

Josef Krause

Relationship between the Voluntary Instrument of CSR in the Textile Industry in the Czech Republic and Financial Performance

DOI: 10.5604/01.3001.0012.2524

University of Economics,
Faculty of Business Administration,
Department of Strategy
W. Churchill Sq. 1938/4
130 67 Prague 3 – Žizkov,
Czech Republic
e-mail: josef.krause@vse.cz

Abstract

The paper deals with the relationship between an environmentally friendly approach on the part of companies and financial performance. The paper emphasises that corporate social responsibility is an important issue in the strategic management of companies. The paper examines companies in the textile industry with an environmentally friendly certification in the Czech Republic, and then compares their indicator of profitability with companies in the textile industry without this chosen certification. The Wilcoxon test and t-test are used for the comparison. No statistically significant differences are confirmed. The limitations of the research are also discussed in the article.

Key words: corporate social responsibility, sustainable development, voluntary instruments, financial performance.

Introduction

The concept of corporate social responsibility is a very current one and is used in business practice. The concept of CSR is important because it has an impact on the future of our society, as well as the fact that it affects all aspects of business [1]. This concept can be considered as one of the strategic objectives of companies [2]. Corporate social responsibility should be an integral part of the strategy. A comprehensive model of corporate social responsibility contains the following three parts: industry-based considerations, resource-based considerations and institution-based considerations [3]. Also other authors write that the ethical aspect should be part of the strategy [4]. It is also possible to find in scientific literature an emphasis on fact that “companies are more than just economic machines regulated by legal contracts” and “companies are also networks of people”. And this are reasons for building of “a sense of community” [5].

Moreover other authors write about the desirability to involve the needs and expectations of society in the strategy of the company and formulate the following six characteristics of responsible strategy: “1) keeping organisational activities in tune with what is generally perceived to be in the public interest; 2) responding positively to emerging societal priorities and expectations; 3) demonstrating a willingness to take need action ahead of regulatory confrontation; 4) balancing stockholder interests against the larger interest of society as a whole; 5) being a “good citizen” in the community, and 6) making the corporation’s social and ethical obligations an explicit and high-priority consideration in the way the enterprise conducts its affairs [6].

Four components (responsibilities) of corporate social responsibility can be formulated: economic, legal, ethical and philanthropic components. Economic responsibilities reflect the goal of business organizations to produce goods and provide services. According to this economic aspect, it is important for an organization to be as profitable as possible and have a powerful competitive position. The legal components are the second part of corporate social responsibility. Organisations must respect laws and regulations and their product must at least meet the legal requirements. Ethical responsibilities are not embedded in the legal order. It is important for an organisation to reflect the expectations and standards which are important for various interest

groups. The philanthropic components are the last aspect of corporate social responsibility. Activities in this area are aimed at promotion of human welfare or goodwill [7].

A shift of focus of attention from stockholders to stakeholders is a characteristic feature of corporate social responsibility. Stakeholders include public interest groups, governmental agencies, trade associations, competitors, employees, customers, share-owners, certain suppliers, and certain financial institutions, among others [8-10]. Stakeholders can be a very useful source of information for an organisation and dialogue with them is crucial for the profitability of an organisation [11].

Corporate social responsibility “is concerned with the ways in which an organisation exceeds the minimum obligations to stakeholders specified through regulation and corporate governance” [12]. The extent to which a company will exceed its minimum obligations depends on short-term shareholder interests, longer-term shareholder interests, multiple stakeholder obligations and the shaper of society. These authors formulate two groups of aspects of corporate social responsibility – internal and external. Internal aspects reflect employee welfare, working conditions, job design and intellectual property, while External aspects are aimed at environmental issues, products, markets and marketing, suppliers, employment, community activity and human rights [12].

The main concerns of stakeholder can be divided into two categories. These categories are concerns over ethical behaviour and the natural environment. In the environmental area, stakeholders are interested in the state of natural resources and the manner of environmental pollution caused by businesses. In the ethical area, they are concerned with the asymmetric nature of markets, the responsibility to society reported by businesses and other activities of the business [13].

Corporate social responsibility is built on three pillars: social, economic and environmental. A company applying the CSR concept voluntarily applies various principles beyond the scope of its legislative duties. Environmental issues include, for example, the protection of natural resources, the reduction of negative environmental impacts, recycling as well as the use of organic products, alternative energy sources, ISO 14000 and EMAS [13].

