



Faculty of Economics, University of Niš
11-12 October 2017

International Scientific Conference
**CONTEMPORARY APPROACHES
IN THE ANALYSIS OF ECONOMIC PERFORMANCES**

**PRODUCT INNOVATIVENESS: LITERATURE REVIEW AND
EMPIRICAL OUTCOMES FROM BULGARIA**

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***Abstract:** There has been a strong interest in research on the success factors of new products in marketing and innovation literature. Surveys have shown that the successful product innovations are among the basic tools increasing the competitiveness of firms, but at the same time, development of new products is costly and risky. This report reviews the product innovation through the prism of success factors of new products. The aim is to set out the basic concepts of product innovativeness, as well as to present the outcomes of empirical survey of Bulgarian firms relevant to the concept under consideration.*

***Keywords:** product innovations, success factors, product innovativeness, empirical survey, Bulgaria.*

1. Introduction

Over recent decades, a significant number of surveys, both empirical and theoretical, have been devoted to the factors leading to the success of new products. The interest in this issue is not accidental at all. On the one hand, as Bankova points out, since Schumpeter, it has been assumed the innovation typically plays a key role in competitiveness at national, industry and firm level (Bankova, 2015). Successful new products, inter alia, lead to bigger sales and improve market valuation of the firm. Development of new products, on the other hand, is a costly and risky undertaking - only about a quarter of the new product designs are successful. The large proportion of unsuccessful designs, coupled with the growing number of new product designs, makes the success factors survey relevant and significant.

This report belongs to the research stream that examines innovativeness in terms of the success factors of the new product. It presents the main concepts about product innovativeness in the published literature so far, as well as the outcomes of the empirical survey of Bulgarian firms.

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This publication contains results of a study financed by the "Scientific research at the University of National and World Economy" Fund under contract №NID NI-11/2016. UDC 658.624(497.2)

2. Literature Review

We can summarize the results of the major surveys on product innovativeness as follows:

Firstly, a number of surveys have examined to what extent the product innovativeness is among the main factors for its success.

Taking into consideration the three meta-analytical surveys on the success factors of the new products conducted so far, i.e. those of Montoya-Weiss & Calantone, 1994; Henard & Szymanski, 2001; Evanschitzky et al., 2012, we see that product innovativeness is present in the last two surveys. The 2001 survey shows that in the publications covered by this survey, the product innovativeness is not a statistically significant success factor. Similar are the results of the 2012 survey, i.e. innovativeness is not a significant prerequisite for the success of the new product.

Secondly, the concept of product innovativeness has been developed by various scientists and from different perspectives, and among the more important surveys are those of Sethi and Sethi, 2009; Atuahene-Gima, 1995; Fang, 2008; Sethi et al., 2001; Song et al., 2011; Calantone et al., 2006.

One of the approaches to innovativeness regards this product's parameter as a meaningful uniqueness. A number of surveys in the field of the new product development and in other marketing fields, such as those of Andrews and Smith, 1996; Im and Workman, 2004; Sethi et al., 2001, apply this approach. According to them, for a result to be innovative, it must be a novel and an appropriate one. Novelty is defined as the extent to which the new product differentiates from the competitive alternatives. The appropriateness of the product, on the other hand, is determined by the extent to which it is useful, relevant, and more necessary to the consumer than the competitors' offerings. Sethi et al. point out that although the novelty of the product and its appropriateness are two separate dimensions, the researchers combine them to build a holistic concept of innovativeness. Im and Workman prove in their survey that these two dimensions of innovativeness should be considered as stand-alone since some factors influencing them, do so in a different way.

