientation to further NPD process (Biggadike, 1979). Branding decisions are considered as intermediate between innovation and commercialisation decisions. This decision is highly correlates with how to position new product to local market (Alden et al., 1999). Some attributes in branding decisions (e.g., logo and visual appearance) should consider the degree of product innovativeness. Another aspect of new product branding is highly related to commercialisation: the packaging, colour and language used to promote the product are highly influenced by local market characteristics. Commercialisation decisions can be classified as tactical, since these decisions are made after NPD is complete (Cooper & Kleinschmidt, 1987; Urban & Hausser, 1980).

The first decisions in NPL are related to innovation. The decision by a subsidiary to develop a new product can be technology-driven or market-driven (Nyström, 1985). Innovation decisions also be initiated by headquarters or subsidiary managers and are highly correlated with decisions on new product innovativeness. Innovativeness is most frequently used as a measure of the degree of ‘newness’ of an innovation (Garcia & Calantone, 2002). Highly innovative products are seen as having a high degree of newness and products with low innovativeness are at the opposite extreme of the continuum (Kleinschmidt & Cooper, 1991; Garcia & Calantone, 2002). Highly innovative tends to be radical innovation since it is easily identifiable by the criteria that a discontinuity must occur on either a marketing or technological basis (Song & Montoya-Weiss, 1998). However, low innovativeness correlates with incremental innovation since it involves adaptation, refinement, and enhancement of existing products. According to Danneels and Kleinschmidt (2001), the high degree of innovativeness of a new product is important for several reasons. First, innovative products present great opportunities for subsidiary companies in terms of growth and expansion into new areas. Second, significant innovations allow firms to establish a competitively dominant position, and afford newcomer firms an opportunity to gain a foothold in the market. However, they also associated a high degree of innovativeness with high risks and management challenges.

The second decision is on branding decisions for the new product. Subsidiaries can launch a new product using an established MNC brand identity or build a new one. Introduction of a new product into a local market using an existing MNC brand can occur in two ways: (1) direct implementation without modification; and (2) implementation with slight adjustment. The decision to adapt and adjust one or several global brand characteristics depends on the extent to which the brand characteristics fit local environment factors, especially in terms of socioculture. When an existing MNC brand is very sensitive to socio-cultural aspects of the host country, there is a greater necessity for adaptation. In this case, subsidiaries cannot use an existing brand without adjustment. Hong et al. (2002), for example, contend that launch of a brand name into a local market should consider the diversity of language, nationalism, and cultural factors. In the same vein, Tse et al. (1988) concluded that local culture factors significantly influence international marketing decisions. The decision to adapt a brand name to local characteristics needs to consider these diversities.

The third NPL decision is on commercialisation. Decisions are classified as commercialisation decisions if they can be easily or inexpensively modified during NPL process (Hultink et al., 1998). However, a commercial decision is a decision on the implementation and execution of product launch by the subsidiary. Commercial decisions are highly correlated to the tactical aspects of NPL (Hultink et al., 1998; Guiltinan, 1999; Di Benedetto, 1999; Hultink et al., 2000). This type of decision deals with the problems involved in bringing a new product to the market, including pricing, promotion, advertising and distribution decisions. Such commercial decisions are important in initiating the initial purchasing behaviour for a new product. Using an appropriate advertising, pricing and promotion strategy, subsidiaries can influence initial purchases by local consumers. Distribution strategies also play an important role in ensuring product availability for potential and existing...
local consumers. Therefore, subsidiary managers need to consider how various combinations of commercialisation decisions can synergistically achieve the desired impact on target market perception and behaviour for the launch of a new product.

**Effect of NPL Localisation Decisions**

Innovation, branding and commercialisation decisions are different in terms of strategic aspects. Innovation decisions are considered to be the set of decisions that predetermines and underlies NPD (Biggadike, 1979; Urban & Hauser, 1980). Before the NPD process, subsidiary managers must have a clear concept of the new product in terms of the degree of innovativeness and newness, product advantage, and its technology content. The next step is to decide the brand characteristics for the product. The brand name, corporate logo, colour, and packaging must be selected before the product can be launched onto the local market. Finally, the pricing, distribution, and promotional and advertising strategy must be confirmed. Therefore it should be a consistency and coherency between new product development decision and commercialization decision (Guiltinan, 1999).

