



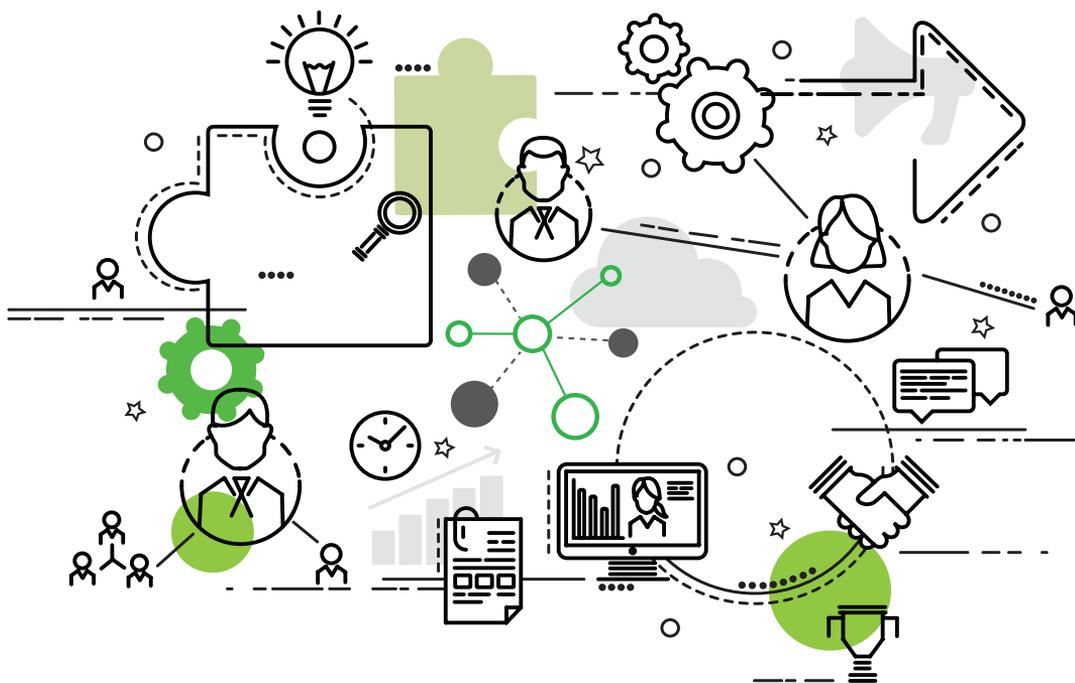
CRACOW
UNIVERSITY
OF ECONOMICS



FOUNDATION
OF THE CRACOW UNIVERSITY
OF ECONOMICS

KNOWLEDGE ECONOMY SOCIETY

CONTEMPORARY CHALLENGES
OF ECONOMIC RESOURCES MANAGEMENT



Edited by
Andrzej Jaki, Piotr Wójtowicz

KNOWLEDGE – ECONOMY – SOCIETY

**CONTEMPORARY CHALLENGES
OF ECONOMIC RESOURCES MANAGEMENT**

CRACOW UNIVERSITY OF ECONOMICS
Faculty of Management
FOUNDATION OF THE CRACOW UNIVERSITY OF ECONOMICS

KNOWLEDGE – ECONOMY – SOCIETY

CONTEMPORARY CHALLENGES OF ECONOMIC RESOURCES MANAGEMENT

Edited by

Andrzej Jaki, Piotr Wójtowicz

Cracow 2018

Reviewer

Piotr Bartkowiak

All papers have been prepared in English by the Authors

Wydanie publikacji zostało sfinansowane z dotacji na utrzymanie potencjału badawczego przyznanej Uniwersytetowi Ekonomicznemu w Krakowie

The book was financed with subsidies for maintaining the research capacity granted to the Cracow University of Economics

© Copyright by the Cracow University of Economics, Cracow 2018

ISBN 978-83-65907-40-0 (printed version)

ISBN 978-83-65907-41-7 (pdf on-line)

Publishing House

Foundation of the Cracow University of Economics
ul. Rakowicka 27, 31-510 Kraków, Poland

Table of contents

Introduction	9
--------------------	---

PART I FINANCIAL PERSPECTIVE OF CONTEMPORARY ECONOMIC PROCESSES

Chapter 1

Vladimir Mihajlović, Gordana Marjanović, Nenad Stanišić

Inflation Dynamics in the Reduced-form New Keynesian Phillips Curve: The Case of Poland	13
---	----

Chapter 2

Ryszard Węgrzyn

The Shaping of Stock Exchange Indices after the Financial Crisis	23
--	----

Chapter 3

Oleksandr Baranovskyi, Myroslava Khutorna

Institutional Environment as a Precondition of an Effective System of Ensuring Credit Institutions' Financial Stability	33
---	----

Chapter 4

Dragomir Dimitrijević, Milan Kostić

Are Market Leaders More Prone to Fraud in Financial Statements Than Smaller Competitors?	45
--	----

Chapter 5

Artur Żuwała

Types and Applications of Cryptocurrencies	55
--	----

PART II HUMAN RESOURCES IN THE ORGANIZATIONS

Chapter 6

Piotr Zajac

Theoretical Aspects of Personnel Controlling 67

Chapter 7

Hubert Obora

Analysis of Human Errors in an Enterprise 79

Chapter 8

Maciej Walczak

Work Standardization in the Context of Improving the Value Stream in a Production 89

Chapter 9

Irmina Włodarska

Building Responsible Relationship between Enterprise and Employees 99

Chapter 10

Urszula Bukowska

Organizational Condition of Nicotinism of Employees 105

PART III DILEMMAS OF MARKETING MANAGEMENT

Chapter 11

Dagmar Lesakova

Design Aspects in Marketing Management of Retail Stores 115

Chapter 12

Irena Śliwińska

Consumer Perceived Risk Associated with Purchasing of Innovative Food Products 123

Chapter 13

Iryna Manczak, Katarzyna Sanak-Kosmowska

Personalization in Marketing in the Reception of Young Consumers 133

Chapter 14

Karolina Gąszcz

The Use of Social Media in Personal Marketing at an University 141

Chapter 15

Marcin Szplit, Andrzej Szplit

Business Analytics in Marketing 153

PART IV
CONTEMPORARY CHALLENGES
OF TRADE MANAGEMENT

Chapter 16*Adam Figiel*

The Integrating Role of Fair Trade in Value Creation Chains 161

Chapter 17*Anatolii Mazaraki, Nataliia Ilchenko*Prospects for Implementing an Omni-channel Strategy at the Wholesale Trade
Enterprises of Ukraine 171**Chapter 18***Grażyna Plichta*The Role of Trust in Shaping Experience in Transactions Concluded in a Traditional
Manner and via the Internet 179**Chapter 19***Karolina Orzeł*

Advantages of Private Label – Retailer’s and Manufacturer’s Perspective 185

Chapter 20*Olfat Chalha*

The Correlation between Mood and Trading Behavior 195

Authors 203

Introduction

Organised economic resources are the basis of the functioning of every enterprise. A proper choice of those resources, their correlation and the ability to use them determine the effectiveness of an enterprise and the efficiency of its operations, expressed in the capability of achieving goals. Perceiving an enterprise as a unique bundle of various types of economic resources is the basis of the resource-based view which in the 1980s was conceptualised and developed as a stream of strategic management. The approach perceives economic resources and the ability to use them as the fundamental source of competitive advantage of an enterprise and its capability of generating profits. The turn of the 20th and 21st century was at the same time related to the exposure of the role of intangible assets with the simultaneous reduction of the role of tangible assets as the base for building the competitiveness of an enterprise and shaping the desired speed of its development. It is accompanied by the progressing intellectualisation of economic processes and the growing significance of intellectual capital as an economic resource of an enterprise and its value creation factor.

The mentioned conditionings of the functioning and development of enterprises became a premise for the creation of this monograph arising from the cooperation of the academia of the Faculty of Management, Cracow University of Economics and the representatives of other Polish and foreign scientific and research centres. The publication is divided into the following four parts:

1. Financial Perspective of Contemporary Economic Processes.
2. Human Resources in the Organization.
3. Dilemmas of Marketing Management.
4. Contemporary Challenges of Trade Management.

The first part of the book entitled *Financial Perspective of Contemporary Economic Processes* exposes a significant attribute of market economy and the logic of the functioning and goals of enterprises, namely finance. Financial processes and decisions have a vital impact on the behaviours and effectiveness of the functioning of all market entities, including enterprises. The financial perspective of their activities is at the same time manifested in the influence of internal and external factors which determine the processes of enterprise economic resources management.

The second part, entitled *Human Resources in the Organization*, exposes complex conditionings of the use of the mentioned resources in the activities of organisations. A change in the perception of human resources, related, among others, to the introduction and spread of the term of human capital, which is the key component of intellectual capital, exposed the significance of employees as an enterprise stakeholders and the need to take care of relations between them and the enterprise. It also requires the use of analytical and controlling tools in order to increase the effectiveness of human resources.

The third part of the monograph, *Dilemmas of Marketing Management*, concentrates on the exposure of the importance of marketing resources and the possibilities to use them in the enterprise.

At the same time it is connected with the process of redefining the value chain and close integration of the marketing management sphere with the financial system of the enterprise. It is accompanied by the process of the diffusion of innovation and the spread of the use of the Internet as the basis for the construction of new business models of enterprises.

The fourth part, entitled *Contemporary Challenges of Trade Management*, is the complementation of the deliberations included in the previous part. It depicts the key conditionings of trade activity management, including trade management, with the exposure of operating and strategic activities focused on the reinforcement of the competitive position of an enterprise on the market.

Andrzej Jaki, Piotr Wójtowicz

PART I

FINANCIAL PERSPECTIVE OF CONTEMPORARY ECONOMIC PROCESSES



Chapter 1

Inflation Dynamics in the Reduced-form New Keynesian Phillips Curve: The Case of Poland

Vladimir Mihajlović, Gordana Marjanović, Nenad Stanišić

1. Introduction

According to the new consensus macroeconomic theory, low and stable inflation rate represents one of the basic goals of economic policy. This is also a precondition for the achievement of other macroeconomic targets, such as closing-up output gap, reducing the unemployment rate, and equilibrating the balance of payments.

One of the most significant relations in macroeconomic theory is associated to the Phillips curve. Originally proposed by Phillips (1958), the curve represented the relationship between changes in wage rate and unemployment rate, which was reformulated in the relationship between inflation rate and unemployment rate. In the new consensus macroeconomics, the most common variant of the curve is the New Keynesian Phillips curve, which is often presented in the following form in related literature (Galí, 2000, pp. 5-6):

$$\pi_t = \beta E_t(\pi_{t+1}) + \lambda mc_t, \quad (1)$$

where:

π_t denotes inflation rate in period t ,

β represents discount factor,

$E_t(\pi_{t+1})$ is an expected future inflation rate in period t ,

λ is the function of price change frequency

mc denotes real marginal costs.

According to equation (1), actual inflation rate depends on expected future inflation rate and dynamics of real marginal costs. According to the alternative variant of the New Keynesian Phillips curve, which will be elaborated in the third section, the inflation rate depends on output gap instead of on marginal costs.

The aim of the chapter is to separate real factors of inflation dynamics based on the New Keynesian Phillips curve, namely real marginal costs and output gap, and examine their short-run and long-run impact on inflation rate in Poland. The main intention is to assess the validity

of that kind of Phillips curve, given in the reduced form. In line with that, the research hypotheses in the chapter are as follows:

H₁: The reduced form New Keynesian Phillips curve is valid concept in light of the nature of the relationship between inflation rate and real marginal costs in Poland, on the one hand, and inflation rate and output gap, on the other hand.

H₂: Dynamics of real marginal costs and output gap, in the reduced-form New Keynesian Phillips curve, explain large part of short-run and long-run variations of the inflation rate in Poland.

The chapter is organised as follows: the second section presents relevant literature review, the third section explains the derivation of the reduced-form New Keynesian Phillips curve and research methodology, the fourth section provides research results and discussion, and the last section is the conclusion.

2. Literature review

The concept of the New Keynesian Phillips curve was a subject of many works. Some of them examined its validity, and others investigated dynamics of inflation and unemployment rate in different countries. For instance, Dabušinskas and Kulikov (2007) examined inflation dynamics in Estonia, Latvia, and Lithuania between 1995 and 2005. By using the New Keynesian Phillips curve, they concluded that there was a limited role of costs in the explanation of inflation process. Rather, the actual inflation rate is affected by inflation expectations. Virbickas (2012) and Vasilev (2015) came to similar conclusions analysing the data for Lithuania and Hungary, respectively.

Bouda (2013) investigated the validity of the New Keynesian Phillips curve in Czech Republic between 2001 and 2012. He came to the conclusion that the expected inflation had the main impact on actual inflation, together with monetary policy shocks. Danišková and Fidrmuc (2011) estimated the Phillips curve for the same country. Saman and Pauna (2013) estimated the New Keynesian Phillips curve for Romania, using to models that differed in the assumption regarding the speed of adjustment of the cyclical unemployment to changes in output. Vašíček (2011) analysed inflation dynamics in The Visegrád Group of countries, and concluded, *inter alia*, that the claim of New Keynesians, that the real marginal cost is the main inflation-forcing variable, is fragile.

In some papers, the analysis has shown that the hybrid variant of the New Keynesian Phillips curve better fits to data about inflation rate and expectations of economic subjects. For example, Basarac, Škrabić, and Sorić (2011) analysed the validity of the hybrid New Keynesian Phillips curve in nine countries in transition and concluded that long-run cointegration relationship existed among actual inflation, expected inflation, and output gap. Leith and Malley (2007) investigated how firms in G7 countries set prices in conditions of monopolistic competition and to what extent New Keynesian Phillips curve represents inflation dynamics in such conditions. Their conclusion is that the hybrid variant of the curve better describes the changes in inflation rate. Some other papers also gave support to the hybrid variant of the curve (Guay & Pelgrin, 2004; Dupuis, 2004; Sahu, 2013; Lanne & Luoto, 2013; Medel, 2015; Nakahira, 2015). However, there is no definite answer which variant has better empirical verification.

The main novelty of the analysis in the paper reflects in focusing solely on real factors of inflation dynamics and separating short-run from long-run impact of the factors, which is allowed by research methodology, based on Vector Autoregression.

3. The reduced-form New Keynesian Phillips curve derivation, data, and research methodology

Starting from the equation for the New Keynesian Phillips curve (1), one can define the set of presumptions to obtain its reduced form. If we assume that the expectations of economic agents are rational, so the difference between actual and expected inflation rate equals zero, and that the value of parameter β equals one¹, the equation (1) could be formulated to include *ex post* realised future inflation rate instead of the expected future inflation rate:

$$\pi_t = \pi_{t+1} + \lambda mc_t. \quad (2)$$

If we “move” the relation (2) one time lag backwards, as suggested in Krznar (2011, p. 14):

$$\pi_{t-1} = \pi_t + \lambda mc_{t-1}, \quad (3)$$

and reformulate, we obtain:

$$\pi_t - \pi_{t-1} = -\lambda mc_{t-1}. \quad (4)$$

This equation represents the reduced-form New Keynesian Phillips curve, which suggests negative relationship between the changes in inflation rate and changes in real marginal costs. Due to the lack of data, unit labour costs, which represent the share of the sum of wages in nominal output (Bludnik, 2009, p. 18), were used as an approximation for real marginal costs in the paper:

$$mc_t = \frac{w_t l_t}{p_t y_t}, \quad (5)$$

where:

- w denotes nominal wage,
- l denotes number of employees,
- p is a price level,
- y represents output.

Bearing in mind the approximation of real marginal costs, and the fact that $\pi_{t-1} - \pi_t \equiv \Delta\pi_t$, the equation for reduced-form Phillips curve, which is the subject of estimation, is obtained:

$$\Delta\pi_t = -\lambda ulc_{t-1}, \quad (6)$$

where:

- ulc denotes unit labour costs.

In the second variant, the New Keynesian Phillips curve is often presented with output gap instead of marginal costs (Galí, 2008, pp. 133-134). Output gap represents the difference between actual and potential output, and could be presented as follows:

¹ In other words, that presumption means that the long-run Phillips curve is vertical.

$$x_t = y_t - y_t^*, \quad (7)$$

where:

x denotes output gap,

y and y^* denote actual and potential output, respectively.

Bearing in mind the same set of assumptions, the reduced-form New Keynesian Phillips curve with output gap could be presented as:

$$\Delta\pi_t = -\lambda x_{t-1}. \quad (8)$$

Hence, in the paper were analysed two models of the New Keynesian Phillips curve in reduced form: one with the unit labour costs, and other with the output gap. Validity of the models is evaluated on the basis of quarterly data for Poland on actual inflation rate, unit labour costs and output gap between 2000Q1 and 2017Q4. All the data are obtained from the OECD Database. The inflation rate is presented by consumer price index². Unit labour costs are also given in the form of index numbers³. The output gap is calculated by the application of Hodrick-Prescott (HP) filter (Hodrick & Prescott, 1981) on original time series about quarterly gross domestic product (GDP) in US dollars for Poland⁴. The value of output gap is obtained by subtracting the filtered value of GDP (potential output) from its original value (actual output). The smoothing parameter used for HP filtering is 1600, which is standard value for data on a quarterly basis. All-time series were transformed into the logarithmic forms prior to further analysis.

The research in the paper is based on VAR methodology (Vector Autoregression), using Vector Error Correction model (VEC model). The precondition for VEC model application is that the analysed time series are cointegrated. For that purpose, Johansen cointegration test was used in the paper (Johansen, 1991). On the other hand, the precondition for cointegration analysis is that the included time series are non-stationary in level and stationary in the first differences. The Augmented Dickey-Fuller test (ADF test) was used to check whether that condition is fulfilled.

The presence of cointegration of two time series indicates the existence of long-run equilibrium relationship between them, i.e. their common trend of movement. In line with that, that relationship between inflation rate and unit labour costs could be expressed by the equation:

$$\pi_t = \beta_0 + \beta_1 ulc_t + \varepsilon_t, \quad (9)$$

where:

ε_t represents random error.

If the time series for inflation and unit labour costs are cointegrated, then ε_t represents deviation of variables from its equilibrium level (equilibrium error), and could be expressed as follows:

$$\varepsilon_t = \pi_t - \beta_0 - \beta_1 ulc_t. \quad (10)$$

² <http://stats.oecd.org/Index.aspx?DataSetCode=EO>

³ http://stats.oecd.org/Index.aspx?DataSetCode=ULC_EEQ#

⁴ <http://stats.oecd.org/Index.aspx?DataSetCode=QNA#>

In other words, the value of ε_t in VEC model expresses Error Correction Term (ECT), which shows how deviations from long-run equilibrium are corrected through the time series. In line with that, the change in the inflation rate could be presented by the following equation:

$$\Delta\pi_t = \varphi ECT_{t-1} = \varphi(\pi_{t-1} - \beta_0 - \beta_1 ulc_{t-1}), \quad (11)$$

where:

φ is a parameter which measures the dynamics of correction of the inflation rate to the equilibrium relationship, defined by cointegration equation.

The estimated value of the parameter should be negative and statistically significant in order to conclude that there is a long-run relationship between variables. In addition to long-run relationship, the complete VEC model consists of short-run relations, and could be presented as follows:

$$\Delta\pi_t = \beta_0 + \beta_1 \Delta ulc_t + \varphi ECT_{t-1}. \quad (12)$$

The short-run relationship between variables exists if the estimated value of parameter β_1 is statistically significant and different from zero, which will be checked using Wald test.

Finally, the stability of the model is checked by the application of diagnostic tests for residuals: Jarque-Bera test for normality, Breusch-Godfrey test for autocorrelation and Breusch-Pagan-Godfrey test for heteroskedasticity.

4. Results and discussion

Based on applied methodology, the results of the ADF test are presented in Table 1.

Table 1. The results of ADF test for analysed time series for Poland between 2000Q1 and 2017Q4

Variable	Level		First Difference	
	<i>t</i> – statistic	<i>p</i> – value	<i>t</i> – statistic	<i>p</i> – value
Inflation (π)	-0.809242 (5)	0.8098	-3.350243 (4)	0.0165
Unit labour costs (<i>ulc</i>)	-2.527329 (4)	0.1137	-7.811196 (3)	0.0000
Output gap (<i>x</i>)	-2.853708 (4)	0.1841	-4.558907 (9)	0.0028

Note: The numbers of time lags, based on Schwarz information criterion, are given in the parenthesis.

Source: own work, based on OECD Database.

The presence of unit root in time series given in level, and stationarity in first differences, is a condition for the application of cointegration analysis. According to the results, that condition is fulfilled.

According to several information criteria⁵, the selected number of time lags is two, in both models. Hence, Table 2 displays the results of cointegration analysis, based on Johansen test. It is obvious that there is one cointegration vector in each model, indicating the long run relationship between inflation rate and unit labour costs, and inflation rate and output gap, respectively.

⁵ The following information criteria were used in the analysis: Sequential modified LR test statistic, Final prediction error, Akaike information criterion, Schwarz information criterion, and Hannan-Quinn information criterion.

Table 2. The results of Johansen test of cointegration for analysed time series for Poland between 2000Q1 and 2017Q4

Number of cointegration vectors	Eigenvalue	Trace statistics	0.05 Critical value	<i>p</i> – value
Time series: π and ulc; Trend assumption: Linear deterministic trend				
None*	0.2955	25.2398	15.4947	0.0013
At most 1	0.0154	0.0713	3.8412	0.3007
Time series: π and x; Trend assumption: No deterministic trend (restricted constant)				
None*	0.2366	26.3717	20.2618	0.0063
At most 1	0.1062	7.7443	9.1645	0.0923

Note: Symbol “*” denotes the rejection of the hypothesis at 0.05 level

Source: own work, based on OECD Database.

The cointegration vectors are as follows:

$$\Delta\pi_t = -0.0409ulc_{t-1} - 1.9285 \quad (13)$$

$$\Delta\pi_t = -0.0339x_{t-1} - 2.0238 \quad (14)$$

According to the applied VEC methodology, the error correction terms (factors) are as given:

$$ECT = \Delta\pi_t + 0.0409ulc_{t-1} + 1.9285 \quad (15)$$

$$ECT = \Delta\pi_t + 0.0339x_{t-1} + 2.0238 \quad (16)$$

Finally, the estimated VEC models for Poland are as follows:

$$\begin{aligned} \Delta(\Delta\pi_t) = & 0.1594\Delta(\Delta\pi_t)_{-1} - 0.0471\Delta(\Delta\pi_t)_{-2} - 0.0003\Delta(ulc_{t-1})_{-1} \\ & - 0.0003^* \Delta(ulc_{t-1})_{-2} - 0.0021^* - 0.0087^* ECT_{-1} \end{aligned} \quad (17)$$

$$\begin{aligned} \Delta(\Delta\pi_t) = & 0.1448\Delta(\Delta\pi_t)_{-1} - 0.0383\Delta(\Delta\pi_t)_{-2} - 0.0003\Delta(x_{t-1})_{-1} \\ & - 0.0004\Delta(x_{t-1})_{-2} - 0.0125^* ECT_{-1} \end{aligned} \quad (18)$$

The values marked with an asterisk are statistically significant at 0.05 level. We can see in the equation (17) that the value of the coefficient of the error correction term is negative and statistically significant, which indicates that there is a long run relationship between inflation rate and unit labour costs. In each quarter, the deviation of the inflation rate from long run relationship with unit labour cost is corrected by 0.87%. In the short run, there is only a relationship between inflation rate and unit labour costs with two time lags. In other words, these costs have influence

on inflation rate after six months (two quarters). This result is confirmed by the application of Wald test (t -statistic = -2.1383 ; p -value = 0.0364).

The equation (18) shows that long run relationship between inflation rate and output gap exists, as well. The value of the coefficient with the error correction term is negative and statistically significant and indicates that the deviation of the inflation rate from long run relationship with output gap is corrected by 1.25%. On the other hand, there is no statistically significant short run relationship between the two variables.

Finally, the stability of the model is checked by the application of normality test, autocorrelation test, and heteroskedasticity test for residuals of the models. According to the results, the residuals of the models are normally distributed and there is no serial correlation and heteroskedasticity, indicating that the models are well-suited.

Table 2. The results of diagnostic tests for residuals of the models

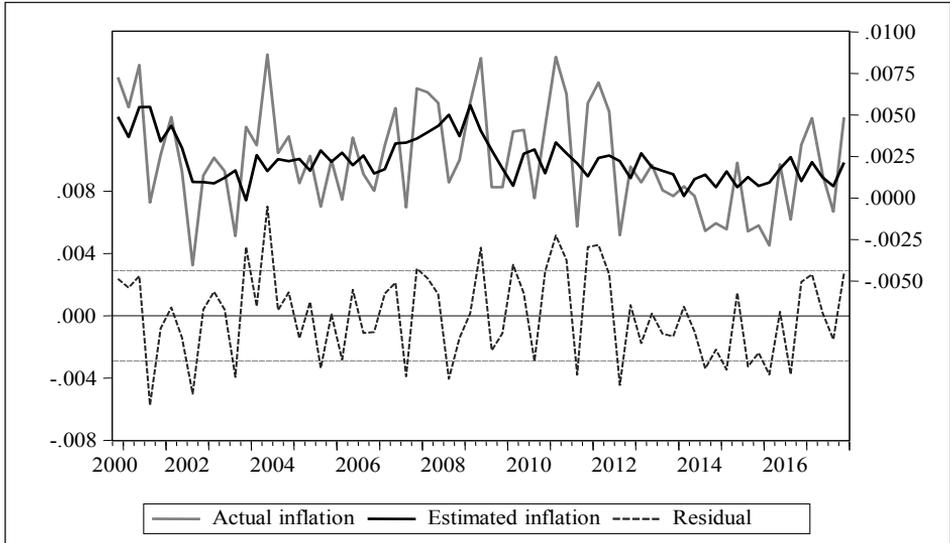
Test	π and ulc	π and x
Normality: Jarque-Bera statistic	1.1774 (0.5551)	1.7140 (0.4244)
Breusch-Godfrey Serial Correlation LM test	0.0910 (0.9131)	0.6278 (0.5371)
Heteroskedasticity test: Breusch-Pagan-Godfrey	0.5876 (0.7389)	0.5383 (0.7771)

Note: Number in parenthesis represents the p -value.

Source: own work, based on OECD Database.

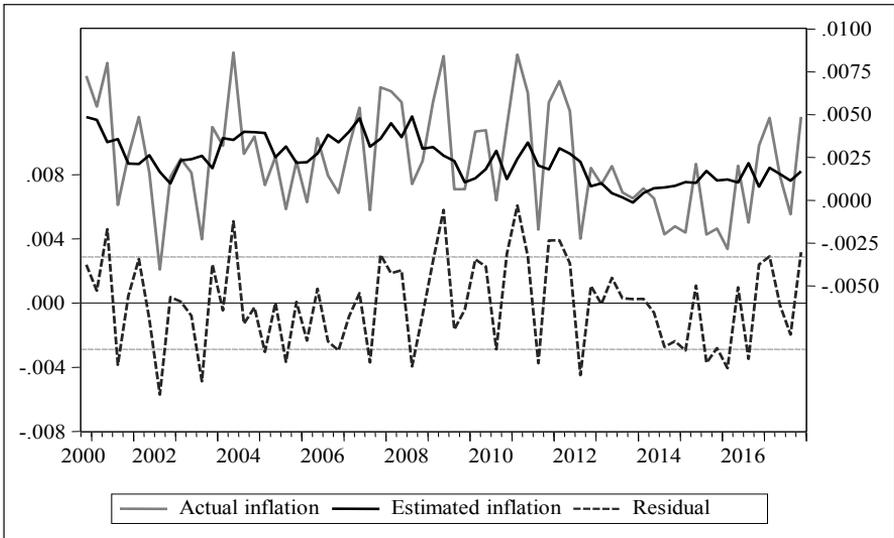
The graphical presentation of the relation between actual and inflation rate, estimated by the models, can be seen in Figure 1 (model with unit labour costs) and Figure 2 (model with output gap). Although the models are well-suited, it is obvious that, on the basis of changes of unit labour costs and output gap, one can explain only a small proportion of variations in the inflation rate. More precisely, the first model explains 18.13% of variations in the inflation rate (according to the value of the coefficient of determination, $R^2=0.1813$). With second model, one can explain 18.35% of variations in the inflation rate. Although the applied analysis confirms the validity of the reduced-form New Keynesian Phillips curve in the case of Poland, there is a need to include more variables in the model to improve its prediction power (the expected rate of inflation, the interest rate, and exchange rate dynamics, etc.).

Figure 1. The actual and estimated rates of inflation (model with unit labour costs) in Poland between 2000Q1 and 2017Q4



Source: own work.

Figure 2. The actual and estimated rates of inflation (model with output gap) in Poland between 2000Q1 and 2017Q4



Source: own work.

5. Conclusion

The inflation rate represents the result of changes in numerous factors, among which the real factors are particularly important. For that reason, the research in the paper was based on the New Keynesian Phillips curve, presented in reduced form, without the impact of expected future inflation rate. Although it represents the main limitation of the research, the obtained results allow drawing of some valid conclusions.

Firstly, the concept of the reduced-form New Keynesian Phillips curve is confirmed in the case of Poland, due to the relationships between the change in inflation rate and change in unit labour costs (as a proxy for real marginal costs), on the one hand, and change in inflation rate and change in output gap, on the other, are like the equation of the curve suggests. At the same time, the first hypothesis (H_1) is confirmed. In addition, the analysis showed that there is the long-run relationship between the variables.

On the other hand, the results of the analysis indicated that, in the case of Poland, there is only short-run relationship between the inflation rate and unit labour cost with two time lags. There is no short-run relationship between the inflation rate and output gap.

Finally, the suggested models of inflation dynamics in Poland, based on the reduced-form New Keynesian Phillips curve, explain only a small part of the inflation rate variations in short and long run (only about 18%). In other words, there is insufficient evidence for the second hypothesis (H_2) to be confirmed. It is not surprising, bearing in mind the complexity of the inflation process in all the countries and myriad of factors which must be taken to analysis in order to get some valid projections on the inflation rate dynamics.

Bibliography

1. Basarac, M., Škrabić, B., & Sorić, P. (2011). The Hybrid Phillips Curve: Empirical Evidence from Transition Economies. *Czech Journal of Economics and Finance*, 61(4), 367-383.
2. Bludnik, I. (2009). The New Keynesianism – Proclamation of a Consensus? *Poznan University of Economics Review*, 9(1), 5-24.
3. Bouda, M. (2013). Estimation of the New Keynesian Philips Curve in the Czech Environment. *Argumenta Oeconomica Pragensia*, 5, 31-46.
4. Dabušinskas, A., & Kulikov, D. (2007). *New Keynesian Phillips Curve for Estonia, Latvia and Lithuania*. Working Paper No. 7, Bank of Estonia, Estonia.
5. Danišková, K., & Fidrmuc, J. (2011). Inflation Convergence and the New Keynesian Phillips Curve in the Czech Republic. *AUCO Czech Economic Review*, 5(2), 99-115.
6. Dupuis, D. (2004). *The New Keynesian Hybrid Phillips Curve: An Assessment of Competing Specifications for the United States*. Working Paper 2004-31, Bank of Canada.
7. Galí, J. (2000). The Return of the Phillips Curve and Other Recent Developments in Business Cycle Theory. *Spanish Economic Review*, 2, 1-10.
8. Galí, J. (2008). *Monetary Policy, Inflation, and the Business Cycle: An Introduction to New Keynesian Framework*. New Jersey: Princeton University Press.
9. Guay, A., & Pelgrin, F. (2004). *The U.S. New Keynesian Phillips Curve: An Empirical Assessment*. Working Paper 2004-35, Bank of Canada.
10. <http://stats.oecd.org/Index.aspx?DataSetCode=EO>

11. http://stats.oecd.org/Index.aspx?DataSetCode=ULC_EEQ#
12. <http://stats.oecd.org/Index.aspx?DataSetCode=QNA#>
13. Hodrick, R.J., & Prescott, E.C. (1981). *Postwar U.S. Business Cycles: An Empirical Investigation*. Discussion Paper No. 451, Illinois: Northwestern University.
14. Johansen, S. (1991). Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models. *Econometrica*, 59, 1551-1580.
15. Krznar, I. (2011). *An Analysis of the Domestic Inflation Rate Dynamics and the Phillips Curve*. Working Papers W-31, Croatian National Bank.
16. Lanne, M., & Luoto, J. (2013). Autoregression-based Estimation of the New Keynesian Phillips Curve. *Journal of Economic Dynamics and Control*, 37(3), 561-570.
17. Leith, C., & Malley, J. (2007). Estimated Open Economy New Keynesian Phillips Curves for the G7. *Open Economies Review*, 18(4), 405-426.
18. Medel, C.A. (2015). Inflation Dynamics and the Hybrid New Keynesian Phillips Curve: The Case of Chile. *Monetaria*, January-June, 25-69.
19. Nakahira, K. (2015). The Hybrid New Keynesian Phillips Curve and Firm-Level Inflation Expectations in Japan. *International Journal of Economic Behavior and Organisation*, 3(2-1), 60-72.
20. Phillips, A.W. (1958). The Relation between Unemployment and the Rate of Money Wage Rates in the United Kingdom, 1861-1957. *Economica*, 34(135), 254-281.
21. Sahu, J.P. (2013). Inflation Dynamics in India: A Hybrid New Keynesian Phillips Curve Approach. *Economic Bulletin*, 33(4), 2634-2647.
22. Saman, C., & Pauna, B. (2013). New Keynesian Phillips Curve for Romania. *Romanian Journal of Economic Forecasting*, 2/2013, 159-171.
23. Vašíček, B. (2011). Inflation Dynamics and the New Keynesian Phillips Curve in Four Central European Countries. *Emerging Markets Finance and Trade*, 47(5), 71-100.
24. Vasilev, A. (2015). New Keynesian Phillips Curve Estimation: The Case of Hungary (1981-2006), *Managing Global Transitions*, 13(4), 355-367.
25. Virbickas, E. (2012). *New Keynesian Phillips Curve in Lithuania*. Working Paper Series, No. 14/2012, Lietuvos Bankas, Vilnius, Lithuania.

Chapter 2

The Shaping of Stock Exchange Indices after the Financial Crisis*

Ryszard Węgrzyn

1. Introduction

The latest financial crisis occurred on world stock exchanges particularly in October 2008, when after the collapse of Lehman Brothers Bank there were rapid declines of indices. The most famous index of New York Stock Exchange, DJIA, marked falls at eight subsequent sessions at that time, and on 15 October 2008 its daily decline was almost 8%.

However, the beginning of the slump on the world stock exchanges, lasting for over a year and a half, began as early as in the second half of 2007. On the other hand, in the first months of 2009 we could observe the slowdown of the falls of the world indices and the beginning of the shaping of a new boom (for more, see: Węgrzyn, 2010).

More than 9 years has passed since then, thus, it is worth looking closer at the shaping of indices in this post-crisis period, particularly in the context of current forecasts concerning the slowdown of economic growth in the European countries and in Poland, the expected rise of inflation and occurring opinions about a possible wave of another crisis.

The aim of this chapter is to present the results of the analysis of the shaping of stock market indices in the world in relation to the present economic situation, and in particular, to indicate differences in the shaping of the indices which represent the shares of companies from different geographical regions and countries.

A more detailed analysis concerning the means and standard deviations of individual indices was conducted, as well as long-term changes in the stock market indices were analyzed. Stock market indices were chosen for analysis considering mainly the criterion of the stock market capitalization size they represent, as well as the criterion assuring the representation of all geographical regions.

The analysis covered the total of 15 stock market indices representing the largest world stock exchanges and individual geographical regions, in the period from 2 January to 30 April 2018.

* The publication was financed from the funds granted to the Faculty of Management at Cracow University of Economics, within the framework of the subsidy for the maintenance of research potential.

2. An analysis of long-term changes in stock exchange indices

The choice of stock exchange indices for the analysis considered mainly the criterion of the value of capitalization of the stock exchange¹ which a given index represents, and the criterion ensuring the representation of individual geographical regions. Thus, North America is represented by indices announced by New York Stock Exchange and by the NASDAQ, as well as Toronto Stock Exchange. Then, Europe is represented by indices calculated at Bourse de Paris, London Stock Exchange, Deutsche Börse, as well as Moscow and Warsaw Stock Exchanges. Asia is represented by indices calculated for Tokyo Stock Exchange, Shanghai Stock Exchange, Hong Kong Exchanges, Bombay Stock Exchange and Australian Securities Exchange. Latin America is represented by indices calculated for two biggest stock exchanges of the region: São Paulo Stock Exchange and Mexican Stock Exchange. More exact information on the analyzed indices are presented in Table 1.

Table 1. Selected stock market indices

Index	Full name	Index description	The source of information
DJIA	Dow Jones Industrial Average	Includes 30 leading American industrial companies. Announced by NYSE Euronext which arose in 2007 as a result of a merger of New York Stock Exchange and Euronext	www.nyse.com
NASDAQ	NASDAQ Composite	Includes shares quoted on the American market NASDAQ (National Association of Securities Dealers Automated Quotations)	www.nasdaq.com
TSX	Toronto Stock Exchange Composite Index	Includes shares of the Canadian companies quoted on Toronto Stock Exchange, which is a part of TMX Group	www.tsx.com
CAC	CAC 40 (Cotation Assistée en Continu)	Includes shares of 40 largest companies quoted at Paris Stock Exchange (Bourse de Paris) being a part of Euronext, and, since 2007, of NYSE Euronext	www.euronext.com
FTSE250	Financial Times Stock Exchange 250	Includes shares quoted at London Stock Exchange	www.londonstockexchange.com
DAX	DAX (Deutscher Aktienindex)	Includes shares of 30 biggest German companies quoted at Deutsche Börse	deutsche-boerse.com
RTS	RTS Index (Russian Trading System)	Includes 50 largest Russian companies quoted at Moscow Stock Exchange (RTS Stock Exchange)	www.rts.ru

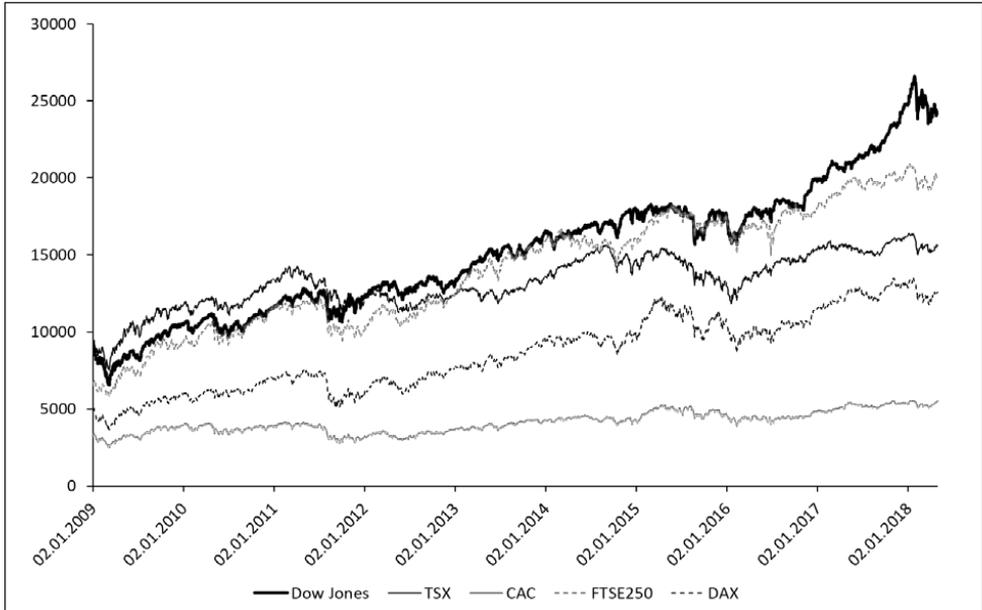
¹ Data considering the national capitalization of stock exchanges, provided by the World Federation of Exchange are included, www.world-exchanges.org (access date: 4 May 2018).

WIG20	Warszawski Indeks Giełdowy 20	Includes 20 largest Polish companies quoted at Warsaw Stock Exchange	www.gpw.com.pl
Nikkei	Nikkei 225 (Nikkei heikin kabuka)	Includes 225 largest companies quoted at Tokyo Stock Exchange	www.tse.or.jp
SSE	SSE Composite (Shanghai Stock Exchange)	Includes Chinese shares quoted at Shanghai Stock Exchange	www.sse.com.cn
Hang Seng	Hang Seng Index	Includes 33 largest companies quoted at Stock Exchange of Hong Kong, since 2000 a part of Hong Kong Exchanges and Clearing Limited (HKEx)	www.hkex.com.hk
SENSEX	Bombay Stock Exchange Sensitivity Index, another name BSE30	Includes 30 largest companies quoted at Indian Bombay Stock Exchange	www.bseindia.com
All Ordinaries	All Ordinaries	Includes Australian common stock traded on Australian Securities Exchange	www.asx.com.au
Bovespa	Bovespa Index (BOlsa de Valores dE São PAulo)	Includes shares quoted at Bovespa (São Paulo Stock Exchange), BM&FBOVESPA at present, it came into being in 2008 r. as a result of a merger between Brazilian Mercantile & Futures Exchange (BM&F) and São Paulo Stock Exchange (Bovespa)	www.bovespa.com.br
IPC	IPC (Índice de Precios y Cotizaciones)	Includes shares quoted at Mexican Stock Exchange	www.bmv.com.mx

Source: author's own study.

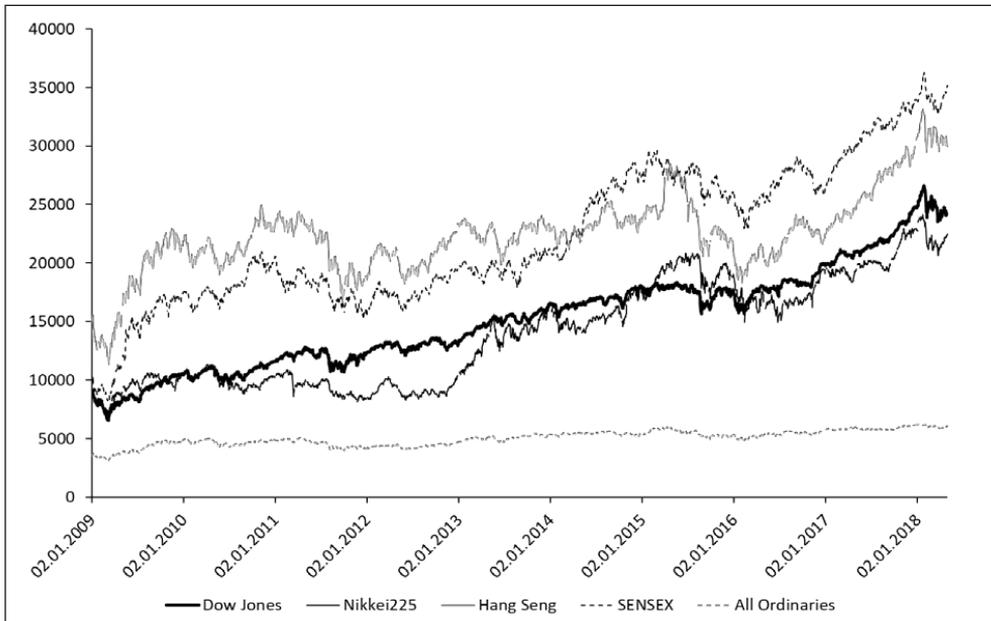
In 2003 a long period of boom started on many markets, which lasted till about mid-2007. In the second half of 2007, the majority of the analyzed indices passed from the boom stage to a slump which deepened quickly in 2008, particularly in January and October. The slump brought losses of indices of 50-70%. A repeated reversal of trends and the beginning of another boom took place most often in February or March 2009, particularly on 9 March 2009, when five of the analyzed indices bounced back. The shaping of indices at that time can be observed in Figures 1-4, which include jointly the period from 2 January 2009 to 30 April 2018. Before drawing the figures, the observation dates were appropriately synchronized.

Figure 1. The shaping of indices in the period of 2009/01/02 – 2018/04/30 (1)



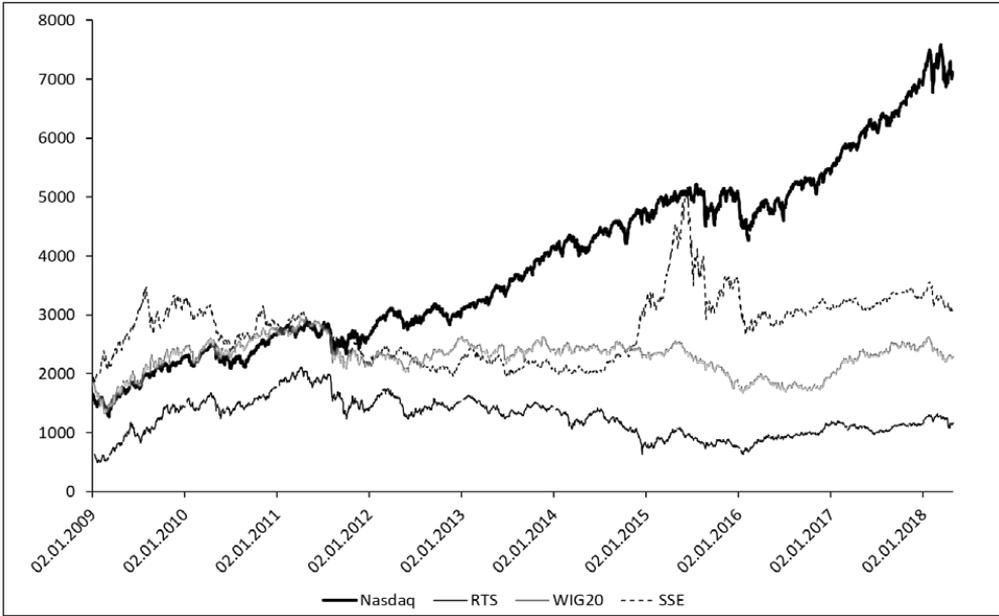
Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

Figure 2. The shaping of indices in the period of 2009/01/02 – 2018 /04/30 (2)



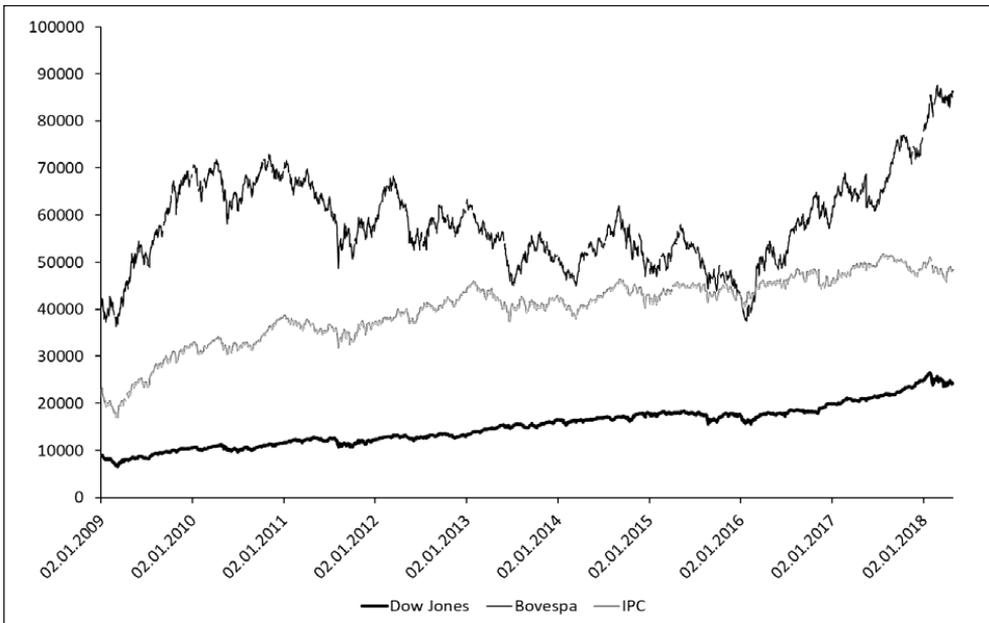
Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

Figure 3. The shaping of indices in the period of 2009/01/02 – 2018/04/30 (3)



Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

Figure 4. The shaping of indices in the period of 2009/01/02 – 2018 /04/30 (4)



Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

In the period of over 9 years presented in Figures 1-4 we can mostly observe a distinct upward trend of the analyzed stock exchange indices. In particular, especially one trend can be seen in Figure 1 in which Dow Jones, TSX, CAC, FTSE250 and DAX indices were shown. In the figure the point of reference is the DJIA index, presented in bold line, which shows the strongest upward trend. The TSX index in the first years surpasses the DJIA index but then its growth rate declines. FTSE250 and DAX shape similarly to DJIA, but contrary to DJIA they do not mark such accelerated growth by the end of 2017. On the other hand, the upward trend of the CAC index is much weaker.

In Figure 2, also in the context of the DJIA index, Nikkei225, Hang Seng, SENSEX and All Ordinaries indices are presented. Nikkei225 shapes in the way which is most similar to DJIA, but it behaves much more dynamically, sometimes going down much lower than DJIA, and on other occasions surpassing it a lot. On the other hand, Hang Seng and SENSEX indices go up a lot in the initial period, but later their upward trend is similar to DJIA. The weakest upward trend can be observed in the case of the Australian Stock Exchange index.

Figure 3 presents indices with the lowest levels, because in other figures their changes in time would not be clearly visible. In the figure, the point of reference is NASDAQ shown in bold line. In this context, RTS, WIG20 and SSE indices are presented, which in the initial period showed strong growths but later a downward trend and some stagnation appeared. The SSE index in 2015 marked a strong growth but also a strong decrease. In recent years the indices marked a mild upward trend.

The last of the figures presenting the shaping of indices includes Latin America indices against DJIA. The IPC index shapes similarly to DJIA, whereas the Bovespa index, after fast growth in 2009, shows a downward trend in the years 2010-2015 and a strong upward trend initiated in 2016.

In order to compare long-term changes in stock exchange indices, percentage changes of indices were calculated in the last 9 years. To avoid mistakes arising from accidental deviations of indices, arithmetic means from indices were calculated for April 2009 and April 2018, and then percentage changes in those means. In addition, annual geometrical means of percentage changes were calculated. The results of the calculations are presented in Table 2.

