

The Antecedents and Consequences of Affordable Value Innovation in Emerging Markets

ABSTRACT

Theoretical and case-based research suggests that innovating for price sensitive segments in emerging markets differs significantly from innovating for traditional Western markets. In this paper, we analyze the antecedents of affordable value innovation and its impact on performance in emerging markets. In particular, we examine three antecedents of affordable value innovation: bricolage, local embeddedness, and standardization. We test our hypotheses using multiple informant data from 47 multinational corporations involving 103 innovation projects that target low income customers in emerging markets. Our empirical analysis shows that all three antecedents have significant effects on the level of affordable value innovation: while bricolage and local embeddedness are positively related to affordable value innovation, standardization has a negative impact. We also find that a firm's ability to launch affordable value innovations is positively related to performance in emerging markets. Moreover, a cross-national comparison shows that our key findings do not vary across various emerging markets. Overall, our findings offer important implications for research on and the practice of innovation for low income segments in emerging markets.

Keywords: Emerging markets, low income markets, affordable innovation, success factors, new product development, performance, value.

INTRODUCTION

In recent years management scholars have paid considerable attention to the drivers of new product development and its impact on firm performance. This research has identified several drivers including product, process, strategy and marketplace characteristics (see for example Ernst, 2002; Evanschitzky, Eisend, Calantone and Jiang, 2012; Henard and Szymanski, 2001; Kahn, Barczak, Nicholas, Ledwith and Perks, 2012; Montoya-Weiss and Calantone, 1994). This research has, however, largely been limited to the study of innovation in developed Western markets such as North America and Western Europe.

Considerably less attention has been devoted to the study of innovation in emerging markets (see for example Lee, Lin, Wong and Calantone, 2011; Yang, Wang, Zhu and Wu, 2012). This lack is surprising given the changing dynamics of the global economy. Increasingly, new markets in Asia, Africa and Latin America have become a major source of growth for companies from around the world (Burgess and Steenkamp, 2006; London and Hart, 2004; Prahalad, 2012; Prahalad and Hammond, 2002). For instance, a study by the international consultancy McKinsey forecasts that by 2025, consumption in emerging markets will comprise \$30 trillion representing about half of total global consumption (Atsmon, Child, Dobbs and Narasimhan, 2012). Currently, however, only 17% of the total revenues for leading companies in Western markets are derived from emerging markets, even though emerging markets represent 36% of global GDP (Atsmon et al., 2012). Thus, emerging markets offer huge potential for Western firms and innovation will be needed for these firms to fully avail of the untapped opportunities these markets present.

Emerging markets, however, tend to be radically different from developed ones. Emerging markets often lack formal institutions, physical infrastructure, and stable regulation. Moreover, these markets suffer from an acute scarcity of resources and their consumers are typically highly price-sensitive as well (Burgess and Steenkamp, 2006; Halme,

Lindeman and Linna, 2012; London and Hart, 2004; Mair, Marti and Ventresca, 2012; Peng, Wang and Yi, 2008; Prahalad, 2012; Ricart, Enright, Ghemawat, Hart and Khanna, 2004; Wright, Filatotchev, Hoskisson and Peng, 2005). Finally, large parts of these economies remain in the informal sector with competition coming from unbranded products and services (London and Hart, 2004; Prahalad, 2012; Sheth, 2011).

The little existing research on innovation in and for emerging markets has been mostly conceptual, qualitative, single case or single country based. And while existing studies differ in their conclusions, most agree on the following. First, customer preferences in low income segments in emerging markets are often radically different from those in high end segments that are typically served and dominated by multinational corporations (MNCs). Second, so-called “good enough” (simple, low-cost, reliable) products targeted at low income segments are potentially profitable in emerging markets because of the size and growth rates of these segments. Third, these segments are very often dominated by local emerging market firms. Finally, the traditional export model for premium products does not work for these price sensitive markets (Christensen, Baumann, Ruggles and Sadtler, 2006; Gadiesh, Leung and Vestring, 2007). Equally, simply re-selling cheap products from Western markets does not lead to success in these emerging markets as these customers prefer products that offer value and are tailored to their specific needs (London and Hart, 2004; Nakata and Weidner, 2012; Prahalad, 2005; Prahalad, 2012; Sheth, 2011; Weiser, 2007). Tapping successfully into low income emerging markets therefore requires the development of new products that meet the low price expectations of customers while offering value (Anderson and Markides, 2007; Dubiel and Ernst, 2013; Lee et al., 2011). Throughout this paper, we refer to these new products as affordable value products and the process of developing these products as affordable value innovation.

Little prior research has examined the factors that enable firms to successfully develop

and launch affordable value products for emerging markets. Existing research on success factors, based as it is on innovation in developed markets, is unlikely to apply to emerging markets and their fundamentally different conditions. As a result, we argue that research on effective innovation practices in emerging markets needs to develop and test new, context-specific theory and hypotheses (Kolk, Rivera-Santos and Rufín, 2013; Nakata, 2012; Nakata and di Benedetto, 2012; Sheth, 2011; Viswanathan and Sridharan, 2012). We address this task by developing a framework that draws on existing emerging market and innovation research as well as on institutional theory to understand how affordable value innovation occurs and how it impacts performance (Mair et al., 2012; Peng et al., 2008). Specifically, we look at low income segments in emerging markets and investigate what firms can do to develop affordable value products for these markets and whether doing so has an effect on performance (Burgess and Steenkamp, 2006; Kolk et al., 2013; Nakata, 2012; Nakata and di Benedetto, 2012; Prahalad, 2005; Prahalad, 2012; Prahalad and Hart, 2002).