Launching a new product onto a local market needs coherence and consistency for each decision. The pressure of localisation/adaptation for one decision will determine the localisation/adaptation of other decisions. When the pressure of global integration is lower than that of localisation/adaptation, subsidiary managers tend to adapt the local environment characteristics rather than the global standard (Jarillo & Martinez, 1990; Prahalad & Doz, 1987). The degree of innovativeness and newness will consider local market characteristics such as tastes, preferences, government regulations, consumer behaviour, cultural values and competition. A new product is usually developed to satisfy local tastes and preferences. Consequently, the product name, logo, colour and packaging should follow local characteristics to facilitate local consumer identification. Furthermore, pricing, distribution, promotion and advertising of the product should also be highly adapted to the local environment.

**H1**: Localisation of new product innovation decisions positively influences localisation of brand characteristic decisions

**H2**: Localisation of new product innovation decisions positively influences localisation of new product commercialisation decisions

The main objective of NPD is to build and produce products that have an advantage compared to competitor products (Calantone & Cooper, 1981). The uniqueness of a new product is considered an important attribute for differential advantage in the market. However, differentiation advantages should be understood by local consumers. Crawford (1987) and Cooper (1992) suggested that attributes such as new product quality, reliability, newness, and uniqueness provide a more concrete picture of a firm’s ability to meet customer needs. These product characteristics enhance advantage in the marketplace (Day & Wensley, 1983). In other words, product superiority must adapt to local consumer criteria and standards. In each country, consumers identify which standards can be classified as superior or not. Consequently, during NPD, subsidiaries must consider local information as an important input in designing, building and producing a new product. Building new product superiority cannot be achieved without a good understanding of local market characteristics. Thus, localisation of NPL (new product innovation, branding and commercialisation) will increase product superiority in the local market. New products launched should not only have a competitive advantage and distinct quality, but also fit with local customer expectations.

**H3**: Localisation of new product commercialisation decisions positively influences new product superiority

**H4**: Localisation of new product innovation decisions positively influences new product superiority

**H5**: Localisation of brand characteristic decisions positively influences new product superiority

Commercialisation and branding decisions are those involved in bringing a new product
into the marketplace (Cooper & Kleinschmidt, 1987). Commercialisation decisions concern pricing, distribution, advertising and promotional strategy. To maximise commercial performance, commercialisation decisions should consider environmental factors such as local competitors, government regulations, consumer behaviour, socio-cultural and demographic attributes, and the political and economic situation. For example, a pricing decision must be developed by considering local purchasing-power parity and distributional costs, as well as the pricing strategies of local competitors. Subsidiaries in a local market cannot fix on new product price using the pricing strategy of subsidiaries in other countries. Each country has different local characteristics. The diversity of host-country environment cannot be treated using standardization procedure (Hill & Still, 1984). Simmonds (1985) argued that for MNC to survive the intense international competition, they must be responsive to the segments that demand unique treatment by virtue of institutional or customer idiosyncrasies. Consequently, localisation of new product commercialisation is needed to increase the market performance of a new product.

**H6: Localisation of new product commercialisation decisions positively influences new product commercial performance**

The central role of branding by MNCs is to establish the MNC’s identity and build its position in the global marketplace among customers, retailers and other market participants (Douglas et al., 2001). A key element of a successful branding strategy is a combination of harmonious and consistent brand architecture across countries and product lines with flexibility to accommodate local environmental factors where subsidiaries operate. The diversity in cultural and socioeconomic factors, market structure, and product life-cycle stage among different countries means that adaptation should be considered in any international marketing strategy (Agarwal, 1997; Douglas & Wind, 1987). Adaptation of brand identity is necessary, but this strategy must respect global brand construction. To facilitate local consumer understanding, the visual appearance, colour, language, and packaging that build physical brand characteristics must be adapted to local market characteristics. In some countries, for example, Arabian countries, many MNCs use Arabic letters to help local consumers to identify and recognise their products. Helping local consumers to identify products facilitates market acceptance because local consumers can easily interpret the messages behind the physical appearance of the brand.