Corporate social responsibility should increase not only the satisfaction of stakeholders but also the economic performance of companies. Corporate social responsibility “adds value because it allows companies to reflect the needs and concerns of their various stakeholder groups. By doing so, a company is more likely to retain its societal legitimacy and maximise its financial viability over the medium to long term” [1].

In addition, the publication Green Paper claims companies that apply principles of corporate social responsibility have better performance and profit growth. The economic effects can be both direct and indirect. A direct effect could be, for example, a better working environment or the efficient use of resources, while indirect effects could include greater attention from customers [15]. Also further opinions emphasise that “entrepreneurship in line with the concept of sustainable development combines environmental and social aspects with economic performance and competitiveness to achieve long-term sustainability of the business” [16].

Social responsibility or sustainability can positively impact the following typical strategic concerns: operational efficiency, risk reduction and vulnerability, enhanced public image, revitalised corporate values and employee commitment as well as access to new markets

Table 1. Structure of companies.

Industry	Number of employees		
	0-50	51-250	Above 250
Manufacture of textiles (NACE code 13)	1	13	10
Manufacture of wearing apparel (NACE code 14)	0	2	4

and capital [17]. Potential opportunities or benefits of corporate social responsibility implementation can be as follows: image benefits, a paradigm shift in business organization management, expression of organisational values, obtaining a “social licence”, increased competition in access to natural and financial resources, a lower cost of access to sources of financing, reducing risks and costs, a better response to the changing needs of organisational stakeholders, access to certain market segments, customer loyalty, driving innovation, better relations with regulatory agencies and obtaining tax benefits for certain categories, as well as attracting and maintaining valuable employees [18].

The textile industry has a very huge tradition in the Czech Republic. Corporate social responsibility is a very current topic in this industry. A large part of production takes place in developing countries, especially in Asia, with working conditions, child labour and other aspects of production often being discussed in this context. Furthermore the impacts on the environment in connection with production, the use of chemical paints, etc. are also discussed. Therefore the importance of CSR activities is a very interesting topic for research.

The main goal of the paper is to evaluate the impact of an environmentally friendly approach on economic performance.

■ Methods

Labelling in the textile industry is regulated by legislation of the European Union, which is implemented into the legislations of the individual states [19]. Two groups of CSR labelling can be distinguished: ecological and social [20]. Another concept summarises these types of eco-labels in the EU market: European eco-label “EU Flower”, OEKO-TEX® Standard 100, 100 plus and 1000, The Blue Angel and the Mobius loop – recycling symbol [21].

Companies certified according to “STANDARD 100” by OEKO-TEX®

in the Czech Republic were incorporated into the research [22]. “Sustainable Textile Production (STeP) certification allows a comprehensive and reliable analysis of the extent of sustainable management provided by a production facility” [23].

58 companies in the Czech Republic have this certification¹⁾. Company data necessary for the research was obtained from the database Albertina²⁾, which is available at the University of Prague. 24 companies have NACE CODE 13 – “Manufacture of textiles” and 6 companies have NACE CODE 14 – “Manufacture of wearing apparel”. 11 other companies have various other NACE CODES. Companies with the codes “Manufacture of textiles” and “Manufacture of wearing apparel” were included in the research.

For comparison with the certified companies, a second sample of companies without certification was created. This met the criteria of the NACE CODES and number of employees. A random number generator function was used for the specific companies chosen for comparison. The statistical programmes Gretl and Statgraphics were used for the calculations.

The following hypothesis is tested: companies with the certification described have a greater return on assets in comparison with those without this certification.

About the companies

The basic structure of the companies involved in the research according to the industry and number of employees is given in *Table 1*.

Only one company is in the small-company category, with a number of employees from 0-50. 15 companies are in the medium-company category, with a number of employees from 51-250, and 14 companies are in the large-company category, with a number of employees above 250.

The structure of companies with and without a certification is the same.