The paper aims to make three contributions. First, we advance theory in the area by developing a conceptual framework and hypotheses around affordable value innovation, its antecedents and impact on performance in emerging markets. Second, we test our hypotheses based on data generated from a large-scale, multisource survey of globally active MNCs in emerging markets. Specifically, we adopt a two-stage sampling procedure and develop two self-administered questionnaires, one for senior managers (assessing the dependent variables) and one for project managers or team members (assessing the independent variables). To the best of our knowledge, this is the first large-scale, cross-region empirical study of the antecedents and performance outcomes of affordable value innovation in emerging markets. Third, we perform multi-group analysis to provide a fine-grained picture of success factors of affordable value innovation across regions. By doing so we are able to theoretically and empirically assess 1) what firms need to do in order to develop and launch new products for

low-income segments in emerging economies and 2) if these success factors vary by region.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

Increasingly, multinational corporations regard emerging markets as crucial for their sustained growth and profitability (Luo, 2001; Ricart et al., 2004; Walsh, Kress and Beyerchen, 2005). Innovation is considered to be a particularly important aspect of entering these low income markets (Sánchez and Ricart, 2010; Zahra, Ireland and Hitt, 2000).

However, as the nature of demand in such markets differs significantly from that in established Western markets (Anderson, Markides and Kupp, 2010; Lee et al., 2011; Prahalad, 2012), new products for emerging markets must also be distinctively different, especially with regard to features and price. New products need to offer value to customers while being significantly cheaper than equivalent products in developed markets (Ernst and Dubiel 2013). Moreover, as local environmental conditions in emerging markets differ significantly from conditions in developed markets, a distinct set of factors is likely to drive the development and success of these affordable value products.

We draw on institutional theory to derive these antecedents of affordable value innovation. According to institutional theory firm behavior is influenced by the nature of its external environment (North, 1990; Peng et al., 2008). Specifically, for firms to succeed, they must adapt their processes, such as innovation for example, to the unique challenges and demands of the environment (George, McGahan and Prabhu, 2012; Sánchez and Ricart, 2010).

Institutional theory has proven particularly helpful to understanding firm behavior in the unstable and unpredictable emerging market environment (Anderson et al., 2010; Mair et al., 2012). High economic and political uncertainty, complexity, within-country diversity, and a general lack of functioning institutions (Mair et al., 2012; North, 1990; Peng et al., 2008)

together pose challenges for firms striving to develop new products for these markets (Burgess and Steenkamp, 2006; Luo, 2001; Peng et al., 2008; Wright et al., 2005).

As the institutional environment of emerging markets differs from established markets (London and Hart, 2004; Peng et al., 2008), operating in emerging markets is particularly challenging for Western MNCs. For instance, a simple transfer of established innovation practices from developed to emerging markets is unlikely to work (Ricart et al., 2004). Existing studies offer anecdotal evidence on successful practices that support the affordable value innovation in emerging markets (Anderson and Markides, 2007; Dubiel and Ernst, 2013; George et al., 2012; Hart and Sharma, 2004; Prahalad, 2005; Prahalad, 2012; Viswanathan and Sridharan, 2012; Weiser, 2007). These studies show that slightly adapting “Western” products, services and business models to low income markets does not work. These studies also offer tentative guidelines on how to successfully develop affordable products for emerging markets. Among those practices are most prominently the willingness of the firm to apply new innovation methods/tools, to establish local networks and to carefully adapt its product strategy to local requirements (Dubiel and Ernst, 2013; London and Hart, 2004; Prahalad, 2012; Radjou, Prabhu and Ahuja, 2012; Sheth, 2011; Weiser, 2007).

Drawing on institutional theory and existing research on innovation and emerging markets, we argue that three factors—bricolage, local embeddedness and product standardization—are critical antecedents of affordable value innovation for low income segments in emerging markets. Specifically, bricolage—the firm’s ability to improvise in light of scarce resources (Baker and Nelson, 2005; George et al., 2012; Halme et al., 2012)—equips the firm with the skill to develop products in resource-constrained, uncertain environments. Similarly, local embeddedness, which refers to the extent to which a firm has relationships with local partners in emerging markets, helps firms overcome the institutional

voids in emerging markets (such as the lack of sales channels) that do not usually exist in developed home markets (London and Hart, 2004; Peng et al., 2008). Finally, the high diversity of emerging markets raises the issue of the relative importance of product standardization vs. adaptation in driving affordable value innovation in low income markets (Sheth, 2011; Subramaniam and Hewett, 2004). Accordingly, we introduce a model explicating these drivers of affordable value innovation and its impact on innovation performance (see Figure 1).

Please insert Figure 1 about here

Affordable value innovation and innovation performance

An appropriate balance between price and value plays a central role when it comes to the success of new products in price sensitive emerging markets. Affordability implies that new products need to be sold at significantly lower price points than in developed markets (Banerjee and Duflo, 2007; Dubiel and Ernst, 2013; Sheth, 2011; Williamson, 2010). Examples of these dramatically cheaper products include cars (\$2,000), cataract surgeries (\$30), mobile phones (\$30), or computer tomography devices that sell for one-sixth of the price in developed markets (Dubiel and Ernst, 2013; Prahalad, 2012; The Economist, 2010).

Affordability alone, however, is not sufficient for successful innovation in price sensitive emerging markets (Nakata and Weidner, 2012; Prahalad, 2012; Williamson, 2010). Customers in these markets also expect value from their products. This value in turn comes from attributes that are important to them (Bowman and Ambrosini, 2000). Attributes that have been found to create value for customers in emerging markets include quality, robustness, intuitive use, and multi-functionality (Nakata and Weidner, 2012; Sheth, 2011; Viswanathan and Sridharan, 2012; Williamson, 2010).

Existing research on emerging markets suggests that both dimensions--affordability and

value--have to be present in order to fully meet customer expectations (Nakata, 2012; Nakata and Weidner, 2012; Prahalad, 2012; Williamson, 2010). Successful cases of innovations in emerging markets that meet these twin demands include M-Pesa, a popular mobile money transfer and payment service (Wooder and Baker, 2012), washing machines by Haier which also clean fruit and vegetables (Radjou, Prabhu and Ahuja, 2012), and enriched yogurts that are both affordable and fulfill nutritional needs especially for children (Webb, Tihanyi, Ireland and Sirmon, 2009). We therefore argue that a firm's ability to develop and launch new affordable value products in price sensitive emerging markets leads to higher innovation performance in these markets (Nakata, 2012; Nakata and Weidner, 2012; Prahalad, 2012; Williamson, 2010). Stated formally, we posit that:

Hypothesis 1: Affordable value innovation in emerging markets results in higher levels of innovation performance for firms in emerging markets.