**H7: Localisation of brand identity decisions positively influences new product commercial performance**

New product superiority correlates positively with product market performance, which refers to the level of financial and competitive outcomes in the market, as reflected in profit, return on investment, and market share (Li & Calantone, 1998; Nakata et al., 2006). Carpenter and Nakamoto (1989) argued that buyers generally have favourable perceptions of a new product with superior features. Buyers also prefer such products in terms of both purchase preference and actual behaviour when the benefits of these features outweigh the costs. Cooper (1992) showed that superior product performance is derived from new product advantage and determines whether or not the product is a marketplace winner. The reasoning is that local customers perceive that the subsidiary offers greater value in its products and services, and consequently shift purchases away from rival products. Consequently, a new product that has high superiority will have a high degree of market acceptance and thus better commercial performance.

**H8: New product superiority positively influences new product commercial performance**

**Data and Methodology**

**Developing Countries as Context**

This research will analyze subsidiary consumer goods in developing countries. The reason to focus on consumer goods is that NPL frequency in this area is greater than
for industrial companies. Moreover, it was considered that consumer goods companies have sufficient experience to launch new products in local markets. However, developing countries are selected because they provide some local environment characteristics that can influence, if not determine, MNC operation (Negandhi & Reinmann, 1972). The developing countries demonstrate high growth of GDP per capita and decreasing the percentage of people living below the poverty (Schmitt & Pan, 1994). Furthermore, as reported by Lefi (1975) that subsidiary marketing executive in this region frequently complain of the small and narrow markets for many consumer products and present relatively small size of markets for non-agricultural consumer products. All national conditions of developing countries influence the significance of the subsidiary operation in the MNC network operation. Face with national market conditions in the developing countries, it makes MNC design and fix subsidiaries' task as: (1) manufacturing unit as a result of low cost production (low labour cost or close the source of raw materials) and diffuse the output toward MNC network, or (2) trying to build and create local market needs in considering the size of population and the future buying power. It’s quite difficult for a single consumer goods subsidiary in the emerging countries to have fully ‘world product mandate’ for various brands handled (Feinberg (2000). Although subsidiaries could have a wide array of value chain activities from marketing, production and R&D, still they have limit autonomy to make strategic decision to develop and differentiate products. The consumer goods subsidiaries in the emerging countries behave mostly as implementer and supporting body of headquarter global strategy.

Identification of suitable subsidiaries was divided into two phases: (1) selection of a list of subsidiaries from existing databases (kompass and icpcredit); and (2) collection of a list of subsidiaries via the internet sites of MNCs. These steps led to the identification of a sample of 1167 subsidiaries, mostly European and American based company, producing consumer goods in 18 developing countries (UNCTAD, 2003) and located in two regions, Asia and Latin America. The focus between these two regions is based on several considerations such as the importance of population, purchasing power parity, and the absorption of foreign direct investment (Cyclope, 2003). Both Asia and Latin America share some similar characteristics as developing countries (UNCTAD, 2003).

**Questionnaire and Data Conception**

The construction of questionnaires was based on the discriminate principle between success and failure for new products (Cooper, 1979). We asked respondents to differentiate two products representing success and failure cases. Therefore, each question should be answered according to these different dimensions of success and failure. Calantone and Cooper (1979) argued that this method allows analysis of responses by directly comparing factors contributing to success or failure. This mechanism also facilitates respondents in cognitively differentiating between the NPL experience contributing to success and failure in the past (NPL realised within 5 years).