Based on the results included in Table 2, we can find out that during the whole period of the last 9 years, there has been a distinct growth of all the analyzed indices. The average annual increments of the indices fluctuated, however, from 2.71% to 17.64%. The largest annual increments were marked for the following indices: NASDAQ – 17.64%, SENSEX – 13.51% and DJIA – 13.15%, whereas the lowest ones for the following indices: SSE – 2.71%, WIG20 – 3.32% and RTS – 4.38%. Poor results of the latter could be observed in Figure 3.

Table 2. The changes in the shaping of stock market indices in the period of April 2009 – April 2018

Indices	The average – April 2009	The average – April 2018	Change (9 years)	The average yearly change
DJIA	7,992.12	24,304.21	204.10%	13.15%
NASDAQ	1,641.15	7,084.14	331.66%	17.64%
TSX	9,224.66	15,380.41	66.73%	5.84%
CAC	2,997.69	5,345.32	78.31%	6.64%
FTSE250	7,037.68	19,870.04	182.34%	12.22%
DAX	4,498.46	12,411.60	175.91%	11.94%
RTS	788.37	1,160.02	47.14%	4.38%

WIG20	1,699.15	2,279.19	34.14%	3.32%
Nikkei225	8,767.96	21,849.05	149.19%	10.68%
SSE	2,456.86	3,126.61	27.26%	2.71%
Hang Seng	14,960.13	30,450.76	103.55%	8.22%
SENSEX	10,911.20	34,145.68	212.94%	13.51%
All Ordinaries	3,665.69	5,946.49	62.22%	5.52%
Bovespa	45,241.46	85,032.32	87.95%	7.26%
IPC	21,477.24	48,163.94	124.26%	9.39%

Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

The results may be encumbered with various stages of the slump or the boom which can be observed in relation to individual indices. The image of the shaping of the SSE or Bovespa index differs substantially from the way of the shaping of majority of indices. The situation is similar also in the case of the RTS and WIG20 indices. With regard to WIG20, we should also pay attention to the fact that it shows a much weaker upward trend than the broadest index calculated on the Warsaw Stock Exchange – WIG. It arises from a faster increase in the prices of shares of smaller companies traded at this stock exchange and not included in WIG20.

Moreover, it should be pointed out that there is a number of factors differentiating individual countries and strongly influencing the situation on the stock market (see, e.g.: *Dostosowania...*, 2009, pp. 46, 58, 68). Among other things, different countries coped differently with the financial crisis and they were affected by it to a different extent. Where there were significant declines on the stock market, specific effects could also occur, leading to a decrease in the economic dynamics. Such effects include: consumption effect – consisting in the reduction of consumption accompanied by a drop in the value of financial assets of households, investment effect – related to a decrease in the interest in the purchase of securities, which leads to the limitation of financing investment ventures, and credit effect – related to the limitation of creditworthiness accompanied by the fall of the market value of the firm (Nawrot, 2009, pp. 18-19).

It should be also pointed that the last analyzed month, April 2018, was not a month with the highest level of indices. Since January 2018 a distinct decline has been marked for the majority of the indices. Associating this drop with the forecasts of a fall of the economic growth and the rise of inflation in the Euro zone and in Poland, we can wonder whether it is not a forecast of a longer slump. The policy of quantitative easing, applied quite commonly after the crisis, may bring unexpected results. Some authors emphasize a very important role of central banks in counteracting but also triggering crises (see: *Ponadnarodowa...*, 2009; Bernanke, 2000).

3. An analysis of expected rates of return and risk of stock exchange indices

The next step in the conducted analysis was the calculation of the basic statistics for index change rates in the period from 1 April 2009 – 30 April 2018, namely from the beginning of the shaping of the post-crisis boom. The statistics, in the form of arithmetic means, standard deviations and coefficients of variation, enabled to evaluate the expected rates of return and risk of individual stock exchange indices. Table 3 presents the results of the computations per annum, whereas

Figure 5 shows individual indices in the portfolio approach, where on one axis the expected rate of return (the mean) of the index is presented, and on the other one the risk measure (standard deviation) is shown.

Based on Table 3, we can find out that the highest expected rate of return is characteristic for the following indices: American NASDAQ – 18.07%, Hindu SENSEX – 15.73%, German DAX – 14.10%, British FTSE250 – 13.55% and American DJIA – 13.46% and Japanese Nikkei225 – 13.46%. The lowest standard deviations are marked for: Canadian TSX – 13.47%, Australian All Ordinaries – 14.14% and American DJIA – 14.36%. To compare the indices also the coefficients of variation were calculated as relative changeability measures being the ratio of standard deviation to the mean. In this case it turned out that the highest risk per unit of the rate of return occurs in the case of the following indices: Chinese SSE – 420.77%, Polish WIG20 – 307.76% and Russian RTS – 293.15%, and the lowest in the case of: American NASDAQ – 95.22%, American DJIA – 106.67% and Hindu SENSEX – 112.42%.

Table 3. The basic statistics of the shaping of the rates of changes in stock exchange indices in the period from 1 April 2009 – 30 April 2018 (per annum)

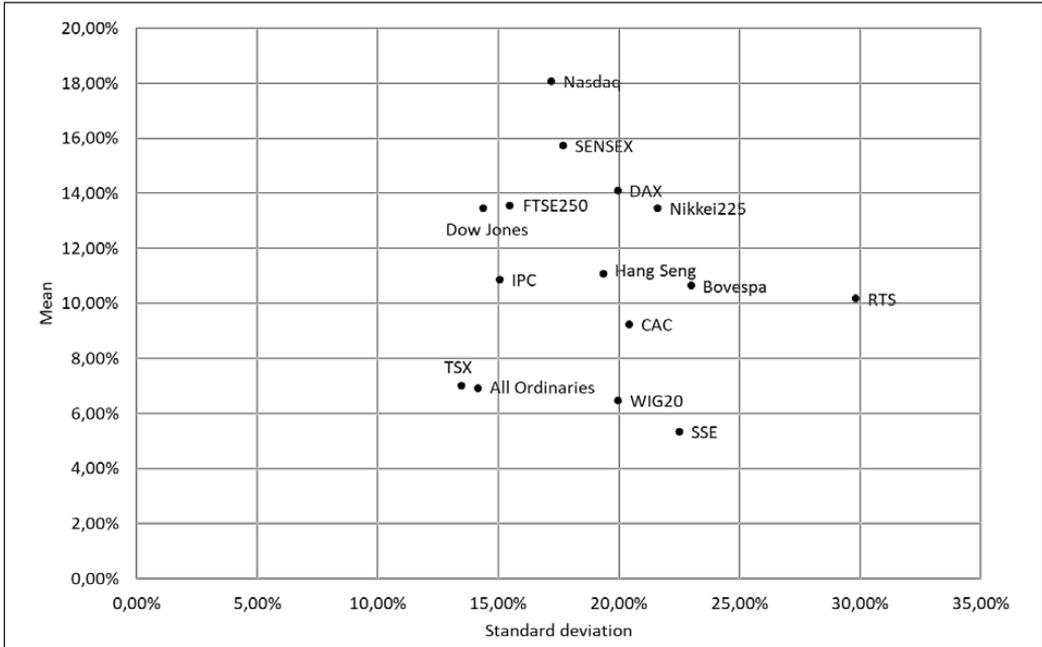
Indices	Mean	Standard deviation	Coefficient of variation
DJIA	13.46%	14.36%	106.67%
NASDAQ	18.07%	17.20%	95.22%
TSX	7.03%	13.47%	191.76%
CAC	9.24%	20.43%	221.09%
FTSE250	13.55%	15.47%	114.20%
DAX	14.10%	19.96%	141.54%
RTS	10.17%	29.82%	293.15%
WIG20	6.48%	19.94%	307.76%
Nikkei225	13.46%	21.60%	160.45%
SSE	5.35%	22.51%	420.77%
Hang Seng	11.07%	19.35%	174.78%
SENSEX	15.73%	17.68%	112.42%
All Ordinaries	6.92%	14.14%	204.38%
Bovespa	10.65%	22.98%	215.85%
IPC	10.87%	15.05%	138.44%

Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

On the other hand, based on Figure 5, we can assess which of the indices turned out the best for investors investing on individual markets with regard to the expected rate of return and risk. Of course, it is about investors operating on these markets in individual countries, and not foreign investors in the case of which also the shaping of exchange rates is an important component of the investment result. The highest expected rate of return and at the same time a relatively low risk is characteristic for the NASDAQ index. In comparison with SENSEX, DAX, Nikkei225, Hang Seng, Bovespa, RTS, CAC, WIG20 and SSE, the index has a considerably higher rate of return and risk at a lower level. Also FTSE250, DJIA and TSX deserve attention. Their expected rates of return are lower and lower, but their risk also decreases. For example, investors from the US

can choose the NASDAQ index (shares included in it) with a higher expected rate of return and higher risk, or DJIA with a lower rate but also a lower risk level. On the other extreme, as indices with the lowest expected rates of return and high risk, we may mention SSE, WIG20 or RTS.

Figure 5. The shaping of the expected rate of return and risk of stock exchange indices



Source: author's own study on the basis of the Stooq News Bulletin data, www.stooq.pl, (2018/05/09).

4. Conclusion

The conducted analysis enabled the assessment of the shaping of the world stock exchanges and paying attention to the occurring differences. In spite of the observed differences on individual markets, it should be stressed that basically in the case of the analyzed stock exchange indices it was similar. At the beginning of 2009, on all markets there was a bounce back after the crisis falls, and then, with few exceptions, there was a long-time boom. In this context, there is even apprehension about the future, as the longer the boom is, the higher probability of the trend reversal.

In the era of globalization and integration of financial markets, such shaping of the majority of indices is not unusual. Also so-called emerging stock markets are becoming more and more integrated with the world stock market. The results of the research conducted within this scope indicates that the covariance of the rates of return on shares on the majority of emerging markets and the world market have strengthened and their correlation has increased (Sodsriwiboon, 2008). For international investors it means the reduction of the effect of the reduction of risk arising from portfolio diversification.

Bibliography

1. Bernanke, B. (2000). *Essays on the Great Depression*. Princeton: Princeton University Press.
2. Nawrot, W. (2009). *Globalny kryzys finansowy XXI wieku. Przyczyny, przebieg, skutki, prognozy*. Warszawa: CeDeWu.
3. Noga, M., & Stawicka, M.K. (Eds.). (2009). *Ponadnarodowa i narodowa polityka monetarna na świecie*. Warszawa: CeDeWu.
4. *Serwis Informacyjny Stooq*, www.stooq.pl.
5. Sodsriwiboon, P. (2008). *Essays on International Stock Market Co-movements*. Los Angeles: University of California.
6. Węgrzyn, R. (2010). The Global Financial Crisis versus the Shaping of Stock Market Indices. [in:] R. Borowiecki & T. Rojek (Eds.), *Challenges for the Contemporary Enterprise under Globalization*. Cracow: Cracow University of Economics.
7. Wojtyna, A. (Ed.). (2009). *Dostosowania makroekonomiczne i mikroekonomiczne w krajach na średnim poziomie rozwoju po kryzysach finansowych*. Warszawa: PWE.
8. *World Federation of Exchange*, www.world-exchanges.org.

Chapter 3

Institutional Environment as a Precondition of an Effective System of Ensuring Credit Institutions' Financial Stability

Oleksandr Baranovskyi, Myroslava Khutorna

1. Introduction

The ensuring of financial stability, regardless which economic system it relates to (we mean micro-, sectoral, macroeconomic or global economic systems), is a complex phenomenon, which requires a multi-level systematic solution. A wide range of financial and non-financial factors need to be taken into account, as well as the formation of an appropriate institutional environment that ensures operational capacity and the ability to achieve the goal of the financially stable system. After investigating problems of financial stability in credit institutions at micro and sectoral levels, we believe that the institutional environment system acts as an organizational and economic mechanism that enables effective implementation of appropriate measures. Note, the intent here is not to reduce the problem of ensuring the financial stability of credit institutions solely to the formation of the institutional environment. However, we believe underestimating it, significantly complicates and slows down the positive effect of the development due to lack of the implementation of a particular set of management measures in the aspect of the investigated sphere.

2. Methodology

The issue of financial stability of financial intermediaries is more closely investigated in the context of ensuring financial stability system as a whole. In particular, it is first found in the works by Garry J. Schinasi (2004), A. Crockett (1997), M. Foot (2003) and A. Large (2003). As a result of later works (Laktionova, 2016; Hlushchenko, 2017), the institutional ensuring of financial stability is viewed on the basis of a reformed institution of state financial regulation, where its administrative, legislative, institutional, and infrastructural contexts are considered. In this case, the preconditions for an effective system ensuring the financial stability of credit institutions are based on a set formation of financially specialized state agencies. By cross interacting and coordinating in organizational, legal and informational manner, these state agencies respond to and neutralize

the source of threats impacting the financial stability of credit institutions, and, in inevitable and invulnerable case, limit their negative impact on the functioning of a wide range of economic agents. During the post-crisis period, the ensuring of financial stability has been researched predominantly through the macroprudential approach where we see an increase in popularity of the new paradigm of synergetics as an alternative to the paradigm of determinism. It is quite evident that a stable financial system is more than a sum of its parts and at each bank, we have to do more than to look at each part of the system. This is the reason why a microprudential approach must be complemented by a macroprudential approach (Lautenschläger, 2018). However, current research gives the impression that the only imperatives for the financial stability ensuring are: 1) transformation of the paradigm of the financial system supervision; 2) implementation of the macroprudential policy; 3) improvement and unification of the microprudential policy across the national systems in order to prevent regulatory arbitrage in financial sector and to minimize risk of appearing in spheres of the system. For this concept, the primary task of the management board of the credit institutions is to comply unconditionally with the regulatory norms and standards. There is a risk of a new moral concept when the management shifts the responsibility for their financial stability to regulators. That is why we think it is essential to complement the paradigm of the financial stability with the renewal of the stockholders' and managers' approach to the business. Of course, current regulatory changes do influence the conception of the business management, but it is realized under the enforcement. It is much more effective to form a platform for the self-perceiving board of stockholders and managers of the credit institutions in the context of "duty to understand" that the consequences of actions that increase the bankruptcy risk of their firm are first and foremost their responsibility, not the regulatory system nor the regulators themselves. This issue is mainly researched among systemically important or so-called megabanks. We are convinced that responsible management is controlled by the ethical behavior of the executive management of the credit institutions. Therefore, the implementation of the ethical theory as a decision-making foundation of the credit institutions' management is a substantial instrument in ensuring financial stability. Edward J. Kane studies the ethical theory through 'categorical imperatives' of Immanuel Kant. In the first formulation, a dutiful action is compared in contrast with conduct that is rationally aimed at achieving some self-serving end. Kant's (1993) second formulation states that one should treat oneself and others as an end in themselves and never solely as a means. Based on this criterion, no professional nor bureaucratic code of ethics can be morally correct if it tolerates using other citizens merely as means to achieve the self-serving end of maximizing stockholder value (Kane, 2017).

Application of ethical theory in practice to identify the preconditions for a long-term stable and sound development of a firm is proved by the different susceptibility of various types of the credit institutions' financial stability during the global financial crisis in 2008. For example, Islamic Banks and European ethical banks that demonstrated a much higher level of the financial stability than conventional credit institutions during the periods of the economic recession. In fact, Islamic Banks remained relatively stable against the first wave of the global financial crisis of 2007-2008 and then contributed to reducing the volatility of global financial markets (Beck, Demirgüç-Kunt & Merrouche, 2013).

Among various factors that positively effect Islamic Banks' financial stability, the fundamental one is their prohibition from dealing with the sale of derivatives and loans (Hassan, 2006). This is their primary competitive advantage over conventional banks that are inherently unstable because they issue interest-based debt (Ghassan & Krichene, 2017).

On the other hand, ethical banks in Europe (e.g., Triodos Bank, Noa Bank, GLS Bank) don't have any special legislation or regulatory norms; they are not prohibited from lending, and their refusal

from using ‘harmful’ financial services is their own choice and decision. In general, the activity of ethical banks is based on three pillars: responsible lending, transparent banking and sustainable banking¹. Let us mention that both Islamic and ethical banks use a value-based business model and prove that it can be commercially robust and resilient. To our minds, this concept of business should form the basis of a new paradigm of financial intermediation to stabilize the financial system and to promote the socio-economic well-being of the society.

It is our position that all these problems cannot be solved only by the instruments of the formal institutional environment. Without lessening the importance of the preceding, we would like to share the opinion of D. North, who notes that in any institutional system, formal institutions take up only a small ‘visible’ part. The central part of the institutional system, reminiscent of the invisible base of the iceberg, is the informal institutions – culture, traditions, stereotypes of behavior (North, 1997). In her turn, E. Ostrom opposes the effectiveness of informal collective norms and low effectiveness of the market methods in the distribution of limited social goods, if implemented without the support of the informal environment – opinions, traditions, beliefs, stereotypes of thinking (Ostrom, 2003). In general, we think that insufficient attention is given to the informal institutional environment of the functioning of credit institutions, and it is important to study its ability to influence the quality of the credit institutions’ stable long-term development.

The purpose of the article is to substantiate the content of the main parameters of informal institutional support as a precondition of forming an effective system of ensuring the financial stability of credit institutions.

3. Results and discussion

First of all, we identify SEFSCI as *a complex structure of components that form the internal environment for the coordinated functioning of its subjects in order to develop and implement purposeful solutions to protect its objects from internal and external threats to financial stability based on the choice of mechanisms, methods and instruments for their revealing, neutralization, minimization and counteraction, taking into account both the environment and the level of the system importance of particular credit institutions*. Secondly, when it comes to efficiency of this system, we evaluate its ability to fulfill formational and functioning goals. In our opinion, the purpose of the SEFSCI is to create conditions for uninterrupted and effective execution of the economic and social functions by the credit institutions as well as their systematic growth in value over time.

To interpret the institutional environment as a set of rules and norms in one sphere, let us present some authors’ vision of its particular elements. In our opinion, the implementation and development of these elements in the internal environment of credit institutions will serve as the fundamental pre-conditions for their potential of achieving the long-term target level of financial stability (see: Tab. 1).

The formation of an effective SEFSCI is about the coordination of the business goals and the pursuit of priorities of credit institutions while ensuring their financial stability. If the latter is viewed as the main business goal of credit institutions, for example, profit maximization, then the process of ensuring financial stability reduces solely to managing the current financial capacity to comply with all legislative and regulatory requirements. Nonetheless, this is not enough for ensuring long-term financial stability. Moreover, according to the empirical experience and

¹ <https://www.triodos.com>

the pre-crisis concept of management, a generally accepted financial indicator is the return on equity (ROE), which, in the opinion of the business community, fully determines the dynamics of the business value. It leads to managers' general attention on ensuring proper profit dynamics, simultaneously taking into account the risk factors for timely and complete compliance with regulatory requirements, including those related to capital. However, empirical studies state insignificant correlation ($R^2 = 8.7\%$) between ROE and the market value of the credit institution business, based on the concept of TSR – *Total Shareholder Return* (Abel, 2012). According to this paper, the banks with ROA about 15% are characterized by significant heterogeneity in terms of TSR varied from -60% to +75%.

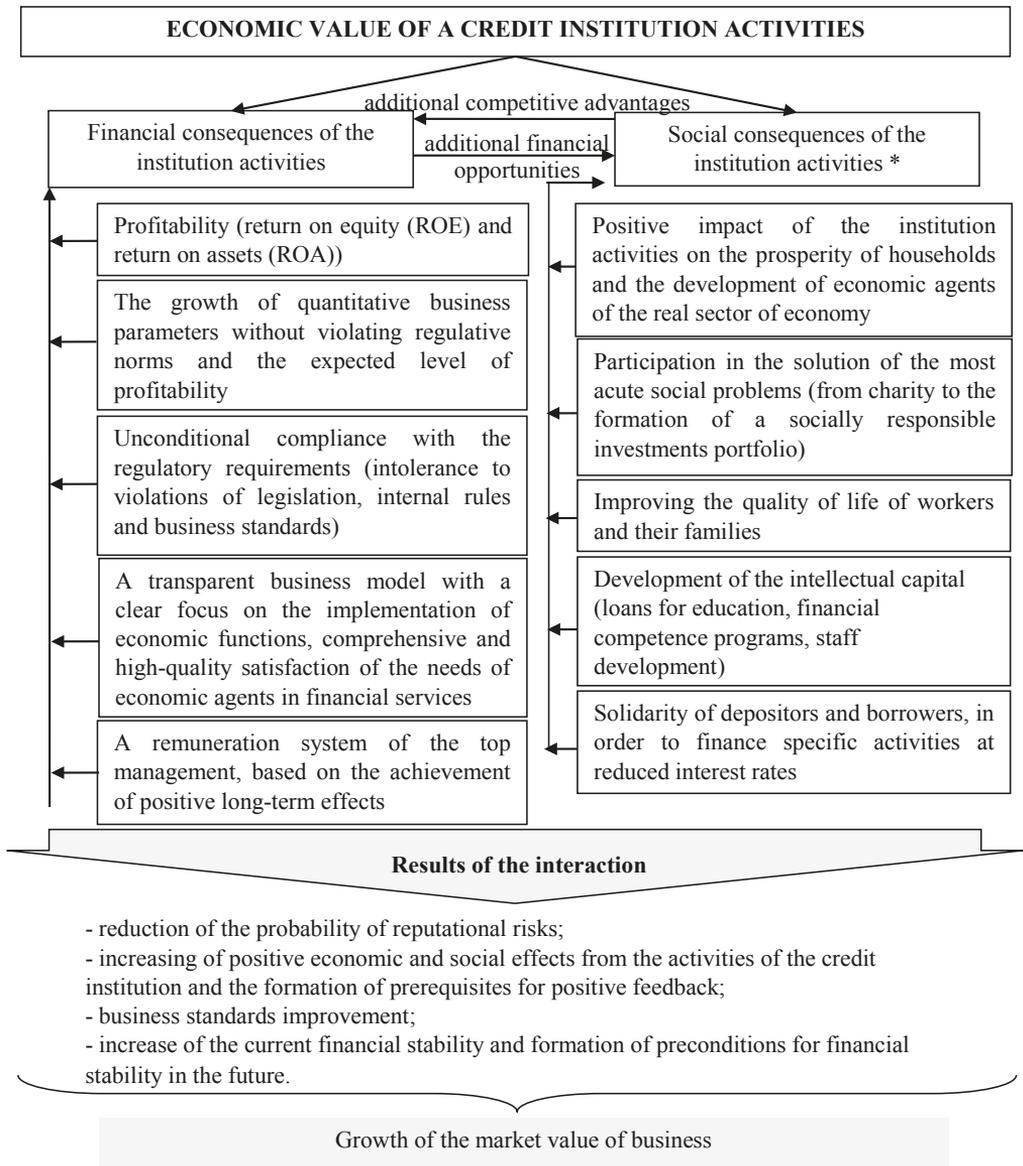
Table 1. Contents of the informal institutional environment of the system of ensuring the financial stability of credit institutions

Subcomponent	Standards and rules
Ideological	<p><i>Formulation of the purpose of credit institution functioning as maximizing the economic value of their activities (value-oriented model)</i></p> <p>Perception of the credit institution as a socio-economic institute</p> <p>Recognition of financial stability as the main reference point for the activities of the credit institution</p> <p><i>The perception of the ideas of sustainable development as a primary focus of the business attention of credit institution to ensure a positive impact on the economic development (economic, social, environmental)</i></p> <p>Perception of corporate culture as a competitive advantage</p> <p>Intolerant attitude towards corruption, illegal actions, including illegitimate methods of income generation</p>
Social	<p>Business ethics of credit institution</p> <p>The active social position of the credit institution</p> <p>Perception of corporate social responsibility as the basis of harmonizing the interests of stakeholders and ensuring a positive impact on the activities of economic agents</p> <p>Refusal to finance activities that have adverse social, economic or environmental effects</p>

Source: author's development.

In general, we believe that the driving obstacle to the ensuring financial stability of credit institutions lies in the conceptual framework, namely, in the current perception of the development of economic agents and economy as a whole by adapting social needs to market interests. Despite this, we are persuaded that ensuring of financial stability, including that of credit institutions, belongs to the objective needs of the economy, and therefore its management cannot be based solely on maximizing profitability. Herewith, profit is only one component of the formation of the total value generated by the activities of credit institutions. Moreover, an increase in the profit of the institution is not yet a guarantee of its economic value growth, and, on the contrary, it can provoke its decline, and the previously given conclusions of the empirical study prove it. That is, the economic value is not an additive function of the credit institutions activities financial results, but it is a consequence of complex, nonlinear, synergistic interrelationships between its components (see: Fig. 1).

Figure 1. The essence of the economic value of a credit institution, its interrelation with the market value of its business



* Social consequences of credit institutions directly depend on the depth of implementation of the socialization principles in their business areas and their perception by society as a whole

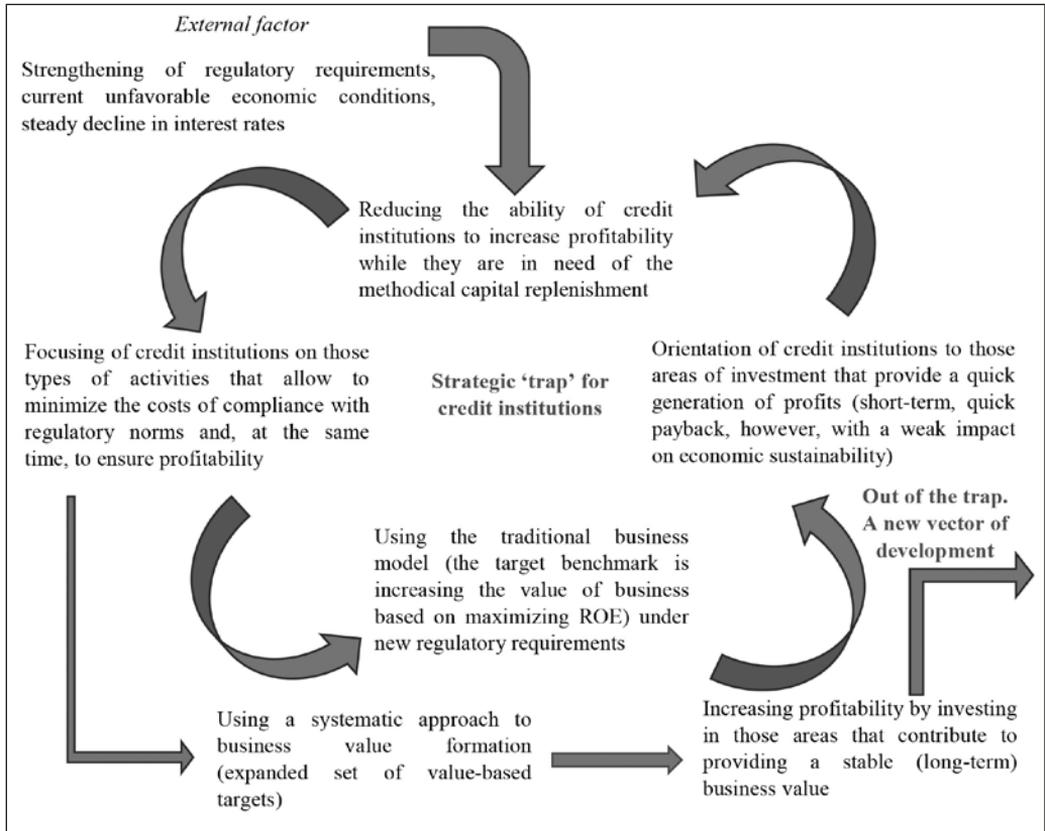
Source: author's development.

Thus, the formation of an effective SEFSCI should be preceded by the transformation of the purpose of the credit institutions functioning; otherwise, the established system will not be able to guarantee maintenance of their financial stability over time. In general, we believe the basis of ensuring financial stability should be the concept that directs the logical subjective thinking of individuals towards achieving the optimal balance between the quality of individual economic activities and the social interests. In this context, we consider the concept of economic value to be the coherent interests of a wide range of stakeholders that take into account both, the pragmatic objectives of business owners and the socio-economic goal of credit institutions.

In our opinion, if the credit institutions don't change the objective of their activity and continue to maintain the traditional business model that focuses on maximizing the efficiency of using capital in new operating conditions (strengthening of regulatory requirements, a new regulatory paradigm, unfavorable economic conditions in terms of ensuring high profitability of business), they will fall into the strategic 'trap'. First of all, focusing solely on ROE (see: Fig. 2), greatly reduces the possibility of ensuring the long-term growth of the business.

We believe to avoid this 'trap' we should see a change, or rather, a broader target for orientation of the credit institutions' activities, achieving this will allow them to ensure long-term growth of business value. We paid much attention to this issue while researching the problem of ensuring the financial stability of credit institutions because we strongly believe that one of the determining criteria for financial stability of credit institutions is their value increase over time. However, it should not result solely in profitability due to their activities, but it is to be an outcome of creating economic value by credit institutions through the effective, efficient and uninterrupted performance of the core socio-economic functions. These values – formalized in the form of a system of qualitative indicators – are to be implemented in the analytical component of the SEFSCI.

Figure 2. The subject of a strategic ‘trap’ of credit institutions on condition of their one-directional targeting



Source: author’s development with consideration (<https://www.bankinghub.eu>).

Taking into account those above, it is worth talking about the implementation of the ideas of the sustainable development concept in the methodology of forming a SEFSCI. The level of its implementation in the activities of economic agents, especially if we talk about financial and credit institutions, has constantly been changing. Thus, the European Commission report 1997 ‘The role of financial institutions in achieving sustainable development’ accentuates that financial intermediaries, despite the fact they are not “dirty” industries, should not stand apart from the process of ensuring the eco-stability of humanity². The report points to tasks that may be implemented by financial and credit institutions as investors, innovators, experts in assessing the efficiency and commercial viability of investing, and as influential stakeholders to ensure a positive impact on the ecosystem through relevant financial products and mechanisms for their delivery. However, the business industry of credit institutions and the ideas of sustainable development were defined as incompatible and impossible to implement (see: Tab. 2).

² <http://ec.europa.eu/environment/archives/finserv/fisum.pdf>

Table 2. The discrepancy between the prevailing business philosophy of credit institutions and the ideas of the sustainable development concept

Criterion	Concept of sustainable development	Business benchmarks of credit institutions
The aim	A systematic view of sustainable development (multidimensional): environmental protection, social justice, economic development	One-dimensional target benchmarks: maximizing profits
Time	A long-term time interval; the main criterion for making decisions is ensuring a positive effect in the future (the short-term effect is not defined as a sufficient condition for the admissibility of certain measures)	A short-term perspective; ensuring sufficient economic feedback from the implementation of certain measures by credit institutions in current periods is perceived as a sufficient condition for their admissibility
Ecological effect	Present and future environmental preservation	Insignificant attention to the environmental effects of the activities
Social effect	The priority of equal opportunities for all individuals, accessibility and equality between generations	Insignificant attention to social effects for economic agents from the activities of credit institutions
Openness	Wide public involvement is encouraged	Limited transparency and accountability (solely within the framework of legislative requirements); public openness is considered as a threat to internal security

Source: author's development with consideration (Pisano, Martinuzzi & Bruckner 2012).

In addition, it is important to note that the existing business philosophy of credit institutions also contradicted the fundamentals of ensuring their financial stability (see: Tab. 3).

Table 3. The comparison of prevailing business standards of credit institutions and the prerequisites for their financial stability

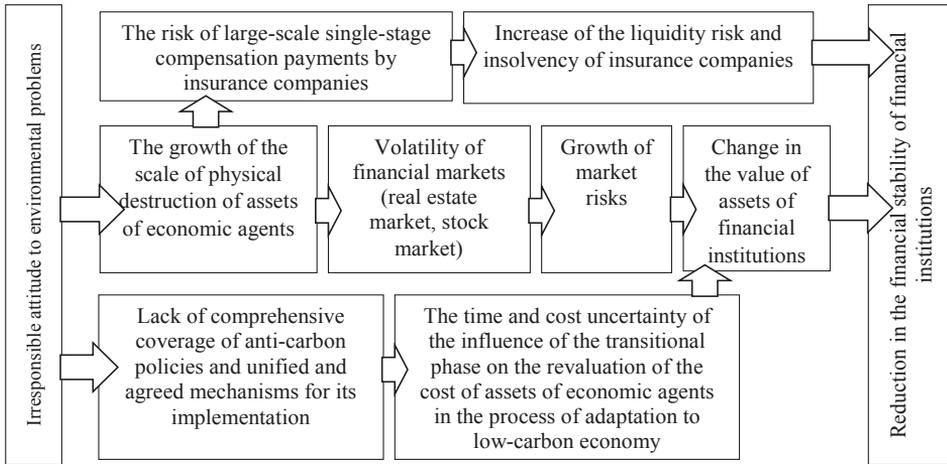
Business standards of credit institutions	Prerequisites for the financial stability of credit institutions
Fulfilling minimum regulatory requirements (sufficient for the licensed functioning) and lobbying for deregulation	Tightening regulatory requirements for the activities of credit institutions to meet the interests of society
Simplified perception of the business value-providing process, namely, on the basis of maximizing ROE	Stability as the main benchmark of activity
Keeping a high leverage ratio to maximize short-term profits	The long-term benchmark for liquidity and capitalization

Focusing the top management’s motivation system on ensuring a steady increase in the profit of credit institutions	Coordination of remuneration schemes for the top management with long-term business targets of credit institutions
The development of contradictory businesses, in terms of socio-economic consequences, (e.g., financial speculation, the sale of derivatives, foreign currency mortgage lending)	The primary focus of the business attention of credit institutions on ensuring a positive impact on the development of the economy and economic agents, in particular
Limited transparency and accountability (solely within legislative requirements)	Wide disclosure not only financial aspects of business but also internal standards of doing business, including corporate social and economic responsibility

Source: author’s development.

Revisiting the ideas of sustainable development, we note that the most controversial issue concerning the expediency of the credit institutions activities is their place as cornerstones ensuring the ecological stability of society. In turn, the modern logic of financial intermediation separates individual actions and responsibility for possible harmful results in the economic, social and environmental context. It seems that attempts to create incentives for responsible and long-term behavior in relation to sustainable development are contrary to the real market practices aimed at obtaining short-term, individual and maximum benefits. In the post-crisis period, the matter is not only about the possibility, but also about the expediency of combining the functioning principles of financial intermediaries and ideas of the sustainable development concept. At first glance, the issue of preserving the ecosystem goes beyond the scope of financial stability. However, it is essential, based on the statement by Mark Carney that reads ‘Once climate change becomes a defining issue for financial stability, it may already be too late’ (Carney, 2017). In his opinion, the channels of climate change that influence financial stability are: 1) physical risks connected with physical destruction of assets of enterprises, which causes fluctuations in the value of financial assets; 2) the risks of obligations that are primarily related to insurance companies to pay monetary compensation in case of the insured event realization that may also be caused by climate change. The last channel is the financial risks arising from the re-evaluation of a large range of assets due to the process of adaptation to the low-carbon economy (see: Fig. 3).

Figure 3. Interconnection of the environmental and financial stability of financial institutions



Source: generalized and constructed in consideration of (Carney, 2017).

4. Conclusion

Considering all the above, we believe that to minimize the effects of financial crises and keep the financial stability of credit institutions in a long-term run, it is necessary to implement the sustainable development ideas directly into their activities as a conceptual basis for doing business. It should be demonstrated in the following way:

- 1) the use of a systematic approach defining the targets for the activities of credit institutions; the implementation will contribute both, to the increasing value of their business and the level of their financial stability. Such target benchmarks should not be limited solely to the financial dimension of the institutions' activities, but also reflect the economic, social and environmental effects of the credit institutions functioning;
- 2) widening the list of criteria for making decisions on the financial resources redistribution with indicators of sustainable development, that will reflect the quality of the impact of the credit institutions on the economic, social and environmental spheres. In our opinion, this will allow:
 - a) to minimize those types of activities of credit institutions that have a negative impact on the environment and, thus, indirectly increase the level of their financial stability by weakening the channel of negative feedback;
 - b) to expand the participation of credit institutions in investment programs that have a long-term effect, and, therefore, will extend the time horizon of their investments;
 - c) to promote convergence of individual interests of credit institutions' shareholders and economic agents.

Note that in this work, we are not talking about a fundamental change in the business model of credit institutions, but rather the need to adjust the target function of their activities, taking into account the ideas of the sustainable development concept. Institutions adopting the strategy will find its implementation at the level of tactical tasks, and will also affect the methodology of internal management. The corporate perception of sustainable development ideas, as a stereotype and belief,

will become a platform that, first, will interconnect the interests of credit institutions and society, which stipulates the choice of tools and methods for achieving the goals of economic agents. Second, it will harmonize the interaction of credit institutions and the agencies of regulation and supervision in terms of ensuring financial stability. The formation of the final result (the level of financial stability of credit institutions) will not only be a consequence of the effectiveness of compulsory norms and rules, as well as the quality control of their compliance, but also the result of the realized social and economic responsibility of each entity in the market in ensuring financial stability.

The subject of further research will be dedicated to the problem of developing indicators of sustainable development for credit institutions. Their implementation in the management process will harmonize credit institutions' activities in accordance with the vital financial interests of economic agents as their stakeholders, and serve as a philosophical basis for the functioning of the system ensuring the financial stability of credit institutions.

The authors would like to express gratitude to James Baxter and Victoria Baxter for their precise proof reading of our manuscript and reviewing the English of this paper.

Bibliography

1. Abel, V. (2012). *Banking Governance, Financial Crisis and Structural Challenges – The Microlevel Perspective*. Presented at the 8th ESDN Workshop, Brussels, Belgium, 22-23 November 2012.
2. *BankingHub*. Retrieved on 10/03/2018, from: <https://www.bankinghub.eu>.
3. Beck, T., Demirgüç-Kunt, A., & Merrouche, O. (2010). Islamic vs. Conventional Banking Business: Model, Efficiency, and Stability. *Journal of Banking & Finance* 2013, 37(2), 433-447.
4. Carney, M. (2015). *Breaking the Tragedy of the Horizon – Climate Change and Financial Stability*. Presented at Lloyd's of London, Governor of the Bank of England and Chairman of the Financial Stability Board, London, United Kingdom, 29 September 2015.
5. Crockett, A. (1997). The Theory and Practice of the Financial Stability. *Essay in International Finance*, No. 203. Princeton University Press: Princeton, New Jersey, USA.
6. Delphi International LTD in Association with Ecologic GMBH. *The Role of Financial Institutions in Achieving Sustainable Development*. Report to the European Commission, 1997. Retrieved on 10/03/2018, from: <http://ec.europa.eu/environment/archives/finserv/fisum.pdf>.
7. Foot, M. (2003). What is 'Financial Stability' and How Do We Get It? *The Roy Bridge Memorial Lecture*, (3).
8. Ghassan, H.B., & Krichene, N. (2017). Financial Stability of Conventional and Islamic Banks: A Survey. *MPRA Paper* 2017, 82372. Retrieved on 10/03/2018, from: <https://mpra.ub.uni-muenchen.de/82372/>.
9. Hassan, K.M. (2006). The X-Efficiency in Islamic Banks. *Islamic Economic Studies* 2006, 13(2), 49-78.
10. Hlushchenko, O.V. (2017). Instyutysiynе zabezpechennya finansovoyi infrastruktury: shlyakhy zmeshennya urazlyvosti (Institutional Ensuring of Financial Infrastructure: Ways to Reduce Vulnerability). *Ekonomika ta derzhava*, 5, 44-49.
11. Kane, E.J. (2017). Ethics vs. Ethos in US and UK Megabanking. *Working Paper Series* 2017, 43. Institute for New Economic Thinking Working Paper Series. Retrieved on 10/03/2018, from: <https://ssrn.com/abstract=2793387>.

12. Kant, I. (1993). *Grounding for the Metaphysics of Morals*, 3rd ed. Translated by Ellington, James W. Indianapolis: Hackett Pub. Co.
13. Laktionova, O.A. (2016). Buferizatsiya finansovoyi stabil'nosti na osnovi formuvannya mekhanizmu makroprudentsiynoho rehulyuvannya (Buffering of Financial Stability on the Basis of Forming the Mechanism of Macroprudential Regulation). *Economics and Management Organization*, 1(21), 127-142.
14. Large, A. (2003). Financial Stability: Maintaining Confidence in a Complex World. *Financial Stability Review*, 170-174.
15. Lautenschläger, S. (2018). *A Stable Financial System – More Than the Sum of its Parts*. Presented at Dutch Banking Day, Amsterdam, Netherlands, 5 February 2018.
16. North, D. (1997). Институты, институциональные изменения и функционирование экономики. Translated by Nesterenko, A.N. Moscow: Nachala. Originally published as 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
17. Ostrom, E. (2003). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press: Cambridge, United Kingdom.
18. Pisano, U., Martinuzzi, A., & Bruckner, B. (2012). The Financial Sector and Sustainable Development: Logics, Principles, and Actors. *ESDN Quarterly Report* 2012, 27.
19. Schinasi, G.J. (2004). Defining Financial Stability. *IMF Working Paper 2004, WP/04/187*.
20. *Triodos Bank*. Retrieved on 10/03/2018, from: <https://www.triodos.com>.

Chapter 4

Are Market Leaders More Prone to Fraud in Financial Statements Than Smaller Competitors?

Dragomir Dimitrijević, Milan Kostić

1. Introduction

Companies' business policy can often be characterized by various forms of illegal behavior. The most common forms of this behavior are related to activities aimed at distorting free competition, particularly, the abuse of dominant position, cartel agreements, and market concentration that prevent, restrict or distort free competition. Developed countries are struggling against this by striving to prevent non-competitive behavior, through organized regulation, and to ensure a higher level of competition, which results in greater value for customers. In addition to this practice, which is related to competition policy, companies may also face other forms of illegal behavior that, ultimately, could disturb the business balance. These forms of behavior are related to the manipulation of financial statements, which is most often carried out with the aim of showing the best position of the companies, or so that the company management could fulfill its personal goals (achieving bonuses, securing a job, etc.). The subject of the paper is to look at the connection between the sizes of companies' market share and the occurrence of warning signs, indicating the possibility of fraud in company's financial statements. The authors strived to examine, through a case study related to certain sectors of the Serbian economy, whether companies, market leaders (companies with higher market share) are more prone to frauds in financial statements.

The aim of the chapter is to point out to the importance of the existence of warning signs that indicate the possibility of fraud. Many companies tend to fake financial statements in order to achieve different goals, among which is better market positioning. The conducted research is an introduction to future research that will test the connection between the size of market share and the potential for fraud in the financial statements.

2. Theoretical basis of the research

Many individuals use frauds to achieve their company's or personal goals. Practice has shown that in the background of all the frauds in the past were the goals of the companies themselves (covering up losses, avoiding bankruptcy, obtaining loans, etc.) or the goals of the managers (achieving bonuses, keeping a job, promotion, etc.). This raises the question of what motivates people to choose a dishonest way to achieve their goals instead of an honest one. Practice has shown that, in a modern business environment, the struggle for survival of companies most often causes dishonest behavior. Frauds are a product of motivation and possibilities. Motivation can come from an economic need or greed, egocentrism, ideological conflict, and psychosis. Motivation and possibilities are interactive: a greater economic need leads to a higher possibility of fraud.

The reasons why frauds are made in financial statements are primarily to show company's false financial positioning, performance, and cash flows (Dimitrijević, 2015, p. 137). Creating false financial statements results in the misleading of various interest groups. The fall in stock prices, huge losses of investors, shift in management, increase in capital costs, difficulty of attracting additional capital, endangering of the interests of creditors and business partners, and the risk of bankruptcy are just some of the negative effects the creation of fraudulent financial statements has on the capital market. The Association of Certified Fraud Examiners (ACFE) defines fraudulent financial reporting as "deliberate misrepresenting of material facts or accounting data, which misleads the user of the information presented in financial statements to making the wrong decisions" (Rezaee, 2002, p. 2). The American Institute of CPA's (AICPA) defines false financial reporting as "intentional misstatements or omissions of amounts or disclosures in financial statements in order to deceive users of these statements" (Dimitrijević, 2015, p. 137). This can include (Stefanović, 2000, p. 4):

1. Manipulation, forgery, or rewriting of accounting records or supporting documents used for the creation of financial statements,
2. Incorrect (false) presentation or deliberate omission of significant events or transactions from financial statements, and
3. Deliberate misapplication of the accounting rules.

One of the best ways to detect fraud is to analyze the warning signs in financial statements. These are indicators that can indicate that something is wrong in the way business is conducted, that there are certain deviations and irregularities, however, they do not necessarily point to the existence of a fraud. In other words, warning signs indicate that additional checking of certain anomalies in business is required, which may or may not confirm the existence of frauds. The problem is that many of these warning signs go unnoticed, or if they are noticed, it is not fully investigated whether they are related to some form of fraud. The practice has shown that many frauds could have been avoided if these indicators had been responded to in a timely manner. Warning signs can be grouped into the following six groups:

1. Accounting anomalies – are the result of the use of unusual processes or procedures in the accounting system. These indicators can be the product of a fraud that is most often performed by accountants and is difficult to detect (Dimitrijević, 2012, p. 20).
2. Internal control weaknesses – when internal control does not exist or is poorly organized, the risk of committing a fraud rapidly increases. In practice, it has been proven that such a situation is often used by the perpetrators of fraud. If internal control is established in a company and is successfully implemented, there is not any maneuvering space for fraud left.

3. Analytical anomalies – are the procedures or transactions that happen at odd times or places, transactions that involve employees or a third party that would not normally be a part of the event; transactions that involve amounts that are too small or too big and transactions that occur too often or too rarely (Dimitrijević, 2012, p. 21).
4. Unusually extravagant lifestyle of employees – changes in the lifestyle of individuals are most easily perceived as a possible hint of fraud, but this is not evidence of fraud, since the extravagant way of life can be the result of an inheritance succession, lottery winnings, and other similar events (Petković, 2012, p. 108).
5. Unusual behavior of employees – the perpetrators are very often taken up by the feeling of fear, guilt, or conscience after committing the fraud. Numerous psychological studies indicate that this state of deception can lead to behavioral changes in the form of irritability, anger, quietness, inclination to alcohol, quarrel mood, impossibility to relax, inability to enjoy the things they used to enjoy, confusion, sweating, increased smoking, and the like.
6. Petitions and complaints – one of the possible warning signs of fraud is the existence of public or anonymous petitions, complaints, and reports submitted to the competent authorities, responsible individuals in the company, or judicial institutions.

3. Methodology and data sources

To determine the warning signs of the possibility of fraud in the financial statements of companies surveyed in this paper is used Beneish’s model, as a mathematical model used to estimate the probability that a company manipulated its accounting books and, consequently, its financial statements is used as a methodological basis for empirical research in this paper. The model is based on the indexes that measure changes in general ledger accounts balances, i.e. changes in financial statements positions, in comparison to the previous year (Kass-Shraibman & Sampath, 2011, p. 81). The model was derived from the survey conducted by Messod D. Beneish, professor of the Indiana University (USA), from 1982 to 1992. The survey was based on a comparison of financial statements of companies in the USA which had prepared fraudulent financial statements, and companies for which manipulations had not been detected. In particular, eight variables determined on the basis of data presented in balance sheets and profit and loss statements of the observed companies were the subjects of comparison, i.e. (Beneish, 1999, pp. 26-28):

1. *days’ sales in receivables index* (DSRI):

$$\frac{\text{receivables}_t / \text{sales}_t}{\text{receivables}_{t-1} / \text{sales}_{t-1}}$$

(t – current year; t-1 – previous year);

2. *gross margin index* (GMI):

$$\frac{(\text{sales}_{t-1} - \text{cost of goods sold}_{t-1}) / \text{sales}_{t-1}}{(\text{sales}_t - \text{cost of goods sold}_t) / \text{sales}_t};$$

3. *asset quality index* (AQI):

$$\frac{1 - (\text{current assets}_t + \text{net PP\&E}_t) / \text{total assets}_t}{1 - (\text{current assets}_{t-1} + \text{net PP\&E}_{t-1}) / \text{total assets}_{t-1}}$$

(PP&E – property, plant and equipment);

4. *sales growth index (SGI)*:

$$\frac{\text{sales}_t}{\text{sales}_{t-1}},$$

5. *depreciation index (DEPI)*:

$$\frac{\text{depreciation}_{t-1} / (\text{depreciation}_{t-1} + \text{net PP\&E}_{t-1})}{\text{depreciation}_t / (\text{depreciation}_{t-1} + \text{net PP\&E}_t)},$$

6. *sales, general, and administrative expenses index (SGAI)*:

$$\frac{\text{sales, general, and administrative expense}_t / \text{sales}_t}{\text{sales, general, and administrative expense}_{t-1} / \text{sales}_{t-1}},$$

7. *leverage index (LVGI)*:

$$\frac{(\text{long-term debts}_t + \text{current liabilities}_t) / \text{total assets}_t}{(\text{long-term debts}_{t-1} + \text{current liabilities}_{t-1}) / \text{total assets}_{t-1}},$$

8. *total accruals to total assets (TATA)*:

$$\frac{\Delta \text{current assets}_t - \Delta \text{cash}_t - \Delta \text{current liabilities}_t - \Delta \text{current maturities of long-term debts}_t - \Delta \text{income tax payable}_t - \text{depreciation and amortization}_t}{\text{total assets}_t}.$$

The Beneish's research results, shown in Table 1, reveals that changes in relations of certain positions are more pronounced in the case of companies that manipulate financial statements than in the case of companies that do not manipulate. For example, the average DSRI is 1.465 for manipulators and 1.031 for non-manipulators. Statistically significant differences in the average values between manipulators and non-manipulators were found for five variables (DSRI, GMI, AQI, SGI and TATA), but not for the rest three variables (DEPI, SGAI and LVGI).

Table 1. The Beneish's research results

Variable	Average for manipulators	Average for non-manipulators
1. days' sales in receivables index (DSRI)	1.465	1.031
2. gross margin index (GMI)	1.193	1.014
3. asset quality index (AQI)	1.254	1.039
4. sales growth index (SGI)	1.607	1.134
5. depreciation index (DEPI)	1.077	1.001
6. sales, general, and administrative expenses index (SGAI)	1.041	1.054
7. leverage index (LVGI)	1.111	1.037
8. total accruals to total assets (TATA)	0.031	0.018

Source: (Beneish, 1999, pp. 24-28).

