

Customer Participation and NPD Process Effectiveness : The Perspective of Marketers

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Abstract

Purpose : The study sought to assess marketers' perceptions on whether customer participation in various stages of new product development helps or degrades the effectiveness of the new product development process. In addition, the effect of new product development (NPD) process effectiveness on the firm's marketing performance, operational performance, and financial performance were investigated.

Methodology : A theoretical model was proposed by reviewing the existing literature and empirically assessing data from 257 respondents via structural equation modeling. The respondents were professionals with expertise in new product development and marketing processes.

Findings : The results highlighted that customers' participation in the creativity or idea generation stage significantly and positively affected the NPD process effectiveness. However, in the concept testing and launch phase, customers' participation may not affect the NPD process effectiveness. Also, NPD process effectiveness significantly and positively affected the marketing and operational performance of the firm. Interestingly, financial performance was not impacted by the NPD process's effectiveness.

Practical Implications : The study disclosed that the customers' participation in the idea generation phase significantly and positively affected the effectiveness of the NPD process. Thus, NPD managers should encourage clients to actively participate in the idea-generation phase. This will not only boost the firm's knowledge function but also enhance customers' sense of belonging.

Originality : The attitude of Indian marketers on customer participation or involvement in new product creation as a research topic is difficult to detect. This work bridged the research gap.

Keywords : new product development (NPD), marketers' perspective, customer participation, financial performance, marketing performance, operational performance

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Business firms around the globe desire organic growth. However, the yearning for organic growth poses many challenges in the firm's trajectory. With the current dynamic environment, firms must design

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methods and strategies to navigate the changes surrounding them. For example, firms can create value through innovation in business models (Bashir & Verma, 2017). Firms can also develop novel and innovative products that provide a competitive advantage (Melander, 2020) and aid firms in navigating the present business environment, which is dynamic and constantly changing. Also, innovation in the firms' products is the need of the hour. Firms try to create offerings as per the needs of the customers; however, such a manufacturing nirvana has become increasingly difficult to attain, given customers' quickly changing preferences, the heterogeneity of their demands, and the resulting micro-segmentation of many product categories (Ogawa & Piller, 2006).

New products are vital for any business firm and have been increasingly used by companies to increase corporate brand revenue and market share (Lim et al., 2020). However, the high failure rate of the new product makes them challenging to pursue. Customer involvement in the new product development (NPD) process has been associated with knowledge benefits for the business firm and, therefore, can decrease product failure risk. The knowledge management viewpoint refers to customer participation as the customer knowledge provision phenomenon whereby customers share their needs- and solution-related inputs in the firm's NPD process (Chang & Taylor, 2016). With the advent of modern technology, especially Industry 4.0, the participation of customers has become easier and is believed to have the potential for customization of offerings (Naeem & Di Maria, 2022). Also, consumers are increasingly using platforms like social media in different stages of purchase and consumption-related decisions, whether it is related to their holiday vacation (Singh & Yadav, 2018) or well-being (Singh et al., 2021). Firms can also use multiple methods and tools, such as the voice of customer method (Melander, 2020), toolkits (Von Hippel & Katz, 2002), social media (Rautela et al., 2021), online communities, etc., to gather and leverage customer knowledge. Interestingly, in the case of small and medium enterprises (SMEs) also, the development of new products contributes to their progress and sustainability (Iqbal & Suzianti, 2021).

However, merely integrating customers into the NPD process does not guarantee knowledge benefits, as customer knowledge is a total of multiple factors that come into play in a “casually complex phenomenon” (Chang, 2021). Furthermore, previous researchers have noted that customer participation effectiveness is dependent on the stages of NPD or a combination of the same (Chang, 2019). Customer participation or involvement in various stages of NPD, as well as the entire NPD process, needs further examination. Furthermore, marketers' viewpoints on whether consumer participation in various stages of NPD improves or undermines the success of the NPD process require further empirical evidence, which, to the best of academics' knowledge, is untested in the Indian context.

New Product Development (NPD)

NPD is a vital activity for any business firm and consists of activities that the firms carry out in evaluating, developing, testing, and commercializing new products (Booz et al., 1982). Pienaar et al. (2019) proposed the NPD process as the set of events that encompass the translation of product ideas, market opportunities, and technical assumptions into an offering that can be presented for sale to consumers. Trott (2012) explained that developing new products transforms business opportunities into tangible products. Also, new product development should be a continuous activity for any business firm as the development and launch of new products are important determinants of growth and sustained performance of the firm in the long run (Melander, 2020). They are accurately mentioned as the “lifeblood” and “engine of growth” for any firm (Badrinarayanan & Arnett, 2008).

Novel products have a multitude of benefits for firms. However, a substantial risk exists associated with customers' acceptance of unique products (Rautela et al., 2021; Seyyedamiri & Tajrobehkar, 2019). As a result, producing new goods is viewed as one of the most dangerous and uncertain activities for most businesses.

Therefore, firms must understand the factors contributing to the success and failure of new products. The complete awareness of the consumers' requirements and wishes, which is acquired by bringing them on board in the journey of new product creation, is one of the factors contributing to the success of the novel idea or product. Detailed insight into the customer's wants can help the business comprehend consumers' motives for purchasing the firm's products and give a better customer experience during each customer buying journey.