Antecedents of Affordable Value Innovation

Bricolage. Bricolage refers to the creative combination of scarce existing resources to find new solutions to problems and discover new opportunities (Baker and Nelson, 2005; George et al., 2012; Halme et al., 2012). While the concept of bricolage has largely been applied to how small companies or social businesses operate, recent studies show that bricolage can also be important for global organizations that operate within resource-constrained settings (Halme et al., 2012).

In low income markets, the ability to improvise new solutions using limited existing resources is a specific way of working around the challenges and opportunities posed by resource-constrained environments (Halme et al., 2012; Sheth, 2011). As innovation activities in emerging markets need to focus on delivering affordable value, bricolage is crucial because it helps firms to both achieve affordability by reducing costs as well as

deliver value by finding alternative, unconventional and creative solutions (Weiser, Kahane, Rochlin and Landis, 2006). Specifically, bricolage helps to overcome resource constraints and institutional voids and therefore represents a major driver of successful NPD in and for emerging markets (Halme et al., 2012; Sheth, 2011). Accordingly, we posit that:

Hypothesis 2: The level of bricolage is positively related to the level of affordable value innovation for firms in emerging markets.

Local embeddedness. Local embeddedness reflects a company's ability "to create competitive advantage based on a deep understanding of and integration with the local environment" (London and Hart, 2004, p. 364). Considerable prior research has shown that the main challenge for firms expanding internationally is their ability to assimilate into existing local networks (Hutzschenreuter, Voll and Verbeke, 2011). Such local embeddedness is particularly crucial in emerging markets given that such markets are characterized by institutional voids and complex and unpredictable local conditions (London and Hart, 2004; Peng et al., 2008).

MNCs, which are typically from developed markets, are usually unfamiliar with challenging local conditions in emerging markets. This unfamiliarity increases the market risk and hence the likelihood of new product failure in price sensitive emerging markets (Halme et al, 2012). Local embeddedness can therefore be an important driver of affordable value innovation in these markets. Specifically, local embeddedness increases a firm's level of understanding of local market peculiarities which in turn increases the likelihood of the firm's innovations being suited to local requirements and conditions.

Furthermore, local embeddedness may compensate for the lack of institutions (e.g., formal distribution channels) that are needed to successfully launch a new product in

emerging markets. This can be achieved by means of establishing non-traditional partnerships for collaboration, for instance with community-based non-governmental organizations, local governments or with community members themselves (Anderson et al., 2010; Sheth 2011; Ansari, Munir and Gregg, 2012). In this way, the negative effects of formal institutional voids can be reduced as such local partners may provide support with their own resources, their local knowledge, and their network relationships (Webb et al., 2009).

Overall, the level of local embeddedness is likely to be crucial to a firm's ability to develop affordable value products for emerging markets (Ansari et al., 2012; Halme et al., 2012; London and Hart, 2004; Nakata and Weidner, 2012). Accordingly, we posit that:

Hypothesis 3: The level of local embeddedness is positively related to the level of affordable value innovation for firms in emerging markets.

Standardization. Standardization refers to the reduction of variety and the aggregation of demand to profit from scale efficiencies (Levitt, 1983; Sheth, 2011). There has been a longstanding debate in marketing regarding the appropriate level of standardization relative to adaptation of new products across different markets (Calantone, Cavusgil, Schmidt and Shin, 2004; Subramaniam and Hewett, 2004; Theodosiou and Leonidou, 2003). In the context of emerging markets, Sheth (2011) argues that greater standardization across these markets is needed to realize efficiency gains across multiple fragmented segments. He therefore argues that standardization will result in increased financial performance in heterogeneous markets (Sheth, 2011). Following Sheth's (2012) line of reasoning, one would expect a positive effect of standardization on affordable value innovation as the efficiency gains would allow firms to save on development costs and thus charge lower prices while maintaining the desired level of

profitability.

In contrast, however, other scholars have argued that standardization will not work in international markets. More specifically, emerging economies exhibit large differences with regard to consumer needs, culture, politics, and economics (Bruce, Daly and Kahn, 2007; Subramaniam and Hewett, 2004; Theodosiou and Leonidou, 2003), both across and within countries. These differences make adaptation to local conditions a crucial driver of new product success (Prahalad, 2012). Specifically, standardization would have a negative effect on customers' perceived value of new products as these products are likely to fail to meet customers' needs in specific emerging markets. Support for this argument comes from a recent study that suggests that a "one-size-fits-all approach" for low-end emerging markets is not appropriate and that successful products need to be significantly adapted to the targeted customer segment (Kolk et al., 2013).

In the light of these conflicting arguments we propose the following hypothesis:

Hypothesis 4: The level of standardization is unrelated to the level of affordable value innovation for firms in emerging markets.

METHODOLOGY

Sample and Data Collection

We use the Forbes 500 ranking of the largest MNCs worldwide to provide the sample frame for our study. We do so for several reasons. First, given that these firms are among the largest in the world, they are most likely to have the resources to engage in affordable value innovation across multiple markets (Halme et al., 2012). (Muller and Kolk, 2010). Second, because these firms operate across multiple countries and regions, studying them allows us to conduct a cross-regional test of our model and hypotheses. This in turn enables us to respond

to calls in the literature to use cross-national data to study innovation in firms. Finally, our sample includes firms from multiple industries and from both the manufacturing and service sectors. This further enhances the external validity of our results (De Brentani and Kleinschmidt, 2004).

We adopt a two-stage sampling procedure and develop two self-administered questionnaires, one for senior managers (assessing the dependent variable) and one for project managers or team members (assessing the independent variables). Senior managers are able to evaluate the performance of the affordable value products and other environmental control variables since they are more knowledgeable about these broader and more strategic aspects of NPD (Henard and Szymanski, 2001). In contrast, project managers or team members are more knowledgeable about the relevant day-to-day and process related details and can thus assess these issues with high levels of reliability (Henard and Szymanski, 2001). Our unit of analysis is the project, each project in turn being related to the development of an affordable value product. A survey with multiple key informants per project seemed most appropriate to test our hypotheses while also reducing the likelihood of common method bias (Podsakoff, MacKenzie, Lee and Podsakoff, 2003).