Beneish further developed the next model for calculating the unique indicator of fraud risk: $M8 = -4.84 + 0.92DSRI + 0.528 GMI + 0.404AQI + 0.892SGI + 0.115DEPI - 0.172SGAI + 4.679TATA - 0.327LVGI$. The limit value in the model is -2.22. The value above the limit means that there are indications of fraud in financial reporting. In the literature, the next version of the model,

with five variables and the same limit value, can also be found: $M5 = -6.065 + 0.823DSRI + 0.906GMI + 0.593AQI + 0.717SGI + 0.107DEPI$ (Mehta & Bhavani, 2017, p. 698).

Thus, Beneish model was extended to eight indicators used to estimate the levels of fraud in financial statements. Beneish model that has been used in the study has its limitations. First of all, this model is based on the American Generally Accepted Accounting Principles (GAPP), and may have some differences if financial statements are prepared in accordance with the International Financial Reporting Standards. Also, if in particular financial statements fraud appeared for several consecutive years, then Beneish model would not provide sufficient certainty to indicate a possible fraud. Beneish model, in fact, cannot take into account all the aspects of changes in the financial statements when they are completely legal, so the model can be used only as an indicator of possible fraud in the areas of financial reporting where further research is required. (Stančić & Dimitrijević, 2014, pp. 496-497).

The data on the basis of which the research was carried out for two Serbian markets, the production and sales of edible oil and the production and sales of beer, were downloaded from the Serbian Business Registers Agency's website (<http://www.apr.gov.rs/>). The calculation of market share was based on the data from the profit and loss statements, the part related to the Income from the sales of products and services in the domestic market, while the data related to the application of the Beneish model were taken from the balance sheet and profit and loss statement of the analyzed companies. The research period was between 2014 and 2016.

4. Research results

The conducted research is divided into two parts. The first one deals with the market in which the edible oil producers operate and the second one deals with the market in which beer producers operate in Serbia.

Table 2 shows the market share of edible oil companies in Serbia between 2014 and 2016. As can be seen from the table, this market is a typical example of an oligopolistic market with two market leaders (Dijamant AD Zrenjanin and Victoriaoil AD Šid) and smaller followers whose market share is around 10%. The situation during the years analyzed was similar to the previous years, when this market had been oligopolistic and located between a "strong" oligopoly and an oligopoly with a dominant firm (Kostić, 2014, p. 432).

Table 2. The size of the market share of edible oil market companies in Serbia

No.	Company	Market share		
		2014	2015	2016
1.	Dijamant ad Zrenjanin	36.92%	37.13%	34.50%
2.	Victoriaoil ad Šid	28.28%	36.97%	35.93%
3.	Sunce ad Sombor	11.73%	4.60%	9.16%
4.	Oil factory Banat ad Nova Crnja	11.72%	10.39%	11.03%
5.	AD Vital Vrbas	11.35%	10.91%	9.38%
	In total	100.00%	100.00%	100.00%

Source: own work.

The following table (Tab. 3) indicates the number of warning signs related to the possibility of fraud in the edible oil companies in Serbia, which were detected with the use of Beneish model during the same period for which the market share of these companies was analyzed. The first thing noticed is the large number of warning signs that appeared both per company (except for Vital, which did not have any warning signs in 2015), and per year. In 2014, the total number of warning signs for all the companies analyzed was 17, in 2015 there were 12, and in 2016 as many as 19 warning signs (Tab. 3).

Table 3. Warning signs of the possibility of fraud in Serbia's edible oil market companies

No.	Company	Warning signs			Percentage share in the total number of warning signs by years		
		2014	2015	2016	2014	2015	2016
1.	Dijamant ad Zrenjanin	2	2	4	11.76%	16.67%	21.05%
2.	Victoriaoil ad Šid	2	4	4	11.76%	33.33%	21.05%
3.	Sunce ad Sombor	3	2	5	17.65%	16.67%	26.32%
4.	Oil factory Banat ad Nova Crnja	4	4	4	23.53%	33.33%	21.05%
5.	AD Vital Vrbas	6	0	2	35.29%	0.00%	10.53%
	In total	17	12	19	100.00%	100.00%	100.00%

Source: own work.

Such a large number of warning signs indicates that there is a need for additional control of the financial statements of the companies observed. It should be particularly noted that most of these statements were the subject of an external audit analysis and that no auditor's report indicated any doubts nor were there statements with auditor's adverse opinion. It should be emphasized once more that warning signs do not indicate directly that the fraud has been committed, but they indicate that there are areas that need to be further checked and analyzed. If we observe the two companies, market leaders (Dijamant & Victoriaoil), it can be noticed that they had a similar number of warning signs throughout the analyzed period. During 2014, both companies had 2 warning signs each, but in 2015 and especially in 2016, this number was doubled. In 2015, Dijamant had 2, and Victoriaoil had 4 warning signs, while in 2016 the companies had 4 warning signs each. Considering other companies during some of these years, there are companies that had more warning signs, such as Vital in 2014 with 6 warning signs and Sunce in 2016 with 5 warning signs. It can be concluded that the situation regarding the warning signs is quite diverse in the sense that both "big" and "small" companies appear to have had warning signs, which requires additional control to eliminate the suspicion that the frauds have actually been committed.

The second part of the research is related to the companies that produce and sell beer in Serbia. Table 4 shows the market share of Serbia's breweries. As can be seen from the table, the company Apatinska Brewery from Apatin had the largest market share during the entire period analyzed, while Carlsberg Srbija d.o.o. Čelarevo and United Serbian breweries Zajčar had a lower, but still significant, market share. Other breweries had a market share that is significantly smaller and generally below 5% of market share.

Table 4. Market share of Serbia's breweries

No.	Company	Market Share		
		2014	2015	2016
1.	Apatinska Brewery doo Apatin	43.39%	39.77%	38.78%
2.	Carlsberg Srbija d.o.o. Čelarevo	28.50%	25.28%	23.02%
3.	United Serbian Breweries Zaječar	18.94%	27.28%	32.42%
4.	AD BIP Belgrade – in bankruptcy proceedings	5.63%	4.29%	3.04%
5.	Valjevska Brewery ad Valjevo	2.18%	2.38%	2.37%
6.	AD Jagodinska Brewery Jagodina – in bankruptcy proceedings	1.35%	1.00%	0.37%
7.	Brewery Niš	0.01%	0.00%	0.00%
	In total	100.00%	100.00%	100.00%

Source: own work.

The authors included four breweries in the analysis of the warning signs of fraud: Apatinska brewery doo Apatin, Carlsberg Serbia doo. Čelarevo, United Serbian Breweries Zaječar, and Valjevska Brewery Valjevo. Others were not included, as they were in bankruptcy proceedings or facing closure, so it is understandable that they would have had a lot of warning signs and their business was not relevant for the functioning of the market being analyzed.

Table 5. displays the situation after the application of Beneish model to Serbia's breweries' financial statements. As with the edible oil companies in the market, a large number of warning signs was present in these companies, as well, over the entire period analyzed. There were 15 in 2014, 6 in 2015, and 12 warning signs in 2016.

Table 5. Warning signs on the possibility of fraud existence in the Serbian beer market

No.	Company	Warning signs			Percentage share in the total number of warning signs by years		
		2014	2015	2016	2014	2015	2016
1.	Apatinska Brewery doo Apatin	3	0	5	20.00%	0.00%	41.67%
2.	Carlsberg Srbija d.o.o. Čelarevo	5	3	2	33.33%	50.00%	16.67%
3.	United Serbian Breweries Zaječar	6	1	1	40.00%	16.67%	8.33%
4.	Valjevska Brewery ad Valjevo	1	2	4	6.67%	33.33%	33.33%
	In total	15	6	12	100.00%	100.00%	100.00%

Source: own work.

In 2015, the market leader Apatinska brewery did not have any warning signs, it had 3 warning signs during 2014, and 5 warning signs in 2016, which is the highest number of warning signs per company for that year. If the number of Apatinska brewery's warning signs is compared with its market share, it can be noted that it had the largest number of warning signs in the same year when its market share declined. However, the link between these two phenomena cannot be proven by using the Beneish model. When considering other companies, especially Carlsberg Serbia and United Serbian breweries Zaječar, which have significant market share, it is noticed that particularly

Carlsberg Serbia had a large number of warning signs throughout the whole period. Carlsberg had 10 warning signs in total, while the United Srebian Breweries had 8 warning signs. All these facts point out to the need for additional control of these companies' financial statements, as practice has shown that only one warning sign can encourage additional control, which in most cases proved the existence of fraud. What can be distinguished is that the smallest company analyzed, by the size of market share (Valjevska brewery), had the least number of warning signs for the entire period analyzed. The reason for this should be sought in the fact that it had recently come out of the bankruptcy proceedings and that the goal of the management was to make the business more transparent, in particular, in terms of financial reporting.

5. Conclusion

In order to meet the goals of the company and their own, many managers tend to create false financial reports. Practice has shown that a great number of world's companies (including companies that are the example of the biggest business frauds – Enron, WorldCom, and Parmalat) made frauds in the very period during which they were dominant in their markets, and thereby misled their creditors, but also their consumers. This is why the starting point of the paper was to question whether there is a link between company's market share and the number of warning signs that point to the possibility of fraud in financial statements. The results of the research have shown that, during the period analyzed, there were many warning signs in all of the companies observed, both per company and per year. However, no firm link was found between the number of warning signs and the size of company's market share. This suggests that both large and small companies are prone to committing a fraud. In both of these categories, the reason for doing such manipulations was the same – to maintain or improve their market position.

It is important to emphasize that, despite the large number of warning signs, the analyzed companies were subject to an external audit that did not issue an adverse opinion on their reporting. This indicates that the control of Serbian companies' financial statements is not at the best level, as there are no adequate legal solutions for better control. It is necessary to introduce an additional level of control (it does not matter whether a forensic accountant, forensic auditor, or fraud investigator will be employed) that will have adequate legal authority to implement additional control methods and further investigate if the warning signs are noticed.

Bibliography

1. Beneish, M.D. (1999). The Detection of Earnings Manipulation. *Financial Analysts Journal*, 55/5, 24-36.
2. Dimitrijević, D. (2012). Forensic Accounting Methods and Instruments for Detecting Fraud in Financial Statements. *Računovodstvo*, 56(3-4), 17-24.
3. Dimitrijević, D. (2015). The Detection and Prevention of Manipulations in the Balance Sheet and the Cash Flow Statement. *Economic Horizons*, 17, 137-153.
4. Kass-Shraibman, F., & Sampath, V.S. (2011). *Forensic Accounting for Dummies*. Hoboken: Wiley Publishing, Inc.
5. Kostić, M. (2015). Analyzing the Conditions of Competition – Case of Serbian Edible Oil Market. *Conference Proceedings EBM*, Faculty of Economics, Kragujevac.

6. Mehta, A., & Bhavani, G. (2017). Application of Forensic Tools to Detect Fraud: The Case of Toshiba. *Journal of Forensic and Investigative Accounting*, 9(1), 692-710.
7. Petković, A. (2010). *Forenzička revizija – Kriminalne radnje u finansijskim izveštajima*. Novi Sad: Proleter A.D. Bečej.
8. Rezaee, Z. (2002). *Financial Statement Fraud – Prevention and Detection*. New York: John Wiley & Sons.
9. Stančić, P., & Dimitrijević, D. (2014). Analytical Methods Analysis in Forensic Accounting. *Conference Proceedings EBM 2014*, Faculty of Economics, Kragujevac.
10. Stefanović, R. (2000). Sprečavanje i otkrivanje lažnog finansijskog izveštavanja. *Računovodstvo 11/2000*, 3-11.

Chapter 5

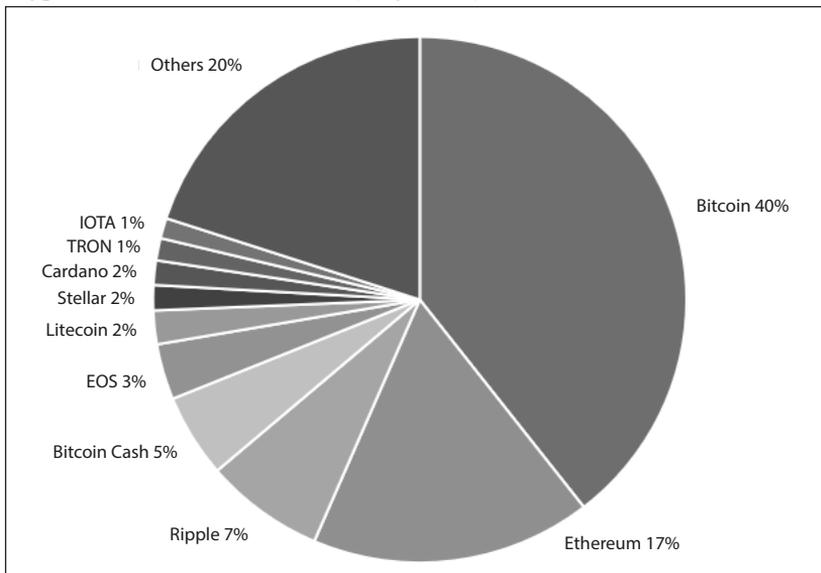
Types and Applications of Cryptocurrencies¹

Artur Żuwała

1. Introduction

The last year brought a dynamic growth of the cryptocurrency market. Its value in May 2018 amounted to over 300 billion dollars (CoinMarketCup, 2018). This was mainly due to the increase in the value of the main cryptocurrencies like Bitcoin and Ethereum and partly due to the appearance of many new ones. Figure 1 shows the market shares of cryptocurrencies.

Figure 1. Cryptocurrencies market shares (May, 2018)



Source: own work based on (CoinMarketCup data, 2018).

¹ The publication was financed from funds granted to Faculty of Management, Cracow University of Economics, for supporting research capability.

The basis for most cryptocurrencies is blockchain technology. It allows to create a mechanism in which the role of the guarantor of the correctness of settlements between the parties is played by mathematical algorithms, and not trust in the third party, state or institution. The further development is the introduction of smart contracts, which once created and recorded in the blockchain will be executed automatically when their conditions are met.

The aim of the chapter is to present different generations of cryptocurrencies and their possible applications together with the indication of existing solutions. The article focuses on technical possibilities and omits the legal aspects of using blockchain technology, cryptocurrencies or intelligent contracts. Currently, the law of most countries, including Poland, is not keeping up with technological changes (Hulicki & Lustofin, 2017), and the reference to the current legal situation goes beyond the subject of the article.

2. Bitcoin and blockchain technology

The basics of blockchain technology and its use to create the first cryptocurrency were presented in 2008 by the creator of Bitcoin under the pseudonym Satoshi Nakamoto. His, her or their true identity, is not known to this day. The “Bitcoin: A Peer-to-Peer Electronic Cash System” manifest was published on the Internet (Nakamoto, 2008).

The idea behind blockchain technology as its name suggest is to create a chain of blocks. A single block is a collection of any digital documents gathered at a similar time and having a common digital signature – hash. The hash is a string of fixed length characters, much shorter than the document itself, and is practically irreversible. To reproduce the original document one should check all the potential possibilities. On the other hand, two different documents give different signatures. A single hash allows to verify the authenticity of all documents included in the block.

Blockchain extends authenticity verification to the chain level. Each block’s hash is made from its content and hash of previous block. This way it is not possible to change the block hash without modifying all subsequent blocks in the chain. So the last hash proves authenticity of all documents in the blockchain.

In the case of bitcoin, the blockchain is used to record subsequent transactions. To ensure the identification of the owners of cryptocurrencies, or rather their wallets, the well-known asymmetric encryption algorithms are used. Electronic money is defined by a sequence of transactions. The transaction is made by signing the hash of the previous transaction with the private key of the payer’s wallet and the public key of the recipient’s wallet – an analogy to the bank account numbers of the payer and the payee.

The currency system will work properly if it is not possible to double spend the same funds. In the absence of a trusted intermediary, the only way to ensure that the payer has not previously spent the same funds is to have information about all transactions and to accept the principle that only the first transaction involving specific funds is valid. This goal can be achieved by making all transactions public and ensuring the order of their execution. This is how it is done in the case of bitcoin.

The entire blockchain containing all transactions is stored by many computers creating a distributed network of peer nodes. None of them is distinguished, there is no central server here. In this network, all blocks, and thus transactions, are publicly available. Each network node col-

lects newly advertised transactions into a block. They accept only valid transactions. After closing block it is added to the end of blockchain.

In a distributed environment, there must be a consensus method that allows the block to be approved. In the case of bitcoin, a proof-of-work method was applied. Each node try to solve the complex computational problem. First get an award – a new coin. Initially, it had a value of 50 bitcoins. Every 210,000 new blocks, or approximately four years, it is reduced by half, in 2018 it is 12.5 bitcoins. This is to last until all planned 21 million bitcoins are emitted. In addition, small transaction fees were assumed, which are now an additional prize for the block makers, and after the issue of all planned coins they will be the only gratification.

Blocks creation is expensive – it consumes processor time and electric power. The complexity is adjusted automatically so that regardless of the number of nodes and computing power involved, a new block appears every ten minutes. The process of creating new blocks, both in the bitcoin network and for other currencies based on blockchain and using proof-of-work consensus, is commonly called “cryptocurrencies mining”, people doing that are miners and companies dealing doing it with large-scale are called mines. Generally for the blockchain technology other consensus protocols can be used to make transaction faster and more energy efficient (Nguyen & Kim, 2018).

Bitcoin network is safe when more than half of processor power engaged in mining is operated by honest owners. If the probability of finding a proof-of-work by the attacker is smaller than by a fair part of the network, it drops exponentially with each subsequent step. Hence the acceptance that the generation of six consecutive blocks after the transaction practically assures it. For an effective attack that allows double spending, one would need to take over half of the computing power of the network. This would be economically unjustifiable, because someone having such power could make much more money on issuing new coins than on potential counterfeiting.

3. First generation and payments

Several hundred cryptocurrencies are now publicly available. While the general idea of their operation is similar, they can be divided into several types depending on the details of the implementation. The emergence of new cryptocurrencies resulted from the development of technology, partly from the disadvantages and limitations of bitcoin itself, the willingness to profit and the ease of their creation.

The basic defects of bitcoin include the lack of immediate transactions, periodically high transaction costs, energy consumption of mining and the resulting impact on the natural environment and susceptibility to high concentration of mining.

The transaction time in the Bitcoin network is about one hour. It eliminates it practically as a currency for payment in retail or service outlets. It is also not suitable for micropayments on the Internet, where immediate settlement is expected. At the end of 2017, during the boom on the cryptocurrency market, transactions lasted much longer, they could have been accelerated by declaring a higher transaction fee. At that time, a quick transaction could cost even more than ten dollars.

The increase of bitcoin value resulted in a significant increase in the number of miners. Because the algorithm scales the difficulty so that the blocks arise evenly, the global increase of mining power is a self-winding mechanism. Taking into account the data from May 2018, the global annual demand of the Bitcoin network for electricity is over 64 TWh. The value of this energy

exceeds three billion dollars. It can be estimated that a single transaction consumes around 850 kWh of energy, which is as much as a typical household for several months or a VISA system for the implementation of half a million transactions (Digiconomist, 2018).

Initially, Bitcoin was mined on personal computers. Rising bitcoin's value has made it profitable to design and manufacture application specialized integrated circuits (ASICs) that are used exclusively to dig this currency. The Chinese companies specialize in this. Their products have practically eliminated the profitability of bitcoin hobby mining on personal computers. Greater accessibility to specialized systems on the Chinese market combined with low electricity prices have resulted in mining concentration in large Chinese corporations (Peck, 2017). This raises concerns about too much network centralization.

On the same principle as bitcoin operate other cryptocurrencies of the first generation. They differ in the implementation details, for example the frequency of new blocks, the speed and cost of the transaction, the algorithm's susceptibility to the use of ASICs, the approach to privacy of users, etc. Examples include Litecoin digesting speed and low transaction cost or Monero aiming at preventing the transaction tracking, what makes it in particular attractive to those who make illegal operations.

A common feature of all cryptocurrencies is the ability to perform the function of money. In the case of the first-generation cryptocurrency it is their only important functionality. It is implemented non-traditional way, but it is still a money, the value of which is due to the fact that it is accepted and there is a supply and demand for it. However, currently, taking into account the very high value changeability of cryptocurrencies in relation to traditional currencies, one can conclude that their main application is speculation and in practice they are not used on a significant scale as a payment instrument.

4. Second generation and smart contracts

The second generation of cryptocurrencies provides a wider use of the block chain. Its first representative is Ethereum launched in 2015. The author of the solution, V. Buterin (2014), defined the Ethereum network as a distributed platform of smart contracts and applications. The content of Ethereum blocks is not limited to the record of transaction history. The network allows for writing scripts that can perform any calculations, store any data and check different conditions.

The ability to write any data in blocks causes that in the case of second generation cryptocurrencies their payment function may be only a side feature. Their networks can be used as a distributed ledger to record data about any assets, such as traditional currencies, shares, real property rights, certificates of any property or energy. As in the case of Bitcoin, Ethereum also found many followers pursuing similar goals, but differing in the details of implementation.

Ethereum scripts are programs written in a Solidity language specially created for this purpose. Smart contract is usually a list of conditions specifying what will happen if they are met. If the contract code is accepted by all parties and saved in the blockchain, it will be executed automatically once the conditions have been met. What is important, the blockchain ensures that no one can replace an earlier created contract code. The proposals for creating smart contracts have been appearing for twenty years (Szabo, 1997), but only blockchain has allowed their relatively simple implementation.

Smart contract is the mutual obligation of the parties written in the form of a computer code, based on the assumption that when the X event occurs, action Y will be performed. The X event may be an entry in the blockchain database, e.g. transfer of cryptocurrency between user wallets or may be expiry of a deadline. In such cases, the contract will be executed automatically. If the X event occurs in the physical world, for instance delivery of goods or provision of services, result of a match played, etc., the execution of the contract requires the involvement of a third party to enter the relevant data. This may be a person designated by the parties to the contract or, in some cases, a decentralized service operating in a blockchain network.

These features of intelligent contracts mean that they should not be treated as a substitute for contracts, but rather as a technical means of their implementation. Because they take place in the virtual space, they work best where the entire transaction can be carried out in a blockchain. If the rights to property goods are saved in a blockchain, then the entire transaction can be carried out by executing the contract.

The most important feature of a smart contract is securing both parties of the transaction if one of them fails to fulfill its obligation. If the contractors make the exchange of goods that can be digitally represented, it is enough that the contract will be defined so that the parties transfer them not to themselves, but to the contract wallet. The contract works so that only when both parties hand over their assets at the agreed time, they will be transferred to contractors. If at the given time one party fails to perform an obligation, the contract will return its assets to the other party.

One of the possibilities of smart contracts is the issuance of tokens that can represent any asset. Token issuing is much easier than creating a new cryptocurrency, it does not require creating a new blockchain, but only to match the network standards within which they are broadcast. For the Ethereum network, the ERC-20 standard was developed which defines the common features of tokens and facilitates uniform management of tokens. Such created tokens can be traded immediately. They can be treated as successive cryptocurrencies or as shares in ventures. In May 2018 there were over 500 types of tokens in this standard. The largest market value, exceeding 11 billion dollars, had EOS tokens emitted by a software development company to create decentralized, scalable applications based on blockchain technology.

Often, tokens are used as a way to publicly raise funds. The so-called Initial Coin Offering (ICO) are usually carried out by companies or organizations wishing to implement projects related to blockchain technology. In contrast to public offers of shares (IPO), they are carried out virtually unattended by market regulators, the issuer does not have to meet any formal requirements. ICOs are usually short-lived and are available globally to all interested parties. The potential gain of the buyer is the increase in the value of tokens when the financed project is successful in the market. It is customary that the issuer's plans are presented in a "whitepaper" document, the content of which is not standardized.

The above ICO characteristics make them investments with very high risk, but at the same time with a potentially very high rate of return. The risk results not only from the fact that the financed project may fail, but also the lack of certain information about the issuer. A significant part of the offers are mere frauds – issuers do not plan to do anything except to raise funds. The value of funds accumulated through ICO in 2017 was over 5 billion dollars, and in the first quarter of 2018 it exceeded 6 billion dollars (Floyd, 2018).

Storing data in cryptocurrency blockchain allows to create distributed ledger. It is a good tool for storing all kinds of registers in which it will not be possible to change once saved data. Typical examples are land and mortgage registers, database of notarial deeds, contract registers, trade

books, tax returns, etc. The benefits of keeping registers in this form are the spread of the database, the ability to quick authorized access to them and the ability to automate transactions by means of smart contracts. An easy to imagine example would be the sale of real estate, in case the land and mortgage register was recorded in the blockchain, and the payment was made by tokens representing the selected currency. In this case, the contract could replace the notary and secure both parties to the transaction.

5. Third generation, scalability and IoT

Cryptocurrencies of the first and second generation are based on blockchain technology and all of them concern its limitation. The most important is poor scalability – the growing number of transactions can cause network delays and the need to increase block sizes. The size of the blockchain itself means that although it is a problem for servers, it completely exceeds the capabilities of simple devices, which makes it difficult to use with Internet of Thing (IoT) devices, in mobile devices or on the Internet. The time needed to confirm transactions can also be a problem, especially if the consensus method is proof-of-work. Transaction costs may be too high in the case of micropayments.

The solution to the above problems is promised by the creators of subsequent cryptocurrencies, among others Cardano, NANO, or IOTA, who define them as the third generation. Cardano focuses on optimizing the blockchain, assuming that not everyone needs all data, eliminates the proof-of-work for the proof-of-stake. This allows to maintain similar functionality as second-generation currencies (Cardanodocs, 2018).

A different approach is used by NANO and IOTA. In order to achieve their goals, their creators based themselves not on the blockchain, but on the data structure (by IOTA called “Tangle”) based on directed acyclic graphs (Popov, 2017). In the network thus created, there are no blocks, miners, confirmatory nodes or transaction fees. Such a network is used for instant transactions at no cost, but it does not allow for the creation of smart contracts.

The idea of a graph-based network is based on the fact that every participant in the network who wants to execute a transaction must actively participate in the consensus by confirming two other transactions. As a result, network performance is not limited by the number of concurrent transactions. The network is fully decentralized and participation in approving other transactions is required instead of fees. Reducing the amount of data needed for nodes allows them to be used with Internet of Things devices. This is how IOTA is advertised – as the basis for the IoT device network.

The structure of the network allows potentially all IoT devices to be networked to enable them to communicate and conclude transactions. In the future directly this will allow for the execution of transactions between devices. For example, a shopping trolley that scans products put into it can “sell” them to a customer’s smartphone with digital wallet. Similarly, an autonomous car can pay for a maintenance-free fuel station. Another application can be fully unattended and immediate charging for the use of public transport or motorways.

6. Cryptocurrency and blockchain application examples

Ripple is an example of cryptocurrency which serve primarily as a service. The aim of its creators is to create a global communication protocol for banks and financial institutions enabling immediate international payments at a minimum cost. Transfers concern traditional currencies with the possibility of their automatic exchange at the best offered rate. Transactions in the RippleNet network are approved every four seconds. This speed is mainly due to the use of a consensus algorithm based on proof-of-correctness (Schwartz et al., 2014).

The assumption of the authors is to compete with the currently used SWIFT protocol maintained by the organization with the same name in use since 1977. The appearance of Ripple has forced the extension of the SWIFT protocol to improve some aspects of its operation (Treasury Today, 2017). Santander Bank launched in April 2018 international payments based on RippleNet for its clients in Poland, Great Britain, Spain and Brazil (Zuckerman, 2018).

Similar goals were set by the creators of the Stellar platform. It offers to store in the blockchain information about any assets with the option of transferring them and exchanging assets between them. The exchanges take place automatically at the best possible exchange rate with the possibility of multiple intermediate exchanges in case of inability to exchange the less popular assets directly. The Stellar network is open and decentralized, using its own consensus protocol (Mazieres, 2015). It works similarly to Ripple, but everyone can open their own network node and decide which nodes they treat as trusted.

Financial services, including international transfers based on Stellar, are already offered by the Filipino company coins.ph and European company Tempo. Tempo allows international cash transfers both online and offline through a network of agents, offering access to over one hundred thousand payout points in 55 countries. In these cases, blockchain was used as a technology to achieve the required properties of services. However, the services themselves are not advertised as being based on cryptocurrencies, the fact of using blockchain technology is not exposed.

Blockchain allows to implement a resource sharing system between parties that do not have full confidence. One of the largest funds within ICO (over 250 million dollars) gathered the creator based on the Filecoin blockchain, which is to be used to store data on unused disk surfaces. Holders of free disk space will rent it at attractive prices. The user will declare how much data he wants to save and the free space holders will bid the rate at which they will accept the data. Filecoin (2018) cryptocurrency will use consensus based on proof-of-replication.

Tracking the supply chain of goods is important for many industries such as pharmaceutical, cosmetics, food, electronics. The combination of the use of IoT sensors with a record of the movement of goods together with the time and transaction in the blockchain network will allow the elimination of many abuses during the distribution of materials and goods. Walmart in collaboration with IBM and Tsinghua University established the Blockchain Food Safety Alliance, which aims to create a system to track Chinese food throughout the entire distribution process. The pilot project includes delivery of mango and pork imported from China to Walmart stores in the USA (Galvin, 2017).

In Poland, PKO BP plans to implement blockchain technology to verify the authenticity of bank documents. Document saved in the blockchain network will allow the client to check remotely whether the file he has received from the contractor or the bank is true and whether there has been an attempt to modify it. Initially, tariffs and regulations for customers will be verified. According to EU regulations, the authenticity of banking documentation does not meet for instance mailings

and blockchain can provide it. This will reduce the costs of communication with clients (PKO BP, 2018).

Blockchain can serve as database for administration. Dubai plans to eliminate paper documents and implement all government transactions in the blockchain network by 2020. Over one hundred million documents per year will be created only digitally. This is to reduce carbon emissions by 114 megatons and save 25 million hours of document processing time (Smart Dubai, 2018).

Estonia is the country where the vision of digital society is most fully realized. All official matters outside of marriage, divorce and purchase of real estate can be carried out virtually there. In Estonia, more digital signatures are used than in the rest of the European Union. Digitization also includes the education sector and health services. This data is saved using blockchain technology, which ensures their stability (Einaste, 2018).

7. Conclusion

In practice, none of the cryptocurrency has become the new money used to make transactions on a significant scale. This is partly due to the lack of legal regulations, low public awareness, high changeability of rates and low convenience for everyday use. Trading them is mainly speculative.

Each of the cryptocurrencies creates their own blockchain network, the latter generation often offer functionality more important than the payment function. The valuation of a given cryptocurrency may in large part result from the assessment of its innovativeness by investors – cryptocurrency becomes more a substitute for participation in the project than the payment method.

Today the most important role of cryptocurrencies is promoting blockchain technology and driving innovations. The most important possibilities are safe transactions without the trusted third party and unchangeable distributed ledger. Many projects that have nothing common with payment are inspired by cryptocurrency market and a lot of them are crowdfunded with the use of tokens.

Bibliography

1. Buterin, V. (2014). A Next-generation Smart Contract and Decentralized Application Platform. *Ethereum White Paper*.
2. Cardanodocs. (2018). *Cardano Settlement Layer Documentation*. Retrieved on 30/05/2018, from: <https://cardanodocs.com/introduction/>.
3. CoinMarketCup. (2018). *All Cryptocurrencies*. Retrieved on 30/05/2018, from: <https://coinmarketcap.com/all/views/all/>.
4. Digiconomist. (2018). *Bitcoin Energy Consumption Index*. Retrieved on 30/05/2018, from: <https://digiconomist.net/bitcoin-energy-consumption>.
5. Einaste, T. (2018). *Blockchain and Healthcare: The Estonian Experience*. Retrieved on 30/05/2018, from: <https://nortal.com/blog/blockchain-healthcare-estonia/>.
6. Filecoin. (2018). Filecoin: A Decentralized Storage Network. *Filecoin Protocol Labs*.
7. Floyd, D. (2018). \$6.3 Billion: 2018 ICO Funding Has Passed 2017's Total. *CoinDesk*. Retrieved on 30/05/2018, from: <https://www.coindesk.com/6-3-billion-2018-ico-funding-already-outpaced-2017/>.
8. Galvin, D. (2017). IBM and Walmart: Blockchain for Food Safety. *PowerPoint Presentation*.

9. Hulicki, M., & Lustofin, P. (2017). Wykorzystanie koncepcji blockchain w realizacji zobowiązań umownych. *Człowiek w cyberprzestrzeni*, (1), 28-53.
10. Mazieres, D. (2015). The Stellar Consensus Protocol: A Federated Model for Internet-Level Consensus. *Stellar Development Foundation*.
11. Nakamoto, S. (2008). *Bitcoin: A Peer-to-peer Electronic Cash System*. Retrieved on 30/05/2018, from: https://s3.amazonaws.com/academia.edu.documents/32413652/BitCoin_P2P_electronic_cash_system.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1541886625&Signature=myDdQTbBNolZ%2F2ye6p024I%2FLXz4%3D&response-content-disposition=inline%3B%20filename%3DBitcoin_A_Peer-to-Peer_Electronic_Cash_S.pdf.
12. Nguyen, G.T., & Kim, K. (2018). A Survey about Consensus Algorithms Used in Blockchain. *Journal of Information Processing Systems*, 14(1), 101-128.
13. Peck, M.E. (2017). Why the Biggest Bitcoin Mines Are in China. *IEEE Spectrum*. Retrieved on 30/05/2018, from: <https://spectrum.ieee.org/computing/networks/why-the-biggest-bitcoin-mines-are-in-china>.
14. PKO BP. (2018). Technologia blockchain ułatwi weryfikację dokumentów bankowych. *Komunikat prasowy*.
15. Popov, S. (2017). The Tangle. *IOTA.org. White Paper*.
16. Schwartz, D., Youngs, N., & Britto, A. (2014). The Ripple Protocol Consensus Algorithm. *Ripple Labs Inc White Paper*, 5.
17. Smart Dubai. (2018). *Dubai Blockchain Strategy*. Retrieved on 30/05/2018, from: <https://smartdubai.ae/en/Initiatives/Pages/DubaiBlockchainStrategy.aspx>.
18. Szabo, N. (1997). Formalizing and Securing Relationships on Public Networks. *First Monday*, 2(9).
19. Treasury Today. (2017). *Ripple vs SWIFT: Payment (R)evolution*. Retrieved on 30/05/2018, from: <http://treasurytoday.com/2017/07/ripple-vs-swift-payment-r-evolution-ttpv>.
20. Zuckerman, M.J. (2018). Santander: We'll Launch Int'l Payment App With Ripple This Spring If No One Beats Us To It. *Cointelegraph*. Retrieved on 30/05/2018, from: <https://cointelegraph.com/news/santander-well-launch-intl-payment-app-with-ripple-this-spring-if-no-one-beats-us-to-it>.

PART II

HUMAN RESOURCES IN THE ORGANIZATIONS



Chapter 6

Theoretical Aspects of Personnel Controlling¹

Piotr Zajac

1. Introduction

This chapter has been devoted to the issue of personal controlling as a tool for human resources management. The aim of the article is to present theoretical aspects of using the controlling in the area of human resources management. The mentioned controlling is an inseparable part of controlling as a concept of the business management and is referred to as personal controlling. The latter is a kind of an “early warning system”, and its task is to notice and identify the phenomena early enough, both inside the company as well as in its surroundings. It allows to avoid or minimize surprises from suddenly emerging threats, as well as to take advantage of emerging opportunities. Early warning systems are informational systems, consisting of a set of quantitative indicators, referring to quantifiable signals and quality indicators used for descriptive signals.

2. Personnel management in the conditions of the economic change

The management as the art of achieving goals can be referred to the rational use of capital, raw materials or information resources. However, the human resources of the organization occupy a special place, especially in the conditions of the economic change, as it is people who are the initiators of all the changes. The task of the personal controlling tool is to coordinate smoothly the management of the most precious company resource, which is the staff. For the specialists dealing with the world market, the end of the 20th century and the beginning of the 21st one has been, most of all, a period of introducing economic changes (the extension of the European Union with new member countries, the opening of borders etc). In this economy, especially in highly developed countries, the occurrence of a new economic order is emphasized, in which knowledge, increasingly used at all levels in the society, is becoming the main factor of the production. This knowledge is inseparably connected with the people who create and distribute it; within a com-

¹ The publication was co-financed from the funds granted to the Faculty of Management at the University of Economics in Krakow, as a part of a grant to support research capacity.

pany these are employees. While the collection, processing and storage of knowledge can happen without the participation of employees – mainly by IT systems – the same creation is difficult to imagine without human participation. Therefore, we come to the conclusion that well-educated, experienced and motivated staff in an organization functioning in a new economy is the main factor thanks to which the organization becomes highly competitive.

The evolution of the views on the importance and the effective use of employee potential was initiated during the industrial revolution. Starting from the school of the scientific organization of work and the model of effective use of people, there have been changes in the philosophy of the employee management. Over time, a model of good treatment of people emerged, which stemmed from the current of human relations within the behavioral school. This model in turn has undergone a modification and a model of human resources that takes into account the desire for the creative contribution of employees to the functioning of the organization has emerged.

The basis of the modern personnel management and at the same time, the components of the management interpreted in the category of the process of coordinating and integrating people's goals with the organization's goals are as follows (Szalkowski, 2006, p. 42):

- defining the mutual expectations of the employees and the organizations employing them,
- concluding numerous contracts describing the mutual expectations of organizations and employees,
- creating conditions that ensure the execution of mutual expectations.

Along with the development of the personal function, there appeared scientific publications, providing theoretical and practical guidelines for a proper conduct in the field of the human management. In the light of the extensive literature on the subject, one cannot provide a universal definition of the human resource management of an enterprise. In the literature on management, the personnel activities are described by such terms as: human resource management, personnel management (HR), management of labor resources and the management of work potential.

I am going to concentrate on a definition in which the human resource management is a strategic and cohesive approach to manage the most valuable organization assets, which are the people working in it, contributing to the achievement of its goals. Human resource management is a method of employment management, leading up to gaining a competitive advantage through the strategic deployment of highly committed and qualified employees, using many cultural, structural and personal techniques (Armstrong, 2005, p. 29).

Human resource management can be defined as a process consisting of logically related activities aimed at providing the organization, at a specified time and place, with a required number of employees with appropriate qualifications and creating conditions that stimulate effective behavior, organization and the use of the employed personnel in accordance with the superior goal of the organization (Pocztowski, 1998, p. 28).

Human resource management can be considered as a set of interrelated activities possessing ideological and philosophical justification. It covers employment, development and rewarding people in organizations as well as shaping the right relationships between the management and the employees. All line managers, team leaders and specialists in human resource management deal with such problems.

The philosophy of human resource management is about recognizing the employees as one of the most valuable elements of the company. The human resources strategy and the global strategy of each organization should harmonize, and navigating the corporate culture should be in line with the corporate strategy requirements. Here comes another philosophical assumption of human

resource management, namely that it is a striving to build the principles of employees' identification with the goals of the organization. This involvement is not so much about the bureaucratic attachment to the organization, but about the fact that employees represent specific attitudes, are attached to their own values and to the values associated with belonging to a family, professional group or trade unions.

Such employees' obligations may be treated as a so-called "psychological contract", i.e. an unwritten contract between the management and the staff, in which the management sets out tasks which are challenging and the employees' loyalty and commitment allow them to be realized. These commitments are made on reciprocity terms. This is a part of the human resources management policy, which sets goals, mutual influence, mutual respect, mutual rewarding and shared responsibility (McKenna & Beech, 1999, p. 14). In the climate of mutual understanding, bilateral commitments get deeper, resulting in both improved productivity and human development. This reciprocity, however, may prove to be particularly unstable in situations where an employee is being cheated by employers. Such phenomena are quite often found.

Another feature highlighted in the human resource management is a "community of interests" (Zajac, 2005, p. 443) of the management and employees, linked to the profitability of the company. Such a community of interests enables the use of a significant resource of initiative and commitments within the workforce. When it comes to verifying this statement in reality, it is easy to notice that in its essence it is right, but in practice there exists a discrepancy of interests. The employee is interested in higher earnings, the employer is interested in a good profit.

A fact of the interactions between the human resources management system and the corporate planning process is particularly noteworthy. The position of intervention from the HRM system is hereby supported. This is due to the strategic goals set in each corporate plan. The policy and practices of the human resources management system which are created as a result of identifying the needs of corporate strategies may turn out to be useful for supervisors or managers.

Other key issues of the human resources management are (McKenna & Beech, 1999, p. 15):

- People as members of the organization and employees of companies. It is people who form the base and the foundation of every functioning organization. The success of the actions that this organization will undertake will be seen in the mobility, deeds and the cooperation of the entire social potential. The human capital has the ability to generate innovation. This is a so-called creative ability of the employees, which is one of the strengths of an organization that provokes proper mobilization and development; it also requires to be used appropriately. Employees are social potential which is quite sensitive to inappropriate treatment. Unsatisfied employees often work worse and sometimes even express their dissatisfaction (an example of which are strikes, sabotages, protests or other expensive and dangerous actions).
- Participation in decision-making has its value and a selection of certain solutions by the people should be based on reliable judgments.
- The authority should be divided within the whole organization, not centralized, so that relations of trust and mutual cooperation between people generating co-responsibility may arise.
- The interests of all parties that have shares in the organization (e.g. employees, shareholders, suppliers and clients) should be harmonized.

Among the most important challenges that enterprises must face, one should mention the necessity to adapt the organization to new conditions of the environment, changes in technology and changes in the level of competence and requirements of personnel working for the organization as well as a striving to obtain an optimal organization and management model. Responding to

change is an example of a learning organization, in which there is a consciously managed process of organizational learning. It is conducted under a special supervision of the management, through which a new image of the internal organization of the company is presented as well as the processes that are particularly significant for achieving success (Mikuła, 2001, p. 28). Knowledge, in turn, becomes the most important element in building an advantage over competitors, especially in organizations selling services and technologies. It should be added that what will count in the organizations of the future is dynamic knowledge, manifested by the ability to react quickly and learn adaptively, which in consequence contributes to the competence and skills of the employees.

An important task for specialists in human resources management is to create the criteria for the assessment of achievements, competences, remuneration systems, leadership structures, openness to changes, etc. A particular attention is paid to the need to present business, strategic and ethical attitude, the usage of professional knowledge and skills, change management and constant development. Another equally important task is to determine the methods of a quick adaptation of organizational culture or incentive systems to the changes in the organization's environment and its strategy. A tool which is very helpful in fulfilling these tasks is "personal controlling" (Pocztowski, 1998, p. 33), through which we can navigate the achievement of goals in the field of human resources management by generating relative information on costs and work efficiency and the integration of planning and control processes.

3. The essence and aims of personal controlling

The concept of controlling originates from the United States, where, at the end of the 19th century, the position of a controller in an enterprise was created for the first time. The development of controlling fell on the years of the global economic crisis, when the creation of a cell navigating and controlling the company's operations became a necessity (Zajac, 2006, p. 33). In the 1950s and 1960s, the controlling appeared in Western Europe, especially in Germany as well as in France and Switzerland. At present, controlling is an integral part of modern management systems in most Western European enterprises.

The way of understanding controlling depends on the size of the enterprise, its organizational culture, internal transformations and changes in the environment. Discrepancies in the interpretation of the concept of controlling result, among others, from the fact that the term comes from the word "to control", which has many meanings in English. The concept of controlling should be distinguished from the term "control" in the meaning of one of the management functions, consisting of comparing the assigned and the achieved values. The meaning of controlling is, in fact, a support system in the process of strategic and operational management of a company by coordinating the planning and the control as well as securing information crucial for making decisions (Pocztowski, 1994, p. 6).

Table 1. Comparison of controlling function with a traditional function of control

Criterion of distinction	Traditional control	Controlling
Relationship with planning	<i>Formal relationship-sticking to plans</i>	<i>Formal and active relationship-co-creating of plans and procedures</i>

Approach to information system	<i>Using the existing information</i>	<i>Co-creating of the information system</i>
Orientation in time	<i>Past- oriented – assessment of what has happened</i>	<i>Future- oriented- predicting</i>
The scope of the concept	<i>Narrower concept</i>	<i>Wider concept</i>
Location in the organizational structure	<i>Cells that have no hierarchical and functional connections</i>	<i>Committees and task teams with flexible personnel and modes of operation, coordinated by a controller specialist</i>
Features of the activity	<i>Finding mistakes, putting forward motions for their correction, looking for the guilty ones, imposing penalties, putting forward motions for organizational and personal changes</i>	<i>Advising, supervising, coordinating, methodic help, putting forward motions for solutions, counteracting, inspiring</i>

Source: own work based on (Stabryła, 2000, p. 321; Kowalczyk, 2002, p. 232; Sekuła, 1999, pp. 16-17; Grudzewski, Zach, & Zabielska, 2001, p. 2).

The table above clearly shows that controlling cannot be equated with traditional control. Controlling is a much wider concept than the control and is also much widely used. By using a number of measures and indicators, it gives the possibility to manage business efficiently.

Controlling in the area of human resources management is an inseparable part of controlling as a concept of business management and is referred to as personal controlling. When talking about human resources management, it is about a specific concept of managing people, characterized by the following assumptions (Pocztowski, 1994, p. 6):

- people are the most valuable resource of the organization, the key to its success,
- the purpose of human resources management is to adapt them to the company's mission and goals,
- the policy in the sphere of human resources is an integral part of the company's policy and is shaped on the basis of the company's culture,
- there occurs a decentralization of the personal function by increasing the powers of the line manager,
- the relations between the management and individual employees have priority over relations between the management and the trade unions.

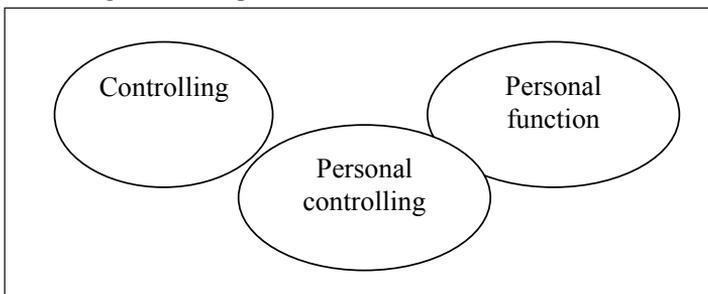
Human resource management harmonizes with the concept of a modern enterprise; not only does it react to the changes in the environment, but also consciously shapes the company environment subsumed as a specific cultural creation, grouping together people cooperating in order to achieve individual goals, who identify with their company.

Personal controlling is a kind of an "early warning system" (Pocztowski, 1998, p. 33), which task is to notice and identify the phenomena early enough, both inside the company as well as in its surroundings. It allows to avoid or minimize surprises from suddenly emerging threats, as well as to take advantage of emerging opportunities. Early warning systems are informational systems, consisting of a set of quantitative indicators, referring to quantifiable signals and quality indicators used for descriptive signals.

Personal controlling in an enterprise fulfills two basic functions. An informative function which task is to collect, process and prepare the information necessary to make personnel decisions. The second function of personal controlling is the navigating function, which is about coordinating plans and other personnel projects, as well as ongoing control over them. The significance of personal controlling is determined not only by the functions that are to be met, but also by the increasingly prominent role of the human capital as an important factor of competitiveness of modern enterprises. By introducing the personal controlling, one can obtain a possibility to coordinate better any planning activities, to record individual components of human capital and to include it not only in the form of costs but also as “assets” (Clark, 1996, p. 251; Storey, 2001, p. 7). Creating a value in the area of the personal function cannot be limited only to reducing labor costs but should use the so-called a “human resource leverage effect”, which is increasing labor productivity by increasing the value of the meter and not by reducing the denominator in the indicators reflecting it. The increase in productivity obtained in this way is much more durable than the one created as a result of activities aimed at reducing labor costs (for example, reduction of employment) (Pocztowski & Purgał-Popiel, 2004, p. 181).

The scope of the personal controlling depends on the needs and a type of the activity of a given company; specific solutions are the result of the development of functional controlling and the manner of performing the personal function.

Figure 1. Personal controlling as a result of the development of the personnel function and the functional controlling in an enterprise



Source: (Pocztowski & Purgał-Popiel, 2004, p. 183).

Assuming a model approach, we can distinguish three main areas of using the personal controlling (Pocztowski & Purgał-Popiel, 2004, p. 182):

- employment,
- a personal function system,
- internal and external factors having influence over the employment and the personal function.

We consider employment as an object influenced by personal decisions, which are directed at shaping its size in terms of quantitative and qualitative characteristics, consistent with the superior purpose of the enterprise. It includes as follows:

- the status and the structure of employment,
- terms and conditions of work,
- costs of work,
- using the time of work,

- employee transfers.
The system of the personal function consists of:
- human resources management strategy,
- personal processes,
- the structure of entities involved in value creation processes in the area of the personal function as well as tools used by them.

Analyzing the personnel strategy should cover both its internal coherence and the compliance of individual elements within a comprehensive human resources management strategy as well as the compliance with the superior business strategy and other business strategies of the company. The controlling should also deal with the process of creating, implementing and supervising strategic programs within the personal function.

The aim of controlling of personal processes is to increase their efficiency. The main personal processes in a company are as follows:

- shaping of the status and structure of the employment (it includes planning of the employment, developing the procedures related to the recruitment of employees and filling specific positions, introducing and adapting newly hired employees, horizontal and vertical promotions as well as a de-recruitment of the employees),
- managing the work efficiency (development of the processes related to the shaping of behaviors and attitudes affecting the results of work and interpersonal communication, determining remuneration principles as well as developing and implementing an employee assessment system),
- developing the human capital (defining the needs in the area of conducting employees' coaching and training, shaping the path of promotion and planning of careers as well as determining the methods of verification of training processes),
- administering personal matters.

Due to the fact that personnel management occurs in specific conditions that have a large impact on the implemented strategies, performing current tasks and the applied processes and techniques, the task of the controlling is to harmonize all the factors creating the internal environment of the personal function as well as the external one. In addition to the company's strategy, organizational structure and organizational culture, the environment of the internal personnel function is formed by stakeholders operating in various business units, including in the sphere of production or logistics. They are internal clients, creating a demand for services provided as a part of the personnel function. In turn, the environment of the external personnel function is created by the stakeholders operating outside the enterprise, especially the labor market actors and macro-technical factors of a technical, economic, legal, demographic, socio-cultural and ecological nature (Pocztowski, 2003, p. 51).