Customers' Participation in NPD

Developing new products was previously regarded as an “internal firm-based process.” Customers used to have no or somewhat passive involvement in the process of NPD. With the radical deviations in the business environment and the evolution of novel open innovation (Chesbrough, 2003) and co-creation paradigms, customers today hold a dominant and crucial position in the NPD process. Lin and Huang (2013) described customer participation as “the degree to which the customer is involved in a manufacturer's NPD activity” (p.3). Customer participation involves breadth as well as depth of customer involvement, and interestingly, both impact new product performance positively (Obal et al., 2024). Customers' engagement gives the firm with information based on the requirements and wishes of the customers, which may not be available to the firm internally. Also, customers may be equipped to give inputs about possible ways to resolve a problem (Chang & Taylor, 2016; Poetz & Schreier, 2012). Studies have also investigated the impact of customer co-creation on firms' ability to upsurge NPD speed. Firms that collaborate with customers can improve NPD speed capabilities and commercialize offerings at a faster rate (Morgan et al., 2019). Customer involvement and engagement are also related to customer loyalty (Srivastava, 2019) and customer satisfaction (Pandey et al., 2020).

A by-product of customer participation is customer engagement, which has been advocated as a marketing imperative of the 21st century due to its promise to develop, maintain, and grow customer satisfaction and business profitability (Lim et al., 2022). Customers today can collaborate and co-create with firms to develop new offerings. Customer participation has been advocated as being positively related to NPD performance (Morgan et al., 2018). The customers' collective dedication and engagement provide the organization with significant revenue potential while reducing the risk associated with NPD. It helps the firm overcome the limits of conventional market research (Ogawa & Piller, 2006). Also, co-creation allows customers to portray their competency, creativity, and expertise (Rashid et al., 2019), thus enhancing the sense of belongingness and satisfaction with the firm and its offerings. The findings of the empirical study by Guzel et al. (2021) suggested that customers are especially keen to buy products where their inputs or contributions are embodied in the final product. Also, the notion that customers provide distinct inputs that help tackle unique tasks in each NPD phase leads firms to engage customers concurrently in various NPD stages rather than involving them only in one NPD stage (Chang, 2019). Thus, customers can participate in the various stages of NPD and provide constructive advice. The current research study deliberates on the three key phases, that is, idea generation, concept testing, and the commercialization or launch phase of NPD. These three phases are vital for the NPD process and involve distinct tasks and skills that make them eligible and worth exploring (Chang, 2019).

Research Gap and Questions

The potential importance of customer participation and interaction in NPD has been argued in the past literature (Hoyer et al., 2010; Rautela et al., 2021; Roberts et al., 2005). Chang (2019) used the knowledge management viewpoint to explore the impact of consumer involvement in the combinations of NPD stages. It was discovered that the joint effect of consumer participation sometimes leads to synergistic consequences. The impact may depend on the “value of customer knowledge and the difficulty of knowledge management” present in “transferring and integrating” the knowledge of customers congregated in NPD stages.

Furthermore, previous literature employed various words to define customer participation, such as customer interaction, engagement, integration, and involvement. However, the actual consequence of customer collaboration and part involvement in various stages of NPD and the entire NPD process still needs to be explored. Also, marketers' perspective regarding whether the involvement of customers in various stages of NPD improves or undermines the effectiveness of the NPD process needs more empirical evidence. This becomes much more relevant in today's scenario as new product managers are encouraged to be more welcoming for an open approach, especially toward NPD by modern firms (Rautela, 2024). The marketers' perspective regarding the customer's involvement in the process is unexplored in the Indian context. The present study fulfills this gap, and we try to fulfill the following research objectives:

- ✍ **RO1** : To study the Indian marketers' perspective regarding the customer's participation in the NPD process.
- ✍ **RO2** : To understand the effect of NPD process effectiveness on the firm's marketing, operational, and financial performance.

Literature Review and Development of the Conceptual Model

Customer Participation (CP) in the Ideation/Idea Generation Phase

At the heart of a great product is a great idea. Thus, if the idea is novel, innovative, and practical, the chances of product success are enhanced significantly. The NPD process initiates with an idea. The firm can generate ideas from various sources, such as its research and development (R&D) department, frontline salesforce, suppliers, employees, competitors, and customers. Customers are at the center of the entire marketing as well as the process of novel product development and thus can be a source of valuable information related to their needs and wants. According to Chang and Taylor (2016), in the ideation stage, firms engage customers to obtain their needs-related knowledge, evaluate the potential of new product ideas, and refine and often select promising ideas for further consideration. Also, their meta-analysis reveals that customer involvement in NPD's ideation and launch stages or phases enhances the firm's financial performance directly and indirectly.

Smith and Reinertsen (1991) coined the phrase “fuzzy front end” to describe the early stages of NPD. The “front end” provides the firm with information on the feasibility and practicability of the product idea concerning economic and technical aspects (Dahan & Mendelson, 2001). Past literature has reiterated the importance of “front end” as front-end performance is directly associated with the new product's success and performance (Florén et al., 2018; Markham, 2013). According to Koen et al. (2014), the future of product development activities hinges on front-end activities since the decisions made in this early stage build the foundation of the innovative alternatives available in the later stages of product development and commercialization.

