

## IMPACT OF FINANCIAL PERFORMANCE OF OUTDOOR WEAR PRODUCERS ON BRAND PERCEPTION OF CONSUMERS

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Financial performance of company is considered as one of the most crucial area, on which companies focus on. Similar approach is in field of outdoor wear production. Contribution is focused on finding, which financial indicators are key for the outdoor wear producers in connection with perception by final customers in Czech Republic. According to our findings it is obvious that companies use profit indicators mainly medium and large size, and in western and northern regions of Europe. Empirical evidence was realised in two groups: (1) companies, (2) customers. For analysis of companies there were used data from 4996 subject. For customers' analysis there was employed questionnaire survey, on which participated 292 persons. For the analysis of gained data there was factor analysis and correspondence analysis with validation technique based on chi-square nonparametric tests and for transparent representation of the structure of dependence and interpretation is used symmetric correspondence map.

Keywords: Financial performance indicators, business, consumer perception, outdoor production

### 1 Introduction

Outdoor-wear industry has become most popular in past ten years. Many producers accepted customers' requirements and apply them into individual products. All customers want to use such outdoor wear in day-to-day life in cities, which is developed mainly for extreme nature environment. Many producers decrease quality level of own products according to general use with low requirements of extreme clothes conditions.

Some customers perceive outdoor-wear as kind fashion style, on which producers have not adapt in past and now they change own production. Because of wearing of outdoor clothes become fashion, many producers try to get part of market share in own region or in global market. Outdoor clothes combine technical level of material and products, high usage value, fashion trends and image. In each of these areas could participate customers by co-creating value and sharing own opinions, which provide better value perception of final product. Increasing product values is usually supported by suppliers and material producers, other clothes producers and of course by sellers.

Financial performance evaluation, including economic results, constitutes an important part of company management, as the evaluation figures help us to monitor and evaluate accomplishment of the basic economic objectives (Zhang, Lawrence, Anderson, 2015; O'Sullivan, Abela, Hutchinson, 2009; Loeschenbrand, 2016; Hornungová, 2015).

### 2 Theoretical background

Recently, performance evaluation methods have significantly changed. Evaluation of performance in company can be defined as the ability of a company to boost investments, put into business activities, contributing to continuous self-improvement and accomplishment of business objectives (Šulák, Vacík, 2005; Maria, 2009; Muchiri et al., 2010). Performance evaluation is one of the tools helping the company management to decide how to do the business activity effectively (Arena, Azzone, Bengo, 2015; Lebas, 1995).

Traditional financial indicators (calculated from accounting data) are still used today to evaluate performance; this approach to performance evaluation and comparison has been recognized as the most appropriate for a long period of time in spite of different accounting and financial indicators. Since 1980 traditional methods have been facing various views, identifying contentious issues in the use of these models, resulting in the

search for other opportunities for performance evaluation (Mohamed et al., 2014; Neely, 2004).

Over the time, the performance has been measured either by the company size or its productivity and profit. The scientific literature divides financial indicators of the company performance into three categories:

- Accounting results and derivative indicators – the accounting result is the result from the financial statement. The basic indicator, which can be explained by means of the structural analysis of the profit and loss statement. Accounting indicators express the company's performance in absolute values. The application of these indicators is recommended for various comparisons: proportion of personal costs to turnover; productivity rate; proportion of business margin to turnover, etc. These indicators provide a clear picture of productivity (Brignall, 2007).
- Traditional production indicators (indicators of financial productivity) – these indicators provide information through the value of invested assets. The best known indicator is ROI (return on investment), calculated as the ratio of the economic result to the cost of investment. Another traditional productivity indicator is the ratio of the net economic results to the equity capital (ROE = return on equity). Ratio indicators of financial productivity provide information helping the company to compare its productivity, expected by shareholders, i.e., to evaluate so-called financial attractiveness.
- New category of financial indicators – represented by the metrics EVA (Economic Value Added); its positive value indicates that from purely financial point of view the company has successfully generated value after the payment of all capital investments, in particular from capital shareholders (Nicu, 2009).