The basic goal of personal controlling is to increase the profitability, efficiency and effectiveness of the activities in the area of human resource management. Other goals of personal controlling are as follows (Sikorski, 2001, p. 50):

- a close connection of the activities of the personnel cell with the entire enterprise through appropriate coordination activities,
- taking care of the transparency of the personnel costs structure and the factors creating them,
- showing the impact of the personnel policy on the decision-making processes and the economic performance of the company,

- the indication of the effects of the objectives and tasks set for human resources in other functional areas for managing the enterprise as a whole.

The tasks of personal controlling are defined in two ways: either as “passive” or as “active” ones (Nowak, 2004, p. 177). What is understood by the passive tasks of personal controlling is a detection of “bottlenecks” in an enterprise or working as an early warning system. In turn, active tasks of personal controlling are the optimal usage of the possibilities inherent in the possessed human resources and shaping them in order to multiply the value and success of the company.

In case of human resources management, a detection of “bottlenecks” in an enterprise may refer to (Sierpińska & Niedbała, 2003, p. 352):

- changes in employees’ productivity,
- changes in the size and structure of labor costs,
- loss of working time,
- changes in the size and structure of employment and qualifications of the employees,
- changes in the accident rates,
- interpersonal relations,
- a system for assessing and rewarding employees.

The effectiveness of the personal controlling used as a tool supporting the human resources management is decided by the way it is organized, i.e. (Pocztowski & Purgał-Popiela, 2004, p. 189):

- defining the tasks and competences of the people performing them,
- assigning the controlling activities to an appropriate organizational unit,
- placing this unit in an organization structure of an enterprise.

The most important tasks of a controller within the personal function of modern enterprises are:

- a coordination of human resources planning,
- supervising the implementation of projects within the framework of human resources management,
- a measurement and an analysis regarding the employment and the mobility of employees,
- counselling for managers and supervisors in an enterprise on the subject of human resources.

In order for the controllers to be able to fulfill their responsibilities effectively, they should be guaranteed independence and have knowledge on the awareness of superior company values, orientation at the future, the ability to think in terms of causes and effects and the ability to combine short- and long-term goals. The manner of assigning personal control tasks to a specific organizational unit depends on the degree an enterprise is developed as well as on its size and trade affiliation. Most often, personal controlling is placed in the financial division or in the human resources division.

4. Types of personal controlling

The most frequently used classification of controlling and thus the personal controlling is its division from the point of view of management levels. Assuming this criterion, we can distinguish:

- Strategic personal controlling.
- Operation personal controlling.

The distinction within the mentioned types of personal controlling – the strategic and the operational one – is important, because each of them is characterized by different goals, tasks and time scale.

The overall objective of strategic controlling can be described as "... creating long-term conditions for the functioning of an enterprise and taking a favorable market position thanks to the preservation or growth of certain success factors" (Sierpińska & Niedbała, 2003, p. 51).

The essence of the personal controlling at a strategic level is to determine the measurable contribution of the personnel function into the long-term development of an enterprise. It is a controlling fully integrated with the general enterprise controlling system, which is a uniform system of procedures and tools that enables measuring the return on investment in the human capital in relation to the company strategic goals. Its scope consists of planning and control activities, resulting from the features of the strategic human resources management (Pocztowski & Purgał-Popiel, 2004, p. 187).

The tasks of the personal controlling at a strategic level include (cited from: Nowak, 2004, p. 179):

- including personal aspects into the company strategy and ensuring the integration of the personnel strategy with the company strategy,
- indicating the implementation of the best possible strategy,
- studying a dependency between the company strategy and the personnel strategy as well as the relationships between functional strategies and the personnel strategy,
- creating long-term plans,
- translating the personnel strategy into specific activities,
- monitoring the degree of the strategy implementation,
- creating and using an early warning system, responding to the changes in the company strategic goals well in advance.

The main determinants of the strategic controlling are:

- time frames – the periods are long or very long,
- the environment analysis – taking into account the external conditions of the company, relying on opportunities and threats in the future,
- potential – focusing on resources existing in the future (Sierpińska & Niedbała, 2003, p. 56),
- structuring problems – a low degree of problem structuration and a more qualitative than quantitative character of goals and tasks (Sekula, 1999, pp. 25-26).

Sekula (1999, p. 25) details the above determinants of strategic personnel controlling with additional characteristics:

- relying on potential success factors, the occurrence of which is only expected in the future,
- a low level of the formalization of data, coming from different and simultaneously variable sources,
- a difficulty in obtaining the necessary information and a relatively low level of its truthfulness,
- a high probability of deviations,
- a need to make serious strategic decisions and to implement changes into the real processes of the company in individual periods,
- a multilevel scope of control,
- a long, and sometimes unlimited, time frame.

The presented goals and tasks of the strategic personal controlling constitute the essence of this type of controlling and are the basis for differentiation between the strategic and the operational controlling.

The second type of the personal controlling, adopted as a result of classification based on the criterion of a management level, is the operational controlling, also referred to in the literature as an operative control.

The overall objective of the operational controlling is to achieve current goals within the profitability, using the quantitative data- most of all- overheads, revenues and results (Sierpińska & Niedbała, 2003, p. 5). The operational controlling deals mainly with short-term activities in a day-to-day personnel management in terms of an effective implementation of the personnel policy, shaping the labor costs, adjusting the human resources to the company tasks and generating appropriate conditions and labor relations (Sikorski, 2001, p. 52).

Considering the same determinants as used for the strategic controlling, recommended by the subject literature, you can characterize the operational controlling as follows:

- time frame – on average up to 3 years and usually short periods – quarterly, annually,
- the analysis of the environment – basing on the internal environment of the organization, the economization and regulation of internal processes,
- the potential – use of the existing resources (Sierpińska & Niedbała, 2003, p. 56),
- the structuration of problems – objectives and tasks expressed in quantitative quantities, data of high precision (Sekula, 1999, pp. 25-26).

The task of personal controlling at the operational level is to control the effectiveness of work in various organizational sections, starting from the effectiveness of individual employees to the effectiveness of the entire organization, by providing relevant information on the employment status, performance level and labor costs, personnel processes and the factors determining them, as well as the use of this information in planning and the control of modifying activities (Pocztowski & Purgał-Popiela, 2004, p. 185).

The distinguishing features of the operational personal controlling are (Pocztowski & Purgał-Popiela, 2004, p. 185):

- focusing on controlling the current goals in the area of the personal function,
- a high level of detailedness of the tasks and a high level of problem structuring connected with it,
- a relatively short period covered by planning, concentration on the current control, for which budgets are the reference point,
- the information used for the planning must be of a strong-signal nature, which stem from the historical data, current events and short-term trends.

The use of personal controlling at the operational level consists of setting deadlines and volumes subject to constant reviews, which are the basis of analyzes and measurements of the expected or identified deviations from the accepted budgets. Then corrective processes are carried out.

Within the operational controlling, you can find specific tasks connected with the personnel policy, which include (Sikorski, 2001, pp. 52-53):

- co-participation in the planning of employee resources and the coordination of the planning,
- the study of the degree of the mutual adjustment of employees to their positions, mainly from the point of view of economic and coordination effects (quantitative and qualitative ones) and the level of the risk posed by the lack of such a matching,
- indicating the ways of leveling the mismatch along with the costs of the necessary operations of such an activity,
- researching, analyzing and rationalizing the labor costs, taking care of the transparency of the creation, accumulation and the use of the personnel costs and factors that cause them,
- monitoring the costs related to the implementation of the personnel policy of the company and the factors that trigger them,
- analyzing the economic and efficiency effects of the implementation processes of the personnel policy of the enterprise,

- inspecting the correctness of the implementation of personnel assessment systems and the impulses resulting from them to program career paths, as well as their compliance with the assumed objectives of the enterprise,
- inspecting and analyzing the work efficiency and other functional elements of the employee's participation in achieving the company's goals,
- diagnosing the economic, organizational and social condition of the company in terms of a broadly understood personnel policy,
- evaluating and analyzing the effectiveness of work positions dealing with the personal policy,
- a comprehensive analysis of all actions in the field of human resources management in the whole enterprise

The detailed activities mentioned in the scope of the operational personal controlling allow to recognize the ranges of activities characteristic for individual personal functions. This is often the basis for a detailed classification of personal controlling based on the areas of its impact.

5. Conclusion

Human resource management refers to the whole set of knowledge, skills and attitudes that all businesses need to be able to compete with each other. The management is required to take care of subordinates and to take decisive actions mostly in such areas as: selection, evaluation, motivation, training and the development of employees.

Modern enterprises wishing to meet the requirements dictated by the market are forced to offer more and more modern and perfect products and services. They can bring it off only thanks to the work of highly qualified, committed, easily adaptable to changes, strongly motivated staff who express readiness to learn and are loyal and productive. Therefore, with such requirements dictated by the market, it is impossible to forget about the tool of personal controlling, which allows you to navigate the processes in individual areas of human resource management, bringing effects for the company and thus for all the employees. By treating the personal controlling as a kind of a service and consulting system, we contribute to the optimal use of the employed staff.

Bibliography

1. Armstrong, M. (2005). *Zarządzanie zasobami ludzkimi*. Kraków: Oficyna Ekonomiczna.
2. Clark, T. (1996). HRM: a Unified Understanding or a Multiplicity of Meanings? [in:] T. Clark (Ed.), *European Human Resource Management*. Oxford: Blackwell Business.
3. Grudzewski, W.M., Zach, I., & Zabielska, B. (2001). Controlling instrumentem nowoczesnego zarządzania. *Ekonomika i Organizacja Przedsiębiorstwa*, 3, 12-17.
4. Kowalczyk, S. (2002). Kontrola funkcji personalnej. [in:] T. Listwan (Ed.), *Zarządzanie kadrami*. Warszawa: Wydawnictwo C.H. Beck.
5. McKenna, E., & Beech, N. (1999). *Zarządzanie zasobami ludzkimi*. Warszawa: FELBERG SJA.
6. Miłucha, B. (2001). *W kierunku organizacji inteligentnych*. Kraków: Antykwa.
7. Nowak, E. (Ed). (2004). *Controlling w działalności przedsiębiorstwa*. Warszawa: PWE.
8. Poczowski, A. (1994). Controlling w zarządzaniu zasobami ludzkimi. *Ekonomika i Organizacja Przedsiębiorstwa*, (8), 5-9.

9. Poczowski, A. (1998). *Zarządzanie zasobami ludzkimi, Zarys problematyki i metod*. Kraków: Antykwa.
10. Poczowski, A. (2003). *Zarządzanie zasobami ludzkimi, Strategie – procesy – metody*. Warszawa: PWE.
11. Poczowski, A., & Purgał-Popiela, J. (2004). Controlling personalny. [in:] M. Sierpińska (Ed.), *Controlling funkcyjny w przedsiębiorstwie*. Kraków: Oficyna Ekonomiczna.
12. Sekuła, Z. (1999). *Controlling personalny cz. I. Istota i przedmiot controllingu personalnego*. Bydgoszcz: Oficyna Wydawnicza Ośrodka Postępu Organizacyjnego.
13. Sierpińska, M., & Niedbała, B. (2003). *Controlling operacyjny w przedsiębiorstwie*. Warszawa: PWN.
14. Sikorski, A. (2001). Controlling personalny. *Zarządzanie Zasobami Ludzkimi*, (2), 49-58.
15. Stabryła, A. (2000). *Zarządzanie strategiczne w teorii i praktyce*. Warszawa-Kraków: PWN.
16. Storey, J. (2001). Human Resource Management Today: An Assessment. [in:] J. Storey (Ed.), *Human Resource Management. A Critical Text*. London: Thomas Learning.
17. Szalkowski, A. (Ed.). (2006). *Podstawy zarządzania personelem*. Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.
18. Zając, P. (2005). Outplacement jako metoda pomocna w zarządzaniu zasobami ludzkimi. [in:] A. Nalepka (Ed.), *Organizacje komercyjne i niekomercyjne wobec wzmożonej konkurencji i wzrastających wymagań konsumentów*. Nowy Sącz: Wydawnictwo WSB–NLU.
19. Zając, P. (2006). Personalnat Controlling jako sywremennie sredstwo za uprawlenie na czoweszki resursi. „*Czoweszki Resursi*”, *Sofia, Broi*, 6/156.

Chapter 7

Analysis of Human Errors in an Enterprise

Hubert Obora

1. Introduction

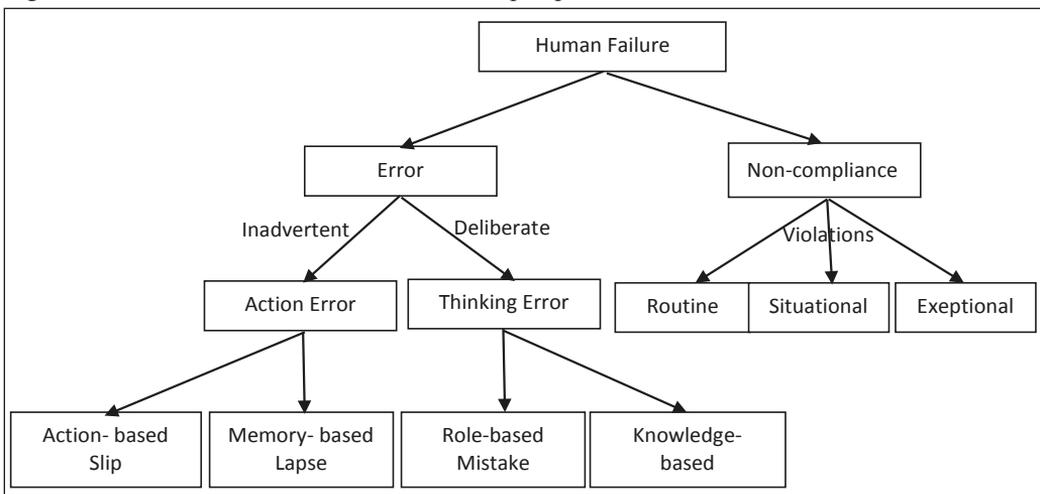
Human errors are – as shown by studies – the reason for 30-70% breakdowns in such domains of business operations as: military, medicine, industry, transport or technical diagnostics (Ratajczak, 1988). For this reason, it seems purposeful to analyze the causes and the conditions of their formation as well as develop principles and tools to eliminate them. By eliminating human errors, serious failures and downtimes are avoided, thereby improving the company's effectiveness. Accidents or near miss situations negatively affect not only at perception of the company, but also employee commitment in the work process. Practice has developed numerous tools used to reduce the likelihood of human errors. They include e.g.: training, work improvements, employee selection, training in decision making, risk perception self-assessment, decision support systems, problem solving process support systems, procedure of conduct in situations particularly exposed to the risk of error. However, in order to apply any of the indicated methods, in-depth analysis of the errors is necessary in terms of identifying their causes and assessing risk. The purpose of this chapter is to present the importance of human error analysis in the organization and assumptions of one of the methods used for such an analysis.

2. Human error

In the opinion of many psychologists, error is an immanent component of any action and plays a positive role in any learning process. Human error is embedded in his nature and cannot be avoided, it is important to ensure that its effects are not adverse. (Budohoska & Włodarski, 1972). This is confirmed by some definitions of this notion encountered in the subject literature. An example of such an approach is the definition proposed by Righby, according to which human error is a form of human action which exceeds the boundaries of acceptability (after: Kuchta, Tylek & Rawska-Skotniczny, 2017). In the opinion of Fröderberg (2014) human error can be defined as any unintended human action leading to undesirable effects. Human errors are referred to in the subject literature in two apparently independent contexts, namely on the occasion of discussing causes of accidents and in the context of analysing human action in the man-machine-environment

system. In the first case, it is analyzed as the reason for the accident, in the second one as a result of improper design of devices the man cooperates with or improper organization of his or her work environment. This difference in analysis perspective also leads to different definitions of error itself. In the first case, the definition of error puts emphasis on the inconsistency of the completed activity with its model, in the second one – on the outcome being different from the intended purpose. The mere fact of occurrence of an error can be considered a fallibility indicator, as, according to its definition, the man has not met the expectations and has not reached the goal (Ratajczak, 1988). In the man-machine-environment system the man is the weakest link, as he or she commits errors; at this point, it should be remembered that (Karczewski & Karczewska, 2012): errors are usually predictable, human behaviors are strengthened by the organization, undesirable events can mostly be avoided, and the organization may influence the behavior of its employees. A variety of approaches to the problem of typology of human errors can be found in the subject literature. The most often found and the most useful from the practical point of view is the division proposed by Reason, according to which potentially undesirable events resulting from a man's action can be divided into: intended and unintended (Reason, 1990). In this perspective human errors come down to unintended actions. The division of human errors according to this author is presented in Figure 1.

Figure 1. Division of human errors – Reason's perspective



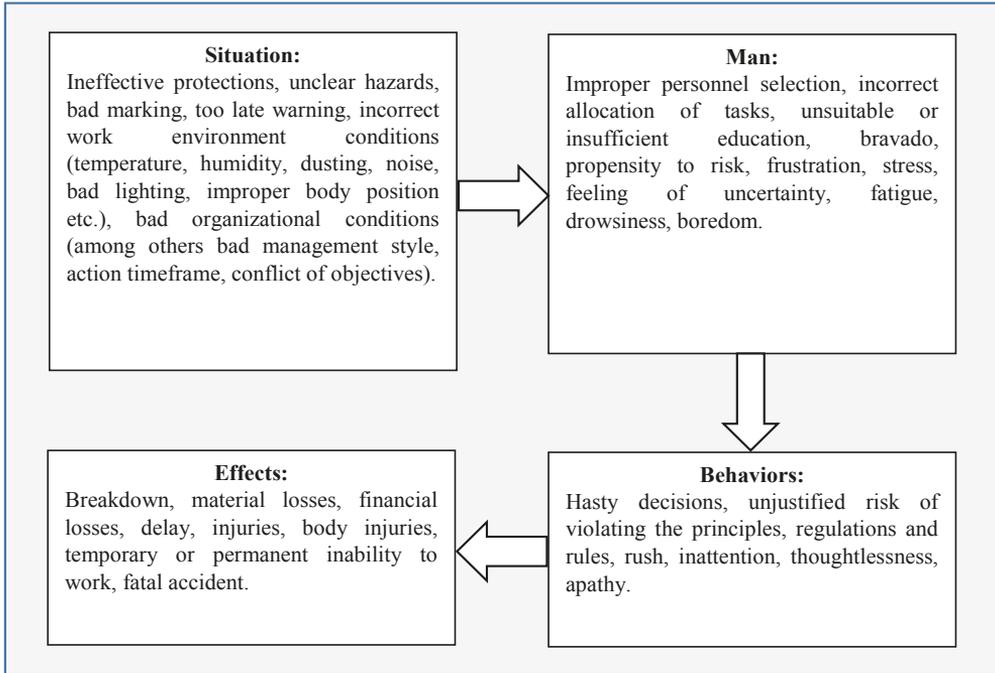
Source: authors' own study on the basis of (Reason, 1990).

According to the assumptions of psychological analysis, human errors are the effect of the so-called cause-and-effect chain (see: Fig. 2) and can be traced back to the sources inherent in the human mentality and personality. The analysis of causes of human errors always has to take account of a man's unique attribute, namely awareness, making him or her the subject of the action, rather than only an object affected by the impact of people and technical structures in the work process.

Awareness and the ability to manage one's own behavior makes the man himself able to analyze his own errors, also allowing others to refer to specified principles of conduct, motivate to take as careful action as possible etc. A man can learn from both his own and someone else's mistakes.

Using earlier experience he may also protect against errors resulting from difficulties in action at the moment the proper action happens. However, all errors should be examined not only in terms of their relation to the goals, but also with regard to the principle of economic effort. The formal goal of any activity is to obtain maximum effect at minimum effort. Committing too much time and contributing too much effort to achieving the goal should be assessed negatively, as a mistake (Pieter, 1970).

Figure 2. Human error formation cause-and-effect analysis model



Source: author’s own study on the basis of (Ratajczak, 1988).

In the engineering (probabilistic) analysis, human error is defined as a resultant of technical, organizational and psychological conditions having effect on the man (Kosmowski, 1999). Rouse and Rouse (1983) proposed examining four classes of error causes: – restrictions of the man, resulting from his or her nature, restrictions of the system, which the man cooperates with, – the conditions in which the man operates in the given system, – events that occur in the man’s action process regardless of him or her and are unpredictable (distractions, sudden deterioration in the condition of the man, incorrect communication, sudden device breakdown etc.).

3. Analysis of human errors – methods

In practice, many tools are used allowing analysis of human error and their reasons. The most frequently used include methods of analysis and problem solving, such as: PDCA-Problem Solving,

G8D (Global Eight Disciplines), DMAIC model, A3 reports or RCA (Roots Cause Analysis). These are tools used in the process of team problem solving in the organization, and thus the spectrum of their application is much broader, however they can be used in the process of analysing human errors. Another group of tools that can be used in the process of analyzing human errors are simple techniques (mostly graphic) originating from TQM (Total Quality Management), such as: Ishikawa diagram, KJ method, affinity diagram or 5 Whys. Apart from these general, universal ways of conduct that can be adapted, solutions dedicated to the analysis of human errors are also created in the described area. The most frequently mentioned ones include:

- HRA – Human Reliability Analysis.
- PHECA – Potential Human Error Cause Analysis.
- SHERPA – Systematic Human Error Reduction & Prediction Analysis.
- HERCA – Human Error Root Cause Analysis.

The first of the aforementioned methods is the most frequently used to analyse human errors in the ergonomic system (man-machine-environment). It comes down to systematic analysis of the factors affecting behavior of the man in the ergonomic system and causing errors. HRA assumptions present both a catalogue of basic human errors and a list of internal (related to the man) and external (related to the environment and the machine) conditions that cause these errors. In the primary assumptions PHECA is a method similar to HRA, however using a completely different classification of human errors and their causes. In this method emphasis has been put on the analysis of potential behavior of the man in the work process. SHERPA is a method used to analyse and eliminate critical (having impact on health and life) human errors in the processes of providing medical services. SHERPA derives its main assumptions from the FMEA and HAZOP methods and is the only computer- aided approach among the listed ones. HERCA is the most universal and most often used human error analysis method among the mentioned ones. Its main advantages are simplicity and universality.

4. HERCA method

HERCA method (Human Error Root Cause Analysis) is a systematic analysis of human errors in order to determine their causes and undertake proper remedies that will prevent repeated re-occurrence of the same error. HERCA method is applied to the analysis of errors committed by the man and is an example of a participative method that methodically ensure that errors and error-fostering situations are eliminated. It should be applied when it has been observed that the error is caused by the man. Basic assumptions of this approach are (HERCA, 2018):

- The man and his actions play the most important role in the entire work process, however it is the man that is its weakest link.
- It is unfeasible for the employee to achieve perfection in action, so even the smallest progress is important.
- An error committed by the employee is not a problem. It is the lack of reaction that is.
- Human error analysis should allow precise indication of the cause of error and its deeper studies.
- Human error analysis should be one of the elements of continuous improvement, bettering communication and memorization of key elements of tasks by employees and superiors.

- By eliminating human errors, serious failures and downtimes are avoided, thereby improving the company's effectiveness. Accidents or near miss situations negatively affect not only at perception of the company, but also employee commitment in the work process. Awareness of safety when performing working activities improves mood and comfort of the employees.

In spite of the fact that the is already known and used in practice (as one of the most important World Class Manufacturing tools), HERCA method has not been the subject of many scientific publications so far. Knowledge related to the application of this analysis is most often transferred in the companies implementing the WCM concept in the course of training as part of the preparations for its implementation. Based on an analysis of the approaches used in several automotive industry companies, the author of this paper affirms that the implementation of HERCA comes down to the following six stages (Ławniczak et al., 2014):

1. Preparation for analysis.
2. Conducting TWTP interview.
3. Identifying the main causes of human error and the proposing solutions.
4. Implementing and controlling solutions.
5. Continuing the analysis in the future.

The purpose of implementation of the first stage is identification of the problem for analysis and collection of data necessary for this purpose. At the beginning the problem should be identified and the question should be answered whether it is a derivative of human errors. In order to identify the problem well the following is necessary:

1. Determine the persons (posts) related to the problem, both being recipients of its negative effects as well as those that may cause the problem.
2. Characterize the problem by answering the question what happened.
3. Identify the time when the problem emerged.
4. Identify the place where the problem emerged and the place/places where its causes may lie.
5. Determine the rank of problem – types and costs of the associated losses for the company, the client, the employee.
6. On the basis of the above data, prepare the list of potential causes of the problem.

HERCA makes sense only when, based on the analysis of the data collected as described above, it becomes evident that the analyzed problem has been at least partially created as a result of a human error. It should be remembered that this HERCA stage should be based on the analysis of facts (empirically confirmed data) and not on the opinion of the employees. For this purpose, 5W&2H method can be used. The next stage of conduct under the HERCA method is TWTP interview (acronym of: The Way To Teach People). Moving to this stage means that the analyzed problem has been created (at least partially) as a result of human error. Thus, data should be collected allowing to identify undesirable events causing the problem the source of which was the man. The purpose of the interview is a thorough check of how the employee is prepared to their work and whether the analyzed problem could arise as a result of the lack of such preparation. The list of questions asked to the employee at this stage is contained in Table 1. TWTP interview should be completed quite quickly after emergence of a problem that may possibly result from human error. Usually HERCA analysis commences on the second or third day after detecting the problem.

Table 1. Basic questions for TWTP interview

1. Does the employee know how to perform work?	2. Where does the employee know from that he or she performs work correctly?
A. The employee knows and can perform it B. The employee only partially knows the job and can partially perform the task C. The employee does not know at all and cannot perform the task	A. He or she performs it according to the instructions B. On the basis of self-control and assessment C. Other
3. Where does the employee know from that the result of the work is free from defects?	4. What does the employee do when a problem appears?
A. Feedback from the manager, coordinator or team B. Self-control and assessment C. Other	A. Contacts the superior, the coordinator or the team to identify the remedial measures B. Warns the superior C. Other

Source: author's own study on the basis of (HERCA, 2018).

The interview must be well prepared by the persons conducting it, to collect relevant information both from the process and the documentation (information describing the analyzed problem). Interviews are conducted individually with each employee. In the course of performing the interview, the problem is to be attacked and not the answering worker, the questions should be specific and detailed. The respondents should be asked to give precise and clear answers. When the asked employee talks about other topics, irrelevant from the point of view of the problem being solved – the person running the interview should stop and ask subsequent questions to go back to the subject matter of interest. As part of the TWTP interview very important is the atmosphere in which it is conducted. The interrogated employee should feel safe, should understand why he or she answers subsequent questions and what is the main purpose of their answers. When the data, collected with the questions by presented in Table 1, are not sufficient for further action – the person running the interview asks auxiliary questions. The examples of such questions are included in Table 2.

Table 2. Examples of auxiliary questions for TWTP interview

1. Does the employee know how to perform work?	2. Where does the employee know from that he or she performs work correctly?
A. Are the tasks performed by the employee not too difficult for them? B. Does the employee know where the basic instructions describing the manner of performing their tasks are stored? C. Are the instructions valid? D. Are the instructions understandable for the employee?	A. Does the employee have tools permitting self-assessment of their own work? B. Is the employee familiar with the most important quality and safety requirements related to their work? C. How does the employee update their knowledge? D. Is the employee notified about changed standards of actions?

3. Where does the employee know from that the result of the work is free from defects?	4. What does the employee do when a problem appears?
A. Is the information system the employee uses understandable for them? B. Under the implementation of their tasks, is the employee able to check the result? C. Does the employee perform tasks on the basis of procedures? D. Is the employee notified when he or she does something incorrectly?	A. Is the employee familiar with the procedure of action in the case of emergence of a problem which he or she cannot handle? B. Does the employee have prepared procedures in case of emergence of such problem? C. Does the employee know who to turn for help to? D. Is the employee familiar with and can use tools for solving the problem?

Source: author's own study on the basis of (HERCA, 2018).

In the third stage under the HERCA method, on the basis of the results obtained in the course of TWTP interview categories of errors and corrective and preventive measures are defined. This stage should be completed as soon as possible after the end of the interview. The analysis should be the result of work of all the employees involved in HERCA, who will consider the problem with account taken of the nature of the man and will draw conclusions from the answers obtained in the second stage. TWTP analysis may indicate one or few causes of human error. Depending on the cause or causes, one or few actions are implemented, to avoid the problem. In HERCA analysis, 8 types of causes are indicated, divided into 3 categories (skills, methods, behavior). Depending on the identified cause a different activity is undertaken. The characteristics of the causes and the corresponding corrective actions are presented in Table 3.

Table 3. Basic causes of human errors and the means for eliminating them

Categories of causes	Causes	Characteristics	Actions
Skills	No ability	No training or insufficient training	Training, standardization, visual management (one-point lesson)
		No understanding of the instruction or training	
		No experience on the position	
		Specific work performed rarely	
Methods	Problems with standards	Instruction is unclear	Standardization, one-point lesson
		Incomplete instruction	
		No education (instruction unknown)	
	Environmental conditions	Too much light, noise or vibrations	Ergonomics, 5S, KAIZEN
	Problem with process	Process too complex	Poka Yoke, 5S, standardization, one-point lesson, KAIZEN
		This process can easily generate different quality than assumed quality	
	Problem with organization of the workstation	Space is badly organized, generating complicated positions.	5S, ergonomics, Gemba Kanri, standardization, visual management, KAIZEN
		Principles of using the space are not observed	
	Technical problem	The machine or tools not suitable for this task.	Poka Yoke, 5S, design of equipment, KAIZEN
		The machine generates default design errors.	
There are no tool operating procedures.			
Proper tools are not always available			
Behavior	Problem with compliance with the instruction	Error occurred due to no attention.	Poka Yoke, standardization, visual management, interview with the employee
		The personnel did not act according to the instructions.	
		The personnel committed the error, because it is a very repeatable task.	
	Personal situation	Stress, fatigue, health problem.	Conversation with the employee

Source: author's own study on the basis of (Ławniczak, Iwanowicz & Mazurek, 2014).

Within this stage of the procedure, several basic principles of conduct are applied:

1. Work in a group gives best results.
2. Routine is good only when it does not cause an error.
3. It is not advised to think routinely because it closes the way to proper diagnosis of the problem.
4. It is not advised to choose the easiest solutions, but those that are most appropriate.
5. Training and update of the instruction is not the only possible solution.
6. It is necessary to take account of the nature of the man in the instructions being prepared.

The fourth stage is implementation and control of the solutions. It is a sort of follow up, the aim of which, on the one hand, is to ensure that the developed solutions are used by employees in their work, and, on the other hand, that these solutions contribute to eliminating the problem. The time of beginning and the duration of such assessment are determined individually, depending on the nature of the problem being solved (human error). If the analyzed problem has not been solved – this stage ends the HERCA procedure. When the problem continues to exist, a subsequent TWTP interview is conducted, looking for further errors that can cause it.

5. Conclusion

The presented method is one of many tools used in the analysis of human errors. Its main advantages are universality and simplicity in application. No computer hardware or specialist training are needed to conduct the analyses. In Poland, this is a relatively poorly known method, both in the subject literature and in practice. The first broader applications are currently taking place mostly in automotive companies. The use of the HERCA method is justified particularly in the situation when the previously obtained data imply that the analyzed error has occurred through the fault of the man. Its application is helpful in indicating accurate error causes and customizing apt corrective or preventive actions. As a result, it is possible to reduce errors caused by employees, which is reflected in better business performance and improved safety. HERCA method can also be used in the case of complex antropotechnical systems, where the man has many roles at the same time.

Bibliography

1. Budohoska, W., & Włodarski, Z. (1972). *Psychologia uczenia się. Przegląd badań eksperymentalnych i teorii. Wydanie 2*. Warszawa: PWN.
2. Fröderberg, M. (2014). *The Human Factor in Structural Engineering. A Source of Uncertainty and Reduced Structural Safety*. Lund: Lund University.
3. HERCA (2018). Materiały szkoleniowe firmy Sapa Polska Sp. z o.o. Sosnowiec.
4. Kosmowski, K.T. (1990). *Zarządzanie bezpieczeństwem i sterowanie ryzykiem w systemach socjotechnicznych*. Krajowa Konferencja Bezpieczeństwa i Niezawodności, Materiały KON-BiN, Zakopane.
5. Kuchta, K., Tylek, I., & Rawska-Skotniczny, A. (2017) Przyczyny i metody zapobiegania błędom ludzkim w inżynierskiej działalności budowlanej. Część I: Klasyfikacja i źródła błędów. *Przegląd Budowlany*, 88(5), 17-23.
6. Ławniczak, I., Iwanowicz, A., & Mazurek, P. (2014). HERCA – metoda analizy błędów ludzkich. *Zeszyty Naukowe Politechniki Poznańskiej*, 62, 85-96.
7. Ławniczak, I., Iwanowicz, A., Mazurek, P., & Butlewski, M. (2014). Praktyczne zastosowanie metody HERCA w zarządzaniu wiedzą o przyczynach wypadków przy pracy. *Ekonomiczne Problemy Usług*, 112, 379-387.
8. Pieter, J. (1970). *Psychologia uczenia się i nauczania*. Katowice: Wydawnictwo „Śląsk”.
9. Ratajczak, Z. (1988). *Niezawodność człowieka w pracy*. Warszawa: PWN.
10. Reason, J. (1990). *Human Error*. New York: Cambridge University Press.
11. Rouse, W.B., & Rouse, S.H. (1983). Analysis and Classification of Human Error. *IEEE Transactions on Systems, Man, and Cybernetics*, (4), 539-549.

Chapter 8

Work Standardization in the Context of Improving the Value Stream in a Production¹

Maciej Walczak

1. Introduction

The beginning of standardization as it is meant right now may be considered the research carried out by F.W. Taylor. The basic principles of Taylor's system included precise testing and determination of the method of performance and duration of particular production operations as well as dissemination, through training, of these model ways of performance among all workers (Martyniak, 2002, pp. 17-18). Another author who has made a significant contribution to the development of standardized work was H. Ford. As early as in 1926 this known industrialist claimed that standardization as applied today is the foundation for tomorrow's improvement, while improvement can be applied for each – even the best standard. H. Ford also emphasized that if standards are treated as limitations, any progress will be stopped (Liker, 2005, p. 225). In Ford plants, product standardization was adopted as the starting point for all the actions towards standardization, being the basis for introducing far-reaching mechanization (Martyniak, 2002, p. 64). Standardization also became a tool to reduce production costs. As a result, it was possible to manufacture low-cost vehicles. However, a side effect was treatment of employees as an addition to the machines they operated. It should also be emphasized that the methods of work were examined and, in consequence, model ways of their performance were determined at the time by specialists appointed for this job. The role of direct production employees was also limited only to following the top-down imposed standards.

The present perception of standardized work has also been substantially affected by popularity of various types of standards and systems (e.g. ISO). This type of solutions are often associated by employees with growth in bureaucracy and stiffened procedures. Hence, the image of standardization is not always positive (Kosieradzka & Smagowicz, 2009, p. 49).

The purpose of the study is to present labor standardization as a tool improving the value stream in the company. For this purpose, the essence and objectives of labor standardization have been briefly

¹ Publication financed from funds granted to the Faculty of Management of the Cracow University of Economics in Cracow from subsidies to maintain the research potential.

presented. Then, selected aspects of standardization in lean and reflective production systems have been presented. In the end, a short summary has been made, together with reference to the problem of maintaining balance between standardization and flexibility in the company's operations.

2. Standardization aspects in improving the value stream

Increased effectiveness of one department most frequently does not lead to efficiency growth in the whole company's operations. Increased effectiveness of the whole company's operations happens in consequence of improvement in the functioning of the key processes (Koliński & Kolińska, 2013, p. 63). In the case of companies delivering goods to clients, such key process is the production process. The purpose of this process is physical transformation of the material into the finished product.

A term that is often used in lean management to refer to production activities is value stream. It is all the activities forming and not forming value that are performed to satisfy a particular group of needs reported by the clients (Czerska, 2009, p. 23). It should be emphasized that the value stream can be a full stream or an internal stream. The full value stream are actions performed by all the entities on the way from acquiring raw materials, through production of goods, until the moment of transferring the product to the end user/consumer. On the other hand, the internal value stream are any actions inside the analyzed company, additionally including relations with direct suppliers and direct clients (Czerska, 2009, pp. 23-24). The efficiency of the course of actions in the internal value stream, directly related to the key processes, is essential from the point of view of the company's operational efficiency.

Standardized work is an improvement tool in all the production management areas, which include planning, organization, motivation and control (Bednarek, 2013, p. 454), because it can be used to improve the course of all types of processes. The basic objectives of standards include:

- maintain the best known work method on the post over a long period of time,
- limit deviations from the adopted standards (quality, time etc.),
- simplify assessment of implemented tasks and control conducted on the posts,
- shorter the induction time for a new contractor to work on the post,
- facilitate the employees to move between the posts (inter-post rotation).

Table 1 presents the benefits, disadvantages and hazards associated with the application of standardized work.

The largest hazard related to standardization is possible reduction in the flexibility of operations on particular posts, affecting flexibility of the whole process.

The priorities at implementing standardized work can become: quality (Q), efficiency (V) and cost (C) (Koliński & Kolińska, 2013, p. 65). Adoption of quality as priority means that attempts are made to reach a situation where all products will have the same workmanship quality, compliant with the technological cards. As a result, the production process is so organized as to prevent emergence of any defective products. The basic criterion in standardization according to efficiency is timely shipment. If production is not performed according to the plan, then attempts are made to fix a work standard to increase work efficiency. The third of the mentioned priorities, namely cost, leads to the course of work being determined so as to improve process effectiveness through elimination of necessary additional costs, such as e.g. organization of unplanned transports to the client (Koliński & Kolińska, 2013, pp. 65-66).

Table 1. Benefits, disadvantages and hazards of standardized work

Benefits	Disadvantages and hazards
<ul style="list-style-type: none"> • same quality product manufacturing regardless of changes of operators on particular posts, • indication of an effective and safe method of performing work, • possible achievements measurement, • presentation of cause and effect relations, • facilitation in training, • standardization of actions taken by various teams in the company, • adjustment of persons' actions in complex production processes, • increased possibility to rely on others' activities, • stabilization of processes in the company and determination of the reference point in the case of improvement actions 	<ul style="list-style-type: none"> • hazard for flexibility of operations, • requirement of active involvement in the standardization process for all the contractors, • imposing ready solutions on the contractors, • employees' concentration on meeting standards and not creating value, • labor expenditure connected with determination of the standards and their later updates

Source: author's own study on the basis of (Pawłowski et al., 2010, p. 31).

3. Essence of standardized work

Standardization is considered to be a key process improvement tool in organizations. It is used in managing both production and administrative processes, it is applied in scientific research, in hospitals, schools, banks etc. (Jałmużna, 2017, p. 74). It should be treated as a tool maintaining productivity, quality and work safety on a high level (Pawłowski et al., 2010, p. 31).

Standard work is defined as “agreed set of procedures determining the most reliable methods and sequences of actions in every process for every employee” (*Standaryzacja...*, 2008, p. 15). Work consistent with a model is work creating value, safe and one in which wastage has been restricted to a minimum². Standardization should proceed after determining the best way of performing a given process, or performing work on the given post. The standardization process itself consists in describing (documenting) such model method as to create the guidelines to all contractors, allowing work to be properly performed, and then disseminating this model among all the parties concerned in order to standardize their actions. If standardization is performed for replicable, routine work, then standards should specify such work aspects as: “allocation of process elements to the operation, sequence and methods of performing them in space and time, staff appointment, number of the required means and work objects (inventory) as well as other essential elements having effect on the course and results of work” (Bednarz, 2013, p. 445). The standards should have the form of transparent and consistent instructions and diagrams of conduct, be communica-

² Imai (2006, p. 94) defines standard as “application of the safest and easiest processes for employees which are most efficient from the point of view of costs and productivity and allow the company to provide the best quality to the client”.

tive and well displayed (Martyniak, 2002, p. 106). They can therefore adopt the written form, but also constitute a set of visual signs (Dudek, 2016, p. 141).

The basic aspects covered by standardized work (on the example of Toyota) are: working time (takt time), work sequence and inter-operational inventory (inventory of works in progress) (Liker, 2005, p. 225; *Standaryzacja...*, 2008, p. 51; Koliński & Kolińska, 2013, pp. 64-65). The above collection can, in addition, include the principles of staff appointment and spatial structure models (Bednarz, 2013, p. 449).

Tact time is defined as the theoretical time allocated for production of one product piece, calculated by dividing the total production time by the number of products ordered by the client (Imai, 2006, p. 26). The main purpose of setting the takt time is to synchronize the pace of production with the pace of sale. In practice tact is reference number, on the basis of which the pace is determined at which the goods should be produced (Rother & Shook, 2009, p. 44). In addition, its value is applied in the evaluation of cycle times of posts from the point of view of the demand reported by the client and also when determining the necessary number of posts and employees to perform a given process (Czerska, 2009, p. 155). Tact time calculated on the basis of the dependence (formula 1) (Rother & Shook, 2009, p. 44):

$$tact\ time = \frac{working\ time\ available\ during\ the\ period\ considered}{customer\ demand\ during\ the\ period\ considered} \quad (1)$$

where:

working time available in the period concerned is the nominal available time less planned and unplanned pauses in work over the given period.

Work sequence determines the sequence of activities, undertaken under one or few subsequent operations in the process, comprising the full cycle of operations (*Standaryzacja...*, 2008, p. 54). Work sequence is dependent on the number of contractors and tasks assigned to them.

Inter-operational inventory is the minimum quantity of materials, parts, semi-finished products etc. which allows production continuity to be maintained. Determination of the standard inter-operational inventory is intended to eliminate wastage of overproduction, inventory and waiting time. Systematic process improvement should lead to a gradual reduction in this inventory, and, in the event of achieving continuous flow in the process, even elimination of the need to maintain inter-operational inventory.

Staff appointment standard and the number of used machines (posts) depends on the takt time duration and the total time for completion of operations on a given production stage. The number of employees takes account of manual completion time, while machines – machine time. In order to determine the staff appointment, the summary execution time is divided by the takt time. Then, the obtained value is rounded to the total number. If the rounding is up, the contractors will have a time reserve. When the fraction part does not exceed 0.5, it is possible to round down. However in this case it will be required to rationalize the work process, in order to shorten the total completion time (Bednarek, 2013, p. 451).

Spatial distribution is also an element in the standardization process. Displacements do not create value in the process, therefore, they should be reduced. Position planning is reflected in the distances travelled in the process both by the employee and the material as well as comfort and work safety. Therefore, the position layout standard organizes flows on the post and prevents emergence of any unnecessary items on it. It also fosters inter-post rotation of the employees.

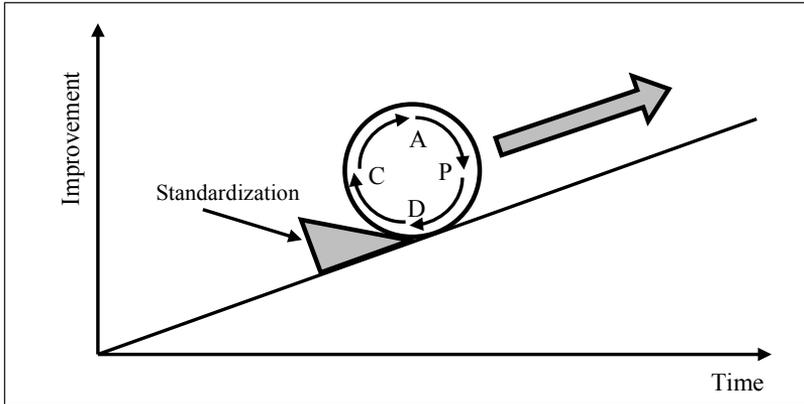
4. Standardized work in lean production and reflective production

Standardization is classified as a key principle in the lean approach (Martyniak, 2002, p. 106; Walentynowicz, 2013, p. 268) and regarded as one of the primary activities under *kazien* (Imai, 2006, p. 58). The purpose of the lean approach is to deliver value to the client by applying processes, where presence of any forms of wastage has been radically limited (so-called *muda*). Process improvement has therefore lead to more actions that create value in the process, and eliminate those which, according to the adopted classification occur only because they cannot be eliminated with the currently applied work methods (type one *muda*) and occur despite the fact that they do not add value and are not required from the point of view of the used work methods (type two *muda*). The introduction of work standard is to ensure correct performance of the operations that create value by every contractor and reduce presence of type one *muda* to the necessary minimum, and eliminate type two *muda* situations. Typical examples of methods ordering operations at the workplace through the prism of eliminating wastage the effect of which is is formation of a standard, are SMED and 5S (Koliński & Kolińska, 2013, p. 70).

In lean production each contractor, substantially, is obliged to comply with the standard. Still uncritical application of standards could inhibit organizational development. For this reason, everybody has the right to improve the standard, which may involve the need to act against the model. Such deviation is justified in the event of searching for a better, more effective solution. Changes in standards are necessary e.g. due to changing conditions of business operations. Modification of or replacement of a standard with a new one needs to be agreed with all the parties involved (Martyniak, 2002, p. 106), however, it is a desirable thing from the point of view of management.

Standardization constitutes an element of progress obtained in the company in consequence of applying the PDCA cycle (Plan-Do-Check-Act). The role of standardization is to prevent organizational regress, namely coming back to the old solutions and customs. It is also the reference point for subsequent improvements. Therefore, standardization stabilizes the process (Matuszek & Kosieradzka, 2017, p. 998), after improvements have been introduced to it. Employees are familiarized with the newly binding standard, get used to its application and work in accordance with it, until subsequent changes are introduced which are again included in the form of the binding, better standard. Despite the process modification, there are no periods when there would be freedom in performing one's responsibilities. Hence, the demand that the employees should be involved in developing standards. As assumed, the employee who has the right to develop standards for the work performed by him or herself will continuously strive to improve this work in the future (Pawłowski et al., 2010, p. 31) (Fig. 1).

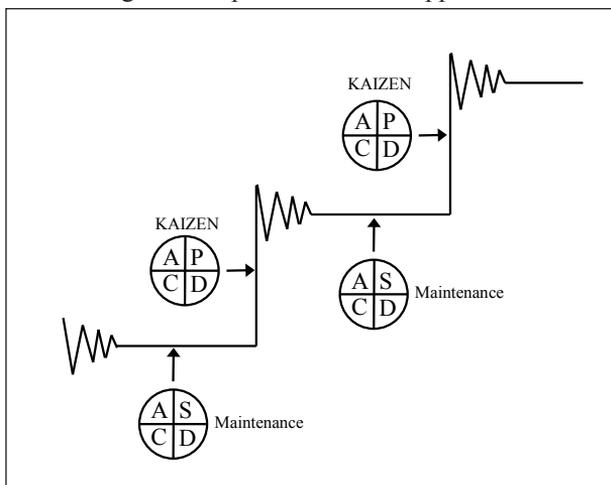
Figure 1. The role of standardization in lean management



Source: author's own study on the basis of (Rother, 2011, p. 12).

Application of PDCA should proceed alternately with SDCA cycle (Standarize-Do-Check-Act). At the time when an improvement is introduced through the application of PDCA cycle, in the improved process there are usually deviations from the assumed values, e.g. time of executing a particular operation on the post should amount to 5 minutes, and the values present in reality are: on the first shift 6, on the second 7 and on the third 4 minutes. This means that conditions in which the analyzed operation is performed are unstable and before introduction of further improvements begins, it is necessary that during each working shift this time should be as close to five minutes as possible. As soon as the adopted standard stabilizes, further changes can be sought under the PDCA cycle. PDCA is therefore an improvement tool, the role of SDCA is to stabilize and standardize solutions (Imai, 2007, p. 90) (Fig. 2).

Figure 2. Stabilization of changes in the process with the application of SDCA cycle



Source: (Imai, 2007, p. 91).

The matter of standardized work is definitely different in the case of reflective production. This concept was created in Volvo Swedish plants in the 1970s. and was being developed until the mid-1990s. The purpose of its creators was to make vehicle assembly work more attractive, so as to solve the company’s problem with acquiring employees³. Hence, it was decided to radically change the assembly organization by eliminating work at the classic, single-flow production line. In the new solution, work comprised a comprehensive task realized in a small team in a work cell. Work was so diverse and the cycle time was extended from the standard 1-2 minutes, corresponding to work at the line, to 15-40 minutes (Clark, 2005, p. 111) (in prospect to 2 hours) in the case of a work cell. Few person teams were involved in comprehensive assembly stages at a relatively high level of operational autonomy and thus work division between the members (Walczak, 2017, p. 36). The teams had to independently develop their own solutions, so as to achieve quantitative and quality goals requested of them (Clark, 2005, p. 112).

Contrary to appearances, this work organization did not require long training, or specialist competences from the employed. Employees quickly mastered their scope of obligations on the post. Substantial facilitation in this regard was the system of supplying posts with parts. The solution consisted in provision of a complete set of parts for each vehicle on the post on a standard transport cart. Parts were laid on the cart in accordance with the order of mounting in the vehicle. Therefore, the sequence of assembly activities was becoming easy to remember (Clark, 2005, p. 114). Improvements in the other aspects of work in the cells were introduced under meetings of particular teams.

Table 2 presents a comparison of factors shaping the solutions concerning standardized work in the case of lean and reflective production.

Table 2. Factors determining the solutions concerning standardized work in lean and reflective production

Comparison criterion	Lean production	Reflective production
Work object flow organization	improved serial production, tact consistent work, team work	parallel flows based on individual and collective autonomy
Process flexibility	possibility to differentiate products, desired stable level of demand for products	high flexibility with regard to production diversification and volume
Human aspects	assessment of work through the prism of group achievements	work in teams, individual evaluation of achievements
Principles of learning and work division	learning one work method, not included in the detailed standards	learning with focus on learning the whole assembly process, variety of work methods based on the standard material delivery system

³ In the discussed period in Sweden, unemployment was at a very low level and additionally work in a factory was perceived as very unattractive by potential employees.

Employees' influence on work process improvement	substantial effect, the employee is required to search for improvements within the operations performed	possibility to exert significant influence on the course of assembly, the employee knows and understands a substantial part of the assembly process
Work ergonomics	ergonomics is taken into account, but does not play a key role	ergonomics plays a substantial role in designing the post and the work process
Process automation	complex, large-scale solutions automating the process, installation performed along an automated conveyor	complex, large-scale solutions automating the process, installation takes place in work cells with the use of multifunctional tools
Cycle duration	short cycle times (1-2 minutes)	long cycle times reaching 2 hours

Source: author's own study on the basis of (Walczak, 2017, p. 38).