Customer participation in the beginning stages helps the firm better understand clients and their demands. Also, it helps avoid resources that customers may perceive as low or no-value products (Ernst et al., 2010). Thus, we hypothesize that:

- ✍ **H01** : Participation of customers in the creativity/idea generation phase does not positively affect the effectiveness of the NPD process.
- ✍ **Ha1** : Participation of customers in the creativity/idea generation phase positively affects the effectiveness of the NPD process.

Customer Participation in the Concept Testing Phase

The concept testing phase follows the initial idea generation and screening phase. It embraces a variety of

marketing research-based approaches employed to assess the marketability of a product or service idea before its actual development (Page & Rosenbaum, 1992). Tauber (1981) explained concept testing as a process where consumers are presented with a stimulus (the concept), and measures of reaction are taken, which the researcher believes are predictive of the behavioral response, such as later purchase. This stage aids the firm in resolving the uncertainty that arises due to the limited information about consumers and markets, unverified design and technologies, and various challenges associated with accomplishing and delivering a perfect design (Dahan & Mendelson, 2001). Prototypes can help firms get early market inputs and insights into the glitches and opportunities that may have been missed or overlooked during the concept design stage (Srinivasan et al., 1997). In their study, Dahan and Srinivasan (2000) highlighted using an “internet-based product concept testing method.” These “virtual prototypes” of new product concepts were used as a substitute for physical prototypes.

Customers are invited in this stage to test the product prototypes in “a real-use setting” (Chang & Taylor, 2016). The involvement of customers ensures that the firm does not devote its rare resources to producing products that may have little or no value to the customers. We have also advocated using contemporary technologies like Industry 4.0 in the NPD process (Naeem & Di Maria, 2022). These modern technologies ensure higher value as the customer can contribute to the “value creation” process (Rayna & Striukova, 2016). The participation of customers ensures that the suitable prototype is selected and moves to the subsequent phase, i.e., product development.

The above discussion leads to the formulation of the following hypotheses:

- ✦ **H02 :** Participation of customers in the concept testing phase does not positively affect the effectiveness of the NPD process.
- ✦ **Ha2 :** Participation of customers in the concept testing phase positively affects the effectiveness of the NPD process.

Customer Participation in the Commercialization or Launch Phase

The process of NPD culminates with the commercialization or launch phase. This stage is vital and contributes substantially to the firm's commercial performance (Roberts & Candi, 2014). This phase allows the firm to observe the consumers' reactions toward the new product. Also, in most cases, the firm launches a novel product in a smaller market, making room for modification or changes before going ahead with a full-scale launch. Athaide et al. (1996) believed that influential firms engage in relationship marketing activities throughout all phases of the commercialization process. Rather than simply trying to close a deal, these firms seek active involvement from potential customers, ranging from codesigning of products to seeking feedback on product-related problems or desired modifications.

Customer participation in the launch or commercialization phase allows the firm to know the product performance in terms of the expectations and satisfaction it delivers to customers. The initial reaction and feedback of the customers aid the firm in identifying the loopholes, if any, in the product. Such awareness enables the firm to launch a product without error, decide on the optimum marketing mix and positioning strategy, and enhance the diffusion rate of the product in the social system (Henard & Szymanski, 2001). This contributes to the NPD process's effectiveness. Thus, we hypothesize that:

- ✦ **H03 :** Participation of customers in the launch phase does not positively affect the effectiveness of the NPD process.
- ✦ **Ha3 :** Participation of customers in the launch phase positively affects the effectiveness of the NPD process.

Effectiveness of the NPD Process and Marketing Performance

The effectiveness of the NPD process is defined as the accomplishment of anticipated performance. It is a multidimensional construct and includes varied dimensions of the firm's performance (Pienaar et al., 2019; Rautela et al., 2021). The effectiveness of NPD and its indicators are still controversial, and we could not find any consensus on them in the past literature. However, most past researchers discussed and validated three vital aspects — financial, operational, and marketing of NPD effectiveness. For example, the study by Chen et al. (2021) revealed that the involvement of customers in information provision and co-production improved the performance of new products. This is via the development of firms' marketing and technological capabilities. Thus, the present study uses three dimensions, i.e., financial performance, operational performance, and marketing performance of a firm, as a measure of NPD effectiveness. Sales, profit margin, team productivity, customer satisfaction, and other measures all reflect these characteristics.

The marketing performance is reflected in various aspects such as loyalty and satisfaction of customers, sense of belonging with the brand, etc. The present study measures the marketing performance by using the five indicators, i.e., the satisfaction level of customers, the loyalty of customers, the attractiveness of new products, a sense of empowerment in customers, and followers of the brand/company/product. If the new product is better-suited, value-driven, and customer-oriented, it draws customers and builds loyalty, resulting in more effective marketing and sales. Therefore, we hypothesize the following:

↪ **H04** : The effectiveness of the NPD process does not positively affect the firm's marketing performance.

↪ **Ha4** : The NPD process's effectiveness positively affects the firm's marketing performance.