Thirdly, with regard to the impact of product novelty and its appropriateness for its market performance, it should be noted that these features are considered very desirable in new products (Sethi et al., 2001). Products that meet the needs in a unique way enjoy a positive feedback from consumers (Cooper, 1993). The surveys of Danneels and Kleinschmidt, 2001; Henard and Szymanski, 2001; Kleinschmidt and Cooper, 1991; Montoya-Weiss and Calantone, 1994; Song and Parry, 1994, demonstrate that the unique new products have a better success than those that are not that new. Also, a number of surveys, e.g. Clark and Fujimoto, 1991; Cooper, 1993; Aaker and Jacobson, 1994, etc., show that products better meeting the consumer requirements are more successful on the market. Nagle and Holden prove that products perceived to be more novel and more appropriate have a significantly higher gross profit margin (Nagle and Holden, 1995). Kleinschmidt and Cooper prove that the product novelty and appropriateness create differentiation compared to competitors and thus provide competitive advantage and better market outcomes (Kleinschmidt and Cooper, 1991).

Fourthly, Sethi and Sethi investigate the relationship between the product novelty and appropriateness, and the product quality orientation of the firm, as well as encouragement

Product innovativeness: literature review and empirical outcomes from Bulgaria

of the team, developing the new product, to risk-taking (Sethi and Sethi, 2009). Their survey shows that product quality orientation and encouragement to take risk influence the market performance of the product, as this effect is mediated by how well consumers perceive the product as a new and appropriate.

According to Fang, the innovativeness of the new product refers to the extent to which the product differs from the competing products in a way that is meaningful to consumers, and therefore reflects the concept of meaningful uniqueness (Fang, 2008). To measure the innovativeness of the new product, Fang uses a scale where respondents have to respond to what extent the product is a new product to the industry and at the same time is the embodiment of new concepts.

Fifth, as already noted, the main success determinant of the new product is the extent to which the product differs from the competing alternatives in a way that is valuable to consumers. Understanding the meaningful uniqueness of the product is at the heart of the definition of innovativeness of Sethi, et al. (Sethi, et al., 2001). According to them, the new product innovativeness refers to the extent to which the product differs from competing products in a meaningful way for consumers.

Sethi, et al. distinguish several specific variables that affect the innovativeness of the new product. They mean the circumstances that are considered, in principle, as prerequisites for occurrence of definite creative outcome. First of all, the higher the probability of emerging innovative concepts, the more variable the flow of incoming information for solving the problem. Secondly, it has been found that innovative concepts are usually the result of development of new relationships between different perceptions and views. Thirdly, innovative concepts emerge from the additional effort aimed at solving a well-defined problem. In this sense, the motivation to fulfill a particular task is an important prerequisite for the innovativeness of the result of its implementation. Fourthly, innovative concepts are born out of the non-routine (as opposed to the algorithmic) approach to problem solving. Discovering innovative concepts is supported when the traditional views and routine ways of doing things are questionable. Fifthly, innovative concepts by definition deviate from the status quo, and therefore not only carry a certain degree of risk, but also can stimulate defensive response with some individuals. That is to say, the likelihood of finding new relationships is enhanced when within the team or firm there is an atmosphere encouraging the risk taking. This atmosphere can be stimulated by financial incentives and non-financial benefits and, as Tanushev's survey shows, it can be developed through team involvement in game situations (Tanushev, 2017). Finally, the generated creative concepts should be successfully realized, which requires certain conditions and resources to be available just when needed.

Sixthly, many authors point out the presence of two aspects of product novelty: a novelty for consumers and a novelty for the firm. For example, Atuahene-Gima examines the relationship between the two aspects of novelty with the market orientation of the firm (Atuahene-Gima, 1995). The product's novelty for the consumer is connected with the extent to which the new product is compatible with the experience and consumer habits of potential customers. According to Lawton and Parasuraman, it is about the magnitude of behavioral change, or the learning effort that potential consumers need to make in order to adopt and start using the new product (Lawton and Parasuraman, 1980). The novelty of the product for the firm refers to the degree of similarity between the new product and the products the firm already produces and sells on the market. The novelty for the firm ranges from incremental

innovations (i.e. product improvements and modifications) to radical innovations, featuring new product lines and new to the world products.