Recently, researchers have begun to examine firm performance as a function of alternative managerial orientations such as an entrepreneurial orientation (Ross, Westgren, 2009), market orientation (Verhees, Meulenbergh, 2004; Sychrová, Šimberová, 2012), and strategic choice. For a firm to achieve success in implementing orientations different from a production orientation, the manager must have a willingness to change and to question current business strategies (Micheels, Gow, 2015).

### 3 Methodology

The main aim of this paper is to find key indicators in grouped factor in the field of financial performance for companies in automotive industry (as one of the most important part of engineering industry). Partial aim of the paper is to identify relationship between observed factors and company size and NACE classification. Main hypothesis suggests dependence between realization of individual activities and their performance in connection with outdoor-wear industry.

Data have been gathered from Amadeus database and processed by the statistical program IBM SPSS Statistics 24; subsequently, (1) factor analysis, (2) dependency between two nominal variables by means of contingency tables and Pearson's chi-squared test, and (3) correspondence analysis have been studied. To graphical design complex view on agriculture field there were used correspondence analysis.

The conditions for choice of companies:

1. geographical location of Europe (West, East, South, North);
2. dividing according corporate size;
3. classification of economic activities according to NACE classification, reduced to 1413 – Manufacturing of other outdoorwear.

Size of company is defined according to regulation of European Commission (Table 1). According to selected NACE groups, the basic population has been defined for individual country as follow in Table 2. Sample population of agriculture companies consist 4996 from whole Europe (see Table 2).

Table 1 Limits for splitting of companies into individual categories

	Staff headcount	Annual turnover	Annual sum of balance
Micro	< 10	≤ 2 mio €	≤ 2 mio €
Small	< 50	≤ 10 mio €	≤ 10 mio €
Medium	< 250	≤ 50 mio €	≤ 43 mio €

Source: Evropské společenství, 2006

Table 2 Pivot table: company size and European region

	Micro & Small	Medium	Large	Missing	Total
Western	105	24	7	159	295
Southern	2259	304	41	120	2724
Northern	134	20	10	36	200
Eastern	1026	476	108	167	1777
Total	3524	824	166	482	4996

Source: own work by authors

Questionnaire survey as part of customers' analysis was targeted on field of outdoor clothes, knowledge the producers' brands. This survey was realised during spring of 2017 in Czech Republic. From group of customers there were selected 851 respondents in random way to participate. From that amount 292 questionnaires were returned back (relative amount is 34,31 %).

Factor analysis is based on the selection of correlation and partial correlation coefficients. The correlation coefficient represents the closeness of linear dependence of individual variables and partial correlation coefficients. The partial correlation coefficient shows a similarity of two variables in such a situation that the other variables are assumed constant. If it is possible to explain the dependence of variables using common factors, the partial correlation coefficients are very small, close to zero. To assess the suitability of the factor analysis, two tests can be used (Tarnanidis et al., 2015; Conti et al., 2014):

- Kaiser-Meier-Olkin (KMO) is a coefficient which could reach values between 0 and 1. Its value consists of the rate of squares sum of the correlation coefficients and squares sum of the correlation and partial coefficients.
- The use of Bartlett's sphericity test lies in testing the null hypothesis stating that the correlation matrix of variables is unit (on diagonal, there are only ones, others are zeros). If the null hypothesis is rejected, the factor analysis may be used for the defined variables.

For the purposes of verification of the factor analysis Cronbach's alpha indicator must be used. This indicator is understood as a reliability coefficient, used as a kind of analogy with the correlation coefficient. Normally, values oscillate in the interval (0;1). Zero, as the extreme value, describes the situation in which individual variables are uncorrelated. On the other hand, the value 1 describes correlated variables. When the value is closer to 1, a higher degree of conformity is reported (Hrach, Mihola, 2006; Cronbach, 1951; Řehák, Brom, 2016).