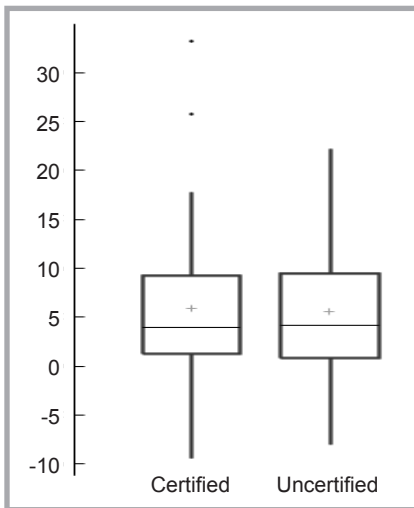


Figure 1. ROA – boxplot.

Methods used

Verification of the equality of sample variances and normal distribution

The equality of sample variances and normal distribution of data must be verified. The usage of statistical testing depends on these characteristics. For the verification of variances, the F-test is used. The Shapiro-Wilk test is used for the verification of normal distribution.

F-test

The equality of variance must be verified. The F-test of equality of variance is used. The test criterion for the F-test is [24]:

$$F = \frac{s_1^2}{s_2^2} \quad (1)$$

where s_1^2 and s_2^2 are variances of individual samples.

Hypothesis

$$H_0: \sigma_1^2 = \sigma_2^2$$

Table 2. Descriptive characteristics of ROA.

Characteristic	Certified	Uncertified
Mean, %	5.912	5.534
Median, %	4.005	4.175
Standard deviation	8.660	6.673
Variance	74.996	44.524
Kurtosis	2.927	0.227
Skewness	1.347	0.389
Standard skewness	3.012	0.869
Standard kurtosis	3.273	0.253
Minimum, %	-9.450	-8.060
Maximum, %	33.230	22.210
Number of units	30	30

is tested against hypothesis

$$H_1: \sigma_1^2 \neq \sigma_2^2$$

where σ_1^2 and σ_2^2 are variances.

Shapiro-Wilk test

A normal distribution of samples is verified by the Shapiro-Wilk test.

The test criterion is [25]:

$$W = \frac{b^2}{\sum_{i=1}^n (x_i - \bar{x})^2} \quad (2)$$

where x_i is the “ith” element of the random selection, \bar{x} the sample average, and b is the best impartial estimate of the linear regression of the observations observed.

Hypothesis H_0 : random sample selection comes from a normal distribution.

Alternative hypothesis H_1 : random sample selection comes from another distribution.

In the case of the equality of sample variances and normal distribution, the t-test is used. In the case of the equality of sample variances and no confirmation of a normal distribution, the Wilcoxon test is used.

For large selections of over 30 observations for both samples, the t-test can also be used for samples that do not have a normal distribution [26]. The samples examined contain just 30 units, is the limit number. Both tests will be used and the results will be analysed.

Indicator of financial performance

One indicator of financial performance was chosen for comparison of certified and uncertified companies: Return on Assets. The construction of this indicator is given in the following formula:

$$\text{Return on Assets (ROA)} = \frac{\text{Earnings Before Taxes} + \text{Cost Interests}}{\text{Total Assets}} * 100 \quad (3)$$

Results

Descriptive characteristics of ROA

Table 2 gives information about the basic descriptive characteristics of the sample of companies analysed. The mean of ROA indicators (r) of the certified companies is 5.912. The value of this indicator is greater than that of the ROA of uncertified companies, which is 5.534.

Figure 1 presents a boxplot with samples of certified and uncertified firms.

The median ROA indicator of certified companies is 4.005 and of uncertified companies – 4.175. The value indicator of the skewness of the certified companies is 1.347 and of uncertified companies – 0.389. The value of the indicator of kurtosis of the certified companies is 2.927 and of uncertified companies is 0.227.

F-test of equality of variances for ROA

Results of the F-test of the ROA indicator are given in Table 3.

The value of the F-criterion is 1.684, and its critical value is 1.861. The level of significance for the rejection of the null hypothesis is 0.083. It is not possible to reject the null hypothesis concerning the equality of variances for the ROA indicator at the standard level of significance – 0.05. The equality of variances will be considered for the ROA indicator.

Normality test

Table 4 presents results of the Shapiro-Wilk test for normality.

The null hypothesis concerning conformity with a normal distribution is tested. The standard value of significance – 0.05 is required. The null hypothesis concerning a normal distribution is rejected for the sample of the ROA indicator for certified companies. It is not possible to reject the null hypothesis concerning a normal distribution for the sample of uncertified companies.