Effectiveness of NPD Process and Operational Performance

The operational performance reveals the efficiency attained by the firm in various operational aspects such as innovativeness of new products, competitive or differential advantage, enhanced productivity of the team, revolutionary products (Glessner, 2012), “improved quality offerings” (Chang, 2019), “shortened development time” (Pienaar et al., 2019; Yang et al., 2019), and so on. The present study measures the operational performance by using the five indicators, i.e., innovativeness/ novelty of the offerings, the differential advantage of the new product, cost of market/customer-related information, the developmental cycle time, i.e., the time between development and launch of the new product, and team productivity. An effective NPD process enhances performance in various aspects of operations. Thus, we put forward the following hypotheses:

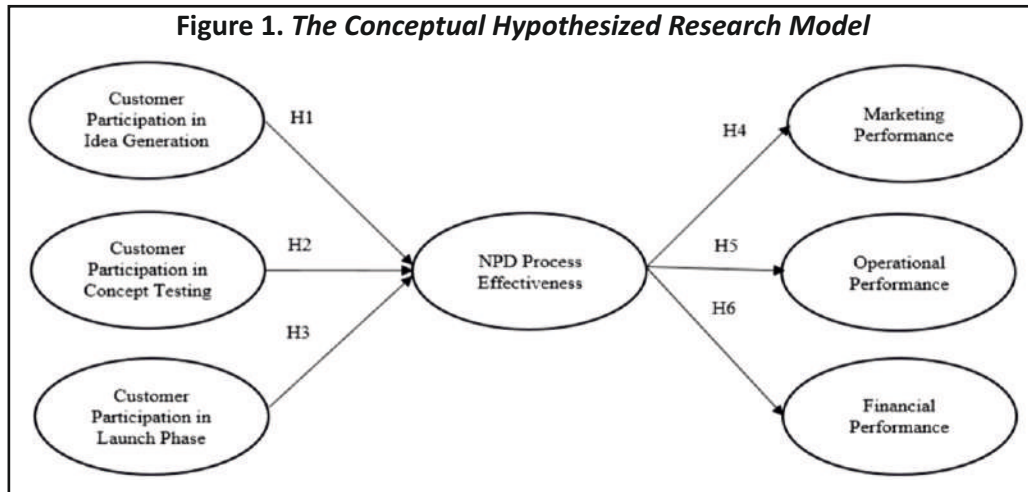
↪ **H05** : The effectiveness of the NPD process does not positively affect the firm's operational performance.

↪ **Ha5** : The NPD process's effectiveness positively affects the firm's operational performance.

Effectiveness of the NPD Process and Financial Performance

The financial dimension of NPD effectiveness reveals the economic return attained by the new product (Rautela et al., 2021). The financial performance of the firm is reflected in various dimensions. However, the present research study measures the financial performance by using the following three indicators: sales of the new product, the firm's profitability on the new product, and market valuation. New products are the sources of financial and economic returns, and therefore, our hypotheses are the following:

↪ **H06** : The effectiveness of the NPD process does not positively affect the firm's financial performance.



⇒ **Ha6 :** The NPD process's effectiveness positively affects the firm's financial performance.

Figure 1 depicts all of the above-mentioned ideas based on the literature review as a proposed conceptual research model. The presented model is tested empirically, and the outcomes are shown in the subsequent sections of the paper.

Methodology

The empirical quantitative research method was used for the present study.

Instrument for the Survey

The data was collected with the help of a questionnaire. The questionnaire was discussed and validated by two experts in the domain of academics and is twofold:

- (i) Respondents' demographics ;
- (ii) Section regarding the present study's seven constructs.

Mostly “Likert scale” was used where “5: *Strongly agree* to 1: *Strongly disagree*.” A pilot study in order to test the validity and reliability of the questionnaire was also conducted. After making the required changes, the survey tool (questionnaire) was finalized for further research (refer to the Appendix).

Sampling and Collection of Data

Judgment sampling (also referred to as purposive sampling or authoritative sampling) was used for the present study. This sampling method allows researchers to use their knowledge, expertise, and judgment to select a research sample. The responses were collected between June 2022 to February 2023. The respondents included R&D department specialists and managers, NPD managers, product managers, and new product supervisors, all of whom knew about NPD and related marketing procedures. When selecting the respondents or sample for the study, we strictly evaluated the research study objectives as well as the thorough comprehension of the target respondents.

Table 1. Profile of the Respondents

Items	Types	Frequency	Percentage
Gender	Male	173	67.32
	Female	84	32.68
Age Group	20–30 years	5	1.94
	31–40 years	83	32.3
	41–50 years	124	48.25
	51 years and above	45	17.51
Respondent's Position	CEO/Founder/Director/Managing Director	18	7
	Senior Product Manager/ Product Manager/ Product Head	107	41.63
	R & D Manager	39	15.18
	NPD Manager	93	36.19

Note. (N = 257).