Regarding the product innovativeness, account should be taken of the empirical evidence derived from Atuahene-Gima that the firm's market orientation has a greater impact on the outcomes of radical innovations than on the outcomes of incremental innovations. The explanation for this is that the degree of product novelty reflects the learning and change in the firm needed to develop and manage the new product on the market and with the consumer, in order to adopt the product. From this perspective, the radical innovations more likely require greater learning and behavioral change - both by the firm and by the consumers - compared to the incremental innovations.

Seventhly, in some surveys (for example, Calantone et al.), it is noted that the product innovativeness is improperly used as an indicator of product advantage since the innovativeness does not necessarily lead to a greater product advantage (Calantone et al., 2006). Hence, the arguments for the two constructs - product innovativeness and product advantage - to be distinguished. Innovativeness is related to the technical and marketing changes (Garcia and Calantone), and product advantage refers to its superiority over other products on the market (Gatignon and Xuereb) in terms of indicators such as quality, benefits and functions (Garcia and Calantone, 2002; Gatignon and Xuereb, 1997).

Garcia and Calantone consider the product innovativeness at two levels, i.e. as technical and marketing changes at industry branch level, as well as technical and marketing novelties at firm level (Garcia and Calantone, 2002). According to the authors, both levels affect the novelty for the consumer.

Eighthly, there are ambiguous views on the relationship between the degree of innovativeness and product performance. Song, et al. point out that highly innovative products may create stronger potential competitive advantages, but at the same time are more likely to be more risky and associated with higher uncertainty (Song, et al., 2011). Kleinschmidt and Cooper defend the notion that products of average degree of novelty are the most vulnerable ones (Kleinschmidt and Cooper, 1991). The reason is that, on the one hand, they are not innovative enough to benefit from the product's advantage, and on the other hand, they are not close enough to the firm's core business to benefit from the synergy effect with it.

Some surveys examine the impact of the radical innovations on consumers who decide to start using the product. On the one hand, the radical innovation promises a greater relative advantage (Rogers, 1983) but, on the other hand, as Song and Di Benedetto point out, it may mean a higher level of complexity and may require a new level of knowledge thus reducing the value of the experience, knowledge and skills accumulated so far (Song and Di Benedetto, 2008). Song and Di Benedetto have found evidence that highly innovative products achieve better performance than other products in terms of one important performance indicator: product achievement of profit targets.

3. Survey of Product Innovativeness of Bulgarian Firms

3.1. Methodology

Product innovativeness: literature review and empirical outcomes from Bulgaria

At the end of 2016, an empirical survey has been conducted in order to establish the current state, peculiarities and manifestation of the success factors of product innovations of Bulgarian firms.

In the first stage of the survey, 20 personal depth interviews were conducted with managers whose duties and responsibilities are closely related to the development of new products in the firm. The aim of this qualitative part is to structure the survey problem, to refine the working hypotheses, and to identify the key variables. In-depth interviews use open questions. This allows full coverage of the whole range of respondents' opinions, hypotheses, associations, etc. This type of questions cover most precisely both the professional language of the respondents and the specific wordings of the answers expressed by them.

The developed survey tool has been tested among 12 managers. Each of them has had a personal interview, in the course of which the participants have answered the questions. After this interview, an additional conversation has been held with each of them. As a result of the testing, corrections to the formulation of questions, possible answers, and questions arrangement in the survey tool have been made in the initial questionnaire.

In the quantitative part of the survey, interviews with 304 business managers operating in Bulgaria and active in the development of new products (at least 2 new products in the last 2 years prior to the survey) have been conducted. Respondents have been asked to answer the questions, considering the latest product introduced to the market by their firm, whether or not successful. The main method for collecting data has been the computer assisted personal interview (CAPI).

Empirical indicators for measuring the product innovativeness have been developed taking into account two considerations. The first one is to use the outcomes of empirical surveys published to date in the literature, applying, as appropriate, the product innovativeness indicators used in these surveys. The second consideration is that the respective empirical indicator should have been mentioned in the qualitative part of the survey among the Bulgarian managers. In order to ensure the relevance and adequacy of empirical indicators to the conditions of developing new products in the Bulgarian firms, the quantitative survey has used those empirical indicators that were marked (albeit not with the same names, but according to their meaning) in the depth interviews with managers.