We asked senior managers to identify affordable value products that had been implemented more than six months before the survey, regardless of their performance. We asked managers to select innovations for low income consumers in so-called bottom-of-the pyramid markets, i.e., those markets in which customers earn less than US\$ 9 a day. This ensured that managers were focused on products that were developed specifically for low income groups in emerging or developing countries where the majority of such consumers live. Limiting respondents' focus to affordable value products also helps reduce any potential bias caused in the case of retrospective data, while also reducing the extent of selection and social desirability biases towards more successful NPD projects (Montoya-Weiss and

Calantone, 1994; Podsakoff, MacKenzie and Podsakoff, 2012). At the end of the survey, we asked these senior managers to either provide the names of the corresponding project managers, or to forward the survey link directly to them. A unique code was generated for each project in order to ensure that both managers responded correctly for the same project. Several reminders were sent to improve the response rate. To create interest and to encourage participation in our study, we offered each manager an executive summary report of the results as well as an individual benchmarking report. Additionally, for each completed questionnaire we offered to donate \$10 to one out of three proposed charity projects.

In total, we contacted 215 of the Forbes 500 companies. Of these, we received 103 usable dyadic response sets across 47 companies (22% response rate). We consider this to be a satisfactory result, as the study design was ambitious and the topic new to many MNCs (Ernst, Hoyer and Rübsaamen, 2010). The 103 projects represent a reasonable split across multiple industries: chemicals and pharmaceuticals (22.3%), communication and computer equipment (20.4%), food and drinks (20.4%), financial institutions (13.6%), electronics (11.7%) and industrial supply and components (11.6%). The average annual sales of the responding companies was \$50.5 billion and the average project development duration was about 26 months. The affordable value products identified were geographically distributed across Africa (34%), Asia (29%) and Latin America (22%). The remaining innovations were either launched in several continents or in a specific country that was not further specified by the respondent.

We tested for non-response bias (Armstrong and Overton, 1977) between early (first half) and late (second half) respondents. This test did not show statistically significant differences for key variables such as industry, sales, project budget and the level of the innovation's radicalness. We did, however, find a significant difference of firm sizes between the two groups. Early respondents belonged to larger firms than late respondents did. This

indicates that our sample might be biased towards larger firms that are typically more active in emerging markets than relatively smaller firms.

Measures

We identified potentially useful scales through an extensive review of the strategy, innovation, international management, development economics and marketing literatures. Items and constructs were adapted to the context of our study where necessary. For measures that were not available, we developed new items based on the existing literature. We pre-tested our survey with 14 academics as well as innovation and strategy managers in multiple firms.

Following Churchill (1979), we measured constructs as latent variables with multi-item scales. Each item was a statement to which managers responded on a seven-point Likert scale anchored on “strongly disagree” and “strongly agree”. The complete list of items can be found in the appendix.

Bricolage. Since bricolage is often used interchangeably with improvisation (George et al., 2012; Sheth, 2011), we adapted the improvisation scale developed by Vera and Crossan (2005) to measure this construct. The original scale comprises items on creativity as well as spontaneity, both of which are consistent with the definition of bricolage in emerging markets (Halme et al., 2012). We added items on price orientation and the ability to combine existing resources in creative ways to our measure of the construct.

Local Embeddedness. To measure local embeddedness we draw on a scale from Zhou, Wu, and Luo (2007) which measures the ties that foreign companies have with local government agencies, social networks and communities in emerging economies. We also added items such as working with NGOs and with unorthodox partners as these forms of local embeddedness have been frequently found to be important in emerging market settings (London and Hart, 2004; Prahalad, 2012; Sheth, 2011; Webb, Kistruck, Ireland and Ketchen,

2010).

Standardization. We measured standardization using an existing construct developed by Subramaniam (2006). Three indicators measure the degree of standardization across country markets including how easy it is to standardize the product and how much creative problem solving was necessary to do so (Subramaniam, 2006).

Affordable Value Innovation. We developed a new measure of the level of affordable value in new products developed by firms. Specifically, to be consistent with our construct of affordable value innovation, we developed items that measure both the extent to which new products offer value to customers while simultaneously being affordable. Specifically, our items measure the affordability of the innovation as well as well as the benefits of the innovation to the targeted emerging market segment.

Performance. We measured the performance of new products using five items based on Blindenbach-Driessen et al. (2010). Thus, respondents were asked to evaluate their NPD projects in terms of profit, revenues, competitive advantage, reputation and satisfaction of clients' needs. We used this approach because, for reasons of confidentiality, firms often refuse to provide detailed information on the financial performance of their new products (cf. Husted, Allen and Kock, forthcoming).

Controls. We controlled for other variables that could potentially affect our outcome variables of interest. First, we measured *environmental hostility* using a scale developed by Calantone, Schmidt, and Benedetto (1997) as well as by Atuahene-Gima & Ko (2001). This construct assesses the external environment of the project regarding safety, investment and market opportunities, as well as the possibility of controlling the environment to the firm's advantage. Second, because different industries are likely to have different rates of affordable value innovation and performance, we controlled for *industry effects* using a series of dummy variables for specific industries in our sample. Third, to control for project-specific effects we

included a variable on the *radicalness of the innovation*, i.e., the degree of novelty of each project in our sample. Specifically, we asked respondents if the innovation was a minor modification of an existing product, a significant upgrade of an existing product, a radical new technology, or a radical new market benefit. The scale is based on similar variables such as new product novelty which have been frequently used in previous studies (see for example Ettlé and Rosenthal, 2011). Finally, we included the logarithm of *project budget* to control for the resources available at the project level (Ernst et al., 2010).

Analysis

To test our hypotheses, we used the variance-based structural equation modeling approach of partial least squares (PLS). PLS allows a simultaneous analysis of theory and measures by estimating in parallel the measurement and the causal model (see Husted et al., forthcoming). It is particularly appropriate for exploratory survey-based analyses as it has a clear focus on prediction as well as theory development. Further, the approach is robust even for smaller sample sizes which are not normally distributed (Ernst, Hoyer, Krafft and Krieger, 2011; Hair, Sarstedt, Pieper and Ringle, 2012a). We used the SmartPLS structural equation modeling software for our analysis (Ringle, Wende and Will, 2005).