The current study comprises participation from industry sectors in India that sell products, services, or both to end users (B2C). The primary reason for selecting B2C enterprises was that B2C firms contact the clients' daily lives by providing solutions to their daily requirements and wishes. Thus, these firms have to be innovative constantly so that they have a competitive edge and offer products that cater to the needs of the customer more effectively and efficiently. This also makes NPD one of the critical activities for B2C firms (Davis et al., 2014). LinkedIn was used as the primary source to find respondents. LinkedIn was used as it is the global professional network, with as many as 1 billion registered affiliates. Respondents who were judged suitable for the study were contacted via LinkedIn and informed of the study's goal. If more information was required, a comprehensive note was emailed to the respondents. Responses were collected using Google Forms. The respondents for the study were from various parts of India. Initially, 283 responses were received. However, out of this, 26 were not complete and biased. The incomplete and biased responses were dropped out of the study, and finally, the responses from 257 respondents were incorporated into the study, which was analyzed further for results. The respondents' profiles are summarized in Table 1.

Data Analysis and Results

The model proposed in the previous sections comprising seven constructs was tested using a two-step process with the help of SPSS 22.0 and IMB AMOS 20.0. Initially, a CFA was done for all the constructs of the model, as depicted in Figure 2. The factor loadings received for each item are then considered for the model fit and other validity measures and standards. In the second step, the SEM was directed at the model.

Measurement Model

The CFA generated the model fit indices, which are shown in Table 2. The acceptable range/values are also presented (Hair Jr. et al., 2010). The indices: Chi-square/degree of freedom (CMIN/DF), comparative fit index (CFI), and Tucker - Lewis index (TLI) are used for understanding the goodness of fit. The root mean square error of approximation (RMSEA) was utilized to understand the model's poor fit. The proposed model is suitable for future testing, as all of the values are acceptable.

Figure 2. Confirmatory Factor Analysis

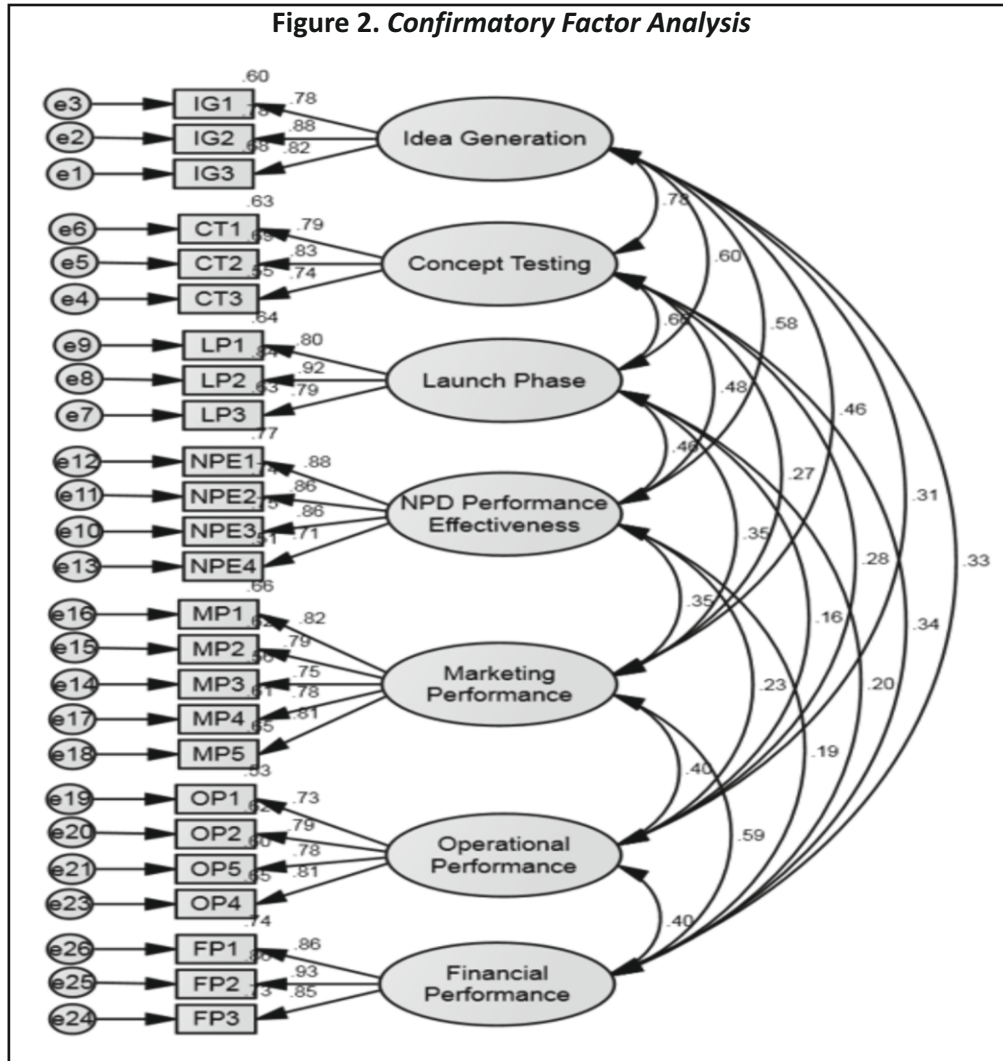


Table 2. Measurement Model Fit Indices

Index	Value Obtained	Suggested Range	Model Fit
CMIN/DF	1.351	< 3	Good fit
CFI	0.944	> 0.9	Good fit
TLI	0.952	> 0.9	Good fit
RMSEA	0.054	< 0.1	Good fit

Reliability and Validity

Cronbach's alpha (CA) was used to assess the reliability of the measurement device. According to Fornell and Larcker (1981), the CA value should be more than 0.70 for all constructs in the investigation. All constructions yielded values more than 0.70, demonstrating their reliability. We conducted a thorough literature analysis to ensure content validity, and the theoretical model is presented using the findings. The judgment and opinion of two experts in the subject domain were pursued and incorporated during the construction of the model and questionnaire design, addressing and meeting the challenges of content validity.