While in lean production emphasis has been put on the flow of material through the positions, to ensure that it takes place according to the designated takt time, in the case of reflective production, the assumed production level was to be provided by a suitable number of simultaneously working work cells.

5. Conclusion

In the Japanese approach a significant difference, as compared to typical western solutions, seems to be effective implementation of the idea proclaimed by H. Ford on "standard temporality". Standard is treated in them only as another step on the never-ending path towards continuous process improvement. As noticed by Bednarz, in the subject literature there is an opinion about a contradiction between standardization and innovation. Therefore, one may come across a not entirely justified opinion that standardization should not be implemented in enterprises focused on operational flexibility. However, the example of Toyota companies clearly proves that the combination of both above ideas in one organization is possible. Far reaching standardization, employee commitment, innovation and operational flexibility are successfully combined in lean management (Bednarz, 2013, p. 446).

Standardization is also becoming a tool to eliminate wastage of employees' intellectual potential. That is because creating standards and their later improvements should proceed with active participation of all the parties concerned, including persons directly employed on the posts which the mentioned standards relate to. If the standardization process is treated as an intellectual challenge and not creation of detailed and stiff instructions for completing the tasks, such approach will allow creativity to be released among these employees. On the other hand, too far reaching and stiff standardization leads to a situation where contractors attach too much attention to doing things correctly and not doing them well (Bednarek, 2013, p. 455).

In the chapter, an attempt has been made to compare selected aspects of standardized work in lean production and reflective production. The most important difference between the both approaches

is the level of detail of standardization as resulting from different value stream flow organization. Still in both cases standardization is an important element in production process implementation.

Bibliography

1. Bednarz, L. (2011). Metodyczne aspekty standaryzacji procesów pracy. *Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu*, 22, 131-147.
2. Bednarz, L. (2013). Standaryzacja pracy i zasobów w strumieniu wartości. [in:] R. Knosala (Ed.), *Innowacje w zarządzaniu i inżynierii produkcji*. Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją.
3. Clarke, C. (2005). *Automotive Production Systems and Standardization. From Ford to the Case of Mercedes-Benz*. New York: Phisyca-Verlag Heidelberg.
4. Czarska, J. (2009). *Doskonalenie strumienia wartości*. Warszawa: Difin.
5. Dudek, M. (2016). *Szczupłe systemy wytwarzania*. Warszawa: Difin.
6. Imai, M. (2006). *Gemba Kaizen. Zdroworozsądkowe, niskokosztowe podejście do zarządzania*. Warszawa: Wydawnictwo MT Biznes Sp. z o.o.
7. Jałmużna, I. (2017). Standaryzacja pracy – czy należy wciąż zwracać na nią uwagę? *Zeszyty Naukowe Politechniki Łódzkiej. Organizacja i Zarządzanie*, (67), 73-86.
8. Koliński, A., & Kolińska, K. (2013). Zastosowanie standaryzacji pracy w celu poprawy efektywności produkcji. *Zeszyty Naukowe Politechniki Poznańskiej. Organizacja i Zarządzanie*, (61), 61-72.
9. Kosieradzka, A., & Smagowicz, J. (2009). Ciągłe doskonalenie procesów produkcyjnych z wykorzystaniem standaryzacji pracy. [in:] R. Knosala (Ed.), *Komputerowo zintegrowane zarządzanie*, vol. 2. Opole: Oficyna Wydawnicza Polskiego Towarzystwa Zarządzania Produkcją.
10. Liker, J.K. (2005). *Droga Toyoty. 14 zasad zarządzania wiodącej firmy produkcyjnej świata*. Warszawa: MT Biznes.
11. Martyniak, Z. (2002). *Historia myśli organizatorskiej. Wybitni autorzy z zakresu organizacji i zarządzania w pierwszej połowie XX w.* Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.
12. Martyniak, Z. (2002). *Nowe metody i koncepcje zarządzania*. Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.
13. Matuszek, J., & Kosieradzka, A. (2017). Efektywność, produktywność i doskonalenie organizacji przedsiębiorstw. [in:] R. Knosala (Ed.), *Inżynieria produkcji. Kompendium wiedzy*. Warszawa: PWE.
14. Pawłowski, E., Pawłowski, K., & Trzcieliński, S. (2010). *Metody i narzędzia Lean Manufacturing*. Poznań: Wydawnictwo Politechniki Poznańskiej.
15. Rother, M. (2011). *Toyota Kata*. Wrocław: Wydawnictwo Lean Enterprise Institute Polska.
16. Rother, M., & Shook, J. (2009). *Naucz się wiedzieć. Eliminacja marnotrawstwa poprzez mapowanie strumienia wartości*. Wrocław: Wrocławskie Centrum Transferu Technologii, Politechnika Wroclawska.
17. *Standaryzacja pracy na hali produkcyjnej*. (2008). Wrocław: Wydawnictwo ProdPress.com.

18. Walczak, M. (2017). Reflective production alternatywą linii montażowej w przemyśle motoryzacyjnym. [in:] M. Walczak & A. Wodecka-Hyjek (Eds.), *Doradztwo biznesowe w rozwoju organizacji*. Kraków: Fundacja Gospodarki i Administracji Publicznej.
19. Walentynowicz, P. (2013). *Uwarunkowania skuteczności wdrażania Lean management w przedsiębiorstwach produkcyjnych w Polsce*. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.

Chapter 9

Building Responsible Relationship between Enterprise and Employees

Irmina Włodarska

1. Introduction

The main purpose of this chapter is to investigate the level of awareness of corporate social responsibility concept by employees and also to identify how CSR activities are engaging employees, including its impact on their motivation, identity, and sense of meaning and purpose. Presented results are based on a complex research conducted in order to get information of whether the CSR practice has been implemented in organization and also to check the awareness of the employer's commitment to social and environmental responsibility.

Both scholars and practitioners agree that a key component of an organization's competitive advantage and ultimate success relates to its responsibility to employees. Hence, traditional strategies for demonstrating responsible employee practices and building strong employee relationships include providing attractive wages, good benefits packages, and opportunities for training and promotion within the organization. In addition, a growing area of interest lies in the potential advantages gained through a firm's corporate social responsibility efforts and employees' engagement.

Nowadays, companies are doing many different things to engage their employees through CSR. There has, for example, been an increase in traditional forms of corporate volunteerism – supporting employees who mentor schoolchildren; care for the elderly, build community playgrounds – along with more “skill-based” engagement efforts wherein employees use their technical and commercial know-how to address social concerns such as robotic workshops for kids. On the operational front, more employees today are engaged in sustainable supply chain management, cause-related marketing, and green business initiatives – in effect, doing social responsibility on-the-job.

2. Nature of CSR

The extant of CSR literature is broad and diverse, which can lead to confusion regarding the definition of CSR (Peloza, 2009). Over time, scholars have examined and classified the concept and theories of corporate social responsibility. Different perceptions of CSR have generated a series of misunderstandings and have created barriers for organizations in the way they approach

CSR opportunities and challenges. Although the concept of corporate social responsibility is being very much debated for over 50 years, there is no generally valid definition. However, based on the definition of Aguinis CSR concept is defined as: “context-specific organizational actions and policies that take into account stakeholders’ expectations and the triple bottom line of economic, social, and environmental performance” (Aguinis, 2011). In this case, the concept of People-Planet-Profit – the triple bottom line can include economic issues (to make profit), social issues (sensitiveness and respect towards different and changing social and cultural norms and values), and environmental issues (to respect the environment and to care for the constant improvement of its condition) (Carroll, 1983). Consequently, Corporate Social Responsibility is the commitment of companies towards the sustainable economic development of the society. It means engaging directly with employees, identifying their basic needs, and integrating their needs with business goals (WBCSD, 1999).

ISO 26000 Working Group on Social Responsibility consider that “Social responsibility is the responsibility of an organisation for the impacts of its decisions and activities on society and the environment through transparent and ethical behaviour that is consistent with sustainable development and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organization” (Slob & Oonk, 2007). Hence, in this changing environment, through effective CSR practices, organizations should: achieve a balance between economic, environmental and social imperatives; address stakeholders’ expectations, demands, and influences and also sustain shareholder value. It is significant to consider how companies manage the social, economic, and environmental effects of their activities and their relations with stakeholders in all key spheres of influence.

3. Study regarding the knowledge level and impact of CSR activities on employees’ engagement and building relationship between enterprise and employees

3.1. The purpose and objectives of the research

The purpose of this research is to study the knowledge and awareness of Corporate Social Responsibility (CSR) as well as the impact of employees’ engagement and its impact on building relationship between enterprise and employees.

Among the objectives set by the research, I highlight four that are directly related to this paper:

O1. Determining the knowledge level regarding the concept of CSR.

O2. Identifying awareness of the employer’s CSR activities.

O3. Verifying the impact of employees’ engagement on the identification with a firm.

O4. Drawing relevant conclusions.

3.2. The sampling

For this study there were surveyed managers and employees aged 25-40. 192 questionnaires were sent, nevertheless, 187 questionnaires were valid.

3.3. Methods and tools used

A questionnaire to study was used for the research. Information collection was conducted online, via the computer application support provided by the platform Freeonlinesurveys.com. In conducting this work I aimed to minimize errors due to non-response, inadequate samples and incorrect answers of the respondents. Data collection for the survey took place in September 2017.

In order to facilitate achieving the targets, in the developed questionnaires open questions, closed questions and mixed were used. The survey was unconcealed, the aim being known from the beginning by the respondents.

3.4. Errors and limitations

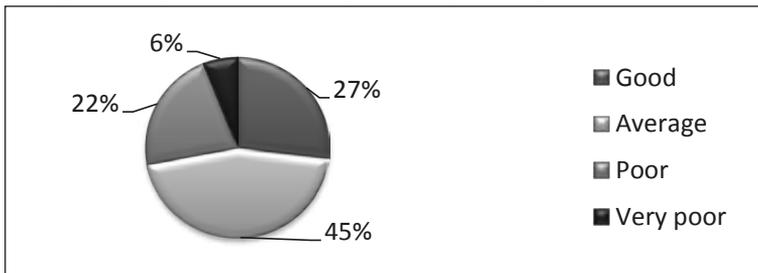
I believe that the most important limitation of the conducted research is due to the sample size (187 respondents). The presented results cannot be extrapolated beyond the universe of the population. These results should be considered in the light of the case study, even if they can help build a critical indicator in defining the core values.

3.5. Research results

A. Understanding the concept of Corporate Social Responsibility

After processing the data obtained from the questionnaires, it was found that 28% of respondents have very poor and poor knowledge regarding this concept. This indicates a relatively high level of knowledge on this subject (Fig. 1).

Figure 1. Knowing the Corporate Social Responsibility Concept

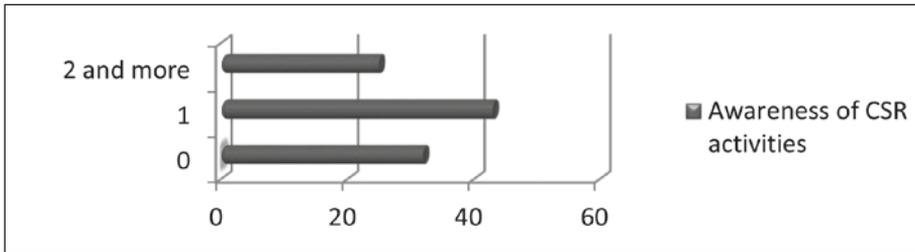


Source: authors' computation.

B. Identifying awareness of company's CSR practices

The research indicates high level of employees' awareness due to very good internal communication such as intranet. 25% of all respondents know more than one good practice (Fig. 2). In which 70% know good practices conducted within their organization.

Figure 2. Awareness of good practices

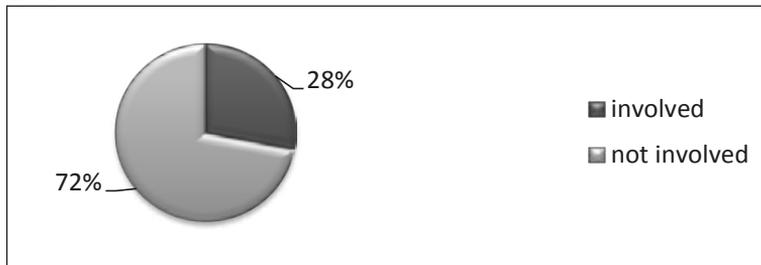


Source: authors' computation.

C. Evaluating the impact of employees engagement

Only 28% of all respondents are or were involved actively in CSR activities that indicate very low employees' engagement (Fig. 3).

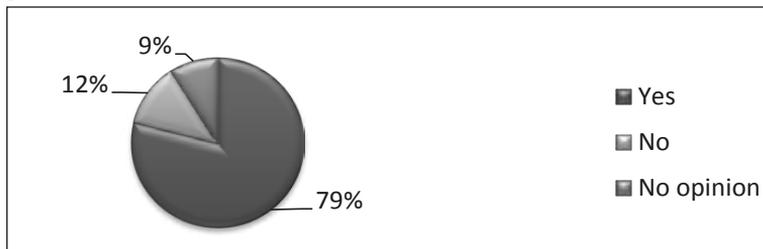
Figure 3. Employees' involvement in CSR activities



Source: authors' computation.

Nevertheless, 79% of actively involved employees claimed that they want something more from a job and feel organizational commitment, and are satisfied with their current work environment (Fig. 4).

Figure 4. Organizational commitment

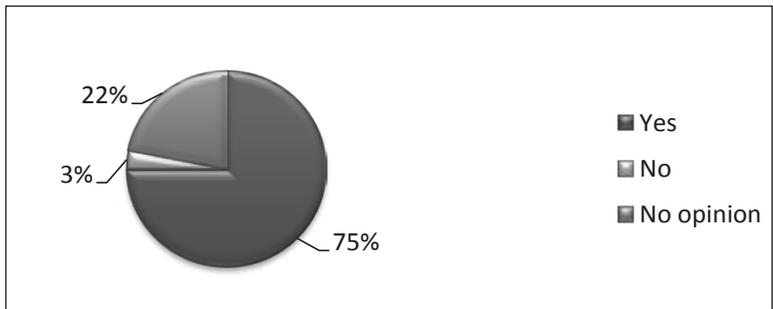


Source: authors' computation.

D. Verifying willingness to work for a company in which CSR practices have been implemented

At the end of the questionnaire, respondents answered the question regarding their willingness to work for a company in which CSR practices have been implemented (Fig. 5). 75% of all respondents say yes and it's very interesting result that can be used for further research on the bigger and more diverse community.

Figure 5. Willingness to work for CSR Company



Source: authors' computation.

To sum up, CSR is being used today as a tool to retain and engage employees. Survey finds that three out of four respondents (aged 25-40) want to work for a company that cares about its impact and contribution to society. It also finds that nearly seventy percent say that they are aware of their employer's commitment to social and environmental causes and 79% say that employees' CSR activities make them feel loyal to the company. Employees' identification with a firm can then lead to a variety of positive outcomes, including organizational commitment and job satisfaction. Based on research, there are increasing numbers of employees aspire for "something more" from a job.

4. Conclusion

All the changes and economic development faced by both international and domestic companies require changes in building responsible relationship with employees. Due to the globalization and competition, social responsibility leads to making decisions that balance the needs of all stakeholders. The study conducted on identifying the knowledge of the concept of CSR and its impact on employees engagement found that the surveyed employees want to feel like they're part of the CSR activities undertaken within the organization.

Taking into account the research results obtained, in line with all above-mentioned, social responsibility empowers employees to participate in company's good practices.

Furthermore, being part of a strategy that helps the greater good can boost employee morale and lead to greater productivity. It creates a sense of pride, being proud of what I do within the organization. That pride is being shown in the relationship between employees and enterprise and indicates the significant meaning of building responsible relationship.

Bibliography

1. Aguinis, H. (2011). Organizational Responsibility: Doing Good and Doing Well. *Handbook of Industrial and Organizational Psychology*, 855-879.
2. Carroll, A. (1983). Corporate Social Responsibility: Will Industry Respond to Cutbacks in Social Program Funding? *Vital Speeches of the Day*, 604-608.
3. Peloza, J. (2009). The Challenge of Measuring Financial Impacts from Investments in Corporate Social Performance. *Journal of Management*, 35(6), 1518-1541.
4. Slob, B., & Oonk, G. (2007). The ISO Working Group on Social Responsibility: Developing the future ISO SR 26000. Retrieved on 03/03/2018, from: http://indianet.nl/pdf/briefing_iso_sr.pdf.
5. WBCSD. (1999). Retrieved on 03/03/2018, from: <http://wbcSD.org>.

Chapter 10

Organizational Condition of Nicotinism of Employees¹

Urszula Bukowska

1. Introduction

The work environment can affect the employee in several ways. It can help meet needs, motivate to develop, give a sense of belonging and safety. However, if there are pathologies present in this environment, related to material or non-material elements of working conditions, its impact on the employee may be destructive. It might lead to such phenomena as mobbing, workaholism, and alcoholism. Also, nicotinism – an important health and social issue – is an organizational problem because there are many smokers among employees.

Smoking is currently an important health and social problem. However, it is also an organizational issue as there are many smokers among employees. The literature on the topic of nicotinism is mainly related to the effects of tobacco use that is treated primarily by publications in the field of medicine. In a few studies in the field of management sciences related to employee addictions, the main problem is the organizational effects of nicotinism. Meanwhile, the issue of stimulating the addiction through the working environment is also important. Therefore, the aim of the research was to identify the possible relationship between the work environment and nicotinism. As a result, anti-smoking prophylaxis undertaken in enterprises may be more effective.

2. Addiction to cigarettes – symptoms and effects

Nicotinism or “addiction to smoking or chewing tobacco or taking snuff, causing chronic (less frequently severe) nicotine poisoning”, is a psychological and pharmacological addiction (Pstrąg, 2000, p. 20). Nowadays, the issue is caused primarily by smoking tobacco in the form of cigarettes. Addiction to them is “the most common anti-health behavior undertaken by millions of people” (Szpringer, Makowska & Olędzka, 2016, p. 44). The study *Social Diagnosis. Conditions and Quality of Poles* carried out in 2015 shows that the percentage of adult Poles smoking

¹ The publication was financed from the funds granted to the Faculty of Management at Cracow University of Economics, within the framework of the subsidy for the maintenance of research potential.

cigarettes decreased within 20 years by 13.5 percentage points. However, every fourth adult Pole still smokes, on average almost 15 pieces a day. They are mainly men, middle-aged people with basic vocational education, unemployed and employees of the private sector (Diagnoza społeczna – Social Diagnosis, 2015, p. 21).

Mental and behavioral disorders due to smoking have been included in category F17 of the *International Statistical Classification of Illnesses and Health Problems ICD-10* (2009, p. 217, 219). It was indicated that the addiction syndrome (e.g. from a single substance such as tobacco) includes behavioral, cognitive and physiological symptoms that develop after repeated use of a given substance and usually include a strong need to take the substance, difficulties in controlling its use, persistent use in spite of harmful effects, preference to take the substance instead of completing other activities and fulfilling commitments, increased tolerance, and sometimes the occurrence of physical symptoms of withdrawal syndrome. This description is used by therapeutic centers to diagnose tobacco addiction.

The following symptoms may indicate the addiction:

- a large number of cigarettes smoked – usually more than 20 a day;
- problems with the external appearance (yellow toes and nails, pale skin, unpleasant smell from the mouth); functioning of the body (smoker's cough, often a stuffy nose); reduced physical fitness (shortness of breath, poor condition);
- unsuccessful attempts to overcome the addiction;
- withdrawal symptoms that appear after 1-2 hours after the last cigarette smoked. These symptoms are nervousness, aggression, increased appetite, problems with concentration, sleep problems, exhaustion, headaches. Longer abstinence is accompanied by nausea and increased sweating;
- collecting cigarette stocks (Lindenmeyer, 2007, pp. 114-115).

There are numerous health effects of tobacco use such as cancer (lungs, bronchi, larynx), coronary heart disease, atherosclerosis, Bürger's disease, chronic bronchitis and emphysema, digestive system disorders, deterioration of the efficiency of sense organs (Pstrąg, 2000, pp. 58-59). Smoking tobacco might be harmful not only to active smokers but also to non-smokers. This is meaningful because the concentration of some chemical compounds in the lateral stream of tobacco smoke is higher than for active smoking (e.g. there is 15 times more carbon monoxide). In particular, environmental tobacco smoke (so-called passive smoking, second-hand smoke) increases the risk of (Lipińska-Ojrzanowska et al., 2015, pp. 828-830):

- impaired lung function,
- respiratory infection,
- chronic diseases of the respiratory system (asthma, chronic bronchitis, chronic obstructive pulmonary disease),
- cardiovascular diseases,
- malignant tumors (lung cancer and breast cancer in premenopausal women),
- complications in the course and outcome of pregnancy and the health of the child.

Being in the company of a smoker also causes a nuisance such as burning eyes, dry throat, headache, fatigue (Szpringer, Makowska & Olędzka, 2016, p. 44). Research (Binkowska-Bury, Marć & Osuchowski, 2010, p. 202) indicates, however, insufficient awareness of smokers about the harmfulness of cigarette smoke for non-smokers. Meanwhile, "Staying in any amount of tobacco smoke is dangerous for a passive smoker" (Szpringer, Makowska & Olędzka, 2016, p. 44).

3. Work and smoking addiction

3.1. Legal norms regulating the use of tobacco

Deliberation of the organizational determinants of workers' addiction to nicotine requires the reference to legal norms regulating the use of tobacco in the workplace and during work time. First of all, with regard to the indicated threats resulting from active and passive smoking, the reference should be made to the clause 66 of the Constitution of the Republic of Poland, under which everyone has the right to safe and healthy working conditions, and thus free from the risks of tobacco smoke. The indicated provision of the Constitution has only a slogan character and does not specify how this right should be implemented. It does not mean that this right has not been implemented because relevant laws have been issued, in particular, the Labor Code, in which the entire chapter has been devoted to health and safety issues. The Labor Code imposes on the employer duties of caring for working conditions, but it does not regulate the issue of smoking by employees. Strictly, the provisions regarding tobacco smoking, also in the workplace, were included in the Act of November 9, 1995, concerning the protection of health against the consequences of tobacco use (consolidated text: Journal of Laws of 2017, item 957, 2439). The current version of the Act prohibits smoking not only tobacco products, but also so-called innovative tobacco products and electronic cigarettes in the premises of work establishments, but also in other locations that are workplaces, such as the university grounds, food and entertainment premises, public transport means, and facilities serving travelers, etc. (Art. 5.1.). However, research conducted among the nicotine addicts indicates that despite the ban, they smoke in public places and even at work (Szpringer, Makowska & Olędzka, 2016, p. 47).

According to the law, a separate smoking room should be designated in a workplace that is structurally separated from other rooms and passageways. However, this is not the employer's responsibility, but the owner or manager of the object is accountable for arranging such area (Art. 3). Creating a smoking room is beneficial for smokers non-smokers, reducing the risk of exposure to the harmful effects of passive smoking. However, the preparation of a smoking room according to the guidelines, properly ventilated and isolated, is an expensive solution, and moreover, it is recognized as a manifestation of acceptance and promotion of harmful addiction (Lipińska-Ojrzanowska et al., 2015, p. 833). Therefore, the employer is not obliged to create it. A total ban on smoking, which is expressed in the lack of a smoking room, is in line with the idea of promoting a healthy lifestyle, but often results in smoking in the places where smoking is not allowed, for example, next to the entrance to the building. It exposes people who enter, including guests, customers to a high concentration of pollutants in the inhaled air. It is also often accompanied by a lot of littering the ground with cigarette butts.

Legal regulations established at the state level do not regulate the issue of time spent by the employee on smoking. In many cases, it is obvious that the specificity of the work and the related workplace do not enable smoking while performing tasks assigned to the position. Therefore, the smokers use brakes. First of all, it is the time of a fifteen-minute break included in the work time if an employee works at least 6 hours a day. In some organizations there is also the so-called lunch break, lasting no more than 60 minutes. Employees working with screen monitors (of any type), after each hour of work, in accordance with §7, point 2 of the Ordinance of the Minister of Labor and Social Policy of December 1, 1998 on health and safety in workplaces equipped with screen monitors, have at least a five-minute break included in work time. According to the employers, this break often turns out to

be too short for the employee not only to smoke a cigarette but also to move to and from the place where he does it. Addiction specialists say that during an eight-hour working day, a smoker smokes on average 7 cigarettes a day, spending 40 minutes on it². In practice, therefore, smoking happens not only during formal breaks but also during the time intended for work.

3.2. Working conditions and smoking cigarettes

Addictions are phenomena analyzed by representatives of various scientific disciplines, hence the etiology of toxicology is explained by philosophical, biological, medical, psychological and pedagogical concepts. The analysis of these concepts presented e.g. by Pstrąg (2000, pp. 21-44), allows us to accept the thesis that the most adequate to explain the phenomenon of stimulating the nicotine among workers is one of the psychological concepts, i.e. behavioral theory that treats addiction as the acquired phenomenon. This does not mean, of course, that every smoking employee has been “taught” at work or in connection with work. The process of “learning” addiction uses positive and negative reinforcements, which are most often social or psychopharmacological factors (Pstrąg, 2000, p. 28). The social factors, especially social groups to which a person reaching for a cigarette belongs or wants to belong are particularly important for those considerations. Smoking is becoming the means by which the need to belong to a group is met, usually informal, but sometimes also formal. A sense of belonging might be considered as a reward, while a repudiation due to the “maladaptation” of the individual to the group norms regarding the admission of nicotine would be a kind of punishment. Sometimes a group of employees united by smoking together is formed. Worse, when one of the superiors also belongs to such a group because its members feel honored. Moreover, due to the fact that often topics that are important for employees are discussed during the break for a cigarette, non-smokers may experience a sense of social exclusion.

However, psychopharmacological factors may also positively enhance behaviors related to nicotine. Cigarettes can be treated as a means of reducing tension, eliminating unpleasant physiological or psychological symptoms, caused by work-related stress. Stress is experienced when the requirements of the environment exceed the capabilities of the individual to deal with them or are at the limit of these possibilities (Widerszal-Bazyl, 2008, p. 89). Many researchers analyzing the phenomenon of organizational stress perceive the working conditions as the reason for exceeding the capacity of the individual, considering them as potential stressors. For instance, Ivancevich and Matterson (1990, p. 222) developed an integrated model of stress and work. They indicated such internal organizational sources of stress as physical environment (e.g. lighting, noise, temperature, air pollution) and organizational stress factors (e.g. the lack of possibility to participate, poor organizational climate, outdated technology, poor management style). Also R.L. Kahn and Ph. Byosiere created the model of organizational stress that includes stressors associated with the organization, such as the noise, lighting, temperature, etc. originating from the physical environment as well as the ambiguity of roles and conflicts related to the psychosocial environment (Terelak, 2005, p. 240). Therefore, smoking is classified as the behavioral effects (“costs”) of stress (Mańkowska, 2017, pp. 133-135). Studies carried out in Finland have shown that workers experiencing severe stress were more likely to become smokers than those who experienced little stress, regardless of age, education, type of employment or civil status. More severe stress

² www.freeforever.pl

also means the higher intensity of smoking and the likelihood that people who had previously quit smoking started to smoke again (Kouvonen et al., 2005, pp. 66-67). Studies conducted in Poland also showed that stress is the most frequent cause of the return to addiction. It is also considered as an obstacle to the process of smoking cessation (Szpringer, Makowska & Olędzka, 2016, p. 48).

Describing nicotinism as an addiction among employees, in addition to the negative health effects also the costs incurred by the employer in relation to it should be indicated. These are waste of working time, increased sickness absence of smokers, higher costs of ventilation, cleaning, and finally the increased risk of fires (Bratton & Gold, 2017, p. 406). For non-smokers, the smell of tobacco smoke carried on clothes can be exhausting. Conflicts between smoking and non-smoking employees are also possible (Binkowska-Bury, Marć & Osuchowski, 2010, p. 198). Activity in the field of tobacco smoking is one of the factors differentiating employees that lead to conflicts. In the analyzed case, the conflict is related to relationships, and therefore its effects are always negative (Jehn & Mannix, 2001, pp. 238-239). It causes difficulties in teamwork. Therefore, not only working conditions affect smoking, but also the opposite – tobacco smoking by employees has an influence on social working conditions.

4. Counteracting the addiction of employees to nicotine

The authors of the Act on Health Protection Against the Consequences of Using Tobacco and Tobacco Products have pointed out that protection of health against the consequences of tobacco use consists of, among others, protection the rights of non-smokers to live in an environment free of tobacco smoke and steam from electronic cigarettes, health promotion by encouraging to lifestyle free of smoking habit, as well as educational and informative activities (Art. 3, par. 1-2a). These are activities that can also be implemented in enterprises. However, researchers in the area of tobacco addiction emphasize that educational activity in an enterprise is effective when it is addressed to two groups: employers, including health and safety specialists, and employees (Lipińska-Ojrzanowska et al., 2015, p. 832). Education of employers and health and safety services concerns the health effects of smoking, including passive smoking, organizational effects, legal norms regulating smoking, but also the possibility of supporting employees in the fight against the addiction. Education of employees is not only about familiarizing them with the negative health effects of smoking, but also about encouraging them to be free of addiction, by pointing out effective ways of fighting it (Lipińska-Ojrzanowska et al., 2015, p. 832). The addicted employee might be discouraged to take up the fight against addiction not only because of the doubts about its effectiveness but also due to expected side effects in the form of irritability, outbursts of anger, gain weight. It is therefore important to motivate smokers to get out of the habit, especially the addicted ones. It turns out that the motivation to quit smoking is greater among the not addicted smokers than among those who are already addicted (Sawicka et al., 2015, p. 415). Meanwhile, informing about the harmfulness of smoking is particularly effective for the non-addicted smokers. It is also advisable to support the addicted ones in quitting smoking. The assistance may be related to the implementation of anti-smoking programs in the company. The addiction treatment centers may help the employer in creating such program. In this way, the behavioral-cognitive therapy program ‘A company without a cigarette’³ can be implemented. However, anti-smoking programs should not include bonuses and

³ www.freeforever.pl

rewards for quitting smoking. They would be morally questionable because non-smokers would be discriminated not having the possibility of receiving such allowance.

People who effectively quit smoking indicate such benefits as improvement of the health condition, well-being and the appearance of the skin, but also saved money (Szpringer, Makowska & Olędzka, 2016, p. 49).

Promoting a cigarette-free lifestyle among employees can be part of a safety culture. In the safety culture, the priority is put on the security of the organization's stakeholders, primarily employees. Safety is then understood widely, not only as preventing occupational accidents and occupational diseases but as preventing physical and psychosocial risks associated with material and non-material working conditions. This means striving to eliminate sources of stress in the company, thanks to which the need felt by employees to reduce the tension with cigarettes will decrease. Eliminating the stressors requires their prior identification that can happen through employees' opinion surveys. Creating the safety culture requires the involvement of employees, but also the conviction that they bear responsibility for their and others' safety. As a result support groups that bring together employees who struggle with the addiction, but also celebrate together the success of quitting smoking might be created. Often employees' awareness of the harmfulness of smoking, including the passive smoking, is insufficient. Then it is necessary to implement educational programs on the effects of smoking, which will become the basis for taking over responsibility for the health and safety of co-workers.

5. Conclusion

Smoking, that sometimes means an addiction, causes negative effects not only for smokers but also for all those who are within the range of tobacco smoke. According to a study conducted in 2015, 25% of Poles smoke cigarettes. Many of them also smoke during working hours. The employer, therefore, bears the costs resulting from the waste of work time, increased sickness absence of employees, ventilation, cleaning, and others. Smoking cigarettes during working hours may arise from the inadequate working conditions. They can foster the addiction in two ways:

- when there are pathological social conditions, it is possible that belonging to a group of co-workers who smoke is treated as a reward for smoking;
- causing stress that the employee tries to reduce thanks to a cigarette.

The implementation of anti-smoking programs by the employer is caused by health as well as economic and image considerations. The basis of these programs addressed to employers, health and safety services and employees is educational activity, the subject of which is the effects of smoking. These programs can contribute to the creation of a safety culture in the enterprise.

Bibliography

1. Bratton, J., & Gold, J. (2017). *Human Resource Management. Theory and Practice*. London: Palgrave. Macmillan Education.
2. Binkowska-Bury, M., Marć, M., & Osuchowski, F. (2010). Palenie tytoniu w zakładzie pracy. *Przegląd Medyczny Uniwersytetu Rzeszowskiego*, 2, 197-204.
3. Czapiński, J., & Panek, T. (Eds.). (2015). *Diagnoza społeczna 2015. Warunki i jakość życia Polaków*. Warszawa: Rada Monitoringu Społecznego.

4. Freeforever. Retrieved on 04/05/2018, from: www.freeforever.pl.
5. Ivancevich, J.M., & Matterson, M.T. (1990). *Organizational Behavior and Management*. Boston: BPI Irvin, Homewood.
6. Jehn, K.A., & Mannix, E.A. (2001). The Dynamic Nature of Conflict: A Longitudinal Study of Intragroup Conflict and Group Performance. *Academy of Management Journal*, 44(2), 238-251.
7. Kouvonen, A., Kivimäki, M., Virtanen, M., Pentti, J., & Vahtera, J. (2005). Work Stress, Smoking Status, and Smoking Intensity: An Observational Study of 46 190 Employees. *Journal of Epidemiology and Community Health*, 59, 63-69.
8. Lindenmeyer, J. (2007). *Ile możesz wypić? O nalogach i ich leczeniu*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
9. Lipińska-Ojrzanowska, A., Polańska, K., Wiszniewska, M., Kleniewska, A., Dörre-Kolasa, D., & Walusiak-Skorupa, J. (2015). Palenie tytoniu w miejscu pracy – prawny i zdrowotny aspekt biernego narażenia na dym tytoniowy. *Medycyna Pracy*, 6, 827-836.
10. Mańkowska, B. (2017). *Wypalenie zawodowe. Źródła, mechanizmy, zapobieganie*. Gdańsk: Harmonia Universalis.
11. *Międzynarodowa statystyczna klasyfikacja chorób i problemów zdrowotnych ICD-10, tom I* (2012). WHO 2009, Centrum Systemów Informacyjnych Ochrony Zdrowia.
12. Pstrąg, D. (2000). *Wybrane zagadnienia z problematyki uzależnień*. Rzeszów: Wydawnictwo Wyższej Szkoły Pedagogicznej.
13. Sawicka, K., Łuczyk, R., Zięba, K., & Łuczyk, M. (2015). Poziom uzależnienia od nikotyny oraz motywacja do zaprzestania palenia tytoniu w wybranej grupie Polaków. *Journal of Education, Health and Sport*, 5(8), 395-416.
14. Szpringer, M., Makowska, A., & Olędzka, M. (2016). Uzależnienie od nikotyny i ocena skuteczności rzucania palenia u dorosłych. *Medycyna Środowiskowa*, 19(1), 43-50.
15. Terelak, J.F. (2005). *Psychologia organizacji i zarządzania*. Warszawa: Difin.
16. Widerszal-Bazyl, M. (2008). Ryzyko psychospołeczne w miejscu pracy i jego ograniczanie. [in:] D. Koradecka (Ed.), *Bezpieczeństwo i higiena pracy*. Warszawa: CIOP- BIP.

PART III

DILEMMAS OF MARKETING MANAGEMENT



Chapter 11

Design Aspects in Marketing Management of Retail Stores¹

Dagmar Lesakova

1. Introduction

The store environment is among the most important determinants of store choice by buyers. It has long been recognized that the atmosphere of the store can be more influential than the product itself in the purchase decision (Kotler, 1973). Many buying decisions are made at the point-of-sale, so that atmosphere in the store can increase sales. In a highly competitive environment, where retailers pursue customers' retention strategies, the store atmosphere is an important differentiator. Professionals concerned with the management side of retail stores recommend how to use space, colours, lighting and interior design to create environments that attract customers.

Psychologists have studied environment-behaviour relationships, developing a distinct psychological discipline known as "environmental psychology". Models used to explain the impact of environment on decision processes are based on the assumption that particular environmental stimuli provoke shoppers to evaluate the information presented through the stimuli and then, based on these evaluations, positively or negatively respond to these stimuli. In this context, the atmosphere is the stimulus (S) that causes a consumer's evaluation (O) and this evaluation causes some behavioural response (R), which could have a form of approach or avoidance.

According to stimuli-response models, the environment-person interaction consists of two phases. In the first phase, environmental stimuli generate emotions of pleasure, arousal and dominance referred as the "PAD". In the second phase, the emotions stimulate approach (positive) or avoidance (negative) behaviours. In 1982 Donovan and Rossiter applied the environment-response framework to test the store atmosphere's impact on customers' behaviours. Their finding suggest that store-induced feelings can increase time spent in the store and also willingness to interact with sales personnel.

The most widely used theory explaining the impact of environment on humans' evaluation is the environmental response model proposed by Mehrabian and Russel (1977). The Mehrabian-Russel approach uses a stimulus-organism-response sequence (SOR). The first component in the SOR and

¹ This chapter was developed within the Research project VEGA V-18-129-00 "Health conscious consumer behaviour: determinants, perspectives and intervention possibilities".

in the Mehrabian-Russel sequence is the stimulus. While the variables representing the evaluation part (O) and the response part (R) of the model are clearly defined, the taxonomy of stimulus variables (S) is less unambiguous. The selection of appropriate stimulus taxonomy is extremely difficult because of the complex and changing combinations of stimuli in any environmental setting. Stimuli can be evaluated either at an affective or cognitive level. The model of Mehrabian and Russel considers only the affective part and emotional states of a person as a mediating variable, influencing human's behaviour. It is assumed that information load of an environment is a direct correlate of arousal. The higher the load, the higher a person's arousal level. Therefore, an environment that is unfamiliar, surprising, crowded and complex will cause that a person becomes stimulated, excited and alert. Conversely, an environment that is common, usual and expected, will cause feelings of relaxation and calmness.

An individual's response (R) to any environment may be categorized as either approach or avoidance behaviour. Approach behaviours include physically moving toward, exploring, and performing in an environment, as well as returning to that environment. Avoidance behaviours include a desire to leave, disinvest, poor performance in an environment, as well as never returning to that environment. In the context of retailing, approach behaviour includes spending more time and money in the store, enjoying the shopping experience and more time spent browsing through the store (Donovan & Rossiter, 1982; Donovan et al., 1994). The model explaining the influence of store environment on customer behaviour was developed by Donovan & Rossiter (1982). They identified pleasure (positive emotions) and arousal (feelings of excitement and stimulation) as intermediating variables in the evaluation of store environment effects. In applying the Mehrabian-Russell model to the retailing, it can be predicted that customers would spend more time and make more purchases in the stores which evoke pleasure and a moderate to high degree of arousal (Spies et al., 1997).

2. The concept of retail store atmosphere

The concept of retail atmosphere (referred also as *atmospherics*) was introduced by Kotler in 1973, in his article "Atmosphere as a Marketing Tool". Kotler (1973) introduced four dimensions of store atmosphere in terms of the humans' sensory channels as visual, aural, olfactory, and tactile. According to his definition the main visual elements of an atmosphere are: colour, brightness, size, and shapes; the aural elements are represented by volume and pitch; olfactory elements refer to scent and freshness; and finally the tactile elements include softness, smoothness and temperature. The fifth sense of taste has not been included as a dimension into Kotler's categorization (1973) because the atmosphere of a retail store cannot be described in terms of this sense. The ultimate goal of creating positive atmosphere was to evoke certain effects in buyers.

Berman & Evans (1995) have formulated a different categorization. They divided atmospheric stimuli into four categories: the exterior of the store, the general interior, the layout and design variables and the point-of-purchase and decoration variables. The design factors contributing most to the visual environment of the store are the exterior, interior and the layout of the store, colours and lighting. Store layout and space architecture influence customers' buying decision. Main goal of a store design for a customer is convenience, which means entering and leaving the store quickly and finding the products easily. Badly designed stores may cause emotional stress and reduce the shopping pleasure.

Baker et al. (1994) have suggested another typology categorizing the elements of store environment into three categories as social factors, ambient factors and design factors. Social factors represent the "people" component of the environment, including both the store employees and

customers. The number, type, and behaviour of people influence consumers' perceptions of stores (Baker et al., 2002). Ambient factors are the non-visual elements of a store's environment such as temperature, scents, noise, music, and lighting. Design factors, on the contrary, are visual elements and include functional and aesthetic elements such as architecture, style and layout. According to Baker et al. (1992) retailers should choose various combinations of these factors.

The concept of a store design has an impact on forming customers' cognitive maps, which can help in understanding the store environment (Kaplan, 1987). Creating simple symmetric (grid floor pattern) with lower shelves is proposed to help consumers better understand the store environment. Titus and Everett (1995) found that it is easier for individuals to understand environments with visual symmetry than environments with visual asymmetry. Following this logic, a store which is more symmetric (simple shelves layout) and more visually accessible (lower shelves) is considered to be less arousing and more legible. Most retail store settings use one of two types of store layouts: simple (grid) store layout and complex (free-form or racetrack) store layout. A simple store layout is characterised by long parallel aisles, with merchandise on shelves on both sides. This layout is often not very stimulating, but it can be suited for shopping in which customers need to move fast through the entire store and easily locate products without losing time. Customers perceive this shopping process as fast and efficient (Iyer, 1989). In simple layout form the space is utilised to a large extent. A simple store layout is a good option for grocery stores. A complex store layout follows an irregular pattern. It is organized into individual, separate areas, each built around a particular product category/shopping theme. The complex layout leads the customer to visit as many store sections or departments as possible and to encourage impulse buying. It stimulates more relaxed and unplanned shopping. The aim of such a layout is to stimulate and provoke the customer to explore the store. The complex layout is often used in department stores and stimulates customers to visit more departments. This layout, however, requires the availability of personnel to help the customers to find the products needed. Complex layouts are suitable for stores that have lots of product categories with each section having its own distinct place, for stores with less inventory and higher-end merchandise.

Donovan & Rossiter (1982) explained the influence of store environment on customer behaviour with the help of environmental psychology. They concluded that the stimuli presented in the store influence the affective and cognitive response of customers to the store environment. They found that two main dimensions could be considered as intermediating variables in evaluating the effects of store environment: pleasure (which refers to the level of positive emotions), and arousal (which refers to the feelings of excitement and stimulation). Studies have shown that with increasing pleasure, the duration of a store visit, amount of purchasing, as well as the re-visit intentions rise. The level of arousal is determined by the information rate of the store, that is, the novelty (the unexpected, surprising, unfamiliar in an environment) and complexity (the number of elements, changes in the setting, etc.) of the total environment (Mehrabian, 1996). Arousal theory implies that optimal information rates contain some novelty and some complexity, which activate the consumer, but also include some calming elements.

3. Methodology and Data

The principal goal of our research is to investigate the stimuli effect on store evaluation (organism stage) and repeat purchase intention (response stage). In particular, we test the impact of shelves height (visibility) and shelves layout (complexity) on cognitive and affective path

of store evaluation, and based on these results we identify how these evaluations influence repeat purchase intention of customers.

One of the methodologies most widely used to investigate the impact of the environment on human decision is experimental design. In our experimental research the effect of the design store stimuli of shelf height and shelves layout on consumer behaviour and specifically on repeat purchase intention was studied. We used pictures of store environments to test the environmental preference and perception. The photographs concerning the 2 design factors used the following four design alternatives: high/low shelf height and simple/complex shelves layout. Thus, four environments were created with the selected images as a basis for questionnaire. Empirical research was conducted on a sample of 240 students. Four groups each consisting of 60 students were exposed to one particular image and asked to respond to the pictures of shelves layout and shelf height and to express their views to the questionnaire. In our paper we investigate cognitive as well as affective store design evaluations of consumers. The cognitive part of evaluation is tested on legibility, representing how easy the store environment can be recognized, or how easy it is to find a way in a store. The affective part of evaluation is tested on arousal, that is a psychological construct related to emotions stimulated by the store. Both evaluations are explored by employing design factors of shelf height and shelves layout. These cognitive and affective evaluations of retail stores may influence repeat purchase intention of consumers (Vrechopoulos et al., 2004; Smith & Burns, 1996; Titus & Everett, 1995; Mehrabian & Russell, 1977).

Focusing on the design factors of shelf height and shelves layout we investigate whether a store which is more symmetric (e.g. simple-grid shelves layout) and more visually accessible (e.g. low shelves), is perceived as less arousing and more legible. Therefore, our hypotheses are:

H1: A store with low shelves generates a higher level of legibility than a store with high shelves.

H2: A store with a simple shelves layout generates a higher level of legibility than a store with a complex shelves layout.

H3: A store with low shelves generates a lower level of arousal than a store with high shelves.

H4: A store with a simple shelves layout generates a lower level of arousal than a store with a complex shelves layout.

The impact of legibility and arousal on repeat purchase intention is tested in the hypotheses:

H5: A store with higher level of legibility will result in a higher repeat purchase intention.

H6: A store with lower level of arousal will result in a higher repeat purchase intention.

Following statements were used to assess the variables as measurement items: shelf height: "This store has high shelves"; shelf layout: "Finding products in this store is easy"; legibility: "I am confident to find my way in this store"; arousal: "I feel excited in this store"; repeat purchase intention: "My shopping in this store will be in the future probable". All measurement items were assessed on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

As mentioned earlier, legibility is related to the navigation and comprehension of the environment, and therefore more related to cognitive processing rather than emotions stimulated by the store (Zeithaml, 1996). On the other hand, arousal is less related to the navigation and comprehension of a store and more to emotions. Thus, both cognitive and affective part of the information processing was explored.

The level of legibility was assessed on a 7-point scale (7 = no problems in way finding, 1 = massive problems in way finding). Arousal was measured using 7-point scale, where 7 = highest excitement and 1 = lowest excitement. Repeat purchase intention is associated with preferring one store over the other, frequent purchasing from this store, and intentions to shop in the store

in the future. For the purpose of our research a 7-point scale was used with extremes 7 = very high purchase intention and 1 = very low purchase intention.

Analysis of variance was employed as a primary statistical technique in the research to test the hypotheses (Rossiter, 2002; Parasuraman et al., 1998).

4. Results and Discussion

To analyse whether the manipulations of the two design factors reached the intended levels, one-way ANOVA was used. Four conditions with appropriate store pictures were produced in a 2 (shelf height: high vs low) x 2 (shelves layout: simple vs complex) design.

The analysis of variance for both shelf height and shelf-layout indicated that the difference between high vs low shelves height and simple vs complex shelves-layout was statistically significant at $p < 0.001$ (Tab. 1).

Table 1. Analysis of variance for design stimuli

Design stimuli	Mean value (M)	F-value	p-value
Shelf height	M high shelves = 6.05 M low shelves = 3.75	96.54	$p < 0.001$
Shelves layout	M simple layout = 4.92 M complex layout = 3.85	37.12	$p < 0.001$

Source: own calculation.

The results for shelf height indicated that the difference between the high-shelf and low-shelf conditions was statistically significant. The p-value was beyond a level of 0.001 with an F-value 96.54. The mean (M) of high-shelves was significantly higher than for the low-shelves (M high shelves = 6.05 vs M low shelves = 3.75). Results for shelves layout produced F-value of 37.12 and a p-value below 0.001. The difference between the group means for simple layout and complex layout was statistically significant (M simple layout = 4.92 versus M complex layout = 3.85).

Hypotheses 1 and 2 relate to the cognitive path of the model. Hypothesis 1 proposes that stores with low shelves are more legible than stores with high shelves. Analysis of variance was used to test the difference. The one-way ANOVA test indicates that the mean legibility (L) for high-shelf stores is significantly lower than the mean legibility for low-shelf stores (ML high shelves = 3.64 < ML low shelves = 4.88; $F = 19.472$; $p < 0.001$). Hypothesis 1 is supported, because a store with low shelves will produce a higher level of legibility than a store with high shelves. In general, shelf height has a significant impact on legibility.

Hypothesis H2 investigated the impact of floor pattern on legibility and proposed that a simple shelves layout is associated with a higher level of legibility. For retail stores with simple shelves layout as compared to complex shelves layout the difference in means for legibility was statistically significant. The results of ANOVA reveal a higher level of the mean legibility in simple shelves layout than the mean legibility of complex shelves layout (ML simple layout = 4.97 > ML complex layout = 3.56; $F = 84.203$; $p < 0.001$). Thus, the hypothesis H2 was supported.

Hypotheses H3 and H4 relate to the affective path of the stimuli evaluation and test whether the effects of shelf height and shelves layout are statistically significant. Hypothesis H3 testing differences in arousal (A) caused by shelf height was not supported (MA high shelves = 4.13 >

MA low shelves = 3.66; $F = 2.498$; $p = 0.079$). The same was found in examining the design factor shelves layout in hypothesis H4, which proved also not statistically significant (MA simple layout = 3.79 < MA complex layout = 3.89; $F = 2.042$; $p = 0.299$). It is an important result indicating that also subsequent hypothesis (H6) working with arousal cannot be supported, because a precondition of any hypothesis to be tested is that the prime variables are effective. A possible explanation for the results of H3 and H4 is that store design factors examined in the research do not evoke enough affective responses in consumers.

Hypothesis H5 proved to be supported. The ANOVA findings suggest that the repeat purchase intention (RPI) for higher level of legibility was significantly higher than for the lower levels of legibility (MRPI higher legibility = 5.89 > MRPI lower legibility = 3.04; $F = 79.793$; $p < 0.001$). In summary, a store design that evokes a higher level of legibility, stimulates more intention to return to the store.

5. Conclusion

The aim of the chapter was to identify the effect of retail design on shopping behaviour using a cognitive and affective information processing. We explained how the environmental stimuli (store design elements) influence legibility and arousal (evaluation states) and how these evaluation states mediate the effects of stimuli on responses and thus affect the behavioural outcomes (repeat purchase intention).

The design factors of shelf height and shelves layout were investigated and found to impact the store evaluations. Legibility was tested for the cognitive part and arousal for the affective part of the evaluation. Experimental research with pictures of store environments was employed to assess the design changes and test the hypotheses.