However, high Cronbach's alpha does not imply that the measure is dimensionless. If, in addition to measuring internal consistency, you wish to provide evidence that the scale in question is dimensionless, additional analyses can be performed. Exploratory factor analysis is one of the method to check dimensionality. Cronbach's alpha is not a statistical test; it is a coefficient of reliability (or consistency). The value could be expressed as the function of number of test items and the average

inter-correlation among the items. Below, for conceptual purposes, we show the formula for the standardized Cronbach's alpha:

$$\alpha = \frac{N \times \bar{c}}{v + (N - 1) \times \bar{c}}$$

where N equals to the number of items; c-bar is the average inter-item covariance among the items; v-bar equals to the average variance.

The values of Cronbach's alpha could be from 0 to 1. If the values are close to 0.5, it signifies a bad level of internal consistency. Over 0.7 means that the value is acceptable and values close to 1 are excellent. A "high" value of the alpha is often used (along with substantive arguments and other statistical measures) as evidence that the items measure an underlying (or latent) construct (Hinton et al., 2004).

Correspondence analysis describes relation between both two nominal variables in pivot table and individual categories. In pivot table there is category combination which should become significant or not. If any categories are similar or associated, there are located in graph near themselves. Correspond analysis itself is focused on association rate, usually by chi-square measure. There are nominal variables as input into correspond analysis, and kind of premise, that there is no ordering between variables (McGarigal, Cushman, Stratford, 2000; Beh, 2010, 2008). Correspond analysis processes dimensional homogenous data which consist only positive values or zeros. Chi-square range has become coefficient which excludes zeros, and help to define relations between rows and columns.

Calculation of correspondence analysis includes three steps: (1) pivot table transformation into table with support of Pearson chi-square; (2) individual value decompositions are applied into defined table, then there are calculated new values and new vectors; (3) new matrix operations serve as input to graph design. Basis for two dimensional pivot tables is data matrix  $n \times 2$ , in which categorical variable A get r values ( $a_1, a_2, \dots, a_r$ ) and categorical variable B get s values ( $b_1, b_2, \dots, b_s$ ). Due realised observation there is created table by two dimensional separations of both variables. In the table is used  $n_{ij}$  frequency, which represents intersect of both variables. This  $n_{ij}$  provides number of observations, where are both  $a_i$  and  $b_j$ . Except  $n_{ij}$  there are used marginal frequency  $n_{i+}$ , where own observation with  $a_i$  value are observed (similar approach is for  $n_{+j}$  in column). After estimating the theoretical frequencies there is designed chi-square statistics. This statistic has chi-square distribution and number of degrees of freedom  $(r-1)(s-1)$ . On this basis, it is decided if exist dependency between variables in the population, and by using correspondence analysis is also possible to determine the structure of dependence (Beh, 2010; Kudrats, Money, Hair, 2014).

#### 4 Results

Based on the economic data from Amadeus database, it is evident that companies commonly use traditional financial indicators for measurement of their own performance. These indicators were analysed:

- $x_1$  – Cash flow [th EUR];
- $x_2$  – P/L for period (Net income) [th EUR];
- $x_3$  – Operating revenue (Turnover) [th EUR];
- $x_4$  – ROA using P/L before tax [%];
- $x_5$  – ROE before tax [%];
- $x_6$  – Gross profit [th EUR];
- $x_7$  – Shareholder funds [th EUR].

Based on the statistical characteristics of the examined groups the conclusions could be presented as an approximate result, limited by the resulting reliability. In the results of the paper there are characteristics of research barriers and future research possibilities.