Convergent validity and discriminant validity were used to achieve construct validity. The same is depicted in Tables 3 and 4. The value of construct reliability (CR) should be > 0.7 for convergent validity. Also, the average variance explained (AVE) should be > 0.5 and $CR > AVE$ (Fornell & Larcker, 1981). $AVE > MSV$ for fulfilling the

Table 3. Measurement Model (for Reliability, Convergent Validity)

Construct (Source)	Items Loadings (k)	AVE	CR	ASV
Idea Generation (IG)				
IG1	0.78	0.685	0.867	0.260
IG2	0.88			
IG3	0.82			
Concept Testing (CT)				
CT1	0.79	0.620	0.830	0.222
CT2	0.83			
CT3	0.74			
Launch Phase (LP)				
LP1	0.80	0.704	0.876	0.167
LP2	0.92			
LP3	0.79			
NPD Process Effectiveness (NPE)				
NPE1	0.88	0.689	0.898	0.146
NPE2	0.86			
NPE3	0.86			
NPE4	0.71			
Marketing Performance (MP)				
MP1	0.82	0.625	0.893	0.163
MP2	0.79			
MP3	0.75			
MP4	0.78			
MP5	0.81			
Operational Performance (OP)				
OP1	0.73	0.605	0.860	0.088
OP2	0.79			
OP3	0.78			
Op4	0.81			
Financial Performance (FP)				
FP1	0.86	0.776	0.912	0.117
FP2	0.93			
FP3	0.85			

Table 4. Discriminant Validity : Correlation Matrix and Roots of AVEs

	MSV	MaxR(H)	OP	IG	CT	LP	NPE	MP	FP
OP	0.164	0.861	0.777						
IG	0.602	0.879	0.307	0.830					
CT	0.602	0.838	0.279	0.776	0.790				
LP	0.436	0.896	0.157	0.604	0.660	0.839			
NPE	0.342	0.910	0.235	0.585	0.481	0.464	0.831		
MP	0.350	0.893	0.405	0.459	0.269	0.350	0.354	0.788	
FP	0.350	0.921	0.397	0.329	0.337	0.203	0.185	0.592	0.880

Note. Off-diagonal values represent correlations among constructs.

criteria of discriminant validity, where MSV stands for maximum shared variance. The values reveal that convergent and discriminant validity are attained for the model, and SEM analysis can be conducted further.

Structural Equation Modeling (SEM)

Figure 3 reveals that the SEM was performed for all the constructs of the model simultaneously. SEM is an extension of path analysis that allows us to examine the relations among both measured and latent variables (Streiner, 2006). Table 5 summarizes all of the regression weights and significant results as well as the study hypotheses. Table 5 also shows the acceptance or rejection of the hypotheses.

Table 5 demonstrates that customer participation in the ideation phase has a considerable and beneficial impact on the effectiveness of the NPD process; hence, H01 is accepted. However, customer participation in the concept testing phase and launch phase may not affect the NPD process's effectiveness, leading to the rejection of H02 and H03. The effectiveness of the NPD process significantly and positively affects the marketing and operational performance of the firm, and thus, H04 and H05 are accepted. However, H06 is rejected because, as per the study results, the NPD process effectiveness does not impact financial performance.