Table 1 displays the correlations of the manifest variables. We assessed the convergent validity of the latent variables by calculating factor loadings. Even though a value of .7 is usually used as a threshold, Hair et al. (2012a) and Hair et al. (2013b) confirm that in exploratory studies loadings above .4 are acceptable. This is the case in our exploratory study (Chin, 2010; Hair, Hult, Ringle and Sarstedt, 2013a). Additionally, we used the average variance extracted (AVE) to assess the degree of convergent validity (Hair et al., 2013a). Each of the latent variables has an AVE above .5, indicating an acceptable level of convergent validity (Fornell and Larcker, 1981; Götz, Liehr-Gobbers and Krafft, 2010; Hair et al., 2013a).

Please insert Table 1 about here

We examined the internal consistency of our measures by relying on Composite Reliabilities. This is preferred to the traditional Cronbach's Alpha as the latter has been found to be sensitive to the number of items in the scale and may therefore over- or underestimate internal consistency (Hair et al., 2013a; Hair et al., 2013b). The composite reliability values are all in the appropriate range of .6 and .95 indicating that all scale items adequately measure the underlying construct (Götz et al., 2010; Hair et al., 2013a).

To assess the discriminant validity of the latent constructs, we estimated the cross-loadings at the indicator level (Lagrange-multiplier test) (Hair et al., 2013a). All factor loadings of the indicators loaded on their intended factor (Hair et al., 2013a). On the construct level, the Fornell-Larcker Criterion is fulfilled. We therefore find support for the discriminant validity of the measurement constructs in our data (Fornell and Larcker, 1981; Hair et al., 2013a).

To test our hypotheses, we assessed the size of the path coefficients as well as the significance of the beta coefficients by applying the nonparametric bootstrapping technique (Chin, 2010; Hair et al., 2013a). To evaluate the structural model, we relied on nonparametric evaluation criteria (see Table 2) as there is no single goodness-of-fit criterion (Hair et al., 2013a). The coefficients of determination (R^2) show predictive relevance for the endogenous constructs, indicating the amount of variance in the construct which is explained by the model (Chin, 2010). The R^2 of the construct innovation performance is relatively small, as this construct is evaluated from a second respondent. Furthermore, we analyzed the effect size f^2 for changes of the endogenous constructs' determination coefficients (Chin, 2010; Götz et al., 2010). We found a stronger effect for the impact of the independent variable bricolage and weaker effects for local embeddedness and standardization. The cross-validated

redundancies (Q^2) (calculated via the blindfolding technique with an omission distance of seven) all lie above zero, indicating that our model has sufficient predictive power (Stone-Geisser-Criterion) (Chin, 2010; Hair, Ringle and Sarstedt, 2011; Henseler, Ringle and Sinkovics, 2009).

Please insert Table 2 about here

RESULTS

Test of Hypotheses

We tested our hypotheses using our sample of 103 NPD projects. As recommended, for all calculations, we used the PLS algorithm with the mean replacement and path weighting scheme (Hair et al., 2013a; Hair, Sarstedt, Ringle and Mena, 2012b). To assess significance, we employed the bootstrapping technique. Figure 2 summarizes our results.

Please insert Figure 2 about here

H1 proposes that affordable value innovation is positively related to performance. We find support for this hypothesis ($\beta = .211, p \leq .05$). Our results also show that all the proposed antecedents have a significant impact on the level of affordable value innovation. H2 predicts that bricolage is positively associated with affordable value innovation. This hypothesis is supported by the data ($\beta = .435, p \leq .001$). H3 predicts that local embeddedness is positively related to affordable value innovation. This effect is also significant and positive ($\beta = .150, p \leq .05$). H4 predicts that varying degrees of standardization have no effect on the level of affordable value innovation. In fact, we find a negative effect of standardization on the level of affordable products ($\beta = -.171, p \leq .05$). Our data thus contradicts hypothesis H4.

Further Analyses

Mediation. We conducted three mediation analyses between bricolage, local embeddedness and standardization on performance, all being mediated by the level of affordable value innovation. All three mediation analyses were conducted using the Preacher-Hayes method for multiple mediations as suggested by Zhao, Lynch and Chen (2012) and Chin et al (2010). These tests showed indirect-only mediations of affordable value innovation between bricolage and innovation performance as well as local embeddedness and innovation performance.

Financial Performance. We cross-validated our results by testing the impact of the performance of the innovation on financial performance. The financial performance variable captures the overall performance of the SBU/firm, both in developed and emerging markets. As controls we used environmental hostility, industry effects and firm size. We found a highly significant positive relationship between innovation performance and SBU/firm financial performance ($\beta = .343, p \leq .001$). This indicates a positive financial contribution of affordable value innovation for the company as a whole.

Cross-National Analysis. To generalize the results of our cross-national survey and to account for unobserved heterogeneity, we conducted a multi-group comparison (Eberl, 2010; Hair et al., 2011; Steenkamp and Baumgartner, 1998). Measurement invariance assumes that scales assess equivalent constructs across different regions and that homogeneity in the subsamples is therefore ensured (Steenkamp and Baumgartner, 1998). Based on where the new product was launched, we categorized the data into three regions. We then estimated the same model for each of the different subsamples in Africa ($n = 35$), Asia ($n = 30$) and Latin America ($n = 23$) (Eberl, 2010). We excluded those cases from the analyses in which countries from more than one continent were involved.

We used the approach outlined by Eberl (2010) and Hair et al. (2013a) to compare the

path coefficients pair-wise. The subsamples were calculated without industry control variables to be able to handle the small subsample sizes. For reasons of comparability, the overall model was also calculated without industry control variables, thus resulting in slightly different path coefficient values. The standard errors of the path coefficients from the bootstrapping approach were saved for these parametric t-tests (Hair et al., 2013a). To calculate the t-tests on the significance of the χ^2 differences, we relied on a method provided by Hair et al. (2013) for multi-group analysis. We find that the results may be cautiously generalized across different regions as the χ^2 differences between the subsamples was found to be significant for only 3 out of 21 cases ($p > .05$) (see Table 3).