For the purpose of factor analysis the value of Kaiser-Meier-Olkin test should reach the value of at least 0.5 (value range is between 0 and 1). In order to assess whether it is possible to use the factor analysis, Kaiser-Meyer-Olkin method (KMO) and Bartlett's test of sphericity have been used. The KMO method is based on selective correlation and partial correlation coefficients. For the indicators in factor analysis KMO are observed according to the highest level of acceptance, which means that the performed level of usefulness of the factor analysis reaches high value. Bartlett's test of sphericity is a statistic test used to examine the hypothesis that the variables are correlated or uncorrelated.

Value for KMO test was reached by 0,764 and for Bartlett's test by 0,000. Therefore, factor analysis itself could be applied. The total variance of the performance indicators is explained by means of eigenvalues, representing the total variance explained by each factor. The eigenvalues show that only three items have reached the minimum value of 1. From this point of view, Extraction Sums of Squared Loadings with cumulative percentage are important. Factor analysis has extracted different numbers of factors, which explains variances of all cases (81,54%).

Table 3 Results of factor analysis

			Cronbach's alpha
Factor 1	Cash flow	0,994	0,779 ACCEPT
	P/L for period (Net income)	0,994	
	Operating revenue	0,987	
	Shareholder funds	0,973	
Factor 2	ROA using P/L before tax	0,813	0,437 NOT ACCEPT
	ROE before tax	0,857	

Source: own work by authors

Results of factor analysis provide in two factors, from which are acceptable value of Cronbach's alpha only for one of them. Last factor has Cronbach's alpha value under minimal acceptable value (under 0,500). Final values calculating acceptable factor need the transformation of individual coefficients. These coefficients express significance of the used elements. Their sum total must be 1. The individual factor indices have been defined by the procedures as follow:

$$Factor\ 1 = 0,2518 \times x_1 + 0,2518 \times x_2 + 0,25 \times x_3 + 0,2464 \times x_7$$

Value of this factor can be calculated for the individual outdoor producer and on the basis of their results a list of businesses can be compiled. Indices can determine important factors of business, playing the key role in achieving the set of objectives. Proposed financial performance indicators should help companies to demonstrate a progress towards the objectives of sustainability. Also we can see basic statistics of observed indexes in Table 4.

Table 4 Descriptive statistics of observed factor

	Mean	Median	Variance	Std. deviation
Factor 1	2016,6704	165,8953	295000,99809	870,08888,3
Factor 1 - grouped	3	3	1,414	2

Source: own work by authors

Pivot tables have been employed to find possible dependencies between observed factors and company size and region of company, for results of the dependency tests see Table 5. Results of the dependence examination in individual variable categories are depicted in the following results of Pearson's chi-square test.

Maintaining the % reliability of the test, the values for connection between individual factors and company size have been determined within 0.05, which represents 5% reliability level. Established values of Pearson's test for the variables are showed in Table 5 (i.e., less than 0.05). Therefore, that bring us to the conclusion that an alternative hypothesis is applied – there are dependencies between all observed factors and company size for all observed indexes. Past results have revealed the relationship between indexes and company size and European region. Subsequently, degree of such dependence has been examined. To that end, the intensity of dependence determined by means of contingency coefficient.

Table 5 Pearson's test of the relationship between individual indexes, company size and European region for observed factor

	Corporate size		European region	
	Value	Signif.	Value	Signif.
Pearson $\chi^2$	2010,429	0,000	225,020	0,000
Contingency coefficient	0,555		0,208	

Source: own work by authors

The intensity of dependence ranges between {0;1}. That means that the higher the absolute value, the greater the intensity of dependence. Table 5 shows that observed factor is close connected within the size of the company and region of Europe – all significance values are in 5% of limit of error. Intensity of the dependence is given by Contingency coefficient, which provides view in this connection. All four defined connection between observed indexes and corporate size and region reach accurate values and there are confirmed dependency between them.

Load indicators (Mass) indicate load line which represents the percentage of information across the table in appropriate category. That loads are obtained as the ratios of the row and column marginal frequencies ( $n_{i+}$ ,  $n_{+j}$ ) in whole table of individual categories (n).

