RESEARCH REGARDING PRODUCT PERFORMANCE MEASUREMENT IN THE CONTEXT OF MARKETING PERFORMANCE

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Abstract. *The product is the essence of the marketing mix and product performance represents a major component of a company's marketing performance. This paper presents several coordinates of a research conducted on 153 companies included in the National Top of Companies from Romania, targeting the investigation of their marketing performance measurement practices. The article focuses on various aspects related to product performance measurement, like the indicators used in these companies for assessing their product performance, the importance levels assigned to these indicators, the ability of measuring product performance and the current level of companies' product performance.*

Keywords: product performance, marketing performance measurement

1. Introduction

The product is undoubtedly the essence of the marketing mix. Why? Without product, the other elements of the mix would be useless. But the other elements of the mix should be approached as well, because one cannot look at the product without taking into account the other elements as well; that would definitely be incomplete. In order to be sold, a product, even a brilliant one, needs a right price, an adequate distribution, an effective and efficient communication-promotion sub-mix and others. Product performance is studied as the key component of the firm's marketing performance; innovation is extremely significant, being known that it is the most offensive of all marketing strategies. A marketing research was conducted on enterprises included in the National Top of Companies from Romania. The research aimed to identify the practices used by these firms for measuring eight distinct components of their marketing performance: market performance, brand performance, customer performance, marketing's financial performance and the performance of each of the four components of the marketing mix – product, price, placement and promotion. The research results related to market performance were previously disseminated [1, 2]. This paper focuses on the aspects of the research related to only one dimension of the eight

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mentioned above, namely the product performance. Therefore, the specific objectives of the research related to the product component of the marketing performance were the following ones: to determine the importance levels assigned by the investigated companies to various indicators that can be used for assessing their product performance, to identify the respondents' satisfaction degree regarding the existing abilities in their firms for measuring product performance and to determine the respondents' self-assessment regarding the current level of their companies' product performance.

2. Research methodology

The research method used for this study was the survey, targeting the total investigation of the sample composed by the firms included in the 2010 catalogue of the National Top of Companies from Romania, developed by the Chamber of Commerce and Industry of Romania [3]. According to the Chamber of Commerce and Industry of Romania, there are two solid arguments for which this hierarchy of firms from Romania differentiates itself from any other hierarchy of firms, developed by any other organization or institution. First of all, the aforementioned institution has the legal obligation to annually develop this top, and secondly, the criteria used for firms' classification and ranking are not only unitary at national level, but are also validated by an officially certified commission. The 2010 Catalogue of the National Top of Companies from Romania comprised 2143 companies. The research instrument used to conduct this research was a questionnaire. Respondents were requested to assign a certain level of importance for a series of indicators that enable marketing performance measurement, through a five-point scale anchored by *not at all important* and *very important.* At the same time, the respondents had at their disposal the option *indicator not used*, for the case in which the respective indicator was not used in their company. The marketing performance indicators were grouped into eight categories corresponding to the eight dimensions of marketing performance that were previously mentioned. As this paper focuses only on the results regarding product performance, it has to be stated that the indicators selected for this type of performance were: product perceived quality; number of new products launched on the market in a specific period of time; revenues generated by new products; success rate of new products; sums spent on innovation activities; average duration of product lifecycle; number of employees involved in the product innovation process; number of new products launched on the market in the last three years which are considered innovations. These indicators were selected based on existing proposals from the specialty literature [4, 5, 6]. The respondents were also asked to self-assess the abilities that exist in their companies for measuring product performance and the current level of the company's product performance; in both cases, their responses were collected using a five-point scale

anchored with *very good* and *very weak*. In the preliminary investigation phase, the questionnaire was pretested on a number of 35 companies, randomly selected based on accessibility. The firms that were selected to take part to the questionnaire pretesting phase were not included in the investigated sample of the firms from the National Top of Companies developed by the Chamber of Commerce and Industry of Romania. After pretesting the questionnaire, some changes were considered as being opportune, changes regarding the order of the questions from the questionnaire, as well as some questions' regrouping and reformulation, with the aim of reducing the questionnaire's dimension, as most of the respondents upon which the questionnaire was pretested considered that filling the questionnaire was relatively difficult. At the same time, questionnaire pretesting enabled the final formulation of the framework hypotheses on which the research was based. The selected method for contacting the companies consisted in sending the questionnaire via e-mail, mainly because the enterprises from this top are located in an extended geographical area, in all of Romania's development regions. In the end, 251 responses from the contacted companies were obtained, but not all of them returned a filled questionnaire. Respondents from 98 companies refused to take part to this research, due to various reasons that were earlier presented [1].