Please insert Table 3 about here

DISCUSSION

Research Implications

In this study, we assess the drivers and outcomes of affordable value innovation in emerging markets. We believe that ours is the first large-scale, cross-regional survey of MNCs regarding their NPD activities in highly price sensitive emerging markets. Drawing on institutional theory, we explain why the different and challenging environment of emerging markets and their lack of institutions potentially affects a firm's ability to develop affordable value products in these emerging markets. We find empirical support for our conceptual model in our data. Two antecedents—bricolage and the level of a firm's local embeddedness—positively affect the firm's ability to develop innovations for low income markets. As resources are lacking, bricolage emerges as an important skill in NPD. Specifically, a firm's use of new approaches to solving problems or combining existing resources in new and creative ways to develop solutions for highly price sensitive customers

is a key driver of the firm's ability to develop affordable value products in emerging markets.

Similarly, as market-supporting institutions are lacking in emerging markets, companies can overcome these institutional voids by being locally embedded and developing local partnerships. Our findings clearly support the prediction from institutional theory that increasing local embeddedness is an effective strategy for firms to overcome the lack of key institutions in emerging markets (Peng et al., 2008; Sheth, 2011; Webb, Kistruck, Ireland and Ketchen, 2010). Building these relationships therefore becomes a crucial driver for the development of affordable value products in emerging markets.

Further, we address the debate about product standardization versus adaptation in successful innovation for emerging markets. On the one hand, standardization increases efficiency and should therefore lead to lower costs and hence lower prices with a positive impact on the level of affordability. On the other hand, while adaptation may increase costs due to lower efficiency it may be necessary to address customers' specific requirements and hence offer value. We find clear empirical evidence that adaptation rather than standardization leads to higher levels of affordable value innovation. This suggests that adaptation helps provide the right balance between affordability and value and that responding to customer requirements across emerging markets segments is key. As Prahalad (2012) and Muller and Kolk (2010) have argued, affordable value innovations therefore need to be tailored to a specific country or low income customer segment.

Our multi-group analyses did not reveal significant differences with regard to the antecedents of affordable value innovation across regions. This result suggests that the three NPD practices identified in this study, i.e., bricolage, local embeddedness and product adaptation, are important drivers of affordable value innovation across multiple emerging markets.

Finally, our results show that developing and launching affordable value products

increases innovation performance and ultimately overall financial performance. This provides evidence for our basic assumption that a firm's capability to develop and launch affordable value products is key to success in emerging markets. It also indicates that a firm's investments in affordable value products for emerging markets pay off financially.

Managerial Implications

As emerging markets become increasingly attractive to MNCs, companies are well-advised to focus on developing and launching affordable value innovations to tap into fast growing price sensitive segments in emerging markets. The results of our study clearly show that affordable products lead to higher innovation and business performance. Hence, managers need to re-focus their NPD activities on affordable innovation. Managers need to rethink their future business models to integrate affordable value innovation into their strategy and take on increasing competition from emerging and developed market challengers with low-cost innovations (Calantone et al., 2004). This may imply a deeper integration of the low income market strategy into the core business of firms and higher commitment towards this new and unfamiliar but growing consumer base of the future (Prahalad, 2005).

This has further strategic implications especially for MNCs. MNCs face local competition in emerging markets, mainly in low income, price sensitive market segments. These markets are often dominated by local firms because such firms are more familiar with local requirements and are therefore typically better at offering affordable value products. Such local firms are increasingly becoming emerging market champions (EMNCs). They are aggressively internationalizing to compete with MNCs in developed markets, often using affordable value products that originated in their home markets and that are now finding their way into developed markets. This development has two important implications for MNCs. First, MNCs need to compete with local firms in emerging markets based on affordable value products in order to avoid losing important markets to local competitors who would

otherwise dominate them. Second, developing affordable value products becomes an important capability for Western MNCs because it prepares them for the potential market entry of EMNCs based on affordable and “good enough” products in their developed, home markets.

Our model and results show that affordable value innovation has different antecedents from the ones that traditionally drive innovation in developed markets. As low-end markets represent a completely different environment to Western markets, greater skill with bricolage and greater local embeddedness are particularly relevant while too much standardization has a negative effect on successful affordable value innovation. Our results therefore highlight the need for managers to be aware of the unique contingencies necessary for them to successfully innovate in emerging markets.

One important aspect is that firms need to seek partnerships with local organizations who are familiar with the local market setting. These local networks are able to compensate for institutional voids in emerging markets. Relationship-building into diverse local networks in emerging markets may also include unorthodox partners such as NGOs who support the companies by providing deep local insights and knowledge about the unique market context (Ansari et al., 2012; Anderson et al., 2010; London and Hart, 2004; Prahalad and Hart, 2002; Webb et al., 2010). At the same time these partners can help MNCs reach markets that are inaccessible to global businesses (Sheth, 2011).

Another important aspect is the concept of bricolage. Bricolage or improvisation is likely to conflict with established NPD routines in MNCs (Ernst and Dubiel, 2013). Managers therefore need to allow for more bricolage in their NPD process if they aim to develop affordable value products for emerging markets. This can be achieved by establishing a separate and more flexible NPD process for this type of innovation, creating a separate team or business unit focusing on affordable value innovation, staffing NPD teams

with members from emerging markets or even relocating important business functions such as R&D to emerging markets.

Limitations and Future Research

This paper is an early attempt to do research on NPD in and for emerging markets. The limitations of this study offer opportunities for further research in multiple ways. First, given our focus on the institutional theory, we chose to emphasize three antecedents of affordable value innovation. However, unearthing other antecedents offers promising avenues for further research. For instance, a firm's corporate culture, its international R&D network or the existence of dispersed NPD teams may all have an effect on the firm's level of affordable innovation. Further, future research might wish to examine in greater detail the role of the customer in the process of developing affordable innovations. Existing research suggests that the input of certain emerging market customers can be critical as these customers provide tacit local knowledge crucial to the development of products and services (see for example Gaurav, Cole and Tobacman, 2011).

