

THE LINK BETWEEN NEW PRODUCT DEVELOPMENT AND CUSTOMER PARTICIPATION: THE ROLE OF CUSTOMER SATISFACTION AND ADOPTION RATE

Phuong Nga Cao

Faculty of Economics, Thai Nguyen University of Economics and Business Administration, Tan Thinh Ward, Thai Nguyen, Vietnam.

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ABSTRACT

To reach a better form of new product development performances along with customer participation, this study has examined the benefits of customer participation, which leads to customer satisfaction based on three attributes of Kano's model. Although the prior studies have stated that customer participation in the new product development is a double-edged sword strategy, this study has shown that cooperating with customers is an easy path to get to the customer satisfaction. We also assume that this satisfaction has led to a greater willingness of customers to buy and use products that improve financial performance and as customer acceptance increases, the new product market will grow dramatically. Obtained data collected from 567 holding companies and 422 customers indicates that customer participation leads to the customer satisfaction and it has a positive impact on new product development financial performance and new product market. The results of this article provide specific managerial guidelines for managing customer participation to improve radical new product innovation.

Keyword: Customer Participation; Customer Satisfaction; New Product Development; Financial Performance; Market Performance.

1. INTRODUCTION

In this age of high speed of living, people are interested on products that meet their needs faster and easier, since they are reluctant to spend more time getting to know new products. This theme has become an important approach for companies to make the products more tailored to the needs of the consumer. A common strategy is participating customers in new product development (NPD). Customer participation is an approach that customers and companies work together to create products with new value and technological knowledge. And, as it is considered a problem-solving approach, is beneficial for both parties (Coviello and Joseph, 2012). As can be seen from definition of this approach, companies have opportunities to gain and inform about new ideas and needs of customer as well as achieving new solution for NPD (Hoyer et al., 2010; Prahalad and Fang, 2008). In other words, consumer participation is considered as an effective approach to integrate different processes of the organization in such a way that the processes of NPD are in line with the needs of consumers.

The enormous potential of the customer participation has attracted research and companies' attention from multiple disciplines (Fang 2008; Coviello and Joseph, 2012, Goldenberg et al., 2009). Obtained reports from various companies such as Nike, Proctor & Gamble and Unilever,

showed that the new product adoption rate and performance have been increased (e.g. Prahalad and Ramaswamy, 2008). Fang (2008) argued that customers were able to provide information and ideas, which relate to their needs for NPD. Hoyer et al. (2010) found that new ideas gained from customers participating in NPD can achieve meeting customers' needs and lead to a higher new product adaptation and reduced new product failure.

To achieve a proper vision for companies and decision-makers as well as managers to adopt customer participation in NPD process, by examining the NPD literature, we have concluded that the success of the new product depends on the level of customer satisfaction (Lagrosen, 2005; Stock, 2014; Fang, 2008; Coviello and Joseph, 2012; Chang and Taylor, 2016). Increasing customers' satisfaction by collaborating with companies in NPD processes is an important factor, which reflects the success of customer participation (Morrison et al., 2000); unfortunately, it has been studied less. Increasing satisfaction has had a positive impact on the NPD performance due to the increased adoption rate of new products (Morgan, 2015). Satisfaction is described as "an evaluation of an emotion so that it reflects the degree to which a customer believes that the possession and/or use of a product evokes positive feelings" (Rust and Oliver, 1993).

In this connection, Kano has stated that new products are more likely to lead to the customer satisfaction and success, if they produced in line with the features received by customers. To identify customer satisfaction, Kano's method is a good way to investigate the characteristics of customer requirements (Kano et.al, 1984). More specifically, product can be accepted by customers, if a combination of three factors Must-be Quality, One-dimensional Quality, Attractive Quality, provided by Kano, has been considered. This theory addresses the quality features of a new product that influences customer perception and behavior, which leads to the better product acceptance (Kano et.al, 1984).