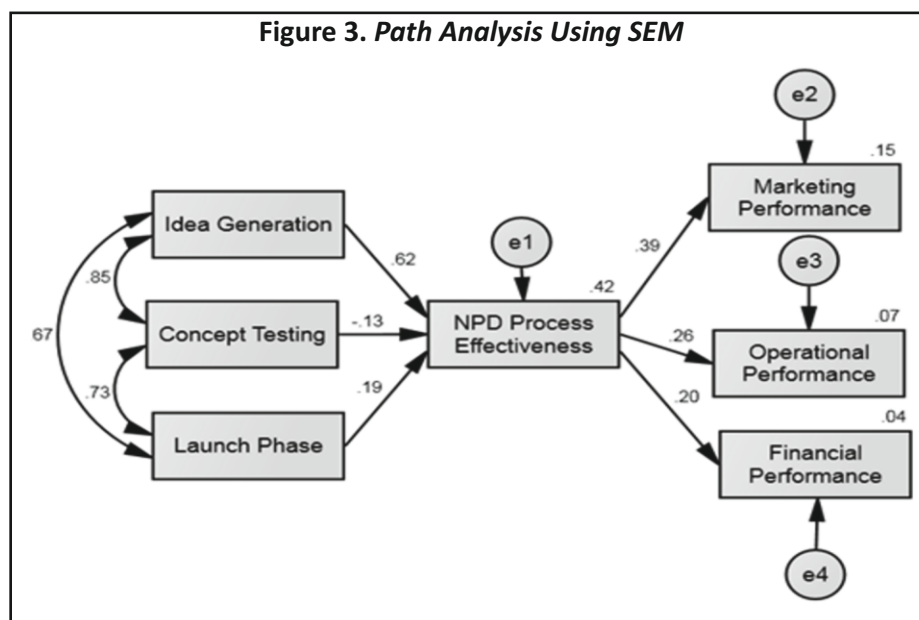


Table 5. Leveraging SEM for Hypotheses Testing

Hypothesis	Regression Coefficient (R^2)	Sig. (P -value)	Hypothesis Accepted/ Rejected
H01: Customer participation in the idea generation phase → NPD process effectiveness	0.62	$P < 0.001$	Accepted
H02: Customer participation in the concept testing phase → NPD process effectiveness	-0.13	$P > 0.05$	Rejected
H03: Customer participation in the launch phase → NPD process effectiveness	0.19	$P > 0.05$	Rejected
H04: NPD process effectiveness → marketing performance of the firm	0.39	$P < 0.001$	Accepted
H05: NPD process effectiveness → operational performance of the firm	0.26	$P < 0.001$	Accepted
H06: NPD process effectiveness → financial performance of the firm	0.20	$P > 0.05$	Rejected

Discussion and Conclusion

Customer participation has been argued to be a vital determinant of the NPD process effectiveness (Chang & Taylor, 2016; Poetz & Schreier, 2012). However, the empirical evidence related to the actual result of customer collaboration and involvement in various stages of NPD and the entire NPD process is essential to validate the statement. Furthermore, the marketers' perspective on customer participation in the new product creation process remains untapped in India. The current study is carried out to address this gap, and we tried to understand Indian marketers' perspectives regarding the customer's participation in the various phases of the new product development process and the impact of the NPD process effectiveness on the firm's marketing, operational, and financial performance. The current study examined three critical stages of NPD: idea generation, concept testing, and commercialization or launch.

The idea-generating stage is the first step in NPD. During this stage of NPD, the decision is made whether the official NPD process will continue or be discontinued (Florén & Frishammar, 2012). The empirical evidence of the present study portrays that customer participation in the idea generation phase significantly and positively affects the NPD process effectiveness. Thus, firms should actively engage with customers to generate new ideas. These ideas generated by the customers might be novel and may reflect the customers' needs. Firms should also use specific implicit or explicit motivation tools such as financial rewards or incentives to appreciate and recognize the “unique, considerable, and practical ideas.” Also, the sense of belongingness and brand loyalty may be enhanced when customers witness their ideas transforming into final products. However, the present study also reveals that customer participation in the concept testing and launch phases may not affect the NPD process effectiveness. This outcome is entirely inconsistent with the previous study conducted by researchers (Chang & Taylor, 2016). This may be attributed to the fact that Indian marketers may perceive that consumers lack technical knowledge and thus may be less valuable in these stages. Customer involvement may delay the entire process of NPD and may have future negative strategic consequences for the firm. Chan et al. (2010) referred to customer participation as a “double-edged sword” as customers can co-create economic benefits, such as customized services, better quality, and more control by participating in the service process. However, although customer participation strengthens relational bonds between customers and employees and enhances their interaction enjoyment, it also increases employees' job stress and reduces their job satisfaction, particularly for employees with a higher individualist or a lower power distance value orientation. NPD is a subset of the firm's overall corporate strategy. The decision regarding new products and related areas is pivotal in fabricating the firm's future performance and expansion plan. Many firms treat the information related to the NPD as sensitive and confidential, thus restricting the participation of customers.

The current research study finds that the success of the NPD process has a considerable and favorable impact

on the firm's marketing and operational performance. Marketing performance involves various aspects related to customer satisfaction and loyalty. The efficacy of the NPD process ensures that the new product satisfies customers' expectations and gives value to the resources they invest. This leads to contentment and eventually draws customers' loyalty, resulting in effective marketing and sales of enterprises' products. NPD process effectiveness also impacts the firm's operational performance. Effective NPD ensures unique products and provides a competitive advantage to a company. An effective NPD process also reduces the cost of the product and the development cycle time.

To summarize, an effective NPD process enhances performance in various aspects of operations. However, financial performance is not impacted by the NPD process's effectiveness. Financial performance is measured in a variety of ways, including new product sales, business profitability, market valuation, and many others. New products generate financial and economic returns. However, the new product may be one of several factors influencing the company's financial performance. The macroeconomic climate, competitive actions, government inventions and regulations, social-cultural milieu, and other factors can all have an impact on financial performance. Thus, NPD effectiveness may not always have a favorable impact on the firm's financial performance.

Theoretical and Managerial Implications

The study has a few important theoretical and managerial implications. The study provides detailed insights into customer participation in critical stages of new product development. A conceptual model is proposed and empirically tested using Indian marketers' data. The marketers' perspective regarding the customers' involvement in the NPD process and its impact on NPD effectiveness is unexplored in the Indian context, which makes the study unique. The study's findings show that customer participation in the ideation or idea-generation phase has a large and favorable impact on the efficacy of the NPD process. The findings have major implications for corporations and NPD managers. They should try to boost the active participation of customers in the idea-generation phase. This will not only strengthen the firm's knowledge function but will also increase customers' sense of belonging. Furthermore, enterprises will grasp the shifting demands and wants of their clients.