As it follows, 153 valid questionnaires were obtained and used for data analysis and interpretation, which represents a response rate of 7.13% of the total number of firms included in the Top. Data analysis was performed with the Statistical Package for Social Sciences (SPSS). The obtained results are representative only at the level of these 153 companies. The structure of the sample composed of the respondent companies according to their main field of activity ensures a quite high representativeness of the structure of the sample composed of the companies from the Top according to the same criterion (see Table 1).

Table 1. Structure of the sample of firms from the National Top of Companies from Romania and structure of the sample of respondent companies according to the companies' main field of activity

Main field of activity	*National Top of Companies from Romania*		*Sample composed of the respondent companies*	
	Number of companies	*%*	*Number of companies*	*%*
Research-Development and High Tech	187	8.73	13	8.5
Industry	846	39.47	62	40.5
Agriculture, fishery	137	6.39	5	3.3
Building	89	4.15	7	4.6
Services	568	26.5	45	29.4
Commerce, Tourism	316	14.76	21	13.7
Total	2143	100	153	100

Among the working hypotheses that stood at the basis of this research are the following ones:

H1: From the category of indicators used for the assessment of the product component of the marketing mix, the respondents consider that product perceived quality is the most important indicator.

H2: At most 50% of the respondents evaluate their ability of assessing product performance as being good or very good.

3. Main results of the research

3.1. Results about product performance

From a technical perspective, it seems that the product is the primordial element of the marketing mix. As it follows, the respondents' opinions regarding the importance levels assigned to the specific assessment indicators for the product component of the marketing mix are presented. Almost half of the respondents (49.7%) consider the *product's perceived quality* by the consumers as being very important in the context of product performance measurement and one quarter (25.5%) of the respondents consider that this indicator is important.

In what concerns the *number of new products launched on the market in a specific period of time*, the most significant part of the respondents (24.8%) belongs to those which consider this indicator as being important for assessing product performance, being followed at a short distance by the proportion of respondents (21.6%) which assign an average importance for this indicator. At the same time, the percentage of respondents that declared they do not use this indicator (19.6%) is higher than the percentage of those who perceive the indicator as being very important (18.3%). Over 20% of the investigated respondents consider that the indicator *revenues generated by new products launched on the market* is important (28.8%), of average importance (22.2%) or very important (20.9%). Another 28 respondents, representing a share of 18.3% of the total number of respondents, do not use this indicator for assessing the product performance in their companies.

The *success rate of new products* is equally considered very important (28.1%) or important (28.1%) by the respondents. This indicator presents a reduced importance for 6.5% of the respondents and is not at all important for other 2.6%. The indicator is not used in 18.3% of the investigated companies. Relatively similar percentages of the total number of respondents consider that *sums spent on innovation activities* are important (26.1%) or of average importance (24.2%) in the context of product performance assessment. Less than 20% of the respondents (19.6%) appreciate this indicator as being very important, while other 17% of the

respondents declare they do not use the indicator. The *average duration of product's lifecycle* is considered important in the product performance context by less than one third of the respondents (30.1%). This indicator is considered very important or of average importance, respectively, by 17.6% of the respondents. In almost one quarter of the investigated firms (24.2%) this indicator is not used. Only 13.1% of the respondents consider that the *number of employees involved in the product innovation process* represents a very important indicator for evaluating product performance. 22.9% of the respondents consider this indicator as being important, 18.3% assign to it an average importance, while in other 28.8% of the enterprises the indicator is not used. Approximately 30% of the respondents do not use the *number of new products launched on the market in the past three years that are considered innovations* as an indicator that enables product performance assessment. Only a relative small share of 16.3% of the respondents assigns to this indicator the maximum level of importance. Based on the results presented only in a synthetic manner, it was found that the specific indicator for product component assessment that enjoys the largest use among the investigated companies is that of product's perceived quality, which refers to how well is the product ranked by consumers, this indicator being used in 92.8% of the investigated firms. At the same time, product's perceived quality is the indicator considered as being the most important in the context of product performance assessment, being appreciated as very important by almost half (49.7%) of the respondents. The following most important indicators are success rate of new products, which 28.1% of the respondents consider very important for the assessment of the product component, and revenues generated by new products respectively, which is considered very important by 20.9% of the respondents. These results allow the confirmation of the hypothesis "From the category of indicators used for the assessment of the product component of the marketing mix, the respondents consider that product perceived quality is the most important indicator."