To assess the localisation of decision (innovation, branding and commercialisation) variables, respondents were asked to consider the degree of adaptation and standardisation for each questionnaire item using a series of statements on a scale ranging from 1 (‘highly following headquarters’) to 5 (‘highly adapted to local environment’). The main objective of this block of questions was to analyse the degree of adaptation in each NPL phase. The product superiority variable was evaluated using questions on the advantage of product characteristics compared to competitors in the local market, ranging from 1 (‘strongly disagree’) to 5 (‘strongly agree’). This block of questions was developed by considering that product superiority can only be defined by comparison with competitors in the local market (Song & Montoya-Weiss, 2001; Song & Parry, 1997). Finally, new product commercial performance in the local market was considered using questions on the performance achieved compared to the respondents’ initial expectation, ranging from 1 (‘far less’) to 5 (‘far exceeded’). The period of questionnaire distribution was realized from February until July 2004. A postal survey was conducted twice, directed
at marketing or commercial directors of subsidiaries. Considering the diversity of subsidiary locations, as well as the nationality of managers, the questionnaires were developed in English language basis. Harzing (2005) found that differences across countries were considerably smaller for nearly all questions when the English language questionnaires are used in cross-national research. This should minimise the bias comprehension for different cultures and lead to a homogenization of responses across countries.

To facilitate questionnaire responses by subsidiary managers and to save time, a special website was constructed. Finally, 69 subsidiaries agreed to participate in the study. Of these, 79.7% responded online and 20.3% responded by mail. As each subsidiary provided two cases (products), the study database comprised 138 products, 50% of which were successful. Analysis was conducted at the product level, as all the organisational processes are reflected in the success or failure of products in the market. Asian region represents 81.2% (112 products) and Latin America region represents 18.8% (26 products). The low participation rate of subsidiaries was due to several factors such as long questions and information confidentiality.

In order to use all construct by combining data from Asia and Latin America, thus we need to test whether there is any significance different within the construct based on these two regions. Independent t-test to compare means in each construct is mobilized. The results show that t-test for differences of means for all constructs between these two regions are not significant, for localisation of commercial decisions (t = 0.570, df = 136, p > 0.001), localisation of innovation decision (t = 0.780, df = 136, p > 0.001), localisation of branding decision (t = 0.210, df = 136, p > 0.001), new product superiority (t = 1.343, df = 136, p > 0.001) and commercial performance (t = 0.383, df = 136, p > 0.001). However, I tested homogeneity of variance using one-way analysis of variance (ANOVA). Levene’s test for homogeneity of variance is conducted on the five constructs examined in this study. In all cases, the within-groups variance was found to be no significance, for localisation of commercial decisions (Levene’s [0.321]) = 0.578; p > 0.01), localisation of innovation decision (Levene’s [0.437]) = 0.608; p >0.01), localisation of branding decision (Levene’s [0.287]) = 1.142; p > 0.01), new product superiority (Levene’s [0.181]) = 1.804; p > 0.01) and commercial performance (Levene’s [0.694]) = 0.155; p > 0.01). In this study, data met the conditions of homogeneity and were appropriate for further analysis by combining data gathered from subsidiary operated in America Latin and Asia.

Assessment of the measurement model

To test the hypotheses proposed, analysis of structural equation modelling (SEM) was applied. Several techniques allow application of the SEM method, with the most well known being those based on adjustment covariance using programs such as AMOS and LISREL. Recently, another approach has attracted increasing support, the technique of partial least squares (PLS), which is a powerful and robust method of analysis (Chin et al., 1996).

The PLS method is an appropriate approach when one or more of the following the characteristics is present: (1) the model includes formative constructions; (2) the sample size is relatively small; and (3) assumptions of normality are not satisfied (Chin & Newstead, 1999). Among the various software packages available, SmartPLS version 2.0 was used to analyse and to test the hypotheses in the present study. PLS is based on regression using path analysis that can estimate and calculate relations among constructs. It produces loading factors between items and constructs and estimates standardised regression coefficients (e.g., beta coefficient) for the paths between constructs. The outputs from the SmartPLS software are used first to test the measurement model and then to test the fit and performance of the structural model.