Since customers' ideas and information in relation to their needs and preferences can align the new product features, we draw a link between customer participation and NPD which leads to customer satisfaction. This connection shows that customer participation can lead to an approach in the NPD process that the created new product ultimately yields their satisfaction. We also assume that this satisfaction has led to a greater willingness of customers to buy and use products that improve financial performance and as customer acceptance increases, the new product market will grow dramatically.

The remainder of the paper is as follows. Next, the conceptual framework, literature background and hypothesis development for the study is presented, followed by the methodology and results of the analysis. Last, a general discussion is presented while addressing the paper's limitations and directions for future researches.

2. THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

To ease the interpretation of the theoretical framework and research hypotheses, the model specifying the variables and relationships in the framework is presented in Figure 1.

Figure 1. Conceptual Framework



The customers' willingness to participate in NPD plans in order to address their needs on the one hand, and on the other hand, companies' willingness to achieve ideas and solutions tailored to the customers' needs have led customer participation to become more and more important in the NPD process (Morgan, 2015). Integration of customers into the NPD activity is a common trend among companies so that they create a new knowledge and value through interaction. In this regard, studies have stated that, at various stages of NPD, firstly, a higher level of adaptation rate will be achieved through customer participation cooperation (Jackson and Messick, 1965; Hoyer et al., 2010; Fang 2008; Morgan, 2015). They steam that ideas will lead to the new product comply with the customer's needs, and the first-hand solutions will be obtained as well. Secondly, reduce the cost of developing new products will be happened by providing the required resources, technology and communications from customers.

As it obtained from studies, customer participation is a two-edged blade, so the lack of proper knowledge about the integration of customers in the NPD process will have a negative impact on the NPD performance (Morgan, 2015). Despite the negative parts of customer participation, the positive role of customers in the NPD could not be ignored. Hence, the new trend has been emerged to create the effectiveness way of customer participation in studies (Stock, 2014; Fang, 2008; Coviello and Joseph, 2012, Morgan et al., 2018, Moon, et al. 2018). The results of these studies have noted that customer participation is influenced by the specific characteristics of both internal and external factors like developed industries, high-tech industries, companies' strategic orientation, small companies, and lead-users. Although companies might have proper performance by considering such factors, a comprehensive approach that encourages companies to participate customers in NPD process is rarely found in studies.

An interactive point of the new product success that is pointed in most studies is the role of customer satisfaction and adoption rate (Lagrosen, 2005; Stock, 2014; Fang, 2008; Coviello and Joseph, 2012; Chang and Taylor, 2016). Customer satisfaction refers to customers' received values from products, which have a huge effect on customer behavior and customer retention. Customer satisfaction is directly related to purchasing behavior, so satisfied customers are more likely to interact with the company and purchase their products (Matzler and Hinterhuber, 1998). Understanding customer demands and needs and determining their differences includes critical importance to manage these needs. Companies not only should be focused on meeting customer demands but also to understand these needs (Matzler and Hinterhuber, 1998). For this, the "Kano model" is a model used to categorize customer needs. Kano's method is a good way to investigate the characteristics of customer requirements (Kano et.al, 1984). Kano has suggested customers, if the following three features are included in the products, would be satisfied and eventually this leads to the success of the new product.

First, Must-be Quality: One of the main points of assessment in the Kano model is the threshold attributes. These are basically the features that the product must have in order to meet customer demands. Threshold attributes are simple components to a product so that the product may not be possible to enter the market or leave the market due to dissatisfaction if they are not available. Second, One-dimensional Quality: This attribute is related to the company's performance into customer needs. More customer satisfaction will be achieved, if companies have better performances due to aligning the product features with the customers' needs. Therefore, customers are willing to pay more for the product. Third, Attractive Quality: Excitement attributes are for the most part unforeseen by the client but may yield paramount satisfaction. Having excitement attributes can only help you, but in some scenarios, it is okay to not have them included. The beauty behind an excitement attribute is to spur a potential customers' imagination, these attributes are used to help the customer discover needs that they have never been thought about before. Having concurrent excitement attributes within a product can provide a significant competitive advantage over a rival. Out of all the attributes introduced in the Kano model, the excitement ones are the most powerful and have the potential to lead to the highest gross profit margins (Kano et al., 1984). Kano, in his theory, has argued that the proportion of these three attributes in products leads to customer satisfaction and reduces the failure rate.