Second, we focus our study on affordable value innovation in *emerging* markets. Future research could, however, also look at how such innovation may or may not succeed in *Western* markets. These "reverse innovations" are an emerging phenomenon that can potentially compete with the existing generation of products and services in developed markets (Ramamurti, 2004). By leapfrogging existing technologies and eliminating unnecessary features (Govindarajan and Ramamurti, 2011) low-cost innovations which offer value could pose a serious threat to existing Western products and services. It would be interesting to understand the conditions under which reverse innovation happens and succeeds and if the drivers are similar to those identified in this study.

Third, our sample has some limitations. Due to the challenges posed by our research design (targeting the world's largest MNCs and our two-stage sampling procedure), we had

complete data from only 103 projects from 47 firms. As a result we have fairly small subsamples to draw on for the multi-group analysis we performed. It is with caution therefore that we interpret the cross-national effects we observe in our study. Future research, drawing on larger samples, should confirm if our results generalize to innovations from multiple emerging markets. Finally, our sample may be biased toward larger firms that are typically more active in emerging markets than smaller firms. Thus, subsequent research should analyze the innovation activity and performance of small and medium-sized firms.

CONCLUSION

To the best of our knowledge, this study is the first large-scale, cross-region empirical examination of the antecedents and performance outcomes of affordable value innovation in emerging markets. Previous research suggests that low income environments open up a fundamentally new and dynamic research arena with challenges, opportunities, and research questions that are different from existing new product development research (Govindarajan and Ramamurti, 2011). Our study of the drivers and consequences of innovation in low-end markets responds to calls in the management literature to advance existing knowledge of NPD in low income markets. It also provides guidance for global businesses that are increasingly aware of the need to focus on new customer bases in emerging markets to remain competitive.

A cross-national comparison reveals that all our main effects generalize across emerging market on different continents. This result is particularly important as companies are increasingly interested in understanding the drivers of successful affordable value innovations across countries and regions. We strongly believe that affordable value innovation is of great importance to companies seeking to grow in the still untapped low income markets of emerging economies around the world.

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Figure 1: Hypothesized Model of the Drivers of Affordable Value Products

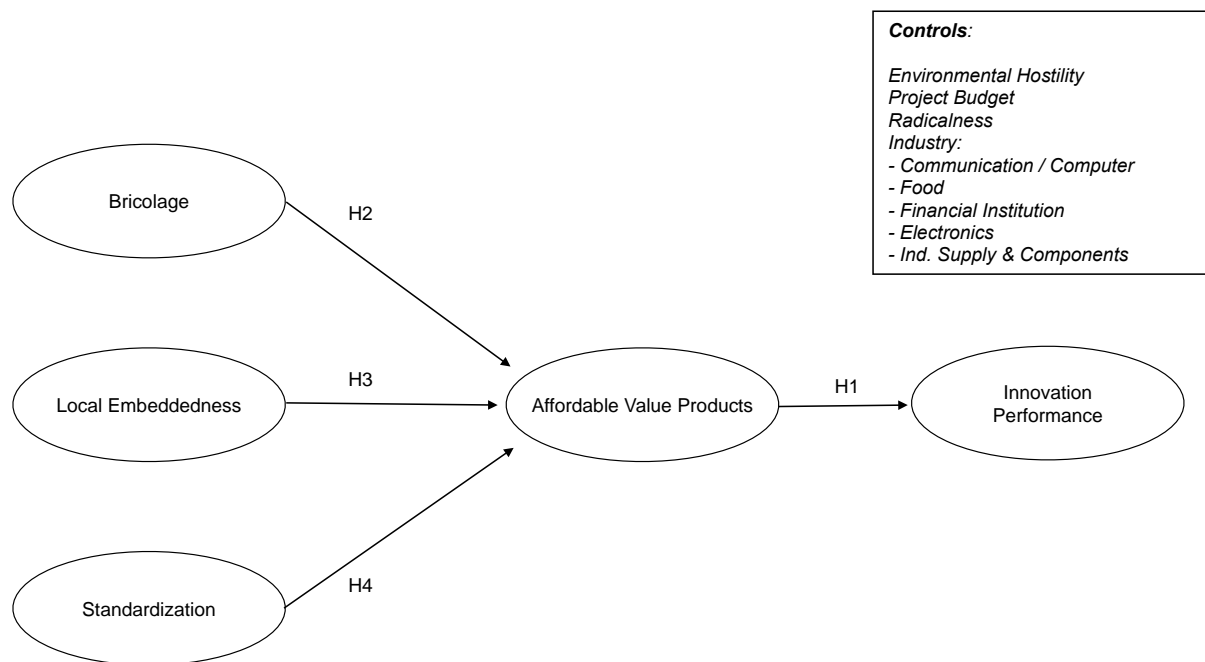


Table 1: Correlations among the latent variables

	n	Mean	S.D.	1.	2.	3.	4.	5.	6.	7.	8.
1. Environmental Hostility	103	3.63	.92	.731							
2. Radicalness	86	2.65	1.33	-.094	n.a.						
3. Project Budget	64	.506	.956	-.099	.064	n.a.					
4. Bricolage	103	5.65	.92	-.111	.228*	.070	.713				
5. Local Embeddedness	103	5.08	1.38	-.067	.177	-.154	.138	.722			
6. Standardization	100	4.33	1.35	-.007	.007	-.040	-.077	-.048	.733		
7. Affordable Value Innovation	103	6.19	1.17	.045	.037	-.023	.498**	.199*	-.210*	.900	
8. Innovation Performance	103	4.74	1.01	-.142	.079	.319**	.082	-.012	-.232*	.264	.807