Model measurement

Generally, model analysis consists of four assessments: (1) individual reliability, (2) composite reliability, (3) convergent validity, and (4) discriminative validity (Chin, 1998a,b; Fornell & Larcker, 1981; Hulland, 1999). The individual reliability of every item is evaluated.
by examining the loadings or simple correlations of the indicators with their respective constructs. The results in Table 1 demonstrate that all indicators exceed the 0.55 threshold proposed by Falk and Miller (1992) during the initial development of scales, and even the more stringent standard of 0.70 proposed by Fornell and Larcker (1981). Composite reliability was used to analyse the reliability of the constructs, since this is considered a more exacting measurement than Cronbach’s α (Fornell & Larcker, 1981). Convergent validity was evaluated using the measurement developed by Fornell and Larcker (1981) known as average variance extracted (AVE). This measurement must exceed a value of 0.50, demonstrating that more than 50% of the variance of the construct is due to its indicators. As shown in Table 1, all AVE values for the constructs exceed 0.50.

However, to assess discriminant validity, Fornell and Larcker (1981) proposed a comparison of the AVE for each construct with the variance shared between each construct and the other constructs of the model such that the former exceeds the latter. Thus, discriminant validity was analysed based on a latent variable correlation matrix (MacMillan et al., 2005). This matrix comprises the square root of AVE for measures on the diagonal and correlations among the measures as the off-diagonal elements. Discriminant validity is determined by examining the columns and rows: the square root of the AVE (principal diagonal) must exceed the correlations between each construct and the other constructs. In other words, if the diagonal

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**Table 1. Reliability and Average Convergent Validity (AVE)**

| Localisation of commercialisation decisions | Mean  | S.D.  | Loading | Composite Reliability | AVE   |
|--------------------------------------------|-------|-------|---------|-----------------------|-------|
| 1. New product/brand advertising idea highly adapted to local environments | 3.14  | 1.23  | 0.74    | 0.90                  | 0.58  |
| 2. New product/brand advertising media/channel highly adapted to local environments | 3.55  | 1.13  | 0.78    | 0.90                  | 0.58  |
| 3. New product/brand retail pricing highly adapted to local environments | 3.46  | 1.17  | 0.79    | 0.90                  | 0.58  |
| 4. New product/brand distribution channel highly adapted to local environments | 3.57  | 1.19  | 0.73    | 0.90                  | 0.58  |
| 5. New product/brand promotion activities highly adapted to local environments | 3.56  | 1.13  | 0.82    | 0.90                  | 0.58  |
| 6. Time-to-launch new product/brand into local market highly adapted to local environments | 3.57  | 1.09  | 0.69    | 0.90                  | 0.58  |
| 7. New product/brand target market highly adapted to local environments | 3.05  | 1.15  | 0.75    | 0.90                  | 0.58  |

| Localisation of innovation decisions | Mean  | S.D.  | Loading | Composite Reliability | AVE   |
|-------------------------------------|-------|-------|---------|-----------------------|-------|
| 1. New product/brand innovativeness highly adapted to local environments | 1.80  | 1.12  | 0.80    | 0.90                  | 0.62  |
| 2. New product/brand newness highly adapted to local environments | 1.98  | 1.02  | 0.84    | 0.90                  | 0.62  |
| 3. New product/brand advantages highly adapted to local environments | 2.57  | 1.05  | 0.79    | 0.90                  | 0.62  |
| 4. Innovation driver of new product (e.g. market and/or technology) highly adapted to local environments | 1.66  | 0.98  | 0.72    | 0.90                  | 0.62  |

| Localisation of branding decisions | Mean  | S.D.  | Loading | Composite Reliability | AVE   |
|------------------------------------|-------|-------|---------|-----------------------|-------|
| 1. New products/brand name highly adapted to local environments | 1.63  | 1.16  | 0.75    | 0.90                  | 0.64  |
| 2. New product/brand visual symbols & logos highly adapted to local environments | 1.61  | 1.03  | 0.80    | 0.90                  | 0.64  |
| 3. New product/brand advertising visual/image highly adapted to local environments | 3.08  | 1.35  | 0.84    | 0.90                  | 0.64  |