2.2. Hypotheses

2.2.1 Customer Participation and Customer Satisfaction

Customers are abundant sources of new product ideas since they provide first hand solutions to the problems they face (Yli-Renko and Janakiraman, 2008). By integrating customers into the ideation process at deeper levels, companies are able to discover customers and markets needs and develop products that mirror such needs (Fang, 2008; Hoyer et al., 2010). As such, they provide the company with the impetus to enhance current product offerings and potentially develop new products that are not available at the market, thus providing an opportunity to develop new markets (Cheng et al., 2016). In general, by reviewing the NPD literature, it can be concluded that customer participants in the NPD process at idea stage, have several advantages: Leads to company awareness about customers' needs; also at deeper levels it will recognize the latent needs of customers that may show up in the future; companies will be able to adapt and integrate the needs, behavior and characteristics of customers with their strategies and processes (Cheng et al., 2016; Fang, 2008).

Since customer satisfaction factors depend on understanding customers' needs, participating customers in NPD processes at idea stage can provide the conditions that finally, those needs are identified and, as a result, customer satisfaction will be achieved (Morrison et al., 2000). We propose that participating with customers has led to receiving important information that can help companies understand the basic needs of the customers. This information helps companies to take Must-be Quality's feature into their products. Customer participation also leads to a two-way interaction between the company and the customer in line with One-dimensional Quality, through which companies can put their performance in line with customer demands, so that customers will not be discouraged after dealing with the final product. One of the most important achievements of customer participation is identifying customers' latent needs, which helps companies create products that not only surprise customers in a good way but also, they are more willing to the

product and even pay more for it. This advantage can provide Attractive Quality attribute. This valuable information addresses the lack of integrity of the company's processes in strategies to meet the consumer needs.

This relationship between customer participation in NPD process and customer satisfaction draw a clear path to the success of the new product. In this way, the conditions will be provided by customer participation in NPD, which subsequently customer satisfaction will be resulted. Hence, we propose the following hypothesis:

H1: Customer participation has a positive relationship with NPD process and customer satisfaction.

2.2.2 Customer Satisfaction and NPD Performances

Recent research on customer participation suggests that greater levels of customer participation in the NPD process can enhance product developing efforts by the company (Fang, 2008), improve financial performance (Coviello and Joseph, 2012), and reduce costs of development and production (Auh et al., 2007; Coviello and Joseph, 2012). Despite all efforts, many product development projects fail and lead to the introduction of products that do not meet customers' expectations and therefore customer satisfaction cannot be obtained (Hamel and Prahalad, 1994; Baker and Sinkula, 2005; Morgan, 2015). Thus, companies have been faced to a doubt about achieving a superior performance in the development of new product. In order to address this issue, by reviewing NPD literature, it has been found that achieving a superior performance is based on the hypothesis that customer satisfaction is the best indicator for the future of the company, so that a high level of customer satisfaction leads to a high level of customer loyalty (Matzler and Hinterhuber, 1998). A high level of loyalty in term leads to a steady stream of future cash flow, and decreases the costs of attracting new customers. Customer satisfaction reduces price elasticizes, as satisfied customers are willing to pay more for high quality products (Matzler et al., 1996).

Based on the results of customer satisfaction and its positive impact on performance (Matzler and Hinterhuber, 1998), as customer participation in NPD processes leads to customer satisfaction, it can be concluded that the performance of NPD will be improved. On the one hand, due to the turnover provided by satisfied customers, a good profit margin will be created, and generally improve the financial performance of the company (Matzler et al., 1996). This is due to the fact that the new product meets customers' hidden needs and preferences, they are willing to pay more for these products. On the other hand, satisfied customers will be more willing to test the new products, because of the good feeling they obtain from them, and the products comply with their demands (Fang, 2008). Therefore, it can be concluded that the products market will be increased with the participation of customers, which has created a satisfaction. Thus, we present the following hypotheses:

H2: Obtained Customer satisfaction from customer participation has a positive relationship with the financial performance of the NPD.