Tables 2 and 3 present several descriptive statistics corresponding to the levels of importance assigned to each of the eight indicators that can be used for assessing product performance. It can be noted once again that according to the respondents' opinion, the most important indicators that can be used for measuring product performance are *product perceived quality* (mean value 3.99), *success rate of new products* (3.18) and *revenues generated by new products* (3.05). The mean values obtained for the importance levels of the remaining five indicators were below 3, corresponding to a less than average level of importance: *sums spent on innovation activities* (mean value of 2.99), *number of new products launched on the market in a specific period of time* (2.84), *average duration of product lifecycle* (2.81), *number of employees involved in the product innovation*

process (2.43) and *number of new products launched in the past three years which are considered innovations* (2.42).

Table 2. Descriptive statistics for the importance levels of the product assessment indicators: *Product perceived quality, Number of new products launched on the market in a specific time period, Revenues generated by new products, Success rate of new products*

		Product perceived quality	*Number of new products launched on the market in a specific period of time*	*Revenues generated by new products*	*Success rate of new products*
N	Valid	152	152	152	152
	Missing	1	1	1	1
Mean		3.99	2.84	3.05	3.18
Std. Error of Mean		.113	.141	.139	.146
Median		4.50	3.00	3.50	4.00
Mode		5	4	4	4(a)
Std. Deviation		1.398	1.739	1.714	1.798
Skewness		-1.640	-.493	-.738	-.776
Kurtosis		2.077	-1.028	-.683	-.781

Table 3. Descriptive statistics for the importance levels of the product assessment indicators: *Sums spent on innovation activities, Average duration of product's lifecycle, Number of employees involved in the product innovation process, Number of new products launched in the past three years which are considered innovations*

		Sums spent on innovation activities	*Average duration of product's lifecycle*	*Number of employees involved in the product innovation process*	*Number of new products launched in the past three years which are considered innovations*
N	Valid	151	152	152	152
	Missing	2	1	1	1
Mean		2.99	2.81	2.43	2.42
Std. Error of Mean		.137	.148	.147	.153
Median		3.00	3.00	3.00	3.00
Mode		4	4	0	0
Std. Deviation		1.687	1.830	1.818	1.889
Skewness		-.656	-.529	-.191	-.130
Kurtosis		-.743	-1.181	-1.395	-1.476

61.4% of the respondents consider that their ability of assessing the performance of the product component of the marketing mix is very good or good. On the other hand, other 30 respondents (19.9%) unravel less satisfied under this aspect,

declaring their ability of assessing product performance as being very weak or weak. The results from Table 4 do not allow to confirm the hypothesis "At most 50% of the respondents evaluate their ability of assessing product performance as being good or very good", as a share of over 60% of the respondents appreciate this ability as being very good or good.

Table 4. Opinion of the respondents regarding their ability for assessing the product component performance

		Frequency	*Percent*	*Valid Percent*	*Cumulated Percent*
Valid	Very good	36	23.5	23.8	23.8
	Good	58	37.9	38.4	62.3
	Average	27	17.6	17.9	80.1
	Weak	16	10.5	10.6	90.7
	Very weak	14	9.2	9.3	100.0
	Total	151	98.7	100.0	
	No answer	2	1.3		
Total		153	100.0		

In what concerns the product's component current performance, it can be noted from Table 5 that most of the respondents (39.9%) declare that their company's performance for this dimension is good. 23.5% of the respondents indicate an average level of their product performance, while other 19% of the respondents indicate a very good level. On the other hand, 24 respondents, representing 15.7%, selected the "weak" or "very weak" options for indicating the current level of the company's product performance.