Summarizing the results of our research, the design factors of shelf height and shelves layout have an impact on shopping behaviour. Stores with low shelves and simple shelves layout result in a higher level of legibility as compared to stores with high shelves and complex shelves layout. However, the shelf height and shelves layout do not result in significantly different levels of arousal. These findings support the conclusion that both the design factors have a significant effect on the cognitive, but not on the affective part of the information processing. The study illustrates the importance of shelf height and shelves layout in designing the stores and helps managers in better understanding the customer's shopping decisions.

Several studies confirm that attitudes toward the retail store environment can sometimes be more influential in determining the store choice than attitudes toward the product (Dawson et al., 1990). The amount of time, which a customer spends in a store, is very important, therefore retailers design their stores to increase this time by enhancing the shopping experience. The higher the assessment of design factors, the longer the visit to the store and the higher the probability of the purchase. Findings of our research entitle the recommendations to retail management in the area of adopting direction-labels helping orientation in the store, improvement of shelf labelling and ensuring visual accessibility of the store (avoiding high shelves).

Store atmosphere is very critical in stimulating customers to visit a store and to increase the shopping frequency. Positive shopping experience and store evaluation can influence future shopping preferences and help in developing store loyalty.

Bibliography

1. Baker, J., Grewal, D., & Levy, M. (1992). An Experimental Approach to Making Retail Store Environment Decisions. *Journal of Retailing*, 6(4), 445-460.
2. Baker, J., Grewal, D., & Parasuraman, A. (1994). The Influence of Store Environment on Quality Inferences and Store Image. *Journal of the Academy of Marketing Sciences*, 22, 328-339.
3. Baker, J., Parasuraman, A., & Grewal, D. (2002). The Influence of Multiple Store Environmental Cues on Perceived Merchandise Value and Patronage Intentions. *Journal of Marketing*, 66(4), 120-141.
4. Berman, B., & Evans, J.R. (1995). *Retail Management: A Strategic Approach*. New-York: Prentice-Hall.
5. Dawson, S., Bloch, P.H., & Ridgeway, N.N. (1990). Shopping, Motives, Emotional States, and Retail Outcomes. *Journal of Retailing*, 66(Winter), 208-227.
6. Donovan, R., & Rossiter, J.R. (1982). Store Atmosphere: An Environmental Psychology Approach. *Journal of Retailing*, 58(1), 34-57.
7. Donovan, R., Rossiter, J.R., & Marcolyn, G. (1994). Store Atmosphere and Purchase Behaviour. *Journal of Retailing*, 70(3), 188-199.
8. Iyer, E.S. (1989). Unplanned Purchasing: Knowledge of Shopping Environment and Time Pressure. *Journal of Retailing*, 65(Spring), 34-57.
9. Kaplan, S. (1987). Aesthetics, Affect, and Cognition: Environmental Preference From an Evolutionary Perspective. *Environment and Behaviour*, 19(1), 3-32.
10. Kotler, P. (1973). Atmospherics as a Marketing Tool. *Journal of Retailing*, 49(4), 48-64.
11. Mehrabian, A. (1996). Pleasure-Arousal-Dominance: A General Framework for Describing and Measuring Individual Differences in Temperament. *Current Psychology*, 14(4), 261-292.
12. Mehrabian, A., & Russel, J.A. (1977). Evidence for a Three-factor Theory of Emotions. *Journal of Research in Personality*, 11(3), 273-294.
13. Parasuraman, A., Zeithaml, V., & Berry, L. (1988). SERVQUAL: A Multiple item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), 12-40.
14. Rossiter, J.R. (2002). The C-OAR-SE Procedure for Scale Development in Marketing. *International Journal of Research in Marketing*, 19, 305-335.
15. Smith, P., & Burns, D.J. (1996). Atmospherics and Retail Environments: The Case of the Power Aisle. *International Journal of Retail and Distribution Management*, 24(1), 7-14.
16. Spies, K., Hesse, F., & Loesch, K. (1997). Store Atmosphere, Mood and Purchasing Behaviour. *International Journal of Research in Marketing*, 14(1), 1-17.
17. Titus, J., & Everett, J. (1995). The Consumer Retail Search Process: A Conceptual Model and Research Agenda. *Journal of the Academy of Marketing Sciences*, 23(2), 106-199.
18. Vrechopoulos, A.P., O'Keefe, R.M., & Doukidis, G. (2004). Virtual Store Layout: An Experimental Comparison in the Context of Grocery Retail. *Journal of Retailing*, 80, 13-22.
19. Zeithaml, V.A., Berry, L., & Parasuraman, A. (1996). The Behavioural Consequences of Service Quality. *Journal of Marketing*, 60(4), 31-46.

Consumer Perceived Risk Associated with Purchasing of Innovative Food Products¹

Irena Śliwińska

1. Introduction

Studying consumer behaviours has currently generated considerable interest among researchers. Determining factors that influence these behaviours is crucial for enterprises, regardless of their domain of activity. The aim of the chapter is to show risk as a determinant of consumer purchasing behaviour in the food market. The research conducted by the author concerned both the tendency to take risk when buying innovative food products and the consumer perceived risk related to functional food, which is still not a widely known food category in the market. Sources of information included literature review, analysis of publications presenting the results of research on perceived risk and consumer behaviour when purchasing new food products and the results of own research carried out in 2017 on a group of 270 people.

2. Consumer risk

The risk results from the fact of making decisions. It also applies to purchasing decisions that buyers face every day. The concept of risk is often confused with the concept of uncertainty (see: Jonas, 2009, p. 242). The risk in economic sciences is defined as “the possibility of deviations from the expected state” (Jonas, 2009, p. 242). It is an objective category and can be calculated using probability calculus.

The risk is slightly differently perceived in relation to consumer decisions. The consumer risk, which is the subject of this article, represents a subjective category. Due to having often incomplete information about the product, unreliable memory and other features related to the functioning of the human psychics, buyers are unable to calculate the probability of an undesirable situation². Seeing the danger of making an incorrect decision and the consequences of making a choice are specific to the consumer risk. In the literature, the term consumer perceived risk is used in this case. Markin (1974, pp. 526-527) expresses perceived risk as a function of uncertainty and possible consequences of a purchase:

¹ This work was co-financed by Doctoral Students' Government of the Cracow University of Economics.

² Some authors in their considerations describe the consumer's risk as a situation in which the consumer can assess the likelihood of making decisions, some omit this issue. (see: Maciejewski, 2009, pp. 254-256).

$$R = f(U, C) \quad (1)$$

where:

- R – perceived risk,
- U – uncertainty,
- C – the consequences of the purchase.

Such perceived risk is a determinant of consumer behaviour on the market. If the client, in the situation of purchasing goods, fails to notice the incorporated risk, then it has no influence on the decision he/she takes. Table 1 summarizes different types of risk consumers are exposed to when they are purchasing goods.

Table 1. Types of risk occurring when the consumer makes a purchase decision

Type of risk	Characteristics
Financial (economic risk)	Consumer's doubts about the price of the product; they are related to the price-value relationship (does the client pay more than he/she should). Incase of products with a long service life, it refers to the costs associated with the exploitation
Functional risk	Concerns whether the product meets the customer's requirements or is able to fulfil certain functions
Social risk	Doubts related to the acceptance of the choice made by the consumer's environment (e.g. selection of appropriate brands)
Psychological risk	The risk related to the perception of one's own value, the creation of self-image
Time risk (risk of loss of time)	Doubts related to uncertainty if time spent searching for a product and buying it will not be lost. This risk also applies to the time spent on a possible exchange or return of the product
Physical risk	The risk related to the safety of the product

Source: own compilation based on (Jonas, 2009, p. 243; Rudnicki, 2004, p. 130; Uptal, 2001, pp. 1342-1343).

There are various factors that influence the degree of a consumer risk. The first is the type of product purchased – a greater risk is associated with more technically complex goods (computers, household appliances, audio, video devices, cars), while lower with so-called fast moving consumer goods (FMCG; e.g. food, cleaning products). Another factor is the consumer's knowledge of the product. Much greater risk is associated with goods that are bought for the first time (new, innovative), or with which consumer previously had negative experiences. The amount of risk depends on the relative financial value (relation of the price to the financial resources of the buyer). The higher the price of the goods, the higher the risk, because if the wrong decision is made, the buyer will suffer greater loss. Expectations related to the purchase, their nature, and the significance they have for the consumer are also important. The amount of the risk also depends on the uncertainty associated with the choice, which occurs, for example, when the buyer has incomplete information about the product or available purchase options. Another factor is the method of making a purchase. The risk in this case will be smaller when buying on a stationary basis than at a distance (made by telephone, online). The last aspect affecting

the level of the risk is related to the consumer's personality traits (it depends on the buyer's self-esteem) (Rudnicki, 2004, p. 130).

3. The specificity of the new food market and the term “innovation”

The food market is a specific market in terms of consumer perceived risk. Food belongs to the FMCG category. Consumer behaviour in this area is usually characterized by a routine approach, i.e. a repeatable purchase of previously known products (Gutkowska, 2009, pp. 272-273). Such behaviour reduces the occurrence of risk (purchase of proven products), but on the other hand it is a barrier to entry of new food products.

The definition of novel food available in the literature encompasses few groups of products. This category includes:

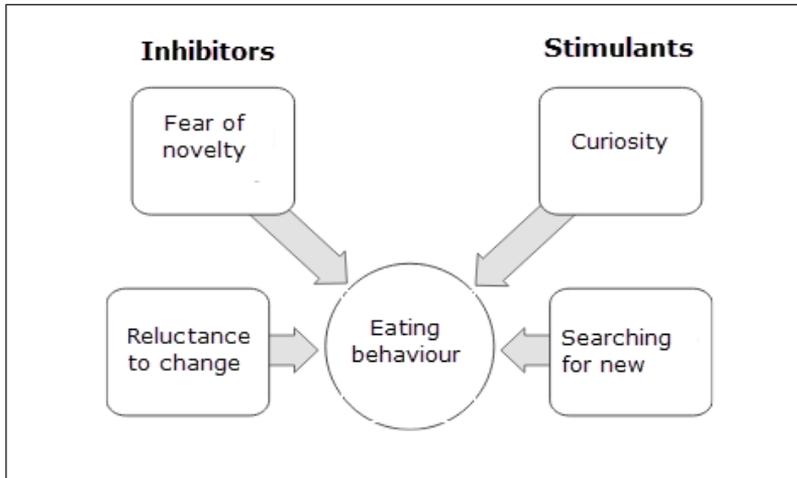
- transgenic food – products consisting of genetically modified organisms or parts thereof containing proteins or DNA of these organisms;
- convenience food – products that are ready to eat directly, or require applying simple cooking techniques, are portioned and packed in the most convenient form for the consumer; these can be both high and low-processed articles, characterized by the possibility of quick consumption;
- functional food – products with a documented beneficial effect on the human body, constituting a part of a normal diet (suitable for regular consumption in the form of traditional food) (Gawęcki, 2002, pp. 5-15; Lähteenmäki et al., 2002, pp. 523-533; Tuorila, 2001; Urala & Lähteenmäki, 2004, pp. 793-803).

However, it should be considered that regardless of whether a given food product is “new” in relation to legal regulations³, or classification in scientific journals, or not, for the consumer it will be new according to his own subjective opinion (Babicz-Zielińska & Dąbrowska, 2011, pp. 39-46). The same applies to the term “innovation”, usually defined as “the successful introduction of something new and useful” (Guerrero, 2009, pp. 345-346). It can be understood differently. From the perspective of the company, it usually concerns the application of new technology (technological newness), while from the customer's point of view, it can be simply a new product on the market (market newness). The perception of innovation by the customer has a key impact on the product success on the market (Barcellos, 2009, pp. 59-60).

Pro-innovative behaviour can be treated as an increased willingness of the individual to take risks. The food market is influenced by two types of contradictory factors (Fig. 1). On the one hand, there are inhibitory factors reflecting the fear of newness, the unwillingness to introduce changes. On the other hand, the factors such as curiosity and searching for new products stimulate customers' desire to buy. The consumer's final decision will depend on which factors in a given purchase situation will prove to be dominant.

³ According to definition: “novel food means any food that was not used for human consumption to a significant degree within the Union before 15 May 1997, irrespective of the dates of accession of Member States to the Union, and that falls under at least one of the following categories: [...]”. All categories are mentioned in Regulation (EU) 2015/2283.

Figure 1. Factors influencing consumer nutritional behaviours



Source: (Babicz-Zielińska & Dąbrowska, 2011, p. 40).

According to Rogers' Diffusion of Innovation Theory, consumers have a different tendency to buy innovative products and sometimes even feel aversion to market innovations. In case of the food market, this reluctance may be caused, among others, by habits, cultural customs, tradition or lifestyle. The reluctance to new food products sometimes takes the form of food neophobia, which could be defined as "a strong avoidance of novelty, unfamiliar foods" (Pliner & Hobden, 1992, p. 105). Consumers with a positive approach to innovation, who "rub the routes" to other buyers, play an extremely important role in launching new products on the market. Table 2 presents the characteristics of five groups of consumers with different attitudes towards innovations described in the Rogers' model.

Table 2. Consumer behaviours towards innovative products according to the Rogers' model

Group name	Characteristics
Innovators	They usually buy the new product as the first, are interested in changes on the market, quickly make purchasing decisions in the face of emerging new products
Early Adopters	They make a purchase relatively quickly, although after some consideration. They need more time than the leaders to make a purchase decision, but they are positive about the new products
Early Majority	They buy new products when other friends already have it, they are more cautious than the groups mentioned above, they need more time to decide
Late Majority	They buy a product when most friends tried it, they collect more information than previous groups before making a purchase
Laggards	They display reluctance to change and to buy new products on the market

Source: own compilation based on (Olejniczuk-Merta, 2016, p. 120; Rogers, 2003, pp. 247-251).

4. Consumer behaviours on the innovative food market – assumptions and results of own research

4.1. Own research

The questionnaire created by the author concerned the impact of nutrition on health, attitudes towards innovation on the food market and behaviors related to the purchase and consumption of one of the types of novel food – functional food. The research was carried out by the author in 2017 in Malopolska Voivodeship. Questionnaire was used as a research tool. The sample was drawn using purposive sampling due to selecting the following variables: age and sex. The analyzes presented in this article were based on answers provided by 270 respondents.

4.2. Willingness to take risks when buying new products

To get to know the attitude of respondents to innovations in the food market, the questionnaire covered a question dividing the respondents into segments proposed in the Rogers' Diffusion of Innovation Theory. The question was phrased in the following way: "What is your attitude to the novelty on the food market?". The question had a closed form with 5 answers to choose. Answers that were used to assign respondents to individual Rogers' model groups are presented in Table 3.

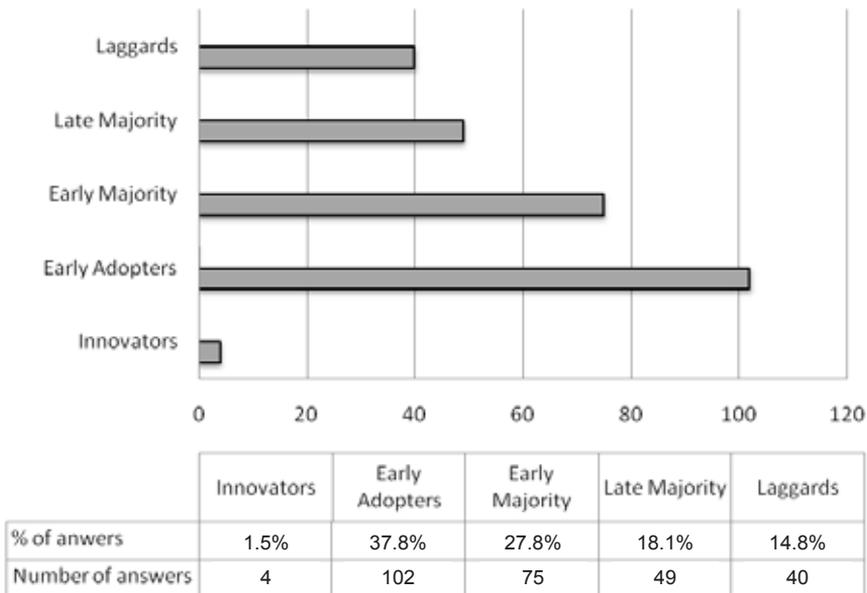
Table 3. The statements used in the questionnaire, which were used to group respondents in terms of behaviour towards innovations in the market

Group name	Answer in the questionnaire
Innovators	I like to have as the first, when new products appear on the market
Early Adopters	I buy relatively quickly, but after some thought
Early Majority	I buy when some friends have tried them already
Late Majority	I buy when most of my friends have already bought and positively assessed
Laggards	I'm reluctant to buy

Source: own study.

Figure 2 presents the percentage share of respondents' answers, based on which they were assigned to relevant segments, expressing their approach to innovative products.

Figure 2. Respondents' attitude to innovation in the food market



Source: own study.

Only 1.5% of respondents (that is 4 responses) were innovators. Most respondents were early adopters (37.8%), people who do not need to get to know other people's opinions about new foods. The second largest group (27.8%) is the early majority. The late majority accounted for 18.1% of the surveyed respondents, while 14.8% of respondents were reluctant to new products on the food market.

4.3. The consumer perceived risk towards functional food and the consumer's attitude towards innovation

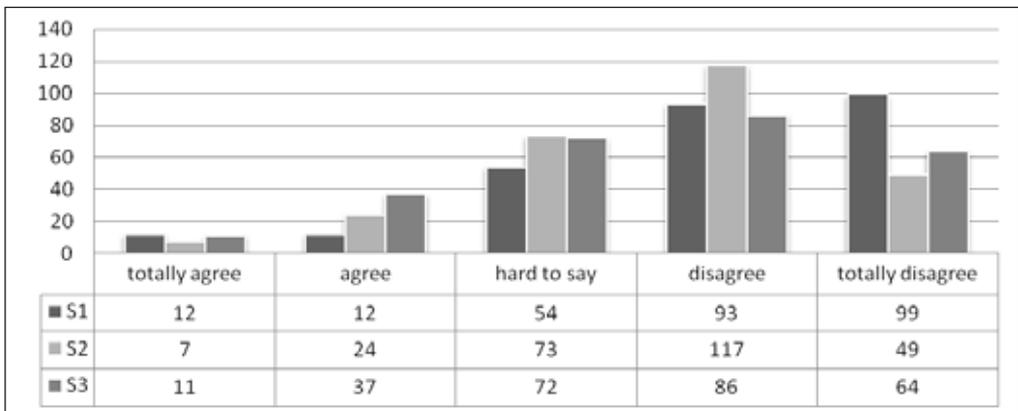
The category of functional food, although it exists in the literature as well as on the market, is not widely known to consumers in Poland (see: Śliwińska, 2016, pp. 199-205). Nevertheless, after providing the definition, most of them (more than half of the respondents) say that they buy and/or consume this type of food. Respondents were asked to examine what in their opinion might pose a risk. The statements contain aspects involving physical risk related to the safety of consumption of this type of products. Statements are presented in Table 4. A 5-point Likert scale was used, where 5 meant high perceived risk ("totally agree") and 1 low risk ("totally disagree"). The results of the study are presented in Figure 3.

Table 4. The statements used in the questionnaire related to the perceived risk toward consumption of functional foods

Designation	Statement
S1	Consuming functional foods by children, the elderly and allergy sufferers can be dangerous to health
S2	Active substances contained in functional foods are easy to overdose
S3	Functional foods should only be consumed under the supervision of physicians and dieticians

Source: own study.

Figure 3. Consumer-related risks associated with the consumption of functional foods



Source: own study.

The research shows that few of the respondents perceive the risk accompanying the consumption of functional products, which is reflected in selecting “disagree” and “totally disagree” incase of statements S1, S2 and S3. A large number of “hard to say” answers indicates that respondents failed to form any opinion, what may result from the lack of knowledge about functional food products.

In the cross-tabulation table two categories were compared: consumer perceived risk toward functional food and the consumers attitudes to innovations in the food market (according to the Rogers’ model). Cronbach’s reliability coefficient alpha for the scale consisting of three statements used in the questionnaire reached the value of 0.6469. The average correlation between items amounted to 0.3889, what indicates a high internal coherence of the used scale. The demonstrated consistency was the basis for summing up and averaging the respondents’ results regarding the perceived risk (statements S1, S2, S3). The summary is presented in Table 5.

Table 5. Attitudes towards innovation and risk perception towards consuming functional food

Risk	Laggards	Late Majority	Early Majority	Early Adopters	Innovators	Sum
Definitely not perceives it	40.0%	22.5%	22.7%	38.2%	100.0%	32.2%
Rather not perceives it	12.5%	32.7%	26.7%	32.4%	0.0%	27.4%
Neither perceives nor doesn't perceive it	32.5%	34.7%	48.0%	24.5%	0.0%	33.7%
Rather perceives it	15.0%	10.2%	2.7%	1.0%	0.0%	5.2%
Definitely perceives it	0.0%	0.0%	0.0%	3.9%	0.0%	1.5%
Total	14.8%	18.2%	27.8%	37.8%	1.5%	100.0%

Source: own study.

Presented analysis shows that according to the majority of respondents functional food is not associated with the risk, as indicated by the low percentage of respondents who selected “definitely perceives it” and “rather perceives it” answers. The risk is identified most often by laggards (15.0%) and the late majority (10.2%). The middle value (“neither perceives nor doesn’t perceive it”) dominated in the late majority and early majority. In the other groups (innovators, early adopters, and laggards), the highest percentage of respondents definitely do not perceive the risk.

5. Conclusion

The food market, as a segment of fast moving consumer goods, is characterized by low perception of risk by consumers. The surveyed consumers have an open attitude to innovation (domination of early adopters group), what creates opportunities for launching new food products on the market. The conducted research regarding the perception of risk to functional foods shows that almost 60% of respondents positively perceive this type of food and consider it as safe for health. A positive aspect is the fact that, regardless of the attitude to innovation, in all groups (created in accordance with the assumptions of the Rogers’ Diffusion of Innovation Theory) respondents do not perceive the risk associated with the consumption of these products or consider it minimal. The factor inhibiting the development of this new category on the food market may be the lack of sufficient knowledge (a lot of answers “hard to say”). To develop the market for the functional food in Poland, it is necessary to properly communicate the value provided by such products, i.e. beneficial effects on health and reducing the risk of diseases. More knowledgeable consumers who are aware of the benefits of eating functional foods are the key to ensure market success for these products.

Bibliography

1. Babicz-Zielińska, E., & Dąbrowska, A. (2011). Zachowania konsumentów w stosunku do żywności nowej generacji. *Hygeia Public Health*, 46(1), 39-46.
2. Barcellos, M.D.D., Aguiar, L.K., Ferreira, G.C., & Vieira, L.M. (2009). Willingness to Try Innovative Food Products: A Comparison between British and Brazilian Consumers. *BAR-Brazilian Administration Review*, 6(1), 50-61.

3. Gawęcki, J. (2002). Żywność nowej generacji a racjonalne żywienie. *Żywność Nauka Technologia Jakość*, 33(4), 5-17.
4. Guerrero, L., Guàrdia, M.D., Nicola, J., Verbeke, W., Vanhonacker, F., Zakowska-Biemans, S., Sajdakowskac, M., Sulmont-Rosséd, C., Issanchoud, S., Contele, M., Scalvedi, M.L., Granlif, B.S., & Herslethf, M. (2009). Consumer-driven Definition of Traditional Food Products and Innovation in Traditional Foods. A Qualitative Cross-cultural Study. *Appetite*, 52(2), 345-354.
5. Gutkowska, K. (2009). Zachowania konsumentów na rynku żywności w warunkach niepewności. [in:] L. Garbarski & J. Tkaczyk (Eds.), *Kontrowersje wokół marketingu w Polsce. Niepewność i zaufanie a zachowania nabywców*. Warszawa: Wydawnictwa Akademickie i Profesjonalne.
6. Jonas, A. (2009). Jakość usługa postrzegane przez klientów ryzyko ich zakupu. [in:] L. Garbarski & J. Tkaczyk (Eds.), *Kontrowersje wokół marketingu w Polsce. Niepewność i zaufanie a zachowania nabywców*. Warszawa: Wydawnictwa Akademickie i Profesjonalne.
7. Lähteenmäki, L., Grunert, K., Ueland, Ø., Åström, A., Arvola, A., & Bech-Larsen, T. (2002). Acceptability of Genetically Modified Cheese Presented as Real Product Alternative. *Food Quality and Preference*, 13(7-8), 523-533.
8. Maciejewski, G. (2009). Potoczne a naukowe rozumienie pojęcia „ryzyko” – jak konsument rozumie ryzyko? [in:] L. Garbarski & J. Tkaczyk (Eds.), *Kontrowersje wokół marketingu w Polsce. Niepewność i zaufanie a zachowania nabywców*. Warszawa: Wydawnictwa Akademickie i Profesjonalne.
9. Maciejewski, G. (2010). *Ryzyko w decyzjach nabywczych konsumentów*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach.
10. Markin, R.J. (1974). *Consumer Behaviour: A Cognitive Orientation*. New York: Macmillan.
11. Olejniczak, M. (2015). Ryzyko konsumenckie w procesie zakupu żywności funkcjonalnej. *Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu*, 15(3), 417-424.
12. Olejniczuk-Merta, A. (2016). *Konsumpcja w innowacyjnej gospodarce*. Warszawa: PWE.
13. Pliner, P., & Hobden, K. (1992). Development of a Scale to Measure the Trait Food Neophobia. *Appetite*, 19(2), 105-120.
14. Regulation (EU) 2015/2283 of the European Parliament and of the Council of 25 November 2015 on novel foods, amending Regulation (EU) No 1169/2011 of the European Parliament and of the Council and repealing Regulation (EC) No 258/97 of the European Parliament and of the Council and Commission Regulation (EC) No 1852/2001.
15. Rogers, E.M. (2003). *Diffusion of Innovations*. New York: The Free Press.
16. Rudnicki, L. (2000). *Zachowanie konsumentów na rynku*. Warszawa: PWE.
17. Rudnicki, L. (2004). *Zachowania rynkowe nabywców. Mechanizmy i uwarunkowania*. Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.
18. Śliwińska, I. (2016). Customer Knowledge Management in the Example of Functional Food. [in:] A. Jaki, B. Mięka & R. Oczkowska (Eds.), *Knowledge – Economy – Society. Strategies, Concepts And Instruments Of Management*. Cracow: Foundation of the Cracow University of Economics.
19. Tuorila, H. (2001). Keeping up with the Change: Consumer Responses to New and Modified Foods. *Food Chain Programme*, Abstract.
20. Uptal, M.D. (2001). A Motivational Process Model of Product Involvement and Consumer Risk Perception. *European Journal of Marketing*, 35, 11-12.
21. Urala, N., & Lähteenmäki, L. (2004). Attitudes behind Consumers' Willingness to Use Functional Foods. *Food Quality and Preference*, 15(7-8), 793-803.

Personalization in Marketing in the Reception of Young Consumers

Iryna Manczak, Katarzyna Sanak-Kosmowska

1. Introduction

One of the most important tasks facing the twenty-first century marketing is to build long-term relationships with customers. This objective can be achieved by addressing individual needs of consumers, largely by adapting the product to their preferences. This adjustment can be done in many ways, and its scope depends, e.g., on the industry in which the product is offered.

In the literature the concept of personalization was signalled already in the 1900s. Peppers and Rogers (1993) pointed to the new perspective of product orientation and its adaptation to the needs reported by consumers. The researchers considered that in the future, entrepreneurs will not even try to sell their products to the greatest number of buyers. Rather, on the contrary, they will try to sell the customer as many products as possible. Thanks to differentiation, they will have a long life cycle (Dziadkiewicz, 2017). Due to this, developing unique relationships with the recipients of products offered by the company on top of shaping the products in accordance with the approach based on a one to one interaction have gained importance.

The purpose of this chapter is to analyze the issue of personalization in marketing. An analysis of the results of the authors' own research occupies a significant part of it. The article discusses how personalization is perceived by young consumers.

2. Personalization in marketing

Personalization of activities related to meeting customer needs is now one of the most important elements in the process of creating and maintaining relationships with the consumers. A significant change in the relationship company-customers, often involving dialogue and participation in the making of product and service has been shaped by several factors: One of them is the rapid development of information technologies, allowing, among others, to personalize the content of marketing messages (Borusiak et al., 2015).

In the literature, it is assumed that the phenomenon of the personalization of marketing activities is in line with the concept of relationship marketing (Gummesson, 1987). This approach emphasizes the benefits for both enterprises and their customers flowing from maintaining a long-term relationship. The aforementioned relationship can be personalized and tailored to customer needs (the anonymity of the customer is not assumed). The benefits of co-creating value between the seller and the buyer are also emphasized by Prahalad and Ramaswamy (2004). Within the highlighted concept, the increase of the significance of the individual consumer and the information provided by them was pointed to. This information affects the final shape of a product or service significantly (Baran, 2013).

Individualization understood as adjusting something to the needs of individuals was still a common way of functioning of sales in the early 20th century. The change from the individual approach to mass sales came along with the development of information technology. Mass sales of identical products addressed to anonymous clients has proved to be insufficient over time. The concept of personalization and customization of the offer tailored to the specific expectations of the buyer was put forward to meet consumer needs.

Personalization is the creation of unique solutions suited to the individual needs of single consumers (Bardakçi & Whitelock, 2003). In practical terms, it can mean offering unique, tailor-made products. The leading objective is to create a personalization offer tailored not only at the level of characteristics (behaviors) of the recipients but also at the level of a single recipient (Szwarc, 2010). Business practice shows that the analyzed conceptual category could also come down to offering identical products to different customers who have manifested similar needs (mass customization). Creating personalized products turned out to be a natural reaction to the efforts of consumers to maintain their individuality. The customization of the appearance of clothing, footwear, an application, an email box, or mobile phone settings allows the consumer to make these things personal (Dziadkiewicz, 2017).

The concept of mass customization is a combination of mass-scale production while maintaining individual characteristics of the products. Consequently, it signifies development, production, marketing and provision of appropriately differentiated and individualized offers at a relatively low price (Rudawska, 2014). It is worth noting that the term was used for the first time in the 1980s in the context of the clothing industry. In practice, mass individualization began to be used only in the mid-1990s (Kaluza & Kotliński, 2004). It can be done at the level of manufacture of the product or when customers receive a uniform product that they can customize independently to their needs (Doligalski, 2006).

3. Methodology of own research

The aim of the study was to identify ways in which young people could be involved in the crowd-sourcing process. Such a scope of subject matter has set research directions. The diagnosis of these characteristics was based on the analysis of behavior of students of the University of Economics in Cracow. The survey was mainly aimed at verifying hypotheses accepted for the needs of conducted research.

The following research hypotheses were put forward for the purposes of the present study:

H1: Young people often ask manufacturers to improve their products.

H2: Young Poles are interested in the possibility of product personalization.

H3: Young women, as much as men, engage in personalization.

A diagnostic survey was performed to obtain the primary information. As a research instrument, a questionnaire was used. The questionnaire consisted of 18 questions, of which 4 are the particulars. The relatively small number of questions results from the fact that it was assumed the respondents would fill out the questionnaires themselves. It was therefore decided to facilitate their task and to encourage them to participate in the survey.

The analysis of the collected empirical data was carried out using the SPSS statistical package. The choice of this program was dictated by the method of presentation of numerical data, i.e. its readability and the available statistical tools. The chi-squared test (χ^2) was used to test the relationships noted.

The survey was conducted on 610 respondents. The principle of non-random selection was adopted, including a discretionary trial method (Giddens, 2012). Most often, the elements of the sample are selected on the basis of the belief that they are representative for the researcher interested in the given population. In the opinion of researchers, this method of selection is also used as an incidental test (non-random selection of subjects) (Francuz & Mackiewicz, 2007).

The proper survey was launched in May 2017 and completed by the end of June in the same year. Before the proper examination, a pilot study was conducted. The pilot study implementation allowed semantic correction of some questions as well as improvement of the technical aspects of the questionnaire. The factors that hindered the gathering of the appropriate research material were eliminated.

4. Characteristics of the studied population

The study involved 610 university students, of which 62% were men, 35% were women, and the rest did not answer the question about gender (3%). First of all, students of the first (43%) and the second year (38%) of university participated. The students represented different faculties of the University of Economics in Cracow: management studies (24%), marketing and market communication (24%), accounting and controlling (18%), and economics (17%). The majority of respondents studied at full-time studies (78%), while 21% of respondents were extramural students (Tab. 1).

Table 1. Research group profile

Detailed list		N	%
Gender	Female	375	61.5
	Male	216	35.4
	Missing data	19	3.1
Year of studies	1	264	43.3
	2	234	38.4
	3	4	0.7
	4	73	12.0
	5	31	5.1
	Missing data	4	0.7

Faculty	Economics	101	16.6
	Management	147	24.1
	Accounting and controlling	110	18.0
	Marketing and market communication	147	24.1
	Logistics	62	10.2
	Commodities	20	3.3
	Land Management	13	2.1
	Missing data	10	1.6
Type of studies	Full-time	473	77.5
	Extramural	129	21.1
	Missing data	8	1.3

Source: own research.

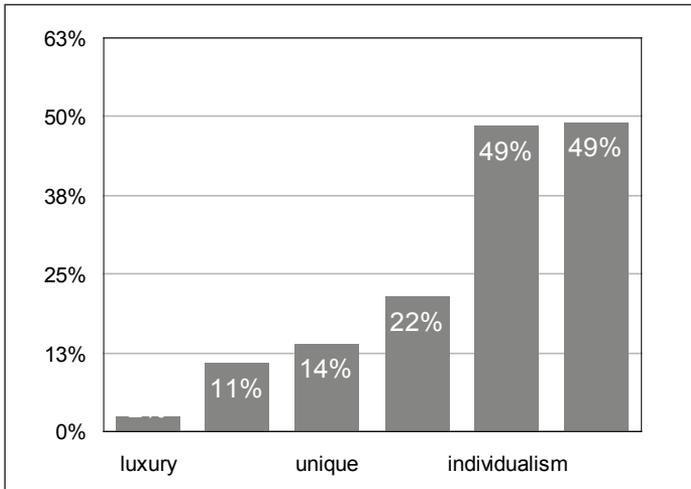
Based on the above data, the profile of the survey participant could be identified. The general trend was that the study participant was typically a woman studying at the first year of full-time studies. The interviewed was a student of management or marketing and market communication.

5. Personalization in marketing

In order to verify how personalization is understood by young consumers, they were asked to provide three spontaneous associations with the word. As a consequence, a free association test was used, so as not to suggest the respondents in any way. The main associations with personalization are: fitting (49%) and individualism (49%), followed by originality (22%), unique (14%), name (11%) and luxury (2%) (Fig. 1). It can be concluded that the young consumers understand the concept in question in a proper way. The most common associations, and therefore fit and originality, point to the understanding of personalization as offering a tailor-made product that stands out from the others available on the market. It should also be noted that only 2% of respondents indicated an association with luxury. According to the respondents, young people see personalized products as increasingly prevalent and accessible to a wider group of consumers.

The most preferred type of personalization of a product is the addition of more features and accessories (43%), a less frequent one is custom color (28%), and adding one's own name or a slogan on the product (22%). The least preferred form of personalization was placing a photo on the product (6%). 52% of the respondents asked for the personalization of a product more than once, while 21% did it once. The others never used customized products (28%). This means that 80% of the respondents have had a shopping experience in the use of personalized products. More than half of the surveyed consumers had made use of this possibility more than once. It can therefore be assumed that the first experience of personalization was positive. Fitting products may take various forms. The most popular one, applied by more than half of the interviewees (43%) is to add functionalities to meet their needs.

Figure 1. Personalization – associations



Source: own research.

The most frequently customized products include clothing (54%), jewelry (54.9%), cars (42%) and footwear (38%). In turn, fewer respondents pointed to the sports products (26%) and cosmetics (20%). Women are more likely than men to want to personalize cosmetics and jewelry ($p < 0.001$). In contrast, males more often than females would like personalized sports gear and cars ($p < 0.001$) (Tab. 2). It is worth noting the fact that in the case of clothing and footwear there is no difference between women’s and men’s preferences. This is an important implication for fashion brands that should include the needs of both genders in their offer. Offers for customization of footwear for men and women is successfully used by international companies such as Adidas, New Balance or Nike. In the case of Polish companies, personalized footwear is addressed above all to women (e.g. L37).

Table 2. Personalized products broken down by gender of the respondents

Products	Participant’s gender		Chi-squared test	
	Female	Male	χ^2	p
Clothing	54.4%	51.9%	0.36	0.550
Shoes	34.9%	41.2%	2.31	0.129
Cosmetics	26.9%	9.3%	26.29	<0.001
Jewelry	54.9%	20.5%	66.49	<0.001
Sports	18.7%	38.9%	29.09	<0.001
Cars	32.3%	57.4%	35.69	<0.001

Source: own research.

Analyzing the obtained research results we can conclude that, for the young people, the opportunity to purchase personalized products has become an important element of the market offer. More than half of the surveyed used such an opportunity, at least once. Therefore, it can be as-

sumed that the young consumers do not have difficulty with personalization as such (i.e., using online configuration wizards, choosing offers etc.). One can also conclude that the main purpose of use of the “massively tailor-made” products is the best product fit for oneself and one’s needs, and at the same time standing out and emphasizing one’s originality. This is evidenced by both the associations expressed by the respondents and the fact that most are personalized products are clothing, footwear and jewelry.

6. Conclusion

In the literature, the phenomenon of product personalization is considered a key area of discussion in the field of modern marketing. Today, consumers are looking for personalized offers, including ones taking into account their individual needs and expectations. Due to this, product personalization is seen as a solution that is becoming more common and is more and more accessible to the wider group of consumers. Besides, it is an example of effective action to shape the modern market offer. What is important, personalization is still an example of a research topic which is important not only for theorists, but mainly for the representatives of economic practice.

To sum up, based on the results of the survey it can be considered that young consumers have had a positive shopping experience with made-to-measure products. According to them, personalization most often manifests itself through fitting and originality. In the light of the remarks made it can be considered that the analyzed concept was associated by the respondents with products “tailored” to their needs that stand out among others available on the market. Importantly, a large percentage of the respondents have had used the possibility of personalizing a product. Besides, it has turned out that this type of experience occurred more than once in a group of subjects.

Based on the obtained results, it was found that product fitting took different forms. One of the most popular of these was to add functionalities to meet the user’s needs. On the basis of the research it was determined that in the case of selected products (clothing and footwear) there is no difference in terms of preference between women and men.

The results of the executed study do not cover the entire subject matter of product personalization. Above all, they may provide a contribution to the pursuit of further studies in the area. They can be taken as an inspiration for taking up subsequent research issues to approximate the subject of contemporary consumer behaviors.

Bibliography

1. Baran, G. (2013). Istota i znaczenie zaangażowania klientów we współtworzenie wartości społecznej. *Współczesne Zarządzanie*, 1, 159-167.
2. Bardakci, A., & Whitelock, J. (2003). Mass-customization in Marketing. The Consumer Perspective. *Journal of Consumer Marketing*, 5(20), 463-479.
3. Borusiak, B., Pierański, B., Romanowski, R., & Strykowski, S. (2015). Automatyzacja personalizacji reklamy internetowej. *Marketing i Rynek*, 3, 36-43.
4. Doligalski, T. (2006). Relacje z klientem w e-biznesie (cz. I). *Marketing w Praktyce*, 8, 6-10.
5. Dziadkiewicz, A. (2017). Personalizacja a kastomizacja w marketingu. *Zarządzanie i Finanse*, (15)1, 95-108.

6. Francuz, P., & Mackiewicz, R. (2007). *Liczy nie wiedzą, skąd pochodzą: przewodnik po metodologii i statystyce: nie tylko dla psychologów*. Lublin: Wydawnictwo Katolickiego Uniwersytetu Lubelskiego Jana Pawła II.
7. Giddens, A. (2012). *Socjologia*. Warszawa: PWN.
8. Gummesson, E. (1987). The New Marketing – Developing Long-term Interactive Relationships. *Long Range Planning*, 4(20), 10-20.
9. Kałuża, G., & Kotliński, A. (2004). Masowa indywidualizacja w kształtowaniu relacji z klientem. [in:] L. Garbarski (Ed.), *Kontrowersje wokół marketingu w Polsce – tożsamość, etyka, przyszłość*. Warszawa: Wydawnictwo Wyższej Szkoły Przedsiębiorczości i Zarządzania im. Leona Koźmińskiego w Warszawie.
10. Prahalad, C.K., & Ramaswamy, V. (2004). Co-creating Unique Value with Customers. *Strategy & Leadership*, 3(32), 4-9.
11. Peppers, D., & Rogers, M. (1993). *The One to One Future: Building Relationships One Customer at a Time*. New York: Dobuleday.
12. Rudawska, E. (2014). Masowa indywidualizacja w marketingu relacji – obszary badań marketingowych. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 337, 60-67.
13. Szwarz, N. (2010). Od masowej komunikacji marketingowej po personalizację w e-marketingu. *e-Mentor*, 3(35). Retrieved on 30/01/2018, from: <http://www.e-mentor.edu.pl/mobi/arttykul/index/numer/35/id/762>.

Chapter 14

The Use of Social Media in Personal Marketing at an University¹

Karolina Gąszcz

1. Introduction

Until recently, some marketing activities were reserved exclusively for business organizations. The change in the situation on the higher education market forces universities, both state and private ones, to undertake explicit marketing activities. Nowadays, when the main customers of the university are young people from Generation Z, whose main focus is the Internet and who have access to social media virtually round the clock, these institutions are forced to take action in social media. So far, the customers were Generations X and Y. For those people, contrary to Generation Z, direct contact, face to face conversations and information exchange via traditional means, mainly through speech or the use of written means, played a significant role. It is worth mentioning that Polish companies have been active on social networking sites for years, gaining many benefits in this way. Through them, they build a positive image of the organization, record the increase in customer numbers and have greater access to information. It can therefore be assumed that public entities such as universities should also use the potential of social media. On the basis of analyses of the higher education market one can say that universities are trying to integrate into the activity of social media and participate in the market by using this type of marketing activity (Buchnowska, 2013, p. 37).

The purpose of the chapter is to define the scope of the use of social media in the implementation of the personal marketing function on the example of a university. To accomplish the main purpose the author defines the concept of personal marketing, describes its function from the perspective of a university and conducts analysis and assessment of the scope of the use of social media in the implementation of individual tasks of personal marketing on the example of one of Krakow's universities. For the purpose of the article a questionnaire was conducted among students of this university and an interview was carried out inside the academic unit in order to learn about the scope of social media used in the implementation of the personal marketing function.

¹ The study was prepared within the statutory research of Department of Management of the Cracow University of Economics.

2. Social media and personal marketing

The term “social media” refers to online and mobile tools that enable users to create, co-create and disseminate a different type of content, i.e. texts, sounds, or video materials (Dabner, 2012, p. 69).

In this way the user ceases to be only a consumer of the content and becomes its producer as well. When comparing social media with traditional ones, two dominant features are highlighted. First of all, communication is two-sided, so we see the ease of interaction, secondly, there are no barriers to their use and their availability is common. Moreover, they are characterized by the ease of content modification and the speed of information delivery (Buchnowska, 2012). Traditional forms of communication, such as discussions, face to face conversations, advertisement boards, as well as newspapers, radio or phone calls, do not provide as many opportunities as social media (Bolek, 2012). Traditional forms of communication are more limited due to the range and constant contact with the stakeholder. In addition, communication problems or problems with free time suitable for everyone may be a hindrance to communication.

There is no clear classification of social media so this matter is still under discussion (Kaznowski, 2008). Most often, though, we can distinguish such categories as: social networks, understood as well as social services (i.e. Facebook, Instagram, Nasza Klasa), blogs (i.e. Wordpress, Blogspot, Blogger), microblogs (i.e. Twitter, Instagram), social sharing (i.e. Flickr, YouTube), and knowledge base (i.e. Wikipedia) (Kulczycki, 2012, pp. 89-109; Aichner & Jacob, 2015, pp. 257-275).

The types of social media we can name are: Facebook, Twitter, YouTube, Instagram, Forums, Blogs and many other social networking sites (Kaznowski, 2008).

Social media, however, are still a novelty in communication. This is due to their continuous development and the multitude of tools that they have at their disposal. Social media appeared only in the first half of the 21st century, and since then they have been constantly changing and developing. They are an example of a dynamically changing and constantly expanding form of communication. They are the means of communication that is subject to social control and can be used on a broad, unlimited scale. They contain both the content of the message and possible points of view regarding the information transferred. The primary function of social media was to serve as entertainment and facilitate and enable communication. However, with the passing time, their development resulted in them being one of the marketing tools. What is more, it can be said that they are nowadays one of the most well known and most often used forms of marketing.

Interestingly, thanks to their widespread reach and development, they have become also one of the tools of personal marketing. Also personal marketing itself is changing parities in relation to the current needs of both internal and external customers. Personal marketing creates new opportunities for human resources, improving competitiveness and the ability to attract new employees in the labour market. It also affects the improvement of various business forms. When we refer to the Middle Ages, where the beginnings of trade were shaped and the concept of relationship marketing between buyers and sellers was created, we should also refer to the present day in which it is possible to build lasting relationships with employees (Mitrega, 2008, p. 11).

The classic concept of marketing perceives as a starting point the study of the needs and preferences of buyers in such a way that promotions support the product, so that it is offered through the appropriate distribution channels at the right price (Fonfara, 1999, pp. 17-18). In every organization personal marketing consists of several activities. These include developing the core, adapting the offer to the expectations of the individual customer, enriching the core with special

services, using pricing strategies that inspire customer loyalty and undertaking intensive marketing activities towards own employees (Berry, 1995, p. 236). Personal marketing is a system of ways to follow and preserve by an enterprise oriented towards the interests and expectations of potential employees (Schwan & Seipel, 1997, p. 7). It can also be understood as the overall activity of internal and external standards related to the comprehensive management of the organization's potential, building its size and structure, and systematic improvement (Synowiec, 2016). In the consideration of personal marketing, one cannot overlook the issue of relationship marketing, understood as the process of cooperation of the company with employees and other groups of external and internal stakeholders, acting for the benefit of developing profitable relations with customers that rely on their satisfaction and emotional involvement (Mitrega, 2008, p. 11). This marketing is nothing else but all the internal and external actions of the company connected with the management of the social potential of the organisation, shaping its size and structure. In addition, it is also the improvement through creating beneficial conditions for those workers who are engaged in the activity of the company, who aim at increasing its market effectiveness and gaining suitable workers from the job market (Penc, 1997, p. 239).

In order to talk about personal marketing one should also describe the objectives by which it is governed. To a great extent they are connected with its activity inside the organisation and towards its environment. The aims can be divided into primary and secondary ones. The primary ones include recognising the needs of employees and potential employees of the company, who are perceived as internal customers, identifying changes happening in the recognised needs and their reasons, pace and direction, separating internal and external customers, creating the product satisfying the identified needs, positioning the products offered, examining how satisfied the needs of external and internal customers are, and satisfying in the best possible way the recognised needs of the external and internal environment. The primary aims are the starting point for the secondary aims, such as creating, shaping and strengthening the organisation's image, establishing and keeping relations with the employees and the external environment, developing the initiative and creativity of the organisation's workers, forming a bond with the environment, and keeping the bond with the environment and the employees even after they leave the job (Baruk, 2008, pp. 121-122).

As it can be seen, personal marketing is a wide concept, including both actions inside the organisation and also acting in the opposite direction, that is outside the organisation, by taking care of its environment. Combining the two dimensions, both the one within the organisation and the external one, into one concept, decides on the superiority and originality of personal marketing. The former dimension, which is one of the sub-systems of personal marketing, includes such elements as communication between the employer and employees, the motivational system, which is based on the use of motivators of a financial as well as non-financial character, the training system, characterised by a professional development programme, and education enabling people to gain completely new skills. Moreover, the personal marketing system inside the organisation includes as well the system of creating and strengthening the company's image as a reliable employer and the system allowing workers to be mobile and to move from one position to another.

On the other hand, external personal marketing concerns actions undertaken outside the organisation and is characterised by such systems as: the system of external communication between the organisation and potential customers (employees and students), the system of internal recruitment and the system of strengthening and creating the company's image (Baruk, 2006, p. 15).

According to many theorists, the most valuable resource of every organisation is people. Despite being known and repeated by many great scientist, this is still valid after all these years and

nowadays it has even gained significance (Baruk, 2006, p. 11). By people, we understand both those who make the organisation from the inside and those who are its environment. Personal marketing is considered to be a new concept of human resources management which puts the employee first. This marketing creates conditions for reaction to changes taking place in the company's environment. Thus, it allows the identification and satisfaction of the internal and external customer's needs. In essence, personal marketing assumes treating all employees and candidates for employment as customers of the organization (Walkowiak, 2007, p. 123). It is also defined as a system of behaviour types of an enterprise oriented at the expectations of potential and current employees. According to this principle, employees are perceived as customers, and thus their interests are at the centre of attention. Personal marketing assumes that an employee should find in their job not only technical means of work, but also clearly defined tasks, goals and visions of the company and a suitable, friendly environment (Altkorn, 1998, p. 12). Personal marketing is manifested not only in acquiring employees, but also in the methods of their maintenance and even preparation for them leaving the company (Zbiegień-Maciąg, 1996, p. 89). Through personal marketing, in enterprises the need to integrate external communication activities (public relations, marketing) and internal communication becomes visible (relations with employees, mission, policy, values, vision), which is an indispensable condition for effective identity management as well as management of the image of the organization. This type of marketing shapes new values and priorities, and communicating them requires action and positive patterns. Active support of managers, engaging employees in conceptual work concerning change, helping managers to acquire skills required by new tasks for subordinates, effective internal communication are all needed. Integrated activities require communication and cooperation in both vertical and horizontal layout. When creating a system of building relationships in individual company structures, actions should be undertaken to create a climate of organizational culture conducive to creating positive values, norms or behaviours among employees (Olsztyńska, 2005, p. 67). As can be seen, personal marketing focuses on internal and external communication. In addition, it takes care of the company's image. To be able meet the requirements of personal marketing in these aspects in the best way, nowadays, together with the increasing spread of social media, no enterprise will survive in a competitive market without using social media. It is through them that we can communicate with employees within the organization and with potential employees from the outside of the organization in a better way than in the traditional one. This communication is faster, more frequent and can be directed to many recipients at the same time.

It should be noticed that more and more emphasis is placed on satisfying external customers' needs by adjusting products and services even to the smallest target group as well as treating employees as customers, thanks to which it is also possible to analyse their needs and try to meet them. These regularities have been noticed not only by companies but also public units, that is higher education institutions.