H3: Obtained Customer satisfaction from customer participation has a positive relationship with the new products market.

3. METHODS

This research tests the hypotheses with two-phase data collected from both holding companies and customers. The data was collected by a survey and distribution to the target persons by human resource manager in each company.

3.1. Data Collection

From the conceptual domain of each construct, the data was collected from both holding companies and customers. The dependent variables (customer participation and NPD performances) came from holding companies and the independent variables (customer satisfaction) came from customers in two steps.

3.1.1. First Phase: Holding Companies

For the survey on the role of customer participation on the NPD process and performances, a mailing list was prepared regarding the Southeast Asia 's holding companies (sampling took place from four countries: Vietnam, Thailand, Laos, Philippines) which all have been active in NPD, to derive an initial sample of 1500 companies. We ensure that these companies are continually innovating themselves in such an extreme way that if an entire industry collapsed so our data, we are able to rely on the obtained data. The first stage of the data collection included a mailed pre-screening sent to the potential respondents to assess their appropriateness for the study. Appropriateness was determined through a short pre-screening questionnaire, which determined whether respondents had been involved in their company's NPD process in the prior two years. Of the initial 1500 companies, 870 pre-screening responses were received. Of those respondents 49 were eliminated because they were not involved in their company's NPD processes in the previous two years, had spent less than two years in their position, or boring titles that reflected a low-level position.

Questionnaire packets were then mailed to the remaining 821 managers. The survey instructions asked respondents to reflect on the most recent NPD project in which they had been involved and to complete the questionnaire with that project in mind. A follow-up mailing was sent two weeks later. In addition to the survey, each mailing included a prepaid return envelope and a cover letter. This sampling effort generated 576 responses, but 4 were removed because they contained too many missing values.

As Armstrong and Overton (1977) recommend, early and late responses were compared but there was no indication of response bias. The survey instrument also included post-hoc checks of the informants' knowledge and involvement in the NPD processes. On a seven-point scale, the mean of their knowledge and involvement was 6.7 responses that indicated inadequate levels of informant knowledge and involvement were eliminated (i.e., scores of less than 4 on the seven-point scale). Thus, 567 usable responses were obtained for a 69% effective response rate. The human resource manager distributes the questionnaire among the respondents represented job titles such as manufacturing managers, product managers, vice presidents of manufacturing, and so on. Considering the nature of the sample and results from previous studies, this level represents a reasonable survey response.

3.1.2. Second Phase: Customers

The questionnaires were sent to the holding companies also asking respondents to indicate contact information of their customers. We informed companies to collect customers who they already bought from the company and also encourage to communicate with them. Of the customers, 648

provided such information, and the identified customers were telephoned to solicit survey answers. Of these respondents 422 customers were successfully reached and surveyed for a response rate of 65%. The respondents were customers who participate in NPD process, purchased, and used the companies' new products. First, we asked them to answer the questions' set one when there are participating in NPD process and then the second set of questions are obtained from customers when the products are introduced. These 422 responses were compared with the remaining 81 responses from holding companies, and no significant meaning differences were found for the constructs reported by customers. The NPD projects varied across a broad range of categories, including computer peripheral devices, general industrial machinery and equipment, electronic components, and transportation components and parts.

3.2. Measurements

The questionnaire was developed using the procedures that Gerbing and Anderson (1988) recommend. Initially, ten paired interviews were done with managers from the holding companies and their customers. These early interviews, which lasted approximately twenty hours, helped develop the measurement scales and were instrumental in the attempt to craft the pre-test survey. On the basis of these interviews and an extensive review of previous studies, preliminary versions of the questionnaires were developed. When possible, existing scale items were adapted to the context. Subsequently, the questionnaires were mailed to a sample of fifteen holding companies and fifteen customers to verify the appropriateness of the terminology used and the clarity of the instructions. A total of 21 questionnaires were returned, and they indicated that, in general, the survey instrument sounded perfect, though a few items were modified to clarify. The measurement items appear in Appendixes A.