The fact that the samples of certified and uncertified firms have the same variances is a result for further evaluation. Only the sample of uncertified companies have

Table 3. F-test of equality of variances for ROA.

ROA	Sample 1	Sample 2
Mean	5.912	5.533667
Variance	74.996	44.524
Unit	30	30
F-value	1.684	
p-value	0.083	
F critical	1.861	

Table 4. Shapiro-Wilk test.

Sample	p-value	W test
ROA – certified companies	0.0075266	0.898048
ROA – uncertified	0.550856	1.19256

a normal distribution. The Shapiro-Wilk test is suitable for the evaluation of differences in the indicators. As mentioned above, the t-test will also be used for comparison because the samples have a border size.

Wilcoxon test – comparison of medians

ROA

The median of sample 1 (certified companies) is 4.005 %, and that of sample 2 (uncertified companies) is 4.175 %.

Null hypothesis: median 1 = median 2.

Alternative hypothesis: median 1 \neq median 2.

The value of $W = 463.5$. $P\text{-value} = 0.847581$.

It is not possible to reject the null hypothesis for $\alpha = 0.05$.

T-test

ROA

The mean of sample 1 – “Certified companies” is 5.912 %, while that of sample 2 (uncertified companies) is 5.534 %.

Null hypothesis: mean 1 = mean 2.

Alternative hypothesis: mean 1 \neq mean 2.

The value of the t-criterion = 0.189545882.

The critical value of the t-criterion = 2.001717484. $P\text{-value} = 0.850326777$.

It is not possible to reject the null hypothesis for $\alpha = 0.05$.

Discussion

Research focused on small and medium-sized enterprises from the automotive industry in Spain brings results that the companies with the most proactive practices have “a significantly positive financial performance” [27]. Other authors state that the environmental management of companies is connected with cost, with no evident impact. They examined the effect of environmental management on the financial performance in Chinese-listed companies. They observed that corporate environmental management had a significant impact on financial performance the year after the application of environmentally friendly practices. Moreover financial performance was not better in the year of application of environmental investments [28]. Further research examined the impact of the activities of companies that relate to corporate social responsibility on superior financial performance. These activities could lead to better labour productivity and growth of sales. This research also emphasised that it is not necessarily true that proposals of corporate social responsibility will lead to greater benefits in general [29].

The research focused on the relationship between the global environmental standards of companies in the United States of America and the performance of companies in the stock market, showing that companies using a rigorous environmental standard have greater market value in comparison with those using environmental standards that are not so rigorous. The criterion used for measurement is Tobin’s q [30]. Other researchers examined mergers in the United States and found higher returns announced by acquirers with high corporate social responsibility activities in comparison to those with a low level of corporate social responsibility activities [31].

Not all research shows an unambiguously positive connection between environmentally friendly activities and the financial performance of companies. An example is the evaluation of the dependence of five green practices (green manufacturing, green purchasing, green information systems, cooperation with customers, eco-design) on organisational performance in Pakistan. Regression analysis confirming the impact of green manufacturing, green information systems, cooperation with customers and eco-design on organisational performance. Green purchasing had no significant impact on the performance of companies [32]. Other researchers state that internal low carbon integration hinders the financial performance of companies; however, it helps to improve their environmental performance. It is interesting to compare it with the impact of external low carbon integration. This instrument is supposed to improve environmental as well as financial performance [33]. The connection between EMAS certification and the impact on the profitability indicator in Czech companies was examined. No positive effect was confirmed [34]. Further researchers examined the relationship between performance in corporate social responsibility and the financial performance of companies in ten industries. They found that environmental performance had a negative impact on financial performance, as measured using Tobin’s q [35]. The same conclusion can be also found in another research [36].

Companies in the textile industry face challenges, one of which is the declining trust of customer because textile concerns decelerate some behaviours and do something else. This can be one of the reasons for the lower interest of cus-

tomers in buying clothes with certification and the lower willingness to pay a higher price for certified clothes [37].

Limitations and further research

The main limitation of the research is the fact that the units in the sample are quite small. This is confirmed by having no confirmation of a normal distribution in the certified companies. This could also be the reason for inconsistent differences between groups of companies according to the mean and median. Another problem is that it is quite difficult to obtain information about companies. Further research should concentrate on barriers to realizing the benefits flowing from the environmentally friendly behaviour of companies.