More and more frequently these units use this tool of personal marketing – social media – to communicate both with external customers as well as in an increasingly advanced way with the internal environment of the university. The increased awareness and flexible approach to customers can contribute to enriching and improving public opinion and developing a better bond with the students. On the other hand, however, by using the means of communication which make the information available to quite a lot of people very quickly, the university is obliged to communicate the information systematically and the information should be checked and reliable.

Current expectations of customers, employees and participants make organisations permanently adjust to their changing needs. The market we have today is very demanding and unstable as far as expectations are concerned, and very competitive. So in order to function in such conditions of external environment of the organisation, it must be first and foremost stable inside and workers must be engaged enough in its development so that together with the changing expectations of the environment their skills could change as well. It is connected above all with the use of personal marketing.

From the perspective of a higher education institution, personal marketing can be defined as all the actions of a unit which aim at creating a bond between the employer and an employee and between the university and a student. On the basis of one of Krakow's university, chosen on purpose, we can draw inferences that public units more and more often want to meet the needs of their employees and students. They become increasingly flexible and creative, adjusting to the changes in the market and creating their product so that it could specifically aim at the group of potential customers. As an example of changes that take place at state universities we can take social media, which are more and more frequently used by state universities. For a very long time, this type of public units was accustomed to the traditional form of communication. Unfortunately, it is not enough with such rapid and fast changes taking place in the environment. Therefore, universities have been forced to open up to new technologies and forms of communication, and to use the more and more widespread and used social media to be able to reach their potential customers, and above all to be in constant touch with their students and to develop a bond with them, which is very important these days. Moreover, through the use of personal marketing, they can also learn about the needs of not only students but also employees, adjusting their job offers, staff transfers, or forms of motivation and remuneration to the expectations of the university staff. Through such functioning and synergies, the university gains both image and widespread good opinion among employees, students as well as the external environment.

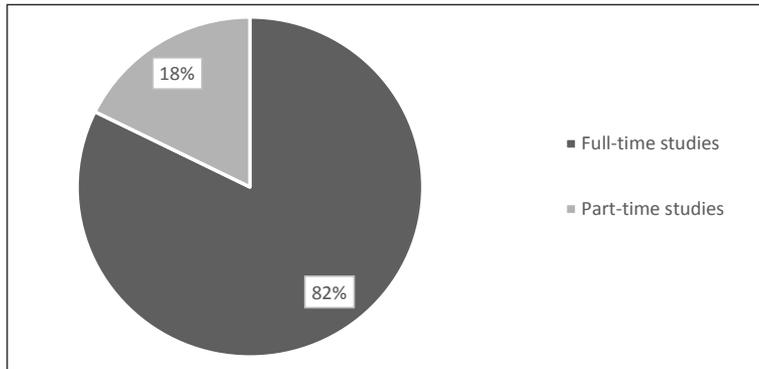
3. Research results

On the example of a Krakow's higher education institution the use of social media in personal marketing was analysed. By personal marketing in this case we understand mainly the relations with the students and employees of this university.

Public units are still part of a group that does not fully exploit the potential of social media. Due to their attachment to traditional forms of communication, lack of flexibility of public units, as well as lack of trust in social media and employees' competences to effectively use them, there are restrictions in their exploitation. One would be tempted to say that many public units practically do not use one of the most widespread and formulated forms of marketing, either within the organization or in its environment. Because of this, unfortunately, universities do not provide information in places where it is most desirable and most searched for. One assumes that due to the lack of flexibility in adjusting to current trends, they do not inform their students about important and significant matters, directly affecting potentially interested people.

In order to check the assumptions that arise, the questionnaire focused mainly on the relationship of the university with its students to check the implementation of the personal marketing function through the use of the tools such as social media. The respondents were students of one of Krakow's universities, of the Faculty of Agriculture and Economics.

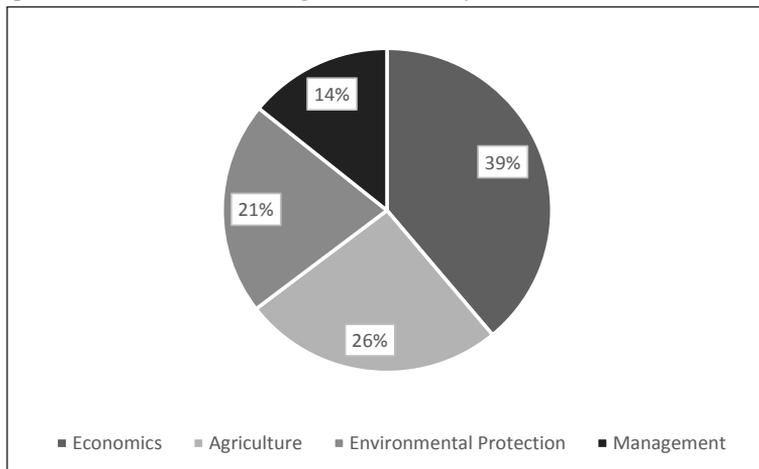
Figure 1. Respondents divided according to their cycle of study



Source: own elaboration based on the questionnaire results.

The target group consisted of 113 people, including 63 men and 50 women. The respondents were both full-time and part-time students in the proportion of 93 students studying full-time to 20 people using the part-time mode. The number of respondents from the first degree cycle (from the first to the third year) was 70, while two years of the second degree cycle were represented by 43 people.

Figure 2. Respondents divided according to their faculty



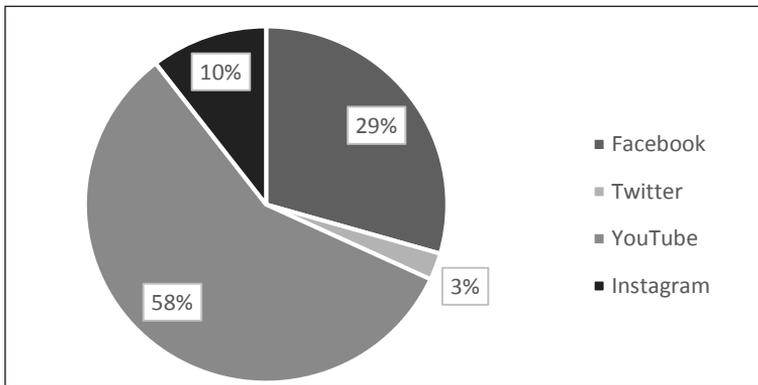
Source: own elaboration based on the questionnaire results.

The largest group of students participating in the survey were students of Economics and their number was 44. The second most numerous group were students of Agriculture (29 people), then Environmental Protection (24 people), while the least numerous group were students of Management (16 people).

What was examined was student’s knowledge of social media tools, which are used by the university in Krakow at which they study. In addition, they were asked about the students’ trust in the information provided by this form of communication. The questionnaire also included questions about the relations that the university creates with them, the degree of completeness of the information provided, and the credibility of the information provided via social media. In order to investigate the implementation of the personal marketing function by the selected Krakow university, the questionnaire included also questions about this unit meeting the expectations and needs of students, about the interest in feedback from students regarding their needs connected with their university, as well as about creating the university’s image.

The university studied uses only four social media, which include: Facebook, YouTube, Twitter, and Instagram. Nowadays, it is a small part of all the communication means which the university could use. Other known and intensively visited social media are also thematic blogs, discussion forums, WhatsApp, Snapchat and Google +.

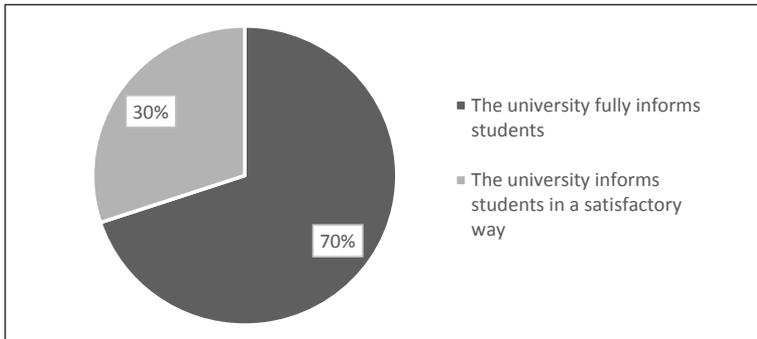
Figure 3. Social media which are used by the university (in the students’ opinion)



Source: own elaboration based on the questionnaire results.

It is interesting, however, to what extent students themselves know the examples of the media used by their university and where they could look for information. While marking the answers on the multiple choice test, students did not prove every time that they knew which forms of social media are actually used by their university. According to the study, among 113 university students surveyed, 94 people believe that their university uses YouTube to provide information, 48 people have seen the activity of the university on the social networking site Facebook, while only 17 people know that Instagram is used by their university. Twitter was chosen most infrequently, only 4 people indicated that the university at which they study uses this form of social media. It can be concluded that the students of the university mainly observed the activity of the university on the two most popular and known types of social media, namely YouTube and Facebook. Such a tendency may be caused by the general popularity of these media. It is worth mentioning that nowadays these social networks are most intensively used by the largest number of users.

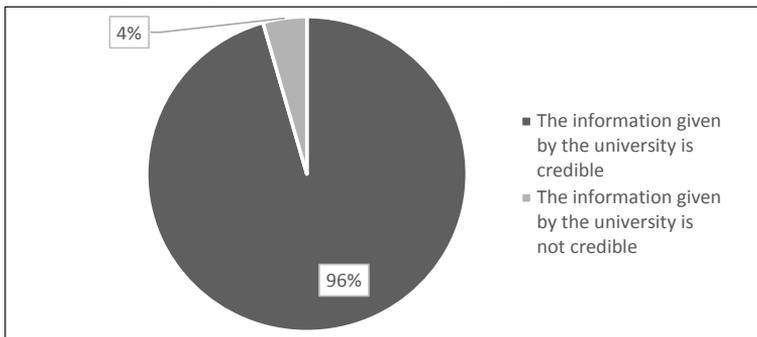
Figure 4. The level of given information, according to the students



Source: own elaboration based on the questionnaire results.

Another question presented to the respondents concerned information provided to students by universities. More than half of the respondents (79 people) believe that the university fully informs students about the events organized by this unit, changes (that is new fields of study, changes in the regulations, changes in the organization of the academic year, etc.), and offers addressed to students (that is traineeships, internships, trainings, scholarships, international exchanges, etc.). Only 34 people felt that they were not sufficiently informed about the matters concerning them directly. From the presented results, it can be concluded that although the university uses very few social media, it uses the most popular ones and therefore it is able convey information and reach a wide range of audience.

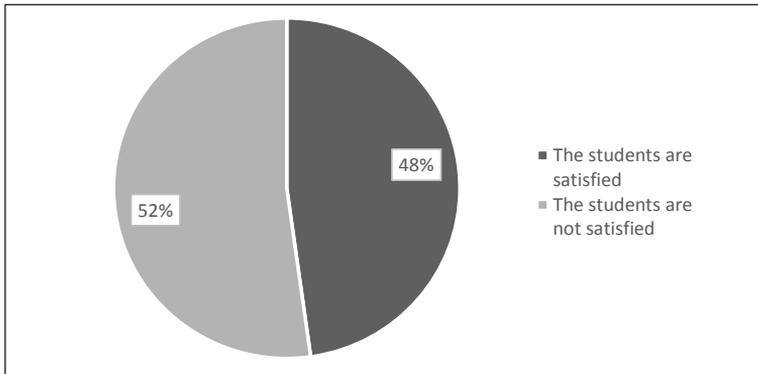
Figure 5. The credibility of the given information, according to the students



Source: own elaboration based on the questionnaire results.

The credibility of the transferred information by the studied university is very well perceived as well. As many as 108 people think that the information given by the university in the social media is credible. Only 5 people have a different opinion. Thanks to that we can see that social media, despite their wide availability and information exchange, are a reliable source of information.

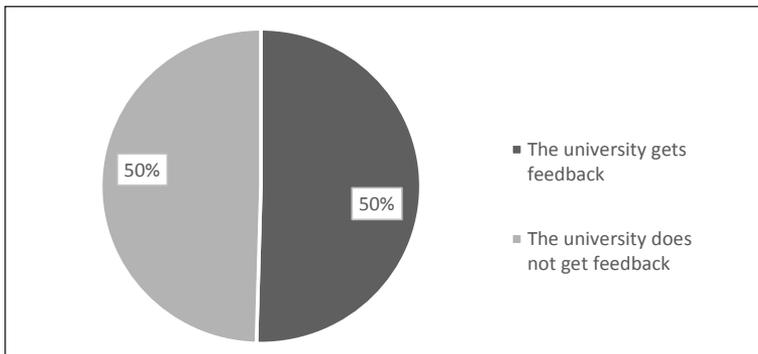
Figure 6. Students' satisfaction with the form of giving information by the social media



Source: own elaboration based on the questionnaire results.

An interesting issue resulted from the answers regarding the students' satisfaction with the information provided to them via social media. In this case, unfortunately, there is no predominant answer. 54 people think that they are fully satisfied with the form of the information transfer by the university, while 59 people do not share this opinion. Therefore, it can be concluded that despite the result of slightly higher dissatisfaction among students, this result should, however, influence the decisions of changes concerning the transfer of information. Knowing the modern needs of young people, universities should provide information in a short, simple and clear way. In addition, the information should be easily accessible and placed in places accessible to students and in intuitive places to be found. Social media is a constantly evaluating information centre, therefore the university should appear not only on selected social networks, but also follow the new generation and use new types of social media. The information itself should be encouraging, clearly explained and written in a simple and accessible language.

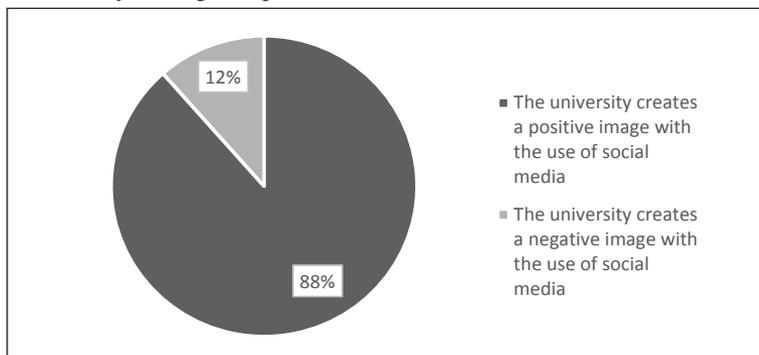
Figure 7. Getting the feedback concerning students' needs and expectations



Source: own elaboration based on the questionnaire results.

Analysing the respondents' answers concerning their opinions on the university's collection of feedback from students regarding the level of satisfaction of their needs (that is trainings, traineeships, apprenticeships, etc.), 57 people completing the survey gave a positive answer. However, as many as 56 people claim that the university they are studying at is not interested in the needs of its students. The presented distribution of answers indicates that the interest in the needs of students should be much greater. It can therefore be concluded that the education unit does not know, is not up to date with the changing needs of studying people. Because of the changing students and the fact that every year there are new ones, this information should be acquired and analysed by the university on a regular basis in order to be able to adapt their offer. It is applicable not only to a didactic offer, but also to the scholarship offer, the possibility of undertaking traineeships and apprenticeships, as well as additional training or international exchanges. The analysed issue is very important, because it is through interest that the trust and bond between the university and its students are created.

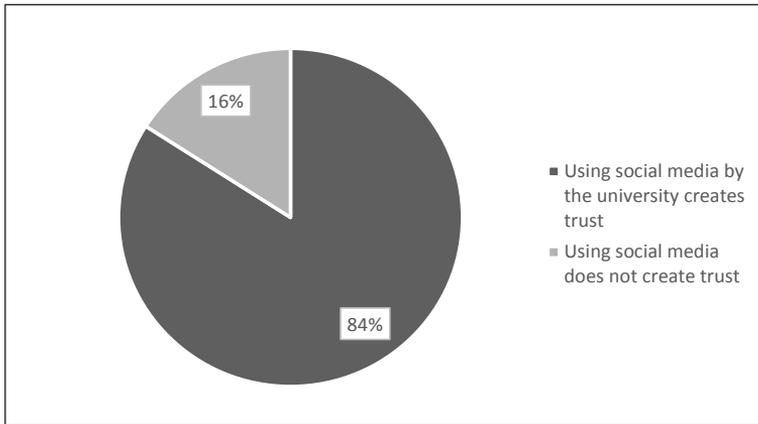
Figure 8. The university's image shaped in the social media



Source: own elaboration based on the questionnaire results.

There has been a controversy over the years regarding the positive image of a university created on social media. First and foremost, this is due to the fact that there is a lot of activity on social networks of various, not always positive, organizations or groups. It is worth noting, however, that with the growing interest in social media, and thus more and more supervision and regulations, it is possible to achieve a positive image. A new, young generation also increasingly positively perceives the image of precisely those organizations, individuals or companies that use social media and build their positions there. This regularity can also be seen in the responses given by the students of one of the Kraków universities. When asked about creating a positive image of their university through activity on social media, as many as 100 respondents answered positively, only 13 respondents responded negatively to this form of creating a positive image of the university. It can be therefore concluded that creating the image on social media is positively received in the closest environment.

Figure 9. Creating bond and trust to the university with the use of social media



Source: own elaboration based on the questionnaire results.

Social media are not only an information transfer or a form of promotion. By using this form of activity, using the function of personal marketing, the university should create the bond with students and gain their trust. In the case of the analysed university, surveyed students confirmed this necessity. In the case of gaining the trust of the university students, as many as 95 among 113 respondents confirm that by using the social media it is possible to gain such trust. Only 18 people gave a different answer. Moving on to the analysis of the answer concerning creating the bond, also as many as 95 of the surveyed people confirmed the positive impact of the active participation in social media on strengthening such a relation.

4. Conclusion

To sum up, social media in today's world do not have the communicative function only. They also perform very well as an information and marketing tool (Miotk, 2013, p. 15). Thanks to this, in an easy and accessible way, you can recognize the needs of the user, present your own offer and establish a bond with them. Companies and organisations have realised that. However, public units, including higher education organisations, still undertake actions with the use of social media with a lot of lack of trust and care. It should be emphasised, though, that despite still being used to traditional forms of communication, it can be more and more often observed that universities enter the social media activity. It can be very well seen on the basis of the analysed university. In this case, using social media in personal marketing used by the university concerning the students studying there is very highly successful. According to the surveyed students, the university informs about important information using the social media, creates a bond and builds trust, moreover, the information made available by the social media is reliable and credible. The issue of the amount of the use of social media by the analysed university is still debatable. With the possibility of widening its activity in the social media, it uses exclusively four of them, that is Facebook, YouTube, Instagram and Twitter. These are the portals and communicators which are most well-known and most often chosen by the young generations. It should be remembered though that there is always

something new, one trend finishes and another one starts. It is important to be up to date and above all be where our customers are. So the use of social media in personal marketing on the example of one higher education institution in Krakow it can be said that this institution to a great extent fulfils the asks of personal marketing using social media.

Bibliography

1. Aichner, T., & Jacob, F. (2015). Measuring the Degree of Corporate Social Media Use. *International Journal of Market Research*, 57(2), 257-276.
2. Baruk, A.I. (2006). *Marketing personalny jako instrument kreowania wizerunku firmy*. Warszawa: Difin.
3. Baruk, A.I. (2008). *Postmodernistyczne koncepcje marketingowe a marketing klasyczny*. Toruń: Dom Organizatora.
4. Berry, L.L. (1995). Relationship Marketing of Services – Growing Interest, Emerging Perspectives. *Journal of the Academy of Marketing Science*, 23(4), 236-245.
5. Bolek, J. (2012). *Efektywne wykorzystanie tradycyjnych i nowoczesnych narzędzi komunikacji wewnętrznej przez przedsiębiorstwo*. Warszawa: Wyższa Szkoła Promocji.
6. Buchnowska, D. (2012). Polskie uczelnie wyższe w serwisach społecznościowych. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Ekonomiczne Problemy Usług*, (88 Gospodarka elektroniczna: wyzwania rozwojowe. T. 2), 147-155.
7. Buchnowska, D. (2013). *Wykorzystanie mediów społecznościowych przez uczelnie wyższe i studentów w świetle badań własnych*. Gdańsk: Uniwersytet Gdański.
8. Dabner, N. (2012). ‘Breaking Ground’ in the Use of Social Media: A Case Study of a University Earthquake Response to Inform Educational Design with Facebook. *The Internet and Higher Education*, 15(1), 69-78.
9. Fonfara, K. (1999). *Marketing partnerski na rynku przedsiębiorstw*. Warszawa: PWE.
10. Kazanowski, D. (2006). Social media – społeczny wymiar Internetu. [in:] J. Królewski & P. Sala (Eds.), *E-marketing. Współczesne trendy. Pakiet Startowy*. Warszawa: PWN.
11. Kaznowski, D. (2008). *Nowy marketing*. Warszawa: VFP Communications Sp. z o.o.
12. Kulczycki, E. (2012). *Wykorzystanie mediów społecznościowych przez akademickie uczelnie wyższe w Polsce. Badania w formule otwartego notatnika*. Poznań: Wydawnictwo Naukowe Filozofii UAM.
13. Miotk, A. (2013). *Skuteczne social media. Prowadź działania, osiągnij zamierzone efekty*. Gliwice: Wydawnictwo Helion.
14. Mitręga, M. (2008). *Marketing relacji. Teoria i praktyka*. Warszawa: CeDeWu.
15. Penc, J. (1997). *Leksykon biznesu*. Warszawa: Agencja Wydawnicza Placet.
16. Schwan, K., & Seipel, K.G. (1997). *Marketing kadrowy*. Warszawa: Wydawnictwo C.H. Beck.
17. Synowiec, J. (2016). *Podsystemy marketingu personalnego w przedsiębiorstwie*. Sosnowiec: Oficyna Wydawnicza “Humanitas”.
18. Zbiegień-Maciąg, L. (1996). *Marketing personalny, czyli jak zarządzać pracownikiem w firmie*. Warszawa: Wydawnictwo Business Press.

Chapter 15

Business Analytics in Marketing

Marcin Szplit, Andrzej Szplit

1. Introduction

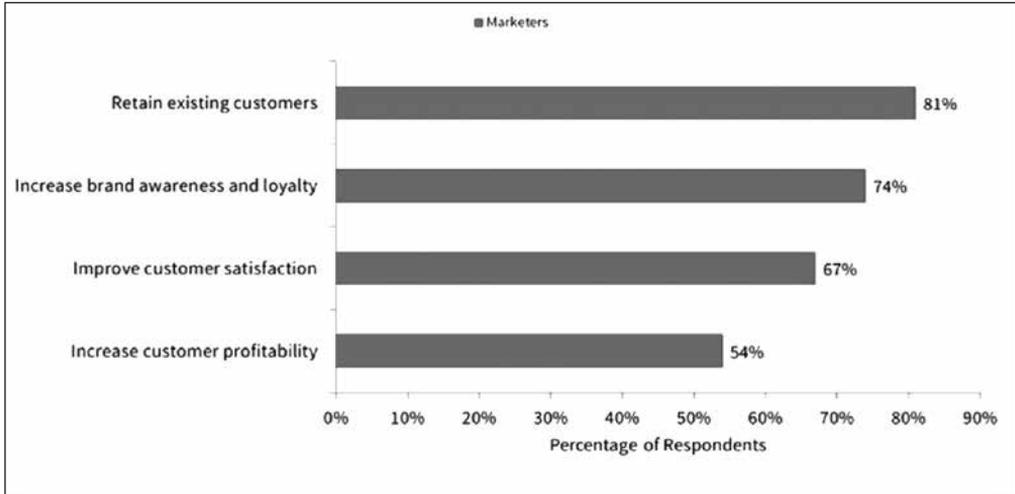
Companies must constantly observe all channels and formats of selling. Marketing department must ensure that company reach the right audience where their messaging will resonate. This requires strategic and tactical insights into marketing performance and customer activity. While marketers face the most challenging environment in the history of their profession, they also have a set of advanced analytical tools to choose from to aid in their efforts. Modern analytical tools can offer marketers up-to-the-minute information on any number of key indicators of customer behaviour, this way marketers can gain a true understanding of all facets of marketing performance and better demonstrate their contribution to the competitive advantage of the organization.

2. Top Marketing priorities

2.1. Retain existing customers

The top goals cited by marketers reflect the need for greater strategic insight into customers and marketing performance (Fig. 1). CMOs need to clearly draw a line between marketing activities and improvement in these areas. First and foremost, marketers care about retaining their current customers. Retention rates are a leading indicator of overall performance and also, easily attributable to marketing efforts. Marketers want to identify the traits of customers at high-risk of departing the business and find a way to bring them back into the fold.

Figure 1. The CMO's Agenda



Source: (Aberdeen Group, 2015, p. 3).

2.2. Increase brand awareness and loyalty

Marketers also need to increase the prominence of their brands while simultaneously instilling customer loyalty. This involves identifying the best channels through which to reach customers, and intelligently allocating marketing efforts to have the greatest impact.

2.3. Improve customer satisfaction

Achieving greater customer satisfaction, means responding to customer needs more quickly and creating a more personalized customer experience. Marketers have to identify the most vital aspects of the customer experience that drive satisfaction and eliminate any practices that produce dissatisfied customers. Highly satisfied customers will become valuable advocates for a company's products and services.

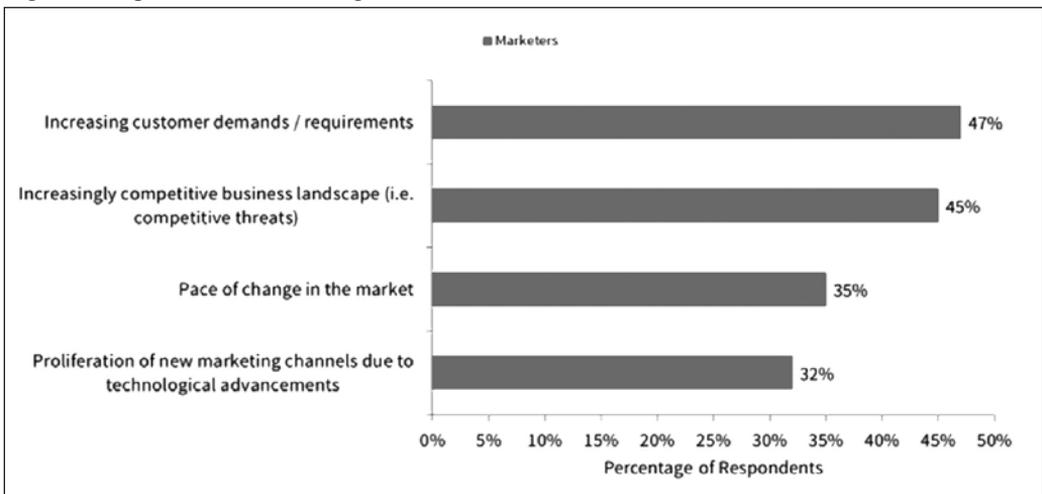
2.4. Increase customer profitability

Finally, over half of marketers are focused on increasing customer profitability. This requires increasing the wallet share of each account while reducing associated costs, such as marketing spend. Maximizing profitability requires a precise and thorough understanding of customers. The wrong upsell attempt at the wrong time could end up decreasing customer spend in the long run. None of these goals exist in a vacuum. Improving customer satisfaction will positively impact loyalty and retention. Developing brand loyalty will make it easier to increase customer profitability. Overall, marketers are an ambitious bunch as they seek to attract and retain customers who are loyal, and increase spend over time.

3. Top External Marketing Pressures

The CMO's was asked what external pressures impact them and their respective organizations' marketing efforts (Fig. 2). Today's customers expect more than ever: highly customized interactions, instantaneous responses, and a seamless omnichannel experience (see sidebar). Additionally, many marketers feel that their industries have never been more competitive. Landscapes continue to become more crowded, and marketers seek to stand out amongst the cacophony of their rivals' messaging. To accomplish this, marketers need to reach customers with the right content via the right channel at the right time. They also need to find ways to differentiate their outreach from competitors while still resonating with the right audience.

Figure 2. Top External Marketing Pressures



Source: (Aberdeen Group, 2015, p. 5).

Marketers are also challenged by rapidly changing markets and the growing number of channels through which customers need to be engaged. Customer activity often needs to be tracked and managed in real-time to stay ahead of the competition. Marketers need to collect, access, and analyse data types as they come in from all digital channels. They also need to predict customer trends and behaviours to stay ahead of the curve. Many marketing departments struggle with managing interactions across multiple channels to ensure customers receive updated and tailored messaging based on previous engagements. All of these external pressures can hold marketers back from achieving their goals. Enlightened marketing leaders do not despair, however, and overcome these challenges through the diligent application of analytics.

4. Omnichannel analytics supports unified commerce

The ecommerce revolution has changed the face of retail over the last 20 years. Online sales have gone from being essentially negligible to a customer base of some 2 billion and a global

market value of approximately €1.7 trillion in 2016, a figure that is forecast to grow to around €2.1 trillion in 2018. Currently, more than one-quarter of this market is generated by eshoppers from the European Union (EU) (Świątek, Kosowska & Szolgayova, 2017).

Along with mobile expansion, the retail market has faced the proliferation of social networks, which has given consumers unique tools to share information, ask questions, download content, and engage in discussions. Moreover, social networks have become an additional retail channel that is gradually gaining importance. They are also getting an important customer support channel. According to IDC, by 2018, 50% of customer support interactions will be digitalized and occur in online communities.

Increasing popularity of purchases in new channels does not mean that consumers totally abandon traditional purchasing methods. Consumers want to be able to choose the most convenient channel, and switch between channels during the purchasing process if needed – giving rise to the omni-channel concept. Omni-channel retailing is a customer-centric approach that gives consumers the ability to buy, receive, and return items seamlessly across all touch points (the store, online, the call center, collection/drop points). It is the practice by which a variety of channels are integrated and leveraged to give the best customer experience, increase loyalty, and maximize revenues.

The integration of systems and data facilitates meaningful analysis, thus enabling retailers to take appropriate actions. If the retailer is to remain competitive, executives, managers, and business users must have access to the most complete information – with full insight into results and critical issues, and the ability to quickly analyse, present, and report these results to support decisions and adapt to the changing market. On a daily basis, retailers must choose the right products to sell, select appropriate suppliers and shipping options, manage customer expectations, set appropriate pricing, forecast stock and inventory needs, and manage seasonal shifts in demand. In the omni-channel environment, making the right choices is becoming much more challenging. Retailers have many more options to consider in each dimension and need to serve a new type of consumer, who is more demanding and impatient.

Data analytics helps retailers adapt to this new breed of consumers in the following ways:

- Analyzing clients' behavior, purchasing patterns, and sentiment, and responding to shoppers' personal needs,
- Correctly predicting demand to optimize product assortment and increase margins and profits,
- Delivering tailored promotions for the right items at the right time and in the customer's favoured way, to stimulate purchases,
- Identifying top customers and learning how to retain and foster them, as well as how to acquire additional customers,
- Identifying and analysing influencers of customers and understanding what impact they have on customers' buying decisions (Forrester Research, 2016).

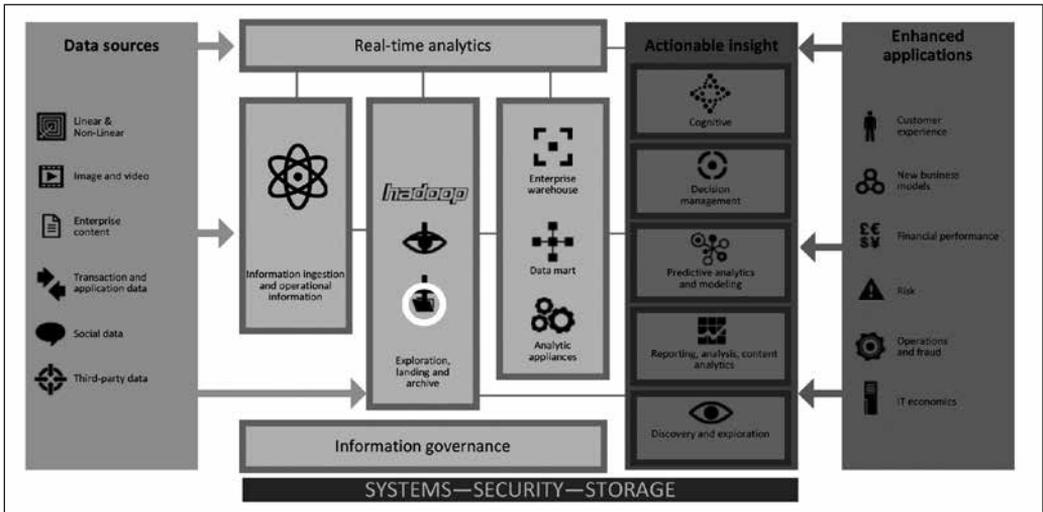
The integration of inventory, sales, and customer data into a single database forms the bedrock of all operations efficiency analytics in the organization. This capability gives the retailers the ability to assess the efficiency of particular channels and stores, measure stock rotation ratios, and evaluate the efficiency of marketing campaigns and the profitability of their performance and make informed decisions based on a wide range of reports showing sales and stock efficiency trends.

Successful omni-channel fulfilment model includes:

- Inventory Management: Single stock at all levels (distribution centres, warehouses, and stores) with full visibility and real-time allocation.
- Warehousing: Optimized, efficient, and automated warehousing.
- Order Processing: Flexible, real-time order management with a full view of the customer journey.

- Delivery Management: Adjusted to give the best customer experience, dynamic delivery operations, and IT-enabled cost and service optimization.
 - Transportation and Logistics: Appropriate providers, optimized by time and cost. particular items. Usually, business analytics systems allow for data monitoring on different levels of detail (channel, region, timeframe, item category, etc.), so retailers can understand. Predictive analytics help retailers to answer the following questions:
 - What goods should you invest in for each week, month or season?
 - How should you allocate inventory to stores and other locations while considering factors such as geo-demographic variety, store capacity, consumer demand, local promotions, and unusual events?
 - How much additional inventory should be allocated for planned promotions?
 - What is the ideal pricing/discount strategy to sell off stock by the end of the season?
 - When is the best time to refill stock from the vendor, and how much should you order?
 - How do you price and allocate new products with no history? (Levine, 2017)
- The well-organized real-time computer that supports all kind of marketing activities may look like this example on Figure 3.

Figure 3. Real time analytics in omni-channel marketing



Source: own elaboration.

5. Case study

Very good example of successful introduction of analytics in marketing was a one of marketing support system in the biggest retail bank in Poland.

One of the significant numbers was the amount of data that flow through the system. It was near 150kB of customer data generated every second 24/7 – this includes: transactions, clickstream, geolocalization, applications, actions.

The main problem to solve by analytics was the question: are there any patterns in customer behaviour? The solution of the problem was creation of number of patterns in customer behaviour:

- abandon applications – contact by Call Centre,
- transfer of money – savings offer (SMS),
- competition – after analysing title of transfer (by AI) lead in Call Centre,
- financial couch – investment offer.

The bank creates a possibility in creating own bank product by customer in real time.

6. Conclusion

Marketers are now expected to endlessly anticipate, meet, and exceed customers' needs while demonstrating the value of all their efforts. Marketing analytics enable organizations to obtain maximum results from their marketing investments. With the right tools, marketers can perform robust analysis on multiple data sources, accurately predict performance, and derive the maximum value from their data.

As trends in consumer buying patterns continue to evolve, retailers need solutions that can derive deep data analytic insights to provide a more sophisticated, centralized view of their customers' preferences and buying journeys.

The joint omnichannel retail analytics solution addresses how to manage the massive information created from customer data points across multiple channels. With the omnichannel retail analytics solution, every piece of data is triangulated with the customer so that retailers can become more aware about customer behavior, more responsive to customers' needs and more effective at making informed business decisions to increase the bottom line.

Bibliography

1. Brinker, S. (2017). *Marketing Technology Landscape Supergraphic*. Martech 5000, Chief Marketing Technologist Blog. Retrieved on 10/05/2017, from: <http://chiefmartec.com/2017/05/marketing-technology-landscapesupergraphic-2017/>.
2. Forrester Research (2016). *Thriving In A Post-Digital World*. Retrieved on 10/05/2017, from: <https://www.forrester.com/report/>
3. Forrester Research (2017). *The Next Generation Of Enterprise Marketing Technology*. Retrieved on 12/09/2017, from: <https://www.forrester.com/report/>.
4. http://v1.aberdeen.com/launch/report/research_report/10903-RR-customer-analytics.asp, Retrieved on 10/05/2017.
5. Levine, B. (2017). *MarTech Landscape: What is RTIM?* MarTech Today. Retrieved on 17/01/2017, from: <https://martechtoday.com/martech-landscape-rtim-194259>.
6. Świątek, M., Kosowska, E., & Szolgayova, E. (2017). *Digitization in Retail – Making Your Omni-channel Strategy a Reality*. An IDC White Paper sponsored by Comarch.

PART IV

CONTEMPORARY CHALLENGES OF TRADE MANAGEMENT



Chapter 16

The Integrating Role of Fair Trade in Value Creation Chains¹

Adam Figiel

1. Introduction

Fair Trade being the partnership based on dialog, transparency and mutual respect which tends to mitigate the disproportion in trade between the developed and developing countries was formalized in 1997. The partnership contributes to the growth of sustainable development by offering better and honest work conditions to the unprivileged blue collar workers in developing countries.

The term “fourth party logistics” (4PL) refers to organizations not directly involved in the movement of physical goods but rather the integrators in the value creation chain. 4PL puts together its own resources, skills, technology as well as of the others in order to devise complex supply chain solutions.

The observation of growing importance of intangible assets of companies has led to the conclusion that Fair Trade can overtake the role of integrator (4PL) in value creation network by offering its favorable reputation to the system.

The aim of the chapter is to demonstrate the integrating potential of Fair Trade in value creation chains.

2. Fair Trade Movement

Fair trade is a social movement as well as a formal institution which tries to help people who make things in developing countries. The movement helps people to work in better conditions and helps them get more money for what they make. These things give workers the opportunity to improve their lives and plan for their future, and they help reduce poverty. The movement also tries to keep the environment the same or improve the state that it is in.

¹ This publication is financed from the statutory research funds of the Department of Commerce and Market Institutions of the Cracow University of Economics.

Fair trade helps people in developing countries sell to people in developed countries. Things that are sold in international trade include handicrafts and other manufactured goods, agricultural products and minerals such as iron and petroleum.

Merchandise that has fair trade status must be given a fair trade certificate. This says it follows rules about fairness to workers and the environment. This will mean the product can put the Fair-trade symbol on their packaging if they earn the certificate.

Fair Trade is a for profit organization yet characterised by very strong social focus. Profits rather remain the means for survival and development than ends in the form of the handsome bottom-line. In its institutional form it resembles a cooperative that offers social support to its member organizations.

3. Responsibility in business philosophy

The subject of corporate social responsibility (CSR) has been widely discussed in literature for years now. CSR is considered, at present, the philosophy in which corporate behavior must be included in corporate strategy (Jimenez, 2009). There can be found many different definitions of CSR, allowing multiple conceptual approaches, however, to most academics CSR is an instrument that helps to reconcile economic, social and environmental objectives to businesses. Organizations, in cooperation with their partners use CSR to defend common values and increase the sense of solidarity and cohesion, as well as improve competitiveness and sustainability. The impact of CSR on the organization is frequently shown in three dimensions: economic, social and environmental (Caroll, 1979). From this view point, the intersection and integration of environmental, social and economic performance in strategic management process guarantees sustainability of the firm (Dyllick & Hockerts, 2002). The framework rests upon the premise that firms incorporate long-term sustainability strategies throughout the value creation chain to create a competitive advantage and improved financial performance (Aragon-Correa & Sharma, 2003; Porter & Kramer, 2006). Development of a long-term strategy for company's performance supports the logic that short-term economic gains alone are not sufficient for a firm to achieve sustainable growth (Elkington, 1998; Dyllick & Hockerts, 2002).

Majority of proposed CSR models, which tend to be based on developed economies. According to literature, modern society pays more and more attention to both social and environmental aspects of technical and economic development as well as globalization (Amaeshi et al., 2008; Zadek, 2004). Also it is frequently mentioned, that environmental changes will influence the growth of CSR prominence.

We support thesis posed by majority of academics that CSR is not a consequence of corporate altruism but rather is a kind of response to demand for socially responsible behavior on stakeholders side. This is the result of stakeholders (specifically society at large) interest in values shared by companies whose products and services society buys. Putting things simple one can say that CSR is motivated by social interest in corporations, who they are and what values they share. In literature one can even find statements that a purchase of a given product is like a vote on a candidate in presidential election. Consumers expect companies to produce high-quality, safe and environmentally friendly products with manufacturing processes that are less harmful to the environment and to communities (Lash & Wellington, 2007).

In most of the models related to CSR the need for its implementation in the strategic context is mentioned. Despite bulk literature on CSR and its strategic prominence to an individual company there remain few mentions with regard to value creation chains (a network of companies partnering in value creation). In such a situation a question of synchronizing of CSR activities of multiple value creation chain partners arises.

4. The prominence of corporate reputation

CSR and corporate reputation remain the two notions closely connected. Corporate reputation is an important intangible asset which heavily contributes to the bottom line of the organization. The relation was proved by Dowling (2002, p. 136), who employed Copeland, Koller, Murrin model for measuring and managing the value of companies.

According to Melewar and Jenkins (2002, p. 81) there are several elements that contribute to overall corporate reputation. Among these the Authors identified two aggregates labeled corporate behavior and corporate culture. Both aggregates are heavily influenced by the corporate values shared as well as physical evidence of previously mentioned values expressed by actual corporate behavior. Here the question of shared values and corporate behavior manifestation arises. The answer can be found in Orlitzky, Schmidt and Rynes (2003, pp. 403-411) work. The Authors proved that there is no direct influence of CSR activities on the bottom line. However, CSR activities contribute to the bottom line by improving corporate reputation which is directly related to the bottom line. For that reason CSR is recognized to be a strategic activity that may become the source of sustainable competitive advantage for the firm (Figiel, 2013).

The issue of reputation is an interdisciplinary and multidimensional phenomenon frequently referred to in international literature.

The phenomenon is particularly important in the context of increasing companies' market ranges and expanding organizational structures leading to partnerships and networking resulting in transition from atomistic view of a company to relational one. Strategic management literature suggests that in order to remain successful companies should concentrate on:

- building trust and cooperation between partners (Ambrose et al., 2010),
 - developing collaboration and coordination (Van Donk & Van der Vaart, 2005),
 - creation of relationships between buyers and suppliers based on long-term mutually beneficial partnerships (Towers & Burnes, 2008), and
 - implementation of ethical supply chains (Shaw et al., 2007),
- to name some of major ones.

5. Reputation of complex value creation chains

Subsequent complex and extended organizational structures being the effect of organizational networks result in more efficient allocation of resources, better flow of know-how and intellectual capital, diminished levels of risk to individual partners, better access to global markets and several other advantages. Despite unquestionable advantages of the new business model there still remain several complications companies must face. One of the consequences of delivering value in a group of companies rather than individually by isolated firms is the need of synchronization

of specific activities forming the value delivery chain as well as communicating with a greater number of stakeholders internationally. That calls for developing, synchronizing and communicating a coherent image and reputation by all members of value delivery chain originating from different parts of the globe rather than by individual companies. Since the nuances between image and reputation remain beyond the scope of this paper, in the presence of ongoing debate between academics regarding the relation between the two terms the Author is going to treat the two notions as synonyms (Figiel, 2011). According to the resource based theory, reputation is a strategic and unique resource, contributing to development of sustainable competitive advantage and affecting value of a company. By the same token one can assume reputation a VRIN resource contributing to the bottom line of a network of companies which form a value delivery chain.

The evolving environment implies changes not only in the organization of companies and in the way they relate one to the other but also brings about consequences on how communication activities are carried out. Due to the occurrence of networking, partnering and relationships, together with simultaneous growing importance of business reputation, full integration of corporate communications and marketing is called for, in order to ensure coherence of corporate image among different stakeholder groups across the globe. That calls for integrating marketing communication on value delivery chain level rather than on individual company level.

The value creation chain is a network of firms performing activities in order to deliver value. All of these firms develop financial, environmental and social strategies, which help them create a positive image to stakeholders (Brown et al., 2006). In this situation, it could be observed that poor social, financial and environmental performance of an individual member affects more the whole value creation chain rather than individual firm (Handfield et al., 2005; Seuring & Muller, 2008). Actions performed by value creation chain members that negatively impact the environment, violate labor code, etc. may damage the reputation of the whole network, diminish sales levels and contribute to stakeholders' unrest (Spekman & Davis, 2004; Figiel, 2013).

The possibility of irresponsible practices puts value creation chain members under pressure to protect their reputations by assuming accountability for the practices of their business partners. That means that the increasing demand for responsibility from individual firms also extends to the activities within value creation chain (Mamic, 2005). At this stage a fundamental question needs to be posed. If a company assumes accountability for its partners in value creation chain, perhaps it would appear more efficient and effective to the value creation chain system to take mutual effort in reputation building and risk sharing? Perhaps in order to find a common denominator for diverse CSR strategies of individual value creation chain members it would be reasonable to outsource the CSR "function" – in other words to include in value creation chain another partner that delivers value to the network by bringing socially responsible reputation? Is it not reasonable than to propose a new value creation chain model in which the non-profit or for-profit yet strongly socially oriented organization brings in an impeccable socially responsible reputation? These are the questions addressed by the author and the purpose of this paper is the attempt to deliver the preliminary answer the above mentioned questions.

The author believes that economic profile of consumer in Eastern European markets resembles the one in remaining EU member states. According to preliminary research one can state that Eastern European society is slightly less affluent in comparison to societies in better developed EU countries. However, that does not translate into lower level of interest in values shared by companies.

6. Research methodology

In order to address the above mentioned questions author surveyed Polish entrepreneurs in order to find out their opinion about postulated inclusion of socially oriented organization in value creation chains. The locus of the research was Poland. The author investigated a sample of 100 polish companies of medium and large size. The research method was the telephone survey due to its cost effectiveness and time efficiency. The structure of the surveyed sample is presented in below table (see: Tab. 1).

Table 1. Structure of research sample

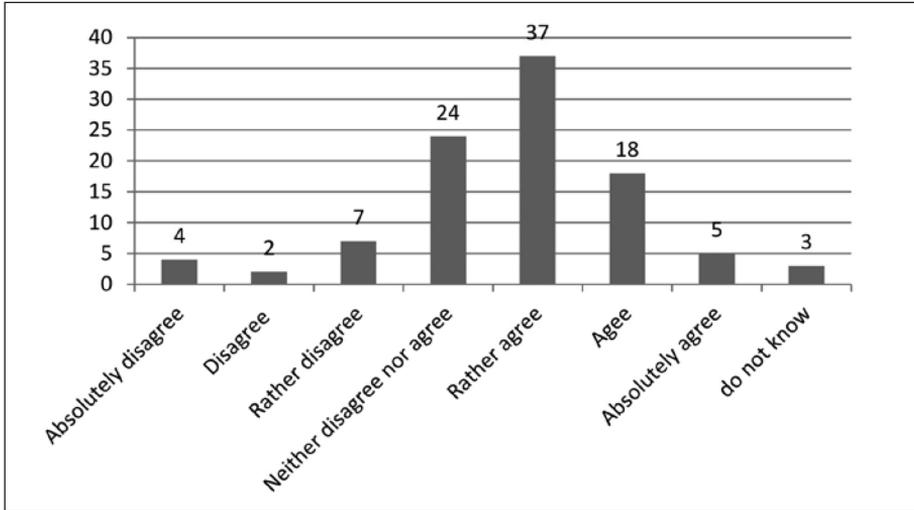
Number of employees	
50-100	22%
Above 100	78%
Level of annual sales	
Low 10 million EUR	30%
Between 10 – 50 million EUR	36%
Above 50 million EUR	34%
Number of partners in value creation chain	
Below 3	6%
3-6	13%
Above 6	56%
Information not disclosed	25%

Source: own work.

7. Research findings

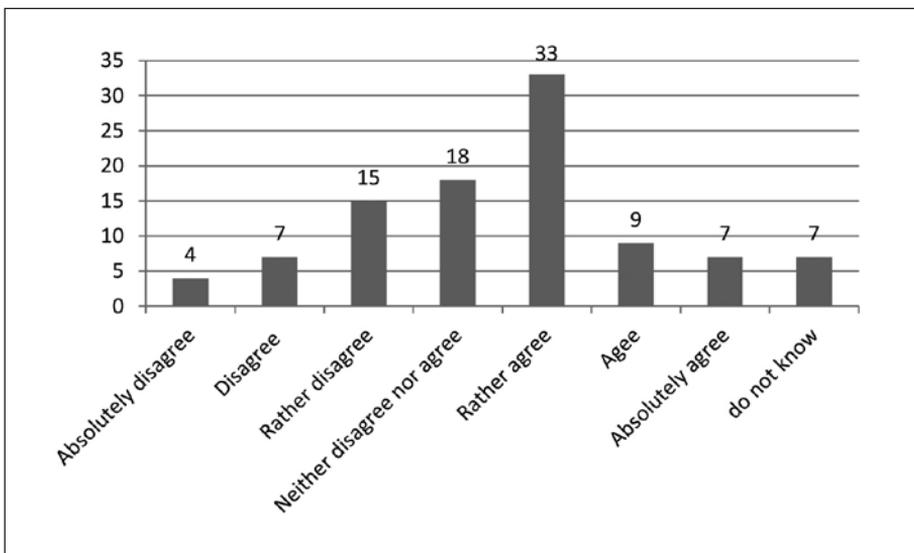
From 100 investigated companies 65% declared that CSR was an element of their corporate strategy, while 35% claimed that socially responsible activities were performed occasionally. Within the same group of companies 60% agree acknowledges the possibility of outsourcing of CSR activities (see: Fig. 1). Also there is an explicitly suggested need for external image donor in a form of socially oriented organization expressed by 49% of respondents (see: Fig. 2).

Figure 1. Distribution of answers to a question: “To what extent do you agree with the following statement – We accept the possibility of outsourcing of CSR activities”



Source: own work.