| New product superiority | Mean  | S.D.  | Loading | Composite Reliability | AVE   |
|--------------------------|-------|-------|---------|-----------------------|-------|
| 1. Product/brand innovativeness relatively higher than that of competitor products | 3.51  | 1.01  | 0.82    | 0.90                  | 0.63  |
| 2. Product/brand advantage relatively higher than that of competitor products | 3.57  | 1.02  | 0.74    | 0.90                  | 0.63  |
| 3. Uniqueness of product concept a key feature of the strategy | 3.58  | 1.01  | 0.77    | 0.90                  | 0.63  |
| 4. Product/brand feature quality relatively higher than that of competitor products | 3.54  | 0.99  | 0.84    | 0.90                  | 0.63  |

| Commercial performance | Mean  | S.D.  | Loading | Composite Reliability | AVE   |
|------------------------|-------|-------|---------|-----------------------|-------|
| 1. Actual customer satisfaction compared to initial expectation | 3.19  | 1.13  | 0.84    | 0.95                  | 0.74  |
| 2. Actual customer acceptance compared to initial expectation | 3.14  | 1.08  | 0.81    | 0.95                  | 0.74  |
| 3. Profitability achievement compared to initial expectation | 3.08  | 1.16  | 0.86    | 0.95                  | 0.74  |
| 4. Margin realisation compared to initial expectation | 3.10  | 1.11  | 0.85    | 0.95                  | 0.74  |
| 5. Market share realisation compared to initial expectation | 3.17  | 1.24  | 0.88    | 0.95                  | 0.74  |
| 6. Sales volume realisation compared to initial expectation | 3.25  | 1.27  | 0.90    | 0.95                  | 0.74  |
| 7. Product revenue realisation compared to initial expectation | 3.01  | 1.15  | 0.88    | 0.95                  | 0.74  |
elements are greater than the off-diagonal elements, the discriminant validity is deemed satisfactory.

**Structural model fit**

Evaluation of the structural model employed measurement of the predictive power of the dependent latent variables, such as the amount of variance in the construct ($R^2$) and adjusted $R^2$, which ought to be greater than or equal to 0.1 (Falk & Miller, 1992). From Figure 1 it is evident that the values for commercialisation ($R^2=0.186$ and adjusted $R^2=0.140$), brand ($R^2=0.290$ and adjusted $R=0.273$), product superiority ($R^2=0.206$ and adjusted $R^2=0.181$), and commercial performance ($R^2=0.467$ and adjusted $R^2=0.437$) are greater than the threshold of 0.1. In addition, the contribution of the predictor variables to the explained variance of the endogenous variables is evaluated using the path coefficient ($\beta$), which must explain at least 1.5% ($0.015$) of the variance of a predetermined variable to be considered significant (Falk & Miller, 1992). The majority of the path variance values exceed this criterion (Table 4). Finally, the significance of the path coefficients was evaluated by analysing $t$ values for the parameters obtained using the bootstrap non-parametric resampling technique, following the indicators given by Chin (1998a). To assess the accuracy and stability of the estimations, it is necessary to use bootstrap non-parametric resampling (Chin, 1998b). Thus, 137 sub-samples were generated using a Student $t$-distribution with two tails and 137 degrees of freedom ($n-1$, where $n$ represents the number of sub-samples) to calculate the significance of the path coefficients ($\beta$), obtaining the values $t(0.001;137)=2.612$ and $t(0.01;137)=3.363$. Moreover, the path coefficient between two constructs is significant for values $>0.2$, and ideally $>0.3$ according to Chin (1998b). The result for $t$ values and standardised path coefficients ($\beta$) are presented in Table 2 and Figure 1.