Following the Atuahene-Gima (Atuahene-Gima, 1995) approach, two sets of empirical indicators have been used in this product innovativeness survey.

3.1.1. Product Novelty Indicators for Consumers

Regarding the novelty for consumers, in accordance with the surveys published so far, the following empirical indicators have been originally selected:

1. Our new our product takes time before consumers understand all of its advantages
2. Our new our product requires a change in the way the consumer uses the product
3. *The concept of our new product is difficult to be understood by consumers*
4. *Our new product requires advance planning by consumers before they start using it*

5. Transition to our new product is associated with high costs for consumers
6. Our new our product is more complex than the products we have introduced in the same market so far

The third and fourth of the above indicators do not receive validation in the qualitative survey. The circumstances they describe are not mentioned - not as specific formulations, but as a meaning they have - by the managers involved in the depth interviews. This is a reason for excluding these two empirical indicators from the final survey tool.

3.1.2. Product Novelty Indicators for the Firm

Introduction of the above indicators requires an answer to the question of how different the product must be as to be regarded as a new one. Degrees of change represent a vast number, and at both ends of this multitude of possibilities are positioned the incremental and radical innovations, respectively. A practical consequence of this distinction is that, since these are based on existing products and services changing them to a certain extent, the incremental innovations are generally easier for planning and implementation and are associated with a smaller change compared to the radical innovations. The novelty for the firm has been assessed by question for the affiliation of the product to one of the following categories:

1. New to the world product
2. New to the industry branch (country's market) product
3. New to the firm (new product line) product
4. Existing firm's product, however, with substantial upgrades
5. Existing firm's product, however, with minor modifications

3.2. Results and Discussion

In order to understand the assessment of respondents about the product innovativeness from the consumer's perspective, the following question has been asked, *“Taking into account the last new product introduced by your firm on the market, please indicate which of the statements below are true. Please, select the correct answers, regardless of their number!”* The percentage of positive responses to each of the four statements is shown in Table 1. The results demonstrate that with two of every three firms consumers need more time to fully understand the product benefits. The cases where a change is needed in the way consumers use the product are three times less. The breakdown of the percentage of positive responses by product type shows that overall, between tangible products and services there are no substantial differences in the manifestation of the indicators for the product innovativeness assessment (Table 2). The only statistically significant difference relates to the way in which the consumer uses the product (30.0% versus 16.2%). A possible explanation of this difference may be found in the inseparability of production and consumption, inherent to the new intangible products: the service modification is actually a modification in both its production and its use.

Product innovativeness: literature review and empirical outcomes from Bulgaria

Table 1. Percentage of Positive Responses of Innovativeness Indicators from Consumers' Perspective

Indicators for Assessment of Product Innovativeness	Percentage of Positive Answers to the Statements
Our new our product takes time before consumers understand all of its advantages	66.8
Our new our product requires a change in the way the consumer uses the product	22.0
Transition to our new product is associated with high costs for consumers	7.9
Our new our product is more complex than the products we have introduced in the same market so far	19.1

Table 2. Percentage of Positive Responses of Innovativeness Indicators from Consumers' Perspective (by Product Type)

Indicators for Assessment of Product Innovativeness	Percentage of Positive Answers to the Statements	
	New Tangible Product	New Intangible Product (New Service)
Our new our product takes time before consumers understand all of its advantages	67.1	66.2
Our new our product requires a change in the way the consumer uses the product	16.2	30.0
Transition to our new product is associated with high costs for consumers	9.2	6.2
Our new our product is more complex than the products we have introduced in the same market so far	21.4	16.2