Conclusions

Taking on an environmentally friendly approach and corporate social responsibility philosophy enables companies to gain various advantages and increase their competitiveness and financial performance. In my research, values of the mean of return on assets of certified companies are greater than those of uncertified companies. The mean of the ROA indicator of certified companies is 5.912%, while that of the ROA indicator of uncertified companies is 5.534%. On the other hand, the median of the ROA indicator of certified companies is 4.005%, and that of the ROA indicator of uncertified companies is 4.175%. For the concrete statistical test, it is necessary to evaluate basic features of data samples and assumptions for statistical tests. The assumptions for the t-test are normal distribution and equality of variances of samples. Some author say that normal distribution should be required for samples above 30 units. The assumption for the Wilcoxon test is equality of sample variances. The Wilcoxon test does not require a normal distribution of data samples. Both samples of companies meet the requirement of the equality of sample variances. However, only the sample of uncertified companies meets the requirement of normal distribution. Both statistical tests (Wilcoxon test and t-test) are used for evaluation of differences between certified and uncertified companies. No differences between samples are statistically significant according to both tests.

Recommendations for future research can be formulated in two main areas. For evaluation of certification using the concrete performance indicator, it is needed to have a larger sample of companies. The comparison of differences between companies in various countries would also be useful. The involvement of various professional organizations seems to be useful. The second prospect of research is evaluation of the impact of various voluntary instruments not only on companies but also on society or the environment. For example, cost benefit analysis can be used for this type of research.



Acknowledgements

This paper was compiled as part of research project IGA 2 VŠE "Sustainable Corporate Responsibility" IP304026.

Editorial note:

- 1) Situation as of May 17, 2017.
- 2) Albertina is a database which allows one to obtain various data about companies in the Czech Republic.