Score in dimension describes individual variables score in two main dimensions. These dimensions don't represent any specific area, because they are reduced to from multi-dimension space. All data in rows and columns have been usually in multi-dimension space, which are reduced into two. Providing information of raw data has not been modified after multi-dimension space reduction of these variables. Inertia indicator represents the share comprehensive information on the profile (on the relevant point). This characteristic is independent of the number of dimensions. Corresponding map includes a graphical representation of both row and column categories according to their dimension scores (Hebák et al., 2007; D'Esposito, de Stefano, Ragozini, 2014).

Table 6 Significance summary of observed dimensions

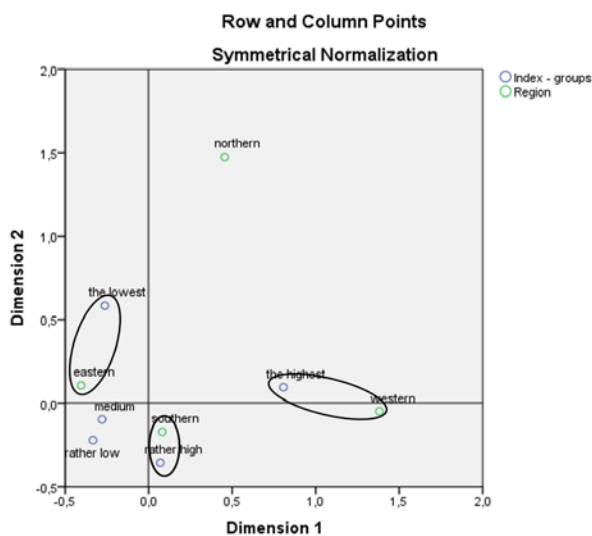
European region		Singular value	Inertia	Chi-square	Sig.	Proportion of Inertia		Confidence singular value	
						Accounted for	Cumulative	Std. dev.	Correlation
	1	0,183	0,033			0,743	0,743	0,015	-0,035
2	0,107	0,011			0,181	0,917	0,015		
3	0,010	0,000			0,083	1,000			
Total			0,045	225,02	0,000	1,000	1,000		

Corporate size		Singular value	Inertia	Chi-square	Sig.	Proportion of Inertia		Confidence singular value	
						Accounted for	Cumulative	Std. dev.	Correlation
	1	0,573	0,328			0,737	0,737	0,010	0,409
2	0,284	0,080			0,181	0,917	0,012		
3	0,192	0,037			0,083	1,000			
Total			0,445	2010,43	0,000	1,000	1,000		