The study results also reveal that the effectiveness of the NPD process significantly and positively affects the marketing and operational performance of the firm. Therefore, the firm should work on the various aspects that enhance the effectiveness of the NPD process, such as inviting various stakeholders to actively participate in the NPD process and understanding their needs and wants, focusing more on interactions rather than transactions with customers, and so on, as this will lead to a better marketing and operational performance of the firm.

Limitations of the Study and Future Research Directions

We attempted to provide thorough attention to the research issue. However, we do not claim that the study is completely comprehensive, holistic, and without restrictions. First, the respondents for the present study were a mix of representations from firms selling products to consumers. Therefore, the study derives its results from representatives of business-to-consumer (B2C) firms and does not include business-to-business firms (B2B). This limits the applicability of the present research findings to broader scenarios or contexts. A similar study might be conducted with representatives from B2B enterprises. It would be interesting to see whether the outcomes alter. Second, the primary data collected is solely based on the survey respondents' understanding and perspectives. As a result, the study is constrained to the extent of information disclosed by the respondents. The contextual relationship between the study variables depends on the expertise, knowledge, and experience of the participating respondents in the survey. Third, the study includes respondents from India only and thus cannot be generalized to

respondents from other parts of the globe. Therefore, the study can be expanded by using a larger sample to test the model, validate the results, and include respondents from various geographical regions. Finally, the LinkedIn platform is used to find respondents, which might introduce bias, as the platform's user base may not be fully representative of all professionals involved in NPD.

Authors' Contribution

Dr. Sonica Rautela, Dr. Tarun Kumar Singhal, and Dr. Sarika Sharma comprehended the idea and developed the research design to undertake the empirical study. Dr. Tarun Kumar Singhal verified the methods and supervised the study. Dr. Sonica Rautela extracted research papers with high reputations by keyword identification, which helped in the conception and design of the work. All authors contributed to the data collection process. Dr. Sarika Sharma empirically evaluated the data using SEM and the softwares SPSS 22.0 and IMB AMOS 20.0. Dr. Sonica Rautela wrote the manuscript after consulting with both authors.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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Appendix. List of Questionnaire Items

Construct	Cronbach's Alpha	Items	CFA Loadings	Source
Idea Generation (IG)	0.78	Customer participation in idea generation aids firms in generating ideas for new products [IG1].	0.78	(Chang, 2019; Roberts et al., 2017; Roberts & Candi, 2014)
		Customer participation in the idea generation stage leads to the co-creation of products that are more valued by customers [IG2].	0.88	
		Customer participation in the idea generation stage enhances the innovativeness of the new product [IG3].	0.82	
Concept Testing (CT)	0.80	Customer participation enables customers to contribute to the testing of new concepts [CT1].	0.79	
		Customer participation aids in getting early market input about the new product [CT2].	0.83	
		Customer participation aids the firm in gauging the consumer's reaction before investing a considerable amount of resources in the physical development of the product [CT3].	0.74	
Launch Phase (LP)	0.81	Customer participation augments the positive mouth of communication during the launch phase of NPD [LP1].	0.80	
		Customer participation enables firms to effectively communicate with customers during the launch of new products [LP2].	0.92	
		Customer participation in the launch phase facilitates the free flow of opinion/ feedback about the new product from the customer to the firm [LP3].	0.79	
NPD Process Effectiveness (NPE)	0.75	Customer participation minimizes the risk of product failure and thus increases the effectiveness of NPD [NPE1].	0.88	
		Customer participation facilitates the introduction of products in new categories [NPE2].	0.86	
		Customer participation improves product functionality for the users, thus providing products with a differential advantage [NPE3].	0.86	
		Customer participation has resulted in improvements in existing products [NPE4].	0.71	
Marketing Performance (MP)	0.78	Effective NPD enhances the satisfaction level of consumers [MP1].	0.82	
		Firms receive the loyalty of consumers as a result of an effective NPD process [MP2].	0.79	
		Customers are more attracted to the new products due to the effective NPD process [MP3].	0.75	
		Effective NPD enhances the sense of empowerment in consumers [MP4].	0.78	
		Effective NPD increases the number of brand/company/ product followers [MP5].	0.81	
Operational Performance (OP)	0.74	Innovativeness/novelty of new products is enhanced due to enhancement in NPD effectiveness [OP1].	0.73	
		NPD effectiveness creates a differential advantage in the new product [OP2].	0.79	

		The cost of market/customer-related information is reduced due to the effective NPD process [OP3].	(Dropped)
		The developmental cycle time, i.e., the time between the development and launch of the new product, is reduced due to enhanced NPD effectiveness [OP4].	0.78
		NPD effectiveness enhances team productivity [OP5].	0.81
Financial Performance (FP)	0.80	The sale of new products is enhanced due to the effective NPD processes [FP1].	0.86
		The profitability of the firm is enhanced as a result of the effective NPD processes [FP2].	0.93
		The firm's market valuation is enhanced due to the effective NPD processes [FP3].	0.85

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