The assessment of the respondents for the product novelty for the firm has been tested by the question “*What is the novelty degree of the latest new product introduced by your firm on the market?*” Responses of managers are presented in Table 3 (for the entire sample) and Table 4 (by product type). The results show that the products with an average degree of novelty prevail - the new product lines and existing products with significant improvements account for more than two-thirds of all product innovations. The comparison between the tangible and intangible products shows two interesting statistically significant differences. The first of them has occurred in the share of new to the world products, which managers of firms for services point out - their share (7.7%) is over three times higher than the share of the same new products for the tangible products (2.3%). This distinction can be explained by the participation in the empirical survey of Bulgarian IT and software firms, where development of new to the world product is far from impossible and certainly is far more likely than creation of new to the world tangible product. The second important distinction between tangible products and services is the higher share of existing products with significant upgrades. The explanation for that may be found in the expanded flexibility

and broader opportunities to experiment in the development of new services based on the existing know-how of the firm.

Table 3. Distribution of New Products from the Perspective of Novelty for the Firm

New Products from the Perspective of Novelty for the Firm	Percentage of Those Who Have Chosen the Respective Answer
New to the world product	4.6
New to the industry branch (country's market) product	18.1
New to the firm (new product line) product	32.6
Existing firm's product, however, with substantial upgrades	36.8
Existing firm's product, however, with minor modifications	6.3

Table 4. Distribution of New Products from the Perspective of Novelty for the Firm (by Product Type)

New Products from the Perspective of Novelty for the Firm	Percentage of Those Who Have Chosen the Respective Answer	
	New Tangible Product	New Intangible Product (New Service)
New to the world product	2.3	7.7
New to the industry branch (country's market) product	20.2	15.4
New to the firm (new product line) product	36.4	27.7
Existing firm's product, however, with substantial upgrades	33.5	41.5
Existing firm's product, however, with minor modifications	6.4	6.2

4. Conclusion

Although the surveys of success factors in the new product development suggest that the innovativeness of the new product affects its results, the evidence supporting this hypothesis is not unambiguous. This necessitates further research.

The concept of innovativeness may be explored by different approaches, which makes its definition and operationalization difficult. The prevailing approach to innovativeness regards it as a meaningful uniqueness. Although the novelty of the product and its appropriateness are two separate dimensions, as seen in the literature, researchers combine them to build a holistic concept of innovativeness.

Product innovativeness: literature review and empirical outcomes from Bulgaria

Our research in Bulgarian companies supports the notion that product innovativeness is a complex and multifaceted concept that needs to be explored by different focal points – innovativeness for the consumer vs. innovativeness for the company; product innovativeness vs. service innovativeness, etc. It also means that there are promising directions for further research on this topic. For example more complex statistical analyses could be applied to explore whether the product innovativeness is really a factor for success in Bulgarian companies, and how it is related to all other factors that provide for new product success in the market.

References

1. Aaker, D.A. and Jacobson, R. (1994). The Financial Information Content of Perceived Quality. *Journal of Marketing Survey* 31(2):191-201.
2. Andrews, J. and Smith, D.C. (1996). In Search of Marketing Imagination: Factors Affecting the Creativity of Marketing Programs for Mature Products. *Journal of Marketing Survey* 33(2):174-187.
3. Atuahene-Gima, K. (1995). An exploratory analysis of the impact of market orientation on new product performance - a contingency approach. *Journal of Product Innovation Management* 12: 275-93.
4. Bankova, Y. (2015). Critical Success Factors of National Competitiveness, International conference: Challenges in Business and Economics: Growth, Competitiveness and Innovations. Nis, Serbia, 113-125.
5. Calantone, R. J., K. Chan, and A. S. Cui. (2006). Decomposing product innovativeness and its effects on new product success. *Journal of Product Innovation Management* 23: 408-21.
6. Clark, K.B. and Fujimoto, T. (1991). *Product Development Performance*. Boston: Harvard Business School Press.
7. Cooper, R.G. (1993). *Winning at New Products*. New York: Addison Wesley Publishing Firm.
8. Danneels, E. and Kleinschmidt, E.J. (2001). Product Innovativeness from the Firm's Perspective: Its Dimensions and Their Relation with Project Selection and Performance. *Journal of Product Innovation Management* 18(6):357-373.
9. Evanschitzky, Heiner, Martin Eisend, Roger J. Calantone, and Yuanyuan Jiang. (2012). Success Factors of Product Innovation: An Updated Meta-Analysis, *Journal of Product Innovation Management*, 29(S1): 21-37.
10. Fang, E. E. (2008). Customer participation and the trade-off between new product innovativeness and speed to market. *Journal of Marketing* 72 (July): 90-104.
11. Garcia, R. and Calantone, R. (2002). A Critical Look at Technological Innovation Typology and Innovativeness Terminology: A Literature Review. *Journal of Product Innovation Management* 19(2):110-132.
12. Gatignon, Hubert and Jean-Marc Xuereb (1997), Strategic Orientation of the Firm and New Product Performance, *Journal of Marketing Survey*, 34 (February), 77-90.
13. Henard, D. H., and D. M. Szymanski. (2001). Why some new products are more successful than others. *Journal of Marketing Survey* 38: 362- 75.
14. Im, S., and J. P. Workman Jr. (2004). Market orientation, creativity, and new product performance in high-technology firms. *Journal of Marketing* 68 (April): 114-32.
15. Kleinschmidt, E.J. and Cooper, R.G. (1991). The Impact of Product Innovativeness on Performance. *Journal of Product Innovation Management* 8:240-251.