Customer Participation. The dependent variable for this study is the customer participation in the NPD process, a collaborative NPD activity in which customers actively contribute to idea generation and selecting various attributes of a new product offering (Hoyer et al., 2010; Prahalad and Fang, 2008). It was measured on a three-item scale assessing the level of participation in various NPD activities with the seven-point Likert scale, and all items were loaded onto their respective latent factor (above $\alpha=.7$). The scale was adopted and modified from Fang (2008), which showed a good reliability in their studies.

1. Our participation effort in NPD's idea stage played a very important role to provide our preferences and expectations of really new product. 2. Our work constituted a significant portion of the overall development effort. 3. Our involvement as providing of the ideas was quite significant to latent needs detection.

Customer Satisfaction. Satisfaction was obtained through two sets of scales were used. The first set was measured on a two-item scale assessing the satisfaction when they are participating with the seven-point Likert scale, and all items loaded onto their respective latent factor (above $\alpha=.7$), which was adopted and modified from Kano et.al (1984) and Matzler and Hinterhuber (1998). The second set was measured on a three-item scale assessing the satisfaction when they are purchasing with seven-point Likert scale, and all items were loaded onto their respective latent factor (above $\alpha=.7$), which was adopted and modified from Kano et.al (1984) and Matzler and Hinterhuber (1998).

Set one:

1. About participating, how would you feel if you could transfer ideas about your needs? 2. How satisfied are you with the participating to develop the new product?

Set two:

1. About the purchased product, how would you feel if you find out it fits with your needs? 2. How satisfied are you with the purchasing of new product?

NPD Performances. Financial performance was measured on a three-item scale assessing the level of financial performance with the seven-point Likert scale, and all items were loaded onto their respective latent factor (above $\alpha=.7$). The scale was adopted and modified from Griffin (1996) and Huang, et al. (2004), which showed good reliability in the study.

1. Whether or not the overall profitability of this new product is high. 2. Whether or not the overall profitability of this new product is higher than that of my company's other new products. 3. Whether or not this new product generates a high investment return.

New product market was measured on a three-item scale assessing the new product speed to market with the seven-point Likert scale, and all items were loaded onto their respective latent factor (above $\alpha=.7$). The scale was adopted and modified from Griffin (1996) and Joshi and Sharma (2004), which showed good reliability in the study.

1. The product market share far behind our goals/far ahead of our goals. 2. The market grows slower than industry norm/faster than industry norm. 3. The market distrusting time slower than our typical product development time/faster than our typical product development time.

4. ANALYSIS AND RESULTS

The bootstrapping-based partial least squares (PLS) approach to structural equation modeling (SEM) was used in this study. PLS is a method that allows estimating complex cause-effect relationship models with latent variables, and it has been widely adopted in business research fields such as information systems, marketing, and operations management (Peng and Lai, 2012). Since the traditional methods such as the causal steps' strategy (Baron and Kenny, 1986) and the Sobel test (Sobel, 1982) are both unsuitable for this study, bootstrapping has been recommended as the best approach for testing our model.

PLS-Graph software was used, and the parameters were estimated using maximum likelihood with a bias-corrected bootstrapping approach. Bootstrap samples were derived from each of the holding companies and customers' datasets to ensure a bias-corrected comparison. Both the holding companies and customers' data were permuted repeatedly in a manner consistent with the random assignment procedure; thus, bootstrap samples of holding companies (each sample with a sample size $N = 724$) and bootstrap samples of customers (each sample with a sample size $N = 1,754$) were generated. These data permutations constitute the reference set for determining significance.