Five of the eight hypotheses examined are accepted. With respect to the explained variance of the endogenous variable ($R^2$) and adjusted $R^2$, the model shows adequate predictive power, since all of the endogenous constructs achieve explained variance $>0.1$, the reference value established by Falk and Miller (1992). Regarding the coefficient standardised coefficient ($\beta$) and the $t$-test value, we can deduce strong causality between the localisation of innovation decisions for localisation of both branding ($\beta=0.538$; $t=5.62$) and commercialisation decisions ($\beta=0.431$; $t=7.04$). This indicates that localisation of innovation decisions induces the localisation of branding and commercialisation decisions. When new product characteristics strongly follow local market characteristics, branding and commercialisation should also adapt to the local environment. These findings strengthen the idea of consistency and coherence of orientation among the three decisions for NPL (Guiltinan, 1999). Coherence and consistency are needed to guarantee the synergy of strategic and tactical decisions. These aspects ensure that the product concept decided on during initial development will be continuously translated into further decisions in each NPL stage.

However, only localisation of commercialisation decisions significantly increases new product superiority ($\beta=0.494$; $t=4.89$). This strong relation supports the finding of Ali et al. (1995) that product superiority resides in consumer perspectives. Localisation and adaptation of commercialisation decisions facilitate the design and development of tactical decisions (pricing, distribution, promotion and

| Table 2. Latent variable correlation matrix: discriminant validity |
|-------------------------------------------------------------|
| **Commercialisation** | **Innovation** | **Brand** | **Product superiority** | **Commercial performance** |
| Commercialisation    | 0.76*             |          |                        |                         |
| Innovation           | 0.43               | 0.79*           |                        |                         |
| Brand                | 0.55               | 0.54           | 0.80*                  |                         |
| Product superiority  | 0.34               | -0.09          | 0.10                   | 0.80*                  |
| Commercial performance| 0.52               | 0.07           | 0.27                   | 0.59                   | 0.86*                 |

*The principal diagonal elements correspond to the square root of the AVE for each construct; the other values correspond to correlations between the constructs.
Table 3. Results of the structural model

| Hypothesis                          | Standardised path coefficient (β) | Path variance*** | t-value (bootstrap) | Test result |
|-------------------------------------|----------------------------------|------------------|---------------------|-------------|
| Innovation → Brand                  | 0.538*                           | 0.290            | 5.62                | Accepted    |
| Innovation → Commercialisation      | 0.431*                           | 0.185            | 7.04                | Accepted    |
| Commercialisation → Product superiority | 0.494*                        | 0.167            | 4.89                | Accepted    |
| Innovation → Product superiority   | -0.308**                         | 0.028            | 2.89                | Rejected    |
| Brand → Product superiority         | -0.006                           | 0.000            | 0.05                | Rejected    |
| Commercialisation → Commercial performance | 0.325*                      | 0.169            | 3.30                | Accepted    |
| Product superiority → Commercial performance | 0.478*                       | 0.129            | 5.99                | Accepted    |
| Brand → Commercial performance      | 0.044                            | 0.002            | 0.47                | Rejected    |

* When the t-value obtained using the bootstrap technique exceeds Student’s t-value t(0.001;137)=3.363, the significance level is achieved at p<0.001. ** When the t-value obtained using the bootstrap technique exceeds Student’s t-value t(0.01;137)=2.612, the significance level is achieved at p<0.01. *** Variance in an endogenous construct explained by another variable, which is the absolute value of multiplying the path coefficient by the correlation between both variables (Falk and Miller, 1992). Its values are supposed to be greater than 1.5%(0.0015).

Figure 1 The fitted model

advertising) taken by subsidiaries according to local market characteristics, thus enhancing coherence between the commercialisation program and local consumer expectations. Furthermore, the quality and advantages of the new product can easily be interpreted by local consumers. This research also identifies an interesting causality between localisation of innovation decisions and product superiority. The structural modelling reveals a negative relation between localisation of innovation decisions and product superiority ($\beta=0.308; \ t=2.89$). The interpretation of this finding could be that subsidiary managers consider that innovation decisions should be centralised in the regional office or in headquarters. One plausible reason is that MNCs tend to centralise R&D facilities in regional offices or headquarters (Kobrin, 1991; Cantwell & Mudambi, 2000). Subsidiaries still do not have adequate facilities to develop and build new product innovativeness, which requires high competency and capability, usually available in headquarters or regional offices. However, localisation of brand identity for a new product does not show any significant relation, indicating that new product superiority cannot be derived from localisation of brand characteristics.