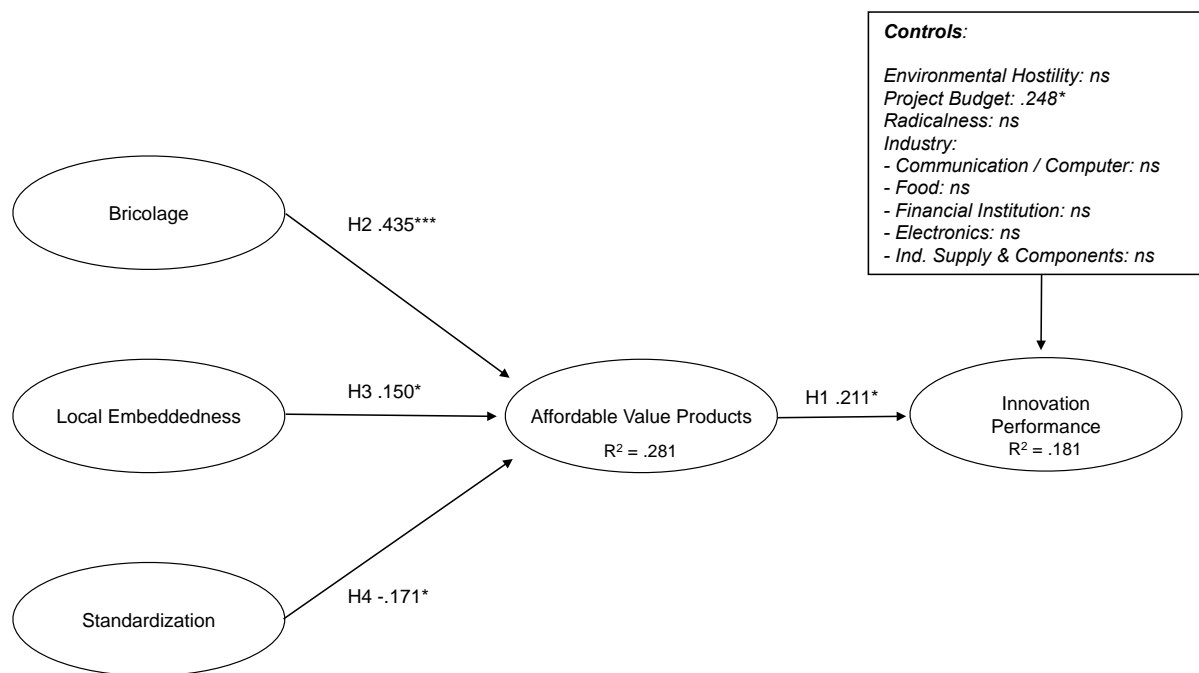
* p < .05, ** p < .01 (two-tailed).

The square root of the AVE are on the diagonal and highlighted in bold.

Table 2: Inner Model Evaluation

Constructs	R ²	f ²	Q ²	q ²
Bricolage	-	.234	-	.168
Local Embeddedness	-	.028	-	.007
Standardization	-	.039	-	.022
Affordable Value Innovation	.281	-	.193	-
Innovation Performance	.181	-	.120	-

Figure 2: Results of the Hypotheses Testing



¹ Significance according to two-sided test * p < .05; ** p < .01; *** p < .001

Table 3: Path Estimation Differences and Significances

Paths	Africa (n = 34) <-> (Asia (n = 30))		Africa (n = 34) <-> Lat. America (n = 23)		Asia (n = 30) <-> Lat. America (n = 23)	
	difference	P	difference	p	difference	p
Bricolage ->Affordable Value Innovation	0.474	0.004	0.163	0.034	-0.033	0.873
Local Embeddedness -> Affordable Value Innovation	0.046	0.786	0.078	0.811	0.000	1.000
Standization -> Affordable Value Innovation	-0.073	0.645	0.242	0.327	0.234	0.213
Affordable Value Innovation-> Innovation Performance	0.082	0.649	0.329	0.391	0.105	0.616
Environmental Hostility -> Innovation Performance	-0.298	0.216	0.106	0.070	-0.226	0.341
Radicalness -> Innovation Performance	-0.063	0.722	-0.360	0.488	-0.092	0.620
Project Budget -> Innovation Performance	-0.004	0.979	0.373	0.990	0.002	0.992

Appendix: Scale Items

Bricolage (adapted from Vera and Crossan 2005; 1 = strongly disagree, 7 = strongly agree)

When working on the affordable value product, our team members...

1. responded directly to unexpected problems.
2. tried new approaches to problems.
3. were good at combining existing technologies/resources/solutions in creative ways.
4. started with the price consumers can afford and then developed a solution

Local Embeddedness (adapted from Zhou et al., 2007; 1 = strongly disagree, 7 = strongly agree)

For this affordable value product we focused on ...

1. utilizing local social networks.
2. strengthening ties with local communities.
3. working with non-governmental organizations (NGOs).
4. working with unorthodox partners, such as locally influential community members or small entrepreneurs.

Standardization (adapted from Subramaniam, 2006)

How would you describe the degree of standardization across country markets in the development of the project?

1. The innovation was completely standardized across country markets (1) to The innovation was individually tailored to each country market (7)
2. Standardizing the innovation was easy (1) to Standardizing was difficult (7)
3. We standardized only what was very obvious (1) to Standardizing involved lot of creative problem solving (7)

Affordable Value Innovation (own development; 1 = strongly disagree, 7 = strongly agree)

The innovation product...

1. is affordable for the low income population.
2. provides benefits to low income customers.

Innovation Performance (adapted from Blindenbach-Driessen et al., 2010)

Evaluate the outcome of the selected innovation projects according to the following criteria.

1. The profit achieved is ... (1 = far lower than expected; 7 = far higher than expected)
2. The revenues achieved is ... (1 = far lower than expected; 7 = far higher than expected)
3. The new or improved product or service satisfies the clients' needs ... (1 = strongly disagree; 7 = strongly agree)

Financial Performance (Reinartz et al., 2004) (1 = much worse; 7 = much better)

After the completion of the affordable value innovation, how do you rate the performance of your SBU compared to your relevant competitors in terms of ...

1. current profitability.
2. attaining growth targets.
3. attaining market share.
4. attracting new customers.

Environmental Hostility (adapted from Calantone et al., 1997)

Thinking about these projects as a whole, how would you characterize the external environment that they are operating in?

1. Rich in investment and marketing opportunities (1) to Very stressful, exacting, hostile; very hard to keep afloat (7)
2. An environment that our firm can control and manipulate to its own advantage, such as a dominant firm has in an industry with little competition and few hindrances (1) to A dominant environment in which our firm's initiative counts for very little against the tremendous competitive, political, or technological forces (7)