4.1. Common Method Bias

As in all survey-based empirical studies, non-response bias is a concern. To address this problem, the early and late (after several rounds of calls) responses for variables used in this study were compared (Armstrong and Overton, 1977; Stank et al., 2001); the t-tests showed no significant differences indicating that the non-response bias did not appear to be a major concern in this study. As we used one informant from each company to answer the self-reported questionnaire in this study, the potential for a common method bias in the results was assessed. First, as appropriate arrangements of the items in a questionnaire can somewhat reduce respondents' consistent motivation and thus decrease the common method bias in self-reporting (Podsakoff et al., 2003; Podsakoff and Organ, 1986), we adopted different instructions for different scales, and the adjacent variables in the conceptual model were put in distinct sections. Second, to accompany this

conclusion, we conducted a test following the recommendation of Podsakoff et al. (2003). Accordingly, two measurement models were compared following the analytical procedure in PLS proposed by Liang et al. (2007), with one measurement model, including all the traits and the other model adding in a method factor. The results showed that the path coefficients were very subtle and insignificant. Third, we checked the correlation matrix to see if there were any high correlations, as Pavlou et al. (2007) suggested that the common method bias is unlikely if there are no excessively high correlations (> 0.9). The results of these tests suggested that the common method bias was unlikely to exist in this study (Table.1).

4.2. Measurement Validation Procedure

A rigorous process was used to develop and validate the survey instruments. Prior to the data collection, content validity was supported by previous studies, executive interviews, and pilot tests. After the data collection, a series of analyses were performed to test the reliability and validity of the constructs.

We followed the commonly used method (e.g: Zhao et al., 2011) to test construct reliability. We conducted exploratory factor analyses (EFA) using both orthogonal and oblique rotations to ensure high loadings on the hypothesized factors and low loadings on cross-loadings in the datasets. All the items loaded onto the expected factors were without significant cross-loadings. Then, the reliability of each construct was tested using Cronbach’s alpha. The Cronbach’s alpha values were over 0.8 for all the constructs datasets, indicating that all the constructs have been considered acceptable (Hooper et al., 2008).

TABLE 1. Means, Standard Deviations, and Correlations

Means, Standard Deviations, and Correlations						
variable	M	SD	correlation Matrix			
			1	2	3	4
Customer Participation	4.78 4	1.14 8	1.000			
Customer Satisfaction	4.89 2	1.21 6	.579* *	1.00 0		
NPD Financial Performance	4.69 3	1.20 4	.284* **	.217 **	1.000	
New Product Market	4.84 7	1.17 7	.347* 	.416 **	.374	1.00 0

* P < .05 , ** P < .01 , *** P < .001

Table 2. Results of the partial least square analysis

Variables	Hypotheses	Standardized Coefficient	result
Customer Participation --- Customer Satisfaction	H1	0.176*	Supported
Customer Satisfaction --- NPD Financial Performance	H2	0.107*	Supported
Customer Satisfaction --- New Product Market	H3	0.102*	Supported

* P < .05

4.3. Results

H1 predicted that customer participation has positive relationship with NPD process and customer satisfaction. As Table 2 indicates, customers are able to provide valuable information that customer satisfaction will be resulted ($\beta = 0.176, p < .05$). Hypothesis 2 predicted a positive relationship between the customer satisfaction and the NPD financial performance. The analysis showed that customer satisfaction that is created by customer participation in NPD can leads to better financial performance ($\beta=0.107, p<0.05$), hence the hypothesis 2 is accepted.

Hypothesis 3 predicted a positive relationship between the customer satisfaction and the new product market. The model showed that customer satisfaction that is created by customer participation in NPD reduces the time it takes the new product distribute to market ($\beta= 0.102, p<.05$) and thus provides support for Hypothesis 3.