Commercial performance in this research was determined by localisation of commercial decisions ($\beta=0.325; \ t=3.30$) and new product
superiority ($\beta=0.478; \ t=5.99$). These results indicate that NPL localisation will increase the appropriateness for local characteristics. Pricing, distribution, promotion and advertising decisions will reflect local consumer expectations, government regulations, local distribution channel, etc. Therefore, this can enhance the commercial performance of the new product in the local market. The second finding also confirms previous findings that new product superiority is an important factor in determining commercial performance (Cooper & Kleinschmidt, 1987; Song & Parry, 1997; Nakata et al., 2006; Cooper, 1986, 1992). In the subsidiary context, new product superiority also contributes positively to commercial performance of the new product in the host-country market.

**Discussion and Conclusion**

This research deals with the problem of subsidiary NPL in developing countries. Since new product failure is common and expensive (Calantone & Montoya-Weiss, 1993; Schmidt & Calantone, 2002), research on how to achieve new product success is important. Several criteria to determine new product success in the subsidiary context have been tested in this research. First, the research supports the idea of Guiltinan (1999) that consistency and coherence among stages in the NPL process are important. The localisation of innovation decisions, decided in the earlier phase of development, tends to localise branding and commercialisation decisions. When new product characteristics are highly adapted to the local environment, methods to bring this new product to market should follow the product characteristics. This means that branding and commercialisation decisions should follow the local environment. Second, the results show that localisation of commercialisation decisions has a positive effect on new product superiority in the local market. Interestingly, localisation of new product innovation reduces new product superiority in the local market. The interpretation of this result is that new product innovation should be standardised to increase new product superiority in the local market. Third, both localisation of commercialisation decisions and new product superiority will increase the commercial performance of new products in the local market.

Another result from this research reveals that localisation of innovation has negative effect on new product superiority. The explanation of this result is the data collected in the 18 developing countries. The nature of emergence and developing country doesn’t enough to give an autonomy role for subsidiary (Edwards et al., 2002). The relatively small size of markets for non-agricultural consumer products is not surprisingly in light of the economic and demographic conditions. Even in the emerging country with relatively large populations (e.g. India, Brazil, China, and Indonesia), internal markets are usually limited by the small size of national income and the low levels of per-capita income (Cyclope, 2003). In order to achieve high economic of scale thus innovation decisions tend to be standardized regionally or globally, and diffused locally (Ghoshal & Bartlett, 1988).

The implication of this work which considers the nature of developing countries environment, MNCs’ managers are expected to localize their commercialization decisions during NPL process. Managers in headquarter should give more autonomy to managers in subsidiary to decide price, distribution, and promotional program for new product launched in the local market. This research support the finding of Hill and Still (1984) that greater adaptation is required in the developing countries. They noted that product adaptation, whether mandatory or discretionary, can strengthen the products’ competitive position in the local marketplace. However considering limited division coordinated by subsidiaries in developing countries, MNCs’ managers should standardize innovation decision regionally or globally in order to increase new product superiority. Subsidiaries’ managers also must increase new product superiority when they want to assure new product commercial performance.

However, the research has several limitations. First, it does not consider competitor reaction to NPL, which can determine the success of new products launched by subsidiaries in the market (Gatignon et al., 1989). Second, the research assumed that NPL decisions are positioned in the spectrum of adaptation and standardisation. However, in reality, the innovation process is
iterative in nature (Garcia & Calantone, 2002). Consequently, local and global aspects have an interactive influence during NPL decisions. Third, the context of this research is developing countries. It seems this research design will have different results when we apply into developed countries. Therefore, future research will focus on the dynamics of global-local in the subsidiaries operating in developed countries.

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