References

1. Chandler D, Werther WB. *Strategic Corporate Social Responsibility: Stakeholders, Globalization, and Sustainable Value Creation*. Los Angeles: Sage; 2014.
2. Salciuviene L, Hopeniene R, Dovaliene A. Perceived corporate social responsibility and its implementation in practice: The case of Lithuanian small and medium-sized enterprises. *Inž. Ekon.* 2016; 27(4): 479-490.
3. Peng MW. *Global strategy*. Nashville: South-Western; 2006.
4. Mintzberg H, Lampel J, Quinn JB, Ghoshal S. *The Strategy Process: Concepts, Contexts, Cases*. New Jersey: Pearson Education, Inc.; 2003.
5. Wit B D, Meyer R. *Strategy: an international perspective*. Andover: Cengage Learning; 2014.
6. Thompson AA, Strickland AJ. *Strategic management: Concepts and cases*. Homewood: BPI; 1987.
7. Carroll AB. The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders. *Bus Horiz* 1991; 34(4): 39-48.
8. Freeman RE, Reed D. Stockholders and stakeholders: A new perspective on corporate governance. *Calif Manage Rev* 1983; 25(3): 88-106.
9. Freeman RE, Harrison JS, Wicks, AC, Parman B, de Colle S. *Stakeholder Theory: The State of the Art*. Cambridge: Cambridge University Press; 2010a.
10. Freeman RE. *Strategic Management: A Stakeholder Approach*. Cambridge: Cambridge University Press; 2010b.
11. Avlonas N, Nassos GP. *Practical sustainability strategies: how to gain a competitive advantage*. Hoboken: John Wiley & Sons; 2014.
12. Johnson G, Whittington R, Scholes K. *Exploring strategy: text and cases*. Harlow: Financial Times/Prentice Hall; 2011.
13. Campbell D, Stonehouse G, Houston, B. *Business strategy: an introduction*. Oxford: Elsevier Butterworth-Heinemann; 2002.
14. Srpová J, Kunz V, Mísař J. Applying the principles of CSR in enterprises in the Czech Republic. *Ekona man* 2012; 6(4): 44-57.
15. European Commission. Promoting a European framework for corporate social responsibility. Green Paper. 2001 [cited 2017 May 3]; Office for Official Publications of the European Communities. Available from: <http://www.social-protection.org/gimi/gess/ShowRessource.action?ressource.ressourceid=33473>.
16. Hyršlová J, Vnoučková L, Hájek M. The concept of sustainable development and competitiveness of enterprises in the chemical industry. *Chem Listy* 2015; 109(4): 317-336.
17. Hitchcock D, Willard M. *The business guide to sustainability: practical strategies and tools for organizations*. New York: Routledge; 2015.
18. Gligor-Cimpoieru DC, Munteanu VP. CSR Benefits and Costs in a Strategic Approach. *The Univers of Craiova Ann J-Econ Scienc Series* 2015; 43 (1): 96-105.
19. Kosinska B, Czerwinski K, Struszczyk MH. Safety and Labelling Requirements for Textile Products – Design and Use Aspects. *FIBRES & TEXTILES in Eastern Europe* 2014; 22, 2(104): 19-24.
20. Koszewska M. Social and Eco-labelling of Textile and Clothing Goods as Means of Communication and Product Differentiation. *FIBRES & TEXTILES in Eastern Europe* 2011; 19, 4(87): 20-26.
21. Žurga Z, Tavčer PF. Apparel Purchasing with Consideration of Eco-labels among Slovenian Consumers. *FIBRES & TEXTILES in Eastern Europe* 2014; 22, 5(88): 20-27.
22. OEKO-TEX® Associationb. [homepage on the Internet]. Zürich: OEKO-TEX® Association; No date [cited 17 May 2017]. Available from: https://www.oeko-tex.com/en/business/oeko_tex_certified_products/oeko_tex_certified_products.xhtml
23. OEKO-TEX® Associationb. [homepage on the Internet]. Zürich: OEKO-TEX® Association; No date [cited 17 May 2017]. Available from: https://www.oeko-tex.com/en/business/certifications_and_services/step_by_oeko_tex/step_start.xhtml
24. Cyhelský L, Hindls R, Kahounová J. *Elementární statistická analýza*. Prague: Management Press; 1999.
25. Kotlorz L. Testy normality. Bachelor [thesis]. Prague: Univerzita Karlova v Praze, Matematicko-fyzikální fakulta; 2012. Available from: CU Digital repository.
26. Hendl J. Přehled statistických metod: analýza a metaanalýza dat. Prague: Portál; 2012.
27. Aragon-Correa JA, Hurtado-Torres N, Sharma S, Garcia-Morales VJ. Environmental strategy and performance in small firms: A resource-based perspective. *J Environ Manage* 2008; 86(1): 88-103.
28. Song H, Zhao CG, Zeng JP. Can environmental management improve financial performance: An empirical study of A-shares listed companies in China. *J Clean Prod* 2017; 141: 1051-1056.
29. Flammer C. Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach. *Manage Sci.* 2015; 61(11): 2549-2568.
30. Dowell G, Hart S, Yeung B. Do corporate global environmental standards create or destroy market value? *Manage Sci* 2000; 46(8): 1059-1074.
31. Deng X, Kang JK, Low BS. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *J Financ Econ* 2013; 110(1): 87-109.
32. Khan SAR, Dong QL. Impact of green supply chain management practices on firms' performance: An empirical study from the perspective of Pakistan. *Environ Sci Pollut Res.* 2017; 24(20): 16829-16844.
33. Mao ZF, Zhang S, Li XM. Low carbon supply chain firm integration and firm performance in China. *J Clean Prod* 2017; 153(1): 354-361.
34. Krause J, Tondlova M. Importance of environmental factors for the competitiveness of firms. *J Environ Prot Ecol.* 2014; 15(1): 374-381.
35. Daszynska-Zygodlo K, Slonski T, Zawadzki B. The market value of CSR performance across sectors. *Inž. Ekon.* 2016; 27(2): 230-238.
36. Slonski T, Daszynska-Zygodlo K, Zawadzki B. Relation of CSR and market measures of financial performance: International evidence. *Proceedings of the 11th International Scientific Conference on European Financial Systems; 2014 Jun 12-13*; Lednice, Czech Republic. Brno: Masaryk University; 2014. p. 542-549.
37. Koszewska M. CSR Standards as a Significant Factor Differentiating Textile and Clothing Goods. *FIBRES & TEXTILES in Eastern Europe* 2010; 18, 6(83): 14-19.

Received 02.11.2017 Reviewed 17.01.2018