5. DISCUSSION

This research is part of a reflection on the prospective of NPD success and consumer participation. To help better manage the NPD, we try to study the type of company-to-consumer relationship and build an effective link to the success of the new product. The important way to reach the success and higher adoption rate is depend on reducing product complexity as well as fit between features of the product and preferences of customers. The main purpose of this study is to provide a better understanding of the customer participation approach to gain higher rate of adoption by increasing customer satisfaction. The study seeks to establish a new way about participation of customers in NPD process, so that companies can increase customer satisfaction and gain better performance.

As a result of this study, a successful link between customer participation and three attribute of Kano's customer satisfaction (Must-be Quality, One-dimensional Quality, and Attractive Quality) has been achieved, which contribute to adopting integrated strategy and consequently leads to better financial performance and market of the new product.

First, the strategic management practice of promoting customer participation may be a double-edged sword. On the one hand, customer participation is considered as a proper way to achieve suitable ideas that are align with the customer's needs, resulting in the company's success in new product projects. On the other hand, this participation is also considered as a factor that reduces the success of the new product. So that customers are not able to provide the appropriate idea and solution to improve the NPD process. In general, the goal of all studies and companies was to achieve a superior performance in the development of a new product. Since an important factor in this success is customer satisfaction, we have found that customer participation in the NPD process

provides the condition that the three attribute of Kano's customer satisfaction will be achieved. Thus, it can be argued customers are able to provide information to align the process of NPD with their needs and demands, which finally leads to customer satisfaction.

Second, companies can achieve superior performance through their product alignment with customers. The importance of customers in this area is such that the failure of a new product occurs when customers did not accept the high complexity products. Meanwhile, due to the fact that customer participation leads to the product in line with customers' basic needs and perspectives as well as surprises them by addressing their hidden needs, they eventually will be satisfied. This satisfaction encourages customers to buy products, and in particular, they accept the new products. In this situation, the high price of products is not considered as an issue for customers. This generated behavior leads to a high turnover and a good margin for the company and as a result, the financial performance of developing a new product will be improved. In addition, customers will have a high desire to test a new product because of the trust and values that they obtain, so the lack of familiarity with the new product will not discourage them from buying it. Hence, the performance of the new product market will grow.

6. MANAGERIAL IMPLICATIONS

Our research provides clear indications for managers who aim to develop a new product. We propose that adopting customers participate because of created customer satisfaction may help to reach successful NPD efficiently.

The analysis revealed that companies with customer participation strategy benefit in the development of a new product. In fact, customer participation in the NPD process, which leads to customer satisfaction, could help managers to capture the benefits of customers' information on NPD. On the other hand, the analysis also revealed that the customer participation should be aligned with satisfaction factors of Kano theory to reach a better outcome. Hence, managers operating in companies with customer participation approaches, which focused only on customers as an idea generation or co-developer, may need to expand their focus and integrate satisfaction features on their strategies in order to gain better product performance. Of course, our analysis did not examine the whole aspect of customer participation and customer satisfaction separately and it may not be a perfect reference. However, managers that aim at entering NPD should consider how to satisfy customers in their plan.

Appendix A. Primary measures in the survey

Constructs and Items	Loading
Customer Participation	
Our participation effort in NPD's idea stage played a very important role to provide our preferences and expectations of really new product.	0.793
Our work constituted a significant portion of the overall development effort.	0.746
Our involvement as providing of the ideas was quite significant to latent needs detection.	0.782
Customer Satisfaction	
Set 1	
About participating, how would you feel if you could transfer ideas about your	0.835

needs?	
How satisfied are you with the participating to develop the new product?	0.817
Set 2	
About the purchased product, how would you feel if you find out it fits with your needs?	0.779
How satisfied are you with the purchasing of new product?	0.876
NPD Financial Performance	
Whether or not the overall profitability of this new product is high.	0.794
Whether or not the overall profitability of this new product is higher than that of my company's other new products.	0.785
Whether or not this new product generates a high investment return.	0.846
New Product Market	
The product market shares far behind our goals/far ahead of our goals.	0.791
The market grows slower than industry norm/faster than industry norm.	0.824
The market distrusting time slower than our typical product development time/faster than our typical product development time.	0.803

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