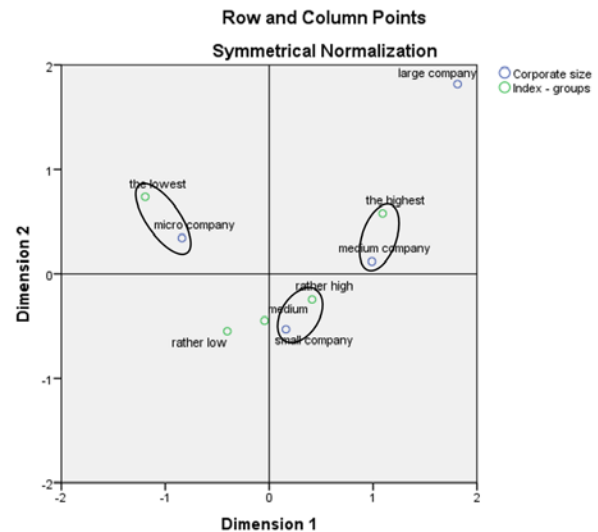
Source: own work by authors

Picture 1 Symmetrical correspond map of indexes and European region



Source: own work

Picture 2 Symmetrical correspond map of indexes and corporate size



Source: own work

Table 7 Influence of country origin of outdoor wear

	Czech Republic		Scandinavian countries		Alpen countries		Eastern Europe		Asian countries	
Absolutely positive	61	20,89	132	45,21	141	48,45	3	1,03	0	0,0
Rather positive	156	23,42	108	36,99	111	38,14	31	10,65	4	1,37
No influence	63	21,58	50	17,12	39	13,40	142	48,80	103	35,27
Rather negative	12	4,11	2	0,68	0	0,0	104	35,74	144	49,32
Absolutely negative	0	0,0	0	0,0	0	0,0	11	3,78	41	14,04
Total	292	100 %	292	100 %	291	100 %	291	100 %	292	100 %

Source: own work by authors

Results of correspondence analysis are included in graphs, which illustrate relations between individual categories and variables. By using symmetrical normalization simplifies examining the relationships between individual categories of the variables. Gained results are confirmed by significance value of Chi-square test. According to computation significance relationship between observed factor and both of corporate size and region are at value 0,000 (see Table 6).

Picture 1 displays the relations among the individual categories and variables, specific links among European region and factor 1, is the output of the correspondence analysis. Three separate groups of categories can be identified. We can say that western companies are at the top of the performance level, on which they focus on. Second highest connection have companies from south Europe. Last, third region are eastern companies with

the lowest focus on measurement performance. Vice versa, companies from northern Europe are in segment within the highest performance, but outside of this connection.

Furthermore, a relation between the size of the company and factor 1 has been investigated in three separate groups. Generally, Picture 2 indicates that micro-companies don't care about performance measurement (reach the lowest level). Vice versa, medium companies look after the most performance production. Large companies are situated too far from the observed groups.

**5 Discussion**

According to results of correspondence analysis there is obvious, that behaviour of outdoor producers are different due they

country. All companies are focused mainly on two parameters such (1) price, (2) production costs, (3) quality. From the correspondence analysis of region and index typical results are shown. Both of western and southern companies are focused mainly on financial performance and profit results. Eastern companies particularly focus on cost level (they describe lowest costs such indicator of effectiveness). On the other hand, focus of northern companies is put into quality area. Country origin of outdoor producer could impact their purchase behaviour. For confirmation of this prediction there was applied research in consumer market.

According to the observed results (see Table 7), consumers chose brand of outdoor wear from mainly from Alpen countries (86,59 %), Scandinavian countries (82,20 %), and from Czech Republic (74,31 %). Such the main reasons for chosen producer from one of these three region are association of outdoor activities and tradition of outdoor production. Asian producers are not well adapted in Czech market, because there are still perception Asian products as low quality. Because of the globalization and opening world markets, that customer's perception bring to producers challenge for better innovation in various products for leisure time activities.

## 6 Conclusions

Process of evaluation financial performance usually traditional indicators, developed from accounting data. These financial indicators provide relatively easy traceability as such data constitute the part of obligatory reporting (financial statements, balance and profit/loss statement form the part of annual balancing). Many authors (Cardinaels, Van Veen-Dirks, 2010; Philips, Louvieris, 2005; Fernandes, Raja, Whalley, 2006) employed diversity of financial indicators on specific corporate activities.

Financial indicators are consider as kind of ratios, employed in strategic management activities to provide reached results to all key stakeholders by e.g. balance sheets, income statements, and statements of cash flows. In general, financial ratios are expressed in connection to other variables by various terms as percentages or fractions (Kotane, Kuzmina-Merlino, 2012; Suarez, Lesneski, Denison, 2011).

The main objective of the paper is find out which indicators in field of financial performance are used, and identify relationship between these indicators (in factor form) and corporate size, and European region. Realised research showed, that companies in outdoor-wear industry look on financial statement of own performance. For observed factor there was applied Pearson chi-square test of independence, by which were evaluated connection within size of company and region of the company.

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**Primary Paper Section: A**

**Secondary Paper Section: AE, BB**