Table 5. Opinion of the respondents regarding the company's current level of product performance

		Frequency	*Percent*	*Valid Percent*	*Cumulated Percent*
Valid	Very good	29	19.0	19.3	19.3
	Good	61	39.9	40.7	60.0
	Average	36	23.5	24.0	84.0
	Weak	10	6.5	6.7	90.7
	Very weak	14	9.2	9.3	100.0
	Total	150	98.0	100.0	
	No answer	3	2.0		
Total		153	100.0		

Another result of the research indicated that in most of the firms, representing 61.4% of the 153 companies, the indicators of product performance are assessed on a regular basis, either yearly, half-yearly or quarterly. In the case of other 11.8% of the companies these indicators are reviewed with a monthly frequency or more often than that, while other 19.6% of the enterprises review the indicators

less than annually. The product performance indicators are never reviewed by 4.6% of the investigated companies.

3.2. The importance of product performance measurement depending on the importance of measuring the product performance indicators

It was intended to test if there exists a relationship between the importance assigned by respondents to product performance measurement and the importance levels assigned to each of the eight indicators of product performance that were taken into account for the conducted research. Multiple linear regression was used in order to test the existence of such a relationship, where the importance of product performance measurement represented the model's dependent variable, while the individual importance levels assigned to each indicator of product performance represented the model's independent variables. From the range of possible options for performing a multiple regression analyses, the stepwise regression was used, according to which the variables that are considered predictors are introduced in the model one at a time, starting with the predictor variable which exhibits the highest correlation with the criterion [7,8].

A positive linear relationship was identified between the importance of product performance measurement and two predictor variables consisting in the importance levels assigned to two indicators – success rate of new products and product perceived quality ($F_{2,91}$=14.2, p<0.001). The value obtained for R^2_{adj} was 0.221, indicating that approximately 22% of the dependent variable's variance can be explained by the simultaneous contribution of the two predictor variables (see Table 6). The regression model does not include the importance levels assigned to the other six indicators of product performance that were taken into account, as these indicators did not represent significant predictor variables for the model's dependent variable.

Table 6. Stepwise multiple linear regression model of the predictors of the importance of product performance measurement

Model statistics				
R^2		.238		
Adjusted R^2		.221		
F statistic		14.2		
d.f.		2,91		
p value		<0.001		
Final predictors	*Unstandardized coefficients (B)*	*Standardized coefficients (Beta)*	*t*	*Sig.*
Importance of "success rate of new products"	0.289	0.321	3.149	0.002
Importance of "product perceived quality"	0.271	0.252	2.469	0.015

Based on the standardized or unstandardized coefficients, the multiple linear regression equation between the importance of product performance measurement (IPPM) and the two predictor variables, importance assigned to the *success rate of new products* (ISRNP) indicator and importance assigned to the *product perceived quality* (IPPQ) indicator respectively, can be written in the following two forms:

$$IPPM = 1.842 + 0.289 * ISRNP + 0.271 * IPPQ \quad (1)$$

$$Z_{IPPM} = 0.321 * ISRNP + 0.252 * IPPQ \quad (2)$$

It can therefore be stated that assigning a higher level of importance for the importance of product performance measurement is positively associated with higher levels of importance assigned to the *success rate of new products* and *product perceived quality* indicators.

Conclusions

This article focused on the product performance measurement aspects of a wider research that aimed to investigate some of the practices used by the firms included in the National Top of Companies from Romania for measuring their marketing performance. According to the results, the indicator that is both the most used one and considered the most important one for measuring product performance among the investigated companies is *product perceived quality*. Other indicators that emerged as important were *success rate of new products* and *revenues generated by new products*. The majority of the respondents (61.4%) had a positive self-assessment of the product performance measurement abilities, perceiving them as being very good or good. On the other hand, only 19% of the respondents believed that the current level registered in their company for product performance was very good.

The paper also substantiates paths for future research, in the following dimensions: firstly, the proposal and testing of some systems of distinct indicators and sub-indicators depending on the market type, for the fast moving consumer goods market and industrial, governmental and products' market respectively; secondly, in the sustainable development spirit, the major coordinate of preoccupations at macro and micro levels, the development and testing of another dimensions of companies' marketing performance will be proposed, concerning the firm's preoccupations regarding their social responsibility, by advancing a system of indicators in this respect.

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