16. Lawton, L., & Parasuraman, A. (1980). The impact of the marketing concept on new product planning. *The Journal of Marketing*, 19-25.
17. Montoya-Weiss, M. M., and R. J. Calantone. (1994). Determinants of new product performance: A review and meta-analysis. *Journal of Product Innovation Management* 11 (5): 397-417.
18. Nagle, T.T. and Holden, R.K. (1995). *The Strategy and Tactics of Pricing*. Englewood Cliffs, NJ: Prentice Hall.
19. Rogers, E. (1983). *Diffusion of Innovations*. Free Press. New York.
20. Sethi, R., Smith, D.C., and Park, C.W. (2001). The Effect of Cross Functional Product Development Teams on the Innovativeness of New Consumer Products. *Journal of Marketing Survey* 38 (1):73-85.
21. Sethi, R., and A. Sethi. (2009). Can quality-oriented firms develop innovative new products? *Journal of Product Innovation Management* 26: 206-21.
22. Song, X.M. and Parry, M.E. (1994). The Dimensions of Industrial New Product Success and Failure in State Enterprises in the People's Republic of China. *Journal of Product Innovation Management* 11:105-118.
23. Song, M., & Di Benedetto, C. A. (2008). Supplier's involvement and success of radical new product development in new ventures. *Journal of Operations Management*, 26(1), 1-22.
24. Song, L. Z., M. Song, and C. A. Di Benedetto. (2011). Resources, supplier investment, product launch advantages, and first product performance. *Journal of Operations Management* 29: 86-104.
25. Tanushev, Christian (2017). Gamification in Marketing. Conference proceedings: Marketing - Experience and Perspectives. Varna, June 29-30 2017, pp.155-167.

INOVATIVNOST PROIZVODA: PREGLED LITERATURE I EMPIRIJSKI REZULTATI IZ BUGARSKE

Apstrakt: Postojalo je veliko interesovanje za istraživanje faktora uspeha novih proizvoda u literaturi o marketingu i inovacijama. Istraživanja su pokazala da su uspešne inovacije proizvoda su među osnovnim sredstvima koja povećavaju konkurentnost preduzeća, ali istovremeno je razvoj novih proizvoda skup i rizičan. Ovaj rad razmatra inovacije proizvoda kroz prizmu faktora uspeha novih proizvoda. Cilj je postaviti osnovne koncepte inovativnosti proizvoda, kao i predstaviti rezultate empirijskog istraživanja bugarskih firmi relevantnih za koncept koji se razmatra.

Ključne reči: inovacije proizvoda, faktori uspeha, inovativnost proizvoda, empirijsko istraživanje, Bugarska.