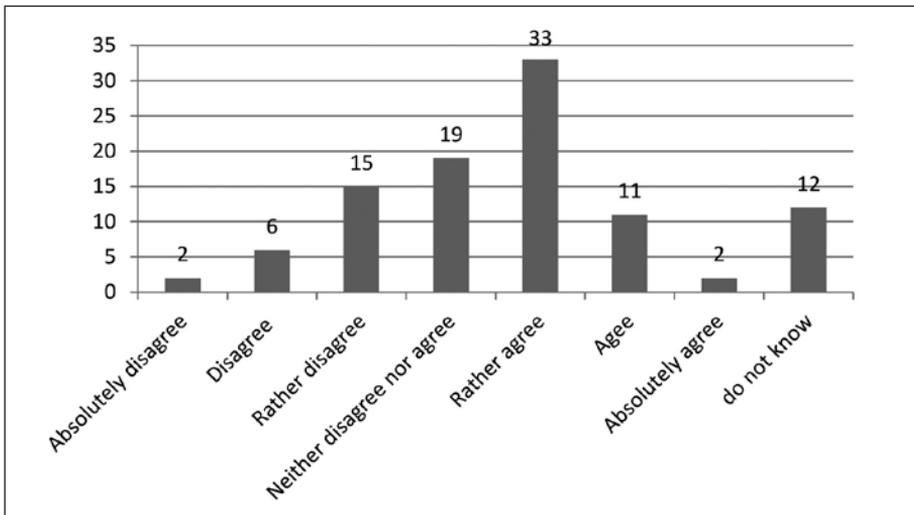
Figure 2. Distribution of answers to a question: “To what extent do you agree with the following statement – Our organization could recognize the socially oriented organization as a full member of our value creation chain”



Source: own work.

Also the possibility of establishing a very close cooperation with a socially oriented organization like Fair Trade – the potential image donor – and treating it as a value creation chain member can be observed between the investigated companies (46% of the sample agrees on that fact – see: Fig. 3).

Figure 3. Distribution of answers to a question: “To what extent do you agree with the following statement – My company, to improve its image, would be interested in close cooperation with the socially oriented organization”



Source: own work.

8. Conclusion

The results obtained in the preliminary research presented above support the hypothesized questions leading to the conclusion that it may be reasonable to suggest a new value creation chain model in which a socially oriented organization like Fair Trade brings in impeccable socially responsible reputation. Although, such an assumption can be made, several other questions need to be answered before a new model of value creation chain is suggested. Author believes that the following issues are of crucial importance: first – is it possible for a socially oriented organization like Fair Trade to take place of a full member in value creation chain, second – can a socially oriented organization like Fair Trade assume accountability and responsibility for the environmental and social reputation of value creation partners (under what circumstances), third – would a socially oriented organization like Fair Trade be willing to take such an accountability and responsibility. The above addressed questions are going to be approached in following research.

Bibliography

1. Ahuja, G. (2000). The Duality of Collaboration: Inducements and Opportunities in the Formation of Interfirm Linkages. *Strategic Management Journal*, 21(3), 317-343.

2. Amaeshi, K., Osuji, O., & Nnodim, P. (2008). Corporate Social Responsibility in Supply Chains of Global Brands: A Boundaryless Responsibility? Clarifications, Exceptions and Implications. *Journal of Business Ethics*, 81(1), 223-234.
3. Ambrose, E., Marshall, D., & Lynch, D. (2010). Buyer Supplier Perspectives on Supply Chain Relationships. *International Journal of Operations & Production Management*, 30(12), 1269-1290.
4. Andersen, M., & Skøtt-Larsen, T. (2009). Corporate Social Responsibility in Global Supply Chains. *Supply Chain Management: An International Journal*, 14(2), 75-86.
5. Aragon-Correa, J.A., & Sharma, S. (2003). A Contingent Resource-Based View of Proactive Corporate Environmental Strategy. *Academy of Management Review*, 28(1), 71-88.
6. Brown, T.J., Dacin, P.A., Pratt, M.G., & Whetten, D.A. (2006). Identity, Intended Image, Construed Image, and Reputation: An Interdisciplinary Framework and Suggested Terminology. *Journal of the Academy of Marketing Science*, 34(2), 99-106.
7. Carroll, A.B. (1979). A Three-dimensional Conceptual Model of Corporate Performance. *Academy of Management Review*, 4, 497-505.
8. Carroll, A.B. (1999). Corporate Social Responsibility. Evolution of a Definitional Construct. *Business & Society*, 38, 268-295.
9. Carter, C.R., & Rogers, D.S. (2008). A Framework of Sustainable Supply Chain Management: Moving toward New Theory. *International Journal of Physical Distribution & Logistics Management*, 38(5), 360-387.
10. Carter, C.R., & Jennings, M.M. (2002). Logistics Social Responsibility: An Integrative Framework. *Journal of Business Logistics*, 23(1), 145-180.
11. Chen, I.J., & Paulraj, A. (2004). Towards a Theory of Supply Chain Management: The Constructs and Measurements. *Journal of Operations Management*, (22), 119-150.
12. Cooper, M.C., & Gillyard, A. (2000). 2000 Career Patterns of Women in Logistics. Annual Conference Proceedings of the Council of Logistics Management. OakBrook, IL: *Council of Logistics Management*.
13. Dowling, G. (2002). How Good Corporate Reputation Create Corporate Value. *Corporate Reputation Review*, 9(2), 134-143.
14. Dyllick, T., & Hockerts, K. (2002). Beyond the Business Case for Corporate Sustainability. *Business Strategy and the Environment*, 11(2), 130-141.
15. Elkington, J. (1998). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. New Society Publishers, Stoney Creek, CT.
16. Eltantawy, R.A., Fox, G.L., & Giunipero, L. (2009). Supply Management Ethics Responsibility: Reputation and Performance Impacts. *Supply Chain Management: An International Journal*, 14(2), 99-108.
17. Emmelhainz, M.A., & Adams, R.J. (1999). The Apparel Industry Response to 'Sweatshop' Concerns: A Review and Analysis of Codes of Conduct. *Journal of Supply Chain Management*, 35(3), 51-57.
18. Figiel, A. (2011). Czym jest wizerunek przedsiębiorstwa – próba zdefiniowania. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, Ekonomiczne Problemy Usług*, 662(74), 83-95.
19. Figiel, A. (2013). *Reputacja w zarządzaniu przedsiębiorstwem – ujęcie marketingowe*. Zeszyty Naukowe, Seria Specjalna: Monografie nr 224. Kraków: Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

20. Fowler, S.J., & Hope, C. (2007). Incorporating Sustainable Business Practices into Company Strategy. *Business Strategy and the Environment*, 16(1), 26-38.
21. Friedman, M. (1962). *Capitalism and Freedom*. Chicago: University of Chicago Press.
22. Frohlich, M., & Westbrook, R.K. (2001). Arcs of Integration: an International Study of Supply Chain Strategies. *Journal of Operations Management*, 20(2), 185-200.
23. Handfield, R., Sroufe, R., & Walton, S. (2005). Integrating Environmental Management and Supply Chain Strategies. *Business Strategy and the Environment*, 14(1), 1-19.
24. Handfield, R.B., Walton, S.V., Seegers, L.K., & Melnyk, S.A. (1997). Green Value Chain Practices in the Furniture Industry. *Journal of Operations Management*, 15(3), 293-315.
25. Jimenez, M.A. (2009). Indicadores de desempeño ambiental en el marco de la ISO 26000 RS. *Pecunia*, 9, 111-128.
26. Krause, D.R., & Ellram, L.M. (1997). Critical Elements of Supplier Development. *European Journal of Purchasing and Supply Management*, 3(1), 21-31.
27. Lash, J., & Wellington, F. (2007). Competitive Advantage on a Warming Planet. *Harvard Business Review*, 85(3), 94-102.
28. Lee, M.-D., P. (2008). A Review of the Theories of Corporate Social Responsibility: Its Evolutionary Path and the Road Ahead. *International Journal of Management Reviews*, 10(1), 53-73.
29. Mamic, I. (2005). Managing Global Supply Chain: The Sports Footwear, Apparel and Retail Sectors. *Journal of Business Ethics*, 59(1/2), 81-100.
30. Mares, R. (2010). The Limits of Supply Chain Responsibility: A Critical Analysis of Corporate Responsibility Instruments. *Nordic Journal of International Law*, 79, 193-244.
31. Melewar, T.C., & Jenkins, E. (2002). Defining the Corporate Identity Construct. *Corporate Reputation Review*, Spring, 5(1), 76-90.
32. Mollenkopf, D., Stolze, H., Tate, W.L., & Ueltschy, M. (2010). Green, Lean, and Global Supply Chains. *International Journal of Physical Distribution and Logistics Management*, 40(1-2), 14-41.
33. O'Leary-Kelly, S.W., & Flores, B.E. (2002). The Integration of Manufacturing and Marketing/Sales Decisions: Impact on Organizational Performance. *Journal of Operations Management*, 20(3), 221-240.
34. Orliczky, M., Schmidt, F.L., & Rynes, S.L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. *Organizational Studies*, 24(3), 403-441.
35. Perry, P., & Towers, N. (2013). Conceptual Framework Development for CSR Implementation in Fashion Supply Chains. *International Journal of Physical Distribution & Logistics Management*, 43(5/6), 478-500.
36. Porter, M.E., & Kramer, M.R. (2002). The Competitive Advantage of Corporate Philanthropy. *Harvard Business Review*, 80, 56-68.
37. Porter, M.E., & Kramer, M.R. (2006). Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review*, 84(12), 78-92.
38. Sarkis, J. (2003). A Strategic Decision Framework for Green Supply Chain Management. *Journal of Cleaner Production*, 11, 397-409.
39. Seuring, S., & Muller, M. (2008). From a Literature Review to a Conceptual Framework for Sustainable Supply Chain Management. *Journal of Cleaner Production*, 16(15), 1699-1710.

40. Shaw, D., Shiu, E., Hassan, L., Bekin, C., & Hogg, G. (2007). Intending to Be Ethical: An Examination of Consumer Choice in Sweatshop Avoidance. *Advances in Consumer Research*, 34, 31-38.
41. Spekman, R.E., & Davis, E.W. (2004). Risky Business: Expanding the Discussion on Risk and the Extended Enterprise. *International Journal of Physical Distribution and Logistics Management*, 34, 414-433.
42. Stevenson, W. (2007). *Operations Management*. New York: McGraw-Hill/Irwin.
43. Stock, J.R. (1992). *Reverse Logistics*. Oak Brook, IL: Council of Logistics Management.
44. Towers, N., & Burnes, B. (2008). A Composite Framework of Supply Chain Management and Enterprise Planning for Small and Medium-sized Manufacturing Enterprises. *Supply Chain Management: An International Journal*, 13(5), 349-355.
45. Zadek, S. (2004). The Path to Corporate Responsibility. *Harvard Business Review*, 82(12), 125-132.

Prospects for Implementing an Omni-channel Strategy at the Wholesale Trade Enterprises of Ukraine

Anatolii Mazaraki, Nataliia Ilchenko

1. Introduction

The development of e-commerce in the context of globalization and integration processes requires enterprises to improve the transparency of business process management in the virtual and real space. The introduction of e-commerce in the activities of wholesalers (for B2B businesses) contributes to increasing the level of customer service. The prospect of wholesale trade may be the introduction of a omni-channel strategy. However, the use of a unique strategy is a complex process and requires the integration of world class technologies and the transformation of outdated organizational structures and business processes, as well as the transformation of supply chains. But, for those wholesalers, who have begun implementing a strategy of omni-channel there is possible to create a powerful competitive advantage among others enterprises.

2. Purpose and basic research problems

The problems of the trends of wholesale trade in Ukraine are researched among such Ukrainian scientists as: Apopii, Khomyak and Yu (2011, pp. 5-7), Beglarashvili (2016, pp. 71-73), Bohoslovet and Trubei (2014, pp. 28-32), Virt (2009), Holoshubova (2015, pp. 71-73), Mazaraki, Lagutin and Gerasimenko (2016) and others. But, issues that enterprises are facing while introducing a new organization form of wholesale trade to require further investigation.

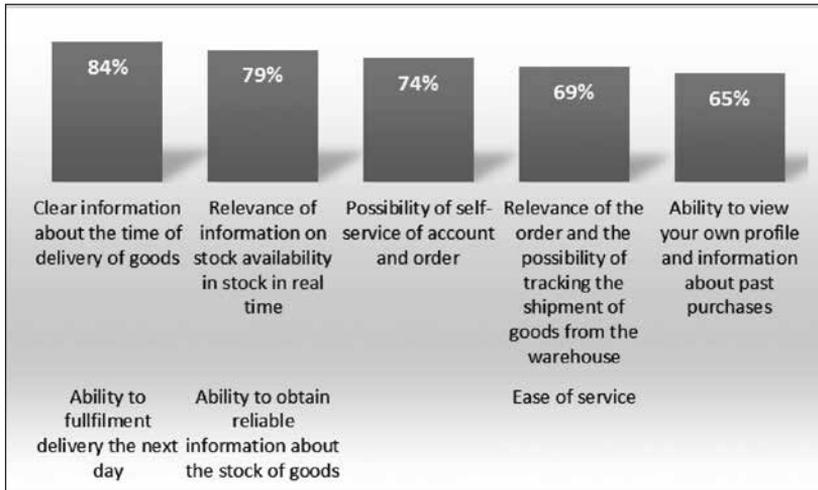
3. Research the trends of development of wholesale trade

As wholesale trade remains an important element in the supply chain and influences the effectiveness of its creation, it is necessary to conduct research on the features of management and optimization of business processes. The results of the empirical study cover both the analysis

of the activities of independent wholesalers, as well as those involved in the organization of the supply chain of goods in the Ukrainian market. The research was aimed at the integration processes taking place in the wholesale market and the peculiarities of the implementation of business processes at the investigated enterprises.

We conducted the research on the criteria for the importance of implementing this strategy when purchasing goods through online orders provided by B2B business representatives (Fig. 1).

Figure 1. The structure of respondents' answers regarding the criteria for according importance when purchasing goods via online orders, which were provided by respondents-representatives of business B2B, %



* fulfillment – is a complete complex of operational and warehouse processing of goods in the Internet trade: acceptance and address storage of goods in the warehouse, selection of goods according to the order, their complete set, shipment of the order for further delivery

Source: own work.

The research of the criteria of importance when purchasing the goods through the Internet order indicated by consumers was conducted, namely: clear information about the time of delivery of goods – 84%, the relevance of information about the availability of inventory in stock in real time – 79%, the possibility of self-service account and ordering – 74%, the relevance of the order and the ability to track the shipment of goods from the warehouse – 69%, the possibility of viewing their own profile and information on past purchases – 65%.

The introduction of omni-channel strategy, according to the research, shows that this strategy contributes to reduce logistics costs, increases customer loyalty and optimizes business processes at a wholesale trade enterprise.

Globalization processes that exist around the world and in Ukraine, expand the borders of cooperation of the participants of the logistic chain of supply of goods. Therefore, the development of an omni-channel strategy contributes to increased transparency in the purchase of goods, the formation of tariffs related to the delivery of goods, customs clearance, payment of taxes, etc. Ensuring the availability of choice of goods on the market increases the opportunities for B2B

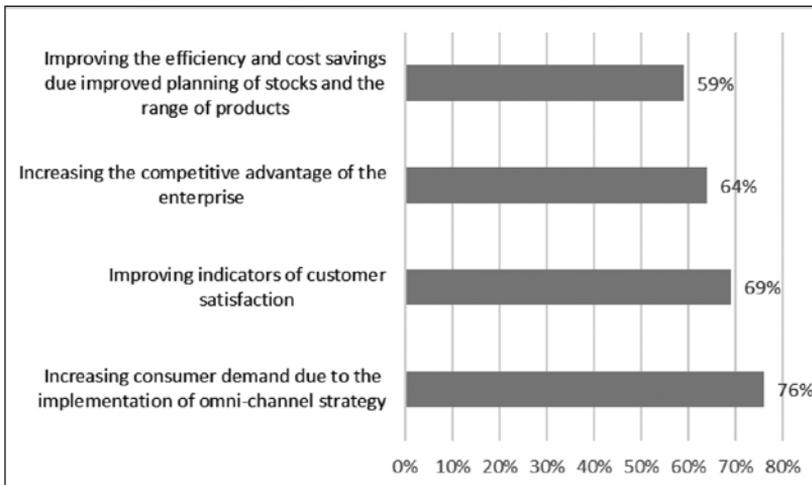
consumers regarding to choose reliable suppliers, which offer a wide range of products (82%) and accordingly, as a reliable source of information about the product (80%).

The development of omni-channel strategy contributes to increasing competition in the organization of e-commerce and enables wholesale companies to differentiate their services and optimize business processes, which is an urgent problem. More than three quarters of B2B companies reported that online services have radically changed the interaction of consumers with the enterprises.

However, 72% of wholesale companies indicated that the cost of introducing an omni-channel strategy is much higher for them than use of one channel, and 71% of consumers believe that the confidence of those companies that use this strategy is increased. However, both consumers and wholesale companies expect the state to address data security issues when conducting transactions in e-commerce and omni-channel strategy implementation.

The wholesale trade enterprises responded to the question “What do you expect from investments into implementation an omni-channel strategy?” 76% of respondents indicated that consumer demand is rising due to the introduction of a omni-channel strategy, 69% – level of consumer satisfaction is increased, 64% increase the competitive advantages of enterprises, 59% – increase of efficiency and cost savings due to the planning of inventory and increase of assortment of goods (Fig. 2).

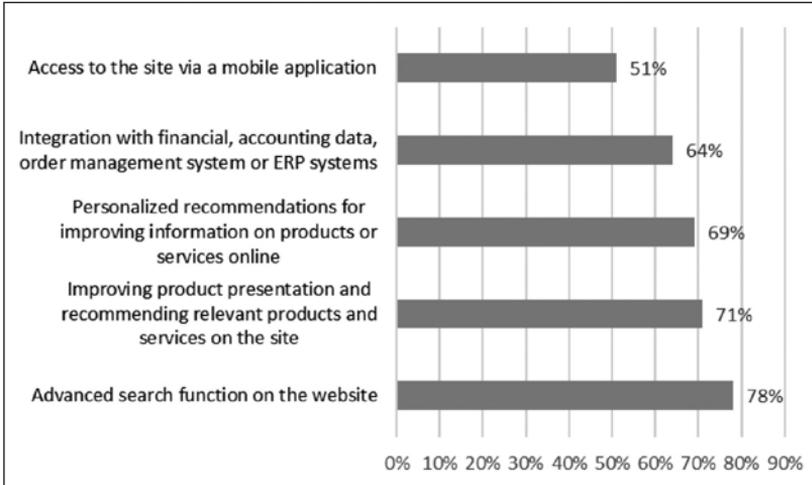
Figure 2. The structure of respondents’ answers concerning the prospects of implementing an omni-channel strategy at the enterprise, %



Source: own work.

We offered the representatives of B2B or B2B consumers-respondents to choose three most important functions among given questions, which they expect to receive in the future from the implementation of the omni-channel strategy (Fig. 3).

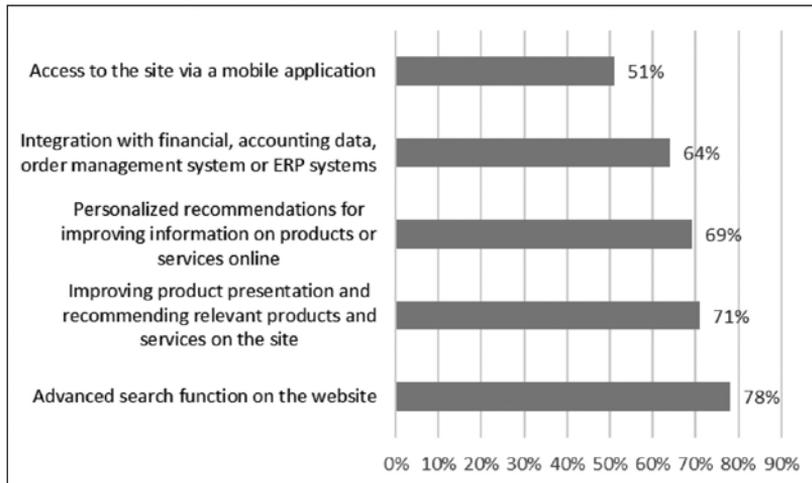
Figure 3. The structure of respondents' answers regarding the most important functional possibilities of omni-channel strategy, %



Source: own work.

The following respondents were asked with the question “Which of the following technologies are the main priorities in the next year’s choice?” Respondents-consumers answered: advanced search functions on the website – 54%, personalized recommendations for improving information on products or services on the site – 52%, access to the site via mobile applications – 51% (Fig. 4).

Figure 4. The structure of respondents-consumers' answers regarding the most important functional possibilities of a unique strategy, %



Source: own work.

For B2B, the link to advanced search is important as one of the top priorities of technology. Providing recommendations and helping consumers to choose a product is the criterion of the highest expectations for both B2B businesses – 58%, and for B2B consumers – 54%. More than a half of the surveyed consumers (52%) have identified personalization as a key perspective in interacting with the B2B suppliers they would like to work with. B2B business considers the priority direction of development of online trade is personalization of information about goods and services on the site.

Improving integration with server systems in B2B business is another priority of the concept of wholesale trade. More than 64% of B2B vendors have identified as a key element, integrating financial, customer and supplier accounting, order management and resource planning (SAP) management systems that they want to implement in the near future. Thus, consumers noted that for them the prospects for developing partnerships are the possibility of implementing a direct online form of payment (for example, the development of a payment system), as well as electronic procurement portals.

We conducted the research of the problems that need to be solved for the implementation of the omni-channel strategy for B2B, and identified the main barriers for their development. The evolution of the implementation of the omni-channel strategy is radically changing, consumers' demands for service levels are increasing and, accordingly, they require technological support for business processes in B2B.

But, almost 65% of B2B representatives believe that integration with back-office systems is a major obstacle to the effective implementation of the omni-channel strategy, 73% of respondents identified the lack of unity of the business processes in sales channels, and 69% – the inconsistency of approaches to the organization of sales channels.

4. Proposals for improving the implementation of the omni-channel strategy at wholesale enterprises

In order to succeed in developing an omni-channel strategy, it is necessary to:

- constantly respond to consumer needs, take into account consumer experience in organizing online commerce in B2C business;
- take into account the experience of introducing of the omni-channel strategy in B2C business;
- use the experience of the leading companies in implementing the system of fulfillment as an option for the delivery of goods;
- implement the system of electronic commerce in cooperation with the enterprises and consumers;
- develop Key Performance Indicators (KPIs) of the business processes;
- develop a system of integrated management of technological initiative with the improvement of the BP;
- team up with leading vendors to implement the latest innovative approaches for building partner relationships to quickly fill the technical gap in the inherited systems and attract system integrators.

We propose to calculate the efficiency of implementing an omni-channel strategy to calculate ROI (Return On Investment), an indicator of return on investment in the implementation of an omni-channel strategy. To do this, it is necessary to calculate the costs of implementation of the omni-channel strategy (P) and the list of new processed contacts and the number and efficiency of contracts concluded with B2B consumers (S).

This method of calculating the payback of financial investments allows to evaluate the financial result from the implementation of the omni-channel strategy (Sanega & Spivakovskaia, 2014):

$$ROI = \frac{S}{P} \quad (1)$$

But, this may be a tentative forecast, the profit from implementing an omni-channel strategy may appear even a year later. An additional measure of economic impact assessment may be the value of one contact received during the implementation of the omni-channel strategy

$$C_{\text{cost}} = \frac{S}{C} \quad (2)$$

where:

C – the total number of contacts established.

It is also necessary to calculate the percentage of perspective contacts on which contracts for the delivery of goods were concluded:

$$T = \frac{R}{C} \cdot 100\% \quad (3)$$

where:

R – the number of customers, whom contracts have been concluded with.

After calculating these parameters, you can analyze the reasons for the failure of consumers to cooperate with the company, as well as develop proposals for future improvement of interaction with potential customers.

We proposed to calculate the ROI for the creation and distribution of content marketing at wholesale enterprises for the target audience, taking into account key performance indicators.

– *The value of promotional activities in the social network V_a :*

$$V_a = N \cdot C, \quad (4)$$

where:

N – the number of clicks from the social networking links that lead to the site;

C – the cost of advertising on the network.

– *The value of lead from the sale of VI :*

$$VI = l \cdot Ki \cdot C, \quad (5)$$

where:

l – the number of lead-to-customer identified from the online environment;

Ki – lead-to-customer conversion rate (from lead to B2C consumers);

C – the value of the transaction.

– The value of the growth of trade V_s :

$$V_s = \frac{K_c - K_n}{K_n \cdot C_{cep}} \quad (6)$$

where:

- K_c – a new rate of conversion, %;
- K_n – previous conversion rate, %;
- C_{cep} – the average cost of goods sold.

Most B2B business executives understand the need to reform the principles of work with consumers, but technically they are not yet ready to provide the complex interaction. Even with the presence of existing digital technologies, many enterprises do not have a single data processing system that allows them to analyze errors and provide coherent interaction with consumers (Kourimsky & Van den Berk, 2014). For example, data from a site is processed by one application, the mobile version of the site is different, and the customer support service in general continues to work with its own databases that do not allow the processing of information promptly. In this case, the company has a significant part of the necessary information about consumers, but the difficulties in data transmission between the channels, together with the limited technological tools prevent the use of holistic and omni-channel consumer experience, adapted to the requirements of consumers.

5. Conclusion

On the basis of the conducted research it is possible to draw conclusions on the feasibility of introducing an omni-channel strategy in wholesale trade:

- expectations of a high level of customer service focused on B2B business to the development of simple and effective Internet sites, while companies optimize their own business processes and flow processes in the supply chain;
- implementation of an omni-channel strategy increases consumer loyalty as a result of standardization of the business processes. For example, a combination of bonus policies of an enterprise, high-quality customer service coupled with different delivery options for goods, increases motivation of buyers for re-orders;
- implementation of an omni-channel strategy promotes the innovative development of the enterprise. According to the research, it is determined that inherited information systems and electronic platforms are largely insufficient for further business development. Most B2B business representatives began to implement or upgrade their own electronic platforms;
- investment in technology should be brought into line with organizational and technological change, that is, it is necessary to carry out the re-engineering of business processes not only at the enterprises of the wholesale trade, but also in the chain of goods supply. B2B Business Representatives should balance their investments in BP staff development and information BP in order to increase the effectiveness of the implementation of the omni-channel strategy;
- most consumers are not always willing to interact with a sales representative and prefer to conduct only preliminary research on an online channel. For example, they can decide on a contract with the Internet search before discussing details with the company's specialists;

- with the help of self-service in real time, chat or voice services, the consumer can quickly get information and solve omni-channel issues regarding the terms of the contract and other problematic issues;
- optimize business flows of the purchase, payment, inventory process;
- develop address-dynamic content and the ability to search for the necessary information;
- gain full control over the business processes; it is possible to centrally manage content marketing processes and business data;
- ensure full integration with the ERP and CRM system, as well as customer data and contract terms, providing the necessary information regardless of the channel upon the request of consumers;
- ensure the integration of consumer internet service, printing, mobile applications and social commerce for the delivery of goods, using the omni-channel strategy.

Consequently, the implementation of an omni-channel strategy is a prospect for the development of wholesale trade and due to the fact that more and more purchases are made on the Internet. At the same time, experts note that personal communication for the customers still remains important with representatives of the company, but 70% of revenues in the B2B business comes from customers using digital channels. The development of e-commerce in Ukraine contributes to the development of partner relations between countries of the world, Ukraine is number 58th place in the rank of e-commerce in the world.

Bibliography

1. Apopii, V.V., & Khomyak, Yu. M. (2011). Essence and Typology of Innovations in Trade. *Collection of Scientific works "Trade, Commerce, Entrepreneurship"*, 12, 5-7.
2. Beglarashvili, O.P. (2016). Implementation of Organizational and Marketing Innovations by Wholesale Trade Enterprises. [in:] *Materials of the International Business-Forum "Problems and Prospects of Innovation Activity in Ukraine" of March 19, 2015*. Kyiv: KNTEU. Retrieved on 29/05/2018, from: <https://knteu.kiev.ua/file/MTc=/1e8a62d3ca6647b78fd23992ec0eb32d.pdf>.
3. Bohoslovets, H.M., & Trubei, O.M. (2014). Problems and Prospects of Wholesale Enterprises' Development. *Scientific Herald of Kherson State University. Series "Economics"*, 5(2), 28-32.
4. Holoshubova, N.O. (2015). Institutional Changes as a Factor of Innovation Development in Trade. [in:] *Materials of the International Business Forum "Problems and Prospects of Innovation Activity Development in Ukraine" from March 19, 2015*. Kyiv: KNTEU. Retrieved on 24/03/2018, from: <https://knteu.kiev.ua/file/MTc=/1e8a62d3ca6647b78fd23992ec0eb32d.pdf>.
5. Kourimsky, H., & Van den Berk, M. (2014). *The Impact of Omni-channel Commerce on Supply Chains*. Retrieved on 24/03/2018, from: https://www.hybris.com/medias/sys_master/root/hb5/hb2/8809522659358/WhitePaper-ImpactOfOmnichannel-WEB-20141017-GLO-EN.pdf?campaigncode=undefined.
6. Mazaraki, A., Lagutin, V., & Gerasimenko, A. (2016). *Domestic Trade of Ukraine*. Kyiv: KNTEU.
7. Sanega, L., & Spivakovskaia, T. (2014). *Features of Content Marketing as an Independent Element of Promotion on the Internet*. Retrieved on 24/03/2018, from: <http://probl-economy.kpi.ua/pdf/2014-21.pdf>.
8. Virt, M.Y. (2009). *Organization-economic Mechanism of Wholesale Trade Functioning in Market Environment*. Dissertation Thesis. Lviv Commercial Academy. Lviv: Ukoopspilka.

The Role of Trust in Shaping Experience in Transactions Concluded in a Traditional Manner and via the Internet¹

Grażyna Plichta

1. Introduction

Trust affects building relations between entities and decisions taken by them, and as a substantial factor it should be present when concluding transactions on every market. Trust plays an important role in the case of transactions concluded in a traditional manner. However, it should be emphasised that it is particularly required when they are concluded via the Internet, and the plane of broadly understood exchange has a virtual dimension.

Nowadays, more and more consumers check the offer on the Internet and then do shopping in a stationary store or online. The specific character of shopping done in a virtual manner is the reason for which customers do not contact the seller directly. They only receive the “image” of a product/service from the seller and a promise that it matches the declared qualities. When there is no direct, physical contact with the seller and with the object of the transaction, to conclude it (do a purchase) remotely high level of trust is necessary. Therefore, we can adopt a research hypothesis that the presence of trust is a significant factor determining the conclusion of a transaction via the Internet.

On the one hand, a specific level of trust influences the conclusion of a transaction virtually and the creation of both positive and negative experience connected with this process. On the other hand, positive buying experience is an extremely important element accompanying the process of building trust, particularly in e-commerce. Thus, another research hypothesis is expressed in the statement that a positive buying experience determines the trust level in the situation of transactions concluded online.

The chapter attempts to present factors which build trust among contemporary consumers who, to save time, check the offer on the Internet regardless of whether they will conclude a transaction

¹ The publication was financed from the statutory research funds granted to the Department of Market Analysis and Marketing Research of the Cracow University of Economics within the framework of the subsidy for the maintenance of research potential.

in the traditional form or virtually. Moreover, they communicate with each other on the Internet by means of social networking sites, among others, and they make recommendations to individual entities, products or services. In addition, an attempt was made to define the role of trust in shaping different experiences connected with the conclusion of a transaction, and the significance of a positive buying experience in the process of building trust in e-commerce is presented. In order to present the problem thoroughly, the acquired secondary data were used.

2. Trust as a significant factor of relations between the parties to the transaction

Trust is a key factor of relations. It appeared in the literature of the subject in the second half of the 20th century, it is often interpreted differently and so far one, commonly recognized definition has not been developed (Kuc & Moczydłowska, 2009, p. 257). Trust is the object of studies in numerous scientific disciplines, among others in management (Paliszkievicz, 2015). Multidisciplinarity, the multi-dimensional character and the complexity of this term are proven by a considerable number of definitional formulas created by scientists (Sankowska, 2011).

The presence of trust, in addition to the positive impact on building relations, increases the quality and the number of social interactions and business transactions. In this arrangement, the subjects are customers playing the role of the trusting one, and sellers as entities of trust (Rudzewicz, 2009). According to Lewicki and Bunker (1996, pp.114-139), in the majority of business relationships, without trust it is not possible to achieve success. When trusting somebody, we are convinced that the other party will not act against us, that it will be reliable, predictable and will observe applicable norms (Paliszkievicz, 2013, pp. 22-23). Trust has an influence on the reduction of uncertainty and risk, and thus the reduction of the time of preparation to the relation between entities².

According to McKnight, Cummings and Chervany (1998), building trust is a result of the influence of five forces (dimensions) on each other: personality, calculation, institutional, perceptive and knowledge-based one. The dimensions, upon considering the element of time, create the total process of building trust.

We can talk about specific trust, characteristic for an individual transaction and the type of relationship between their participants. We can also distinguish so-called general trust, which comprises relations between unfamiliar entities which have not contacted each other before. It is based on moral bases and the recognition that others profess the same moral principles. In the social scale, individual cases of aggregated trust lead to the growing mobilisation, activeness and innovativeness. Trust can be also perceived through the prism of other benefits. They include, among others, encouragement to the participation in transactions, exchange of information and reduction of uncertainty, which may concern, among others, future consequences of undertaken activities, e.g. whether the choice made will be good or whether, unfortunately, it will be not. Uncertainty can be reduced owing to the presence of subjective trust (to the entity being a party to the transaction) and objective trust, that is to a specific place of transaction.

Mutual trust which arises from professing by both parties (subjects) the same norms of ethical code affects lower costs of concluding a transaction. The presence of the element of trust

² A synthetic overview of theories concerning trust starting from the precursors of the sociological approach to this category up to the approach from the perspective of other disciplines, also from the perspective of economics, (among others Sztompka, 2007).

shapes the conviction that the stronger party will not use its advantage against the weaker party. The general attitude of trust to the other party may be the effect of previous positive experiences and a positive emotional relation. It may be also an effect of professional activities of individual entities and the effect of the positive influence of specific places where transactions are concluded.

In the case of the lack of trust, a transaction can be concluded only with the use of specific securities and regulations (Laske & Neunteufel, 2005).

3. Building trust in transactions concluded in the traditional manner and via the Internet and e-customers' buying experience

The dynamic development of digital technology has influenced changes in the available manners of concluding a transaction. More and more often the presentation of the offer and the sales of goods and services take place outside classical, stationary retail outlets, by means of electronic media (electronic retailing). Electronic sales transaction materialises without the participation of direct contact between the parties. A feature of e-commerce is its global character and the specific character of the relation between entities, since transactions are concluded most often by means of e-mail and websites (Grudzewski & Hejduk, 2002, p. 148).

Online sales in Poland make up 7.7% of the value of the Polish trade. Until 2020, the value of online shopping should grow on average by 16% a year, achieving the share in total retail sales at the level of 12%. In 2017, 54% of Polish Internet users bought online (compared to 50% in 2016). Moreover, more than a half of e-consumers (53%) use the offer of domestic e-stores. The main factor encouraging to this form of shopping is the 24-hour-a-day availability (82% indications). Consumers perceive e-shopping as comfortable (44%), uncomplicated (41%), taking less time than traditional shopping (39%), and cheaper (33%). Buyers in the virtual format are well-informed about the product offer available on the Internet, they know brands of websites. The most frequently bought products online are: clothes, accessories, books, CDs and films³. In 2016, 43% of respondents considered this form of shopping risky, whereas in 2017 by far lower percentage of respondents (38%) shared this opinion (Raport "E-commerce ...", 2017).

Shopping done online is characterised by the fact that customers cannot touch products, do not contact the party to the transaction directly, they only receive an "image" of the product from the seller and the promise that it meets the declared characteristics. The transaction concluded in this way is often related to making adequate payments with the omission of material data carriers and declarations of will (Barta & Markiewicz, 1998, p. 90). Trust in this aspect does not only concern the problem of safety on the Internet, personal data protection and privacy on a website. Trust to e-commerce can be reduced by a relatively high level of crime online. It concerns not only the delivery of the purchased product, but also harmful activities of hackers, which violate consumers' rights. In spite of the fact that three out of five Internet users doing shopping on the Internet are afraid that the data submitted will be used inappropriately, they appreciate the conveniences offered by the Internet and are ready to give even most confidential information if only they will

³ The report prepared by Gemius in cooperation with the Chamber of Digital Economy. The survey was conducted with the CAWI method on a representative sample of 1,500 Internet users aged 15–75. The measurement was made in the period 7-14.04. 2017.

believe that it will make their life easier. For this reason, among others, as many as 60% of Internet users in Poland save the data of payment cards on websites and in applications. Even more people share personal data on social networking sites, which enables the collection of even confidential data, which digital consumers are ready to make available, if, in return, they will save time and they increase their comfort (Raport “*Cyfrowi ...*”, 2017).

Sending sensitive data via the Internet, such as personal data, payment card numbers, etc., is often a necessity in the case of a transaction implemented “remotely”. For the consumer to do shopping without a direct contact with the goods and the seller and share his personal details, he must have a certain level of trust understood as the expectation that the partner to the transaction will be honest, regardless of the ability to control. In the buyer-seller relationship we can distinguish three types of trust:

- Calculated – its sources lie in own and social experience in the contacts with the seller, It is based, among other things, on guarantee, quality tests, own research.
- Institutional – based on applicable regulations and activities of consumer organisations. Brand, being a guarantee of specific parameters, plays a crucial role.
- Personal – emotional factors play a very important role (Kozłowska, 2017).

The process of building trust in e-commerce is complex. In the initial phase, during which a buying decision is made, the customer’s trust is built based on the information about the seller and the product available on the store website. The customer’s decision is the effect of his “confrontation” with the information which is submitted by means of the store website. In the situation when sellers create Internet store websites which are complicated to navigate, do not attach exhaustive and clear information about the offer, availability of products, payment terms or contact details, scepticism and limited trust of e-customer may appear (Wasiluk & Suchocki, 2012).

The key element is undoubtedly the moment of making the decision about the purchase (so-called click). To make it, the customer, in addition to the interest in the offer, must be convinced about the seller’s honesty. Moreover, he should obtain any information which is necessary to make a purchase, proving the seller’s competence. Upon obtaining it, the transaction is concluded, consisting of three parts, namely: making payment, delivery, after-sales service. Each of the stages is connected with building trust. In the first stage, namely making payment, security is the most important (major limitation of trust in e-commerce). At the delivery stage, safe and timely delivery is important. Delays, errors, shortcomings may bring about its loss. After-sales service is also crucial. Accepting returns and complaints, technical support, a possibility to make use of the granted guarantee prove the seller’s reliability and builds trust. The customers’ experience, understood in the context of their treatment by the sellers on individual stages, create in their awareness a specific “base of experience” achieved in this process.

Buying experience may be positive (it is an element of building trust) and negative, which may be the reason that, for example, the customer will resign from buying in a given store. Positive experience requires smooth and consistent communication between individual departments of the firm in terms of, for example, an appropriate store website/webpage, implementation of automation principles, perfect service, procedures (security, returns, complaints). They should, among others, evoke positive emotions and be consistent with the communication of brand, as well as create a base for trust building (Kozłowska, 2017).

Negative experience is created in customers in the situation of the lack of the sense of safety (shortage of information, complicated privacy policy, incomplete contact data), lack of possibility to find a product (no product search engine), and perceiving the website as non-intuitive and

not functional. The problem are also situations when, e.g. the photos of a product do not match the reality, or the time of waiting for the delivery extends. Moreover, such a negative experience as automatic treatment of customers, problems with a return or complaint, or delivery of faulty products definitely do not help to build trust.

In order to create a positive experience when doing shopping online, various activities are undertaken and procedures are introduced, e.g. safe payment forms, electronic system of direct payments, special payment cards intended to make payments online. A potential customer should have the feeling that he has a contact with a reliable, trustful partner, although a virtual one, still a professional seller who can resolve any doubts which would occur while concluding a transaction.

Inspiring trust communication from the entities functioning in so-called virtual space should have the following elements:

- complete and reliable information about the firm (history of the firm, notes about its employees),
- complete, reliable and up-to-date information about the products, services,
- complete, reliable and up-to-date information necessary to conclude a transaction, e.g. payment methods, dates and manners of delivering a shipment, complaints, etc.,
- possibility to certify authenticity,
- easiness of navigation round the site (website functionality),
- confirming orders made (communication with buyers),
- recommendations (to be found on Internet forums, social media sites, etc.).

A great majority of transactions concluded on the market are transactions concluded with trusted entities. However, it does not mean that without trust a transaction is not possible. On the market there are so-called bargains which are looked for, therefore, the decision about the conclusion of the transaction is taken in the situation of the lack of trust.

4. Conclusion

Trust, as one of the most important elements of social capital, is of great importance for the processes which undergo on the market. Its presence at every moment and in every form is beneficial and desirable. It is particularly required in the situation of concluding a transaction via the Internet. Trust to the entity (the seller) and individual elements of a transaction, i.e. a product, service, payment method, builds a positive buying experience. A good buying experience means establishing permanent relations with customers, winning their loyalty and, in consequence, raising the sales. In the nearest future, Internet stores can use a technology which will improve the purchasing process and will bring closer a person buying online to the experience of the customer of a brick-and-mortar store. What will help in it is the presentation of the product, namely the HD quality photos with the possibility of 360 degree preview, short time of searching for information (a few seconds), VR – virtual reality (e.g. goggles or gloves enabling the testing of products before buying), or a chat with a virtual advisor, already available in many cases. Similar experiences of a e-store customer and a stationary store customer and a possibility to do shopping via numerous channels and on many devices undoubtedly affect the growth of online sales. The presence of trust factor, which is particularly significant when buying online, can definitely reinforce this growth.

Bibliography

1. Barta, J., & Markiewicz, R. (1998). *Internet a prawo*. Kraków: Universitas.
2. Grudzewski, M.W., & Hejduk, I.K. (2002). *Przedsiębiorstwo wirtualne*. Warszawa: Difin S.A.
3. Kozłowska, J. (2017). Budowanie zaufania w handlu elektronicznym poprzez kreowanie pozytywnych doświadczeń zakupowych. *Świat Marketingu*. Retrieved on 15/05/2018, from: <http://czasopismo.swiatmarketingu.pl/wp-content/uploads/2018/02/Budowanie-zaufania-w-handlu-elektronicznym-poprzez-kreowanie-pozytywnych-dos%CC%81wiadczzen%CC%81-zakupowych.-Koz%C5%82owska-Justyna.pdf>.
4. Kuc, B., & Moczydłowska, J.M. (2009). *Zachowania organizacyjne*. Warszawa: Difin S.A.
5. Laske, M., & Neunteufel, H. (2005). *Vertrauen eine „Conditio sine qua non“ für Kooperationen?*, Wismarer Diskussionspapiere, Hochschule Wismar, Fachbereich Wirtschaft. Heft 01/2005.
6. Lewicki, R.J., & Bunker, B.B. (1996). Developing and Maintaining Trust in Work Relationships. [in:] R.M. Kramer & T.R. Tyler (Eds.), *Trust in Organizations: Frontiers of Theory and Research*. Ohio: Sage Publication.
7. McKnight, D.H., Cummings, L.L., & Chervany, N. L. (1998). Initial Trust Formation in New Organizational Relationships. *Academy of Management Review*, 23(3), 473-490.
8. Paliszkiewicz, J. (2015). Rola zaufania w handlu elektronicznym w świetle badań literaturowych. [in:] R. Knosali, *Innowacje w zarządzaniu I Inżynierii Produkcji*. Katowice.
9. Paliszkiewicz, J. (2013). *Zaufanie w zarządzaniu*. Warszawa: PWN.
10. *Raport "E-commerce w Polsce 2017. Gemius dla e-commerce Polska"*. (2017).
11. *Raport "Cyfrowi Polacy – konsumenci w czasach e-rewolucji"*. (2017). Digital/McKinsey.
12. Rudzewicz, A. (2009). Zaufanie – przegląd koncepcji. [in:] L. Garbarski & J. Tkaczyk (Eds.), *Kontrowersje wokół marketingu w Polsce: niepewność i zaufanie a zachowania nabywców*. Warszawa: WAiP.
13. Sankowska, A. (2011). *Wpływ zaufania na zarządzanie przedsiębiorstwem*. Warszawa: Difin S.A.
14. Sztompka, P. (2007). *Zaufanie fundamentem społeczeństwa*. Kraków: ZNAK.
15. Walisiuk, A., & Suchocki, A. (2012). Zaufanie jako bariera rozwoju przedsiębiorstw handlu elektronicznego. *Economy and Management*, 4(1), 113-123.

Advantages of Private Label – Retailer’s and Manufacturer’s Perspective¹

Karolina Orzel

1. Introduction

In the management literature we will find a lot of evidence on how a brand and value created by it influence building competitive advantage on institutional markets (McCarthy & Norris, 1999; Wang, Wei & Yu, 2008; Santos-Vijande et al., 2013). American Marketing Association defines a brand as “a name, term, design, symbol or any other feature that identifies one seller’s good or service as distinct from those of other sellers” (Bennett, 1995, p. 18). In the contemporary approach, a brand is a system of the identification of a specific product, firm, event or space which aims at distinguishing the offer of a specific organisation from competitive offers. In such a meaning, it is of holistic character, integrating all activities undertaken in the organisation (Kienzler & Romanowski, 2009, p. 146). Renowned brands, as intangible assets based on information and knowledge, play a very important role in raising the value of the firm and achieving competitive advantage owing to them, particularly in the trade sector, where in the conditions of more and more varied selection of goods, the significance of a brand for the consumer is manifested best. The situation refers not only to the issues of managing a store/chain brand or having the most attractive, from the consumer’s point of view, variety of manufacturer brands within the range of products, but also possessing private labels in the offer. Nowadays, we can notice the systematic growth of the market shares of products marked with retailers’ private labels, and some researchers predict that until 2025 the global share of food products with retailers’ private labels will constitute even as much as 50% of the world market (Schreijen, 2011).

2. Definition and evolution of private label

The occurrence of private labels caused some confusion in the terminology used (Małkowska-Borowczyk, 2006, p. 288). In Great Britain the term “own label”, whereas in the US the following

¹ Publication was financed from the funds granted to the Faculty of Management at Cracow University of Economics, within the framework of the subsidy for the maintenance of research potential.

terms are used: “private label”, “distributor brand” or “store brand” – (Kłosiewicz-Górecka, 2003). According to the definitions available in the Polish literature, we can find support in the standpoint of Domański (2001, p. 123), who defines private label as “marking the products ordered to be manufactured by producers, distributed only in the stores of a given chain, belonging to retailers and wholesalers, which concern products sold only by those firms or under their direct control”, or in the view of Keller (2011, p. 236), who understands private label as “products sold by retailers and other participants of the distribution chain” marked with the information “made for...” or bearing the logo of a retail chain or a trademark. Considering rather arbitrary interpretation of the term private label, this paper adopted the descriptive term of private label as the trademark, that is own label controlled by a retailer of a retail association, available only in the points of sale of the retail chain related to the controlling entity (Sławińska, 2008, pp. 139-140). It should be emphasized here that the commonness of private label products will differ depending on the analyzed level of commodity turnover. Thus:

- in the case of retailers, the availability of private labels is limited to retail chains managed by this firm;
- in the case of wholesalers, the wholesaler can make the private label available to all customers (the private label will appear in every retail outlet of the wholesaler’s client) or only in outlets of the integrated retail chain controlled by it.

With the growth of the market power of large retail chains, the conditions of selling in trade changed, which was manifested in, among others, labelling products by retailers which noticed that special marking of goods makes it easier for customers to identify the product, the level of its quality, it justifies the price level. The aim of the first private labels was to become independent of prices “vertically tied”, established by producers. On the other hand, taking into consideration fast changing buying preferences and consumer needs, as well as fierce competition (primarily in terms of prices) in the sector, it is not surprising that firms were inclined to make new efforts aiming at ensuring competitive advantage (Nowak & Śmigielska, 2015).

The development of private labels is basically inherent to cost leadership strategy and differentiation strategy². In the first case private labels serve to introduce products with low prices into the retailer’s offer, and in the other one – private label premium products are supposed to create the image of the retailer offering high quality articles, and even innovative products (Kłosiewicz-Górecka, 2015).

3. Benefits from the launch of private label for a retailer

The launch of retailer brands brings a lot of positive aspects, both the economic ones, related to the strive of firms to achieve profitable sales volume (consumers willingly buy products at lower prices) and a possibility to negotiate more favourable purchase prices from producers (for the products not labelled with the manufacturer brand, retail chains pay as much as for generic products, as they only buy the functional value of the product), as well as image-related, expressing themselves in keeping a special style of the assortment, which will attract customer, build their loyalty and allow to distinguish itself against the competitors. The overview of the literature of the subject indicates numerous benefits coming from the introduction of private labels both for

² In management literature, three general strategies of competition are distinguished, enabling to achieve extraordinary effectiveness, namely cost leadership, differentiation and focus (Sławińska, 2002, pp. 16-17).

the retailer and the producer. Table 1 shows selected works in Polish and foreign literature in which positive factors of the implementation of private labels and their multi-dimensional influence on the firm's activity were investigated.

Table 1. Benefits from the launch of the private label for a retailer

Benefits	Literature
Growth of profits in a given product category	De Wuif, K., Odekerken-Schröder, G., Goedertier, F., Van Ossel, G. (2005); Vahie, A., Paswan, A. (2006); Cheng, J.M., Chen, L.S., Lin, J.Y., Wang, E.S. (2007); Huang, M., Jones, E., Hahn, D.E. (2007); Stopczyński, B. (2010)
Higher margin on private label products	Richardson, P.S., Jain, A.K., Dick, A. (1996); Baltas, G. (1997); Baltas, G., Doyle, P., Dyson, P. (1997); Vahie, A., Paswan, A. (2006); Hsu, H., Lai, C. (2008); Lee, D., Hyman, M.R. (2008); Liu, T., Wang, C. (2008); Wyatt, R.J., Gelb, B.D., Geiger-Oneto, S. (2008)
Growth of the retailer's bargaining power (compared to possibilities to negotiate manufacturer labels)	Baltas, G. (1997); Baltas, G., Doyle, P., Dyson, P. (1997); Connor, J.M., Peterson, E.B. (1992); Putsis Jr, W.P. (1997); Aggarwal, P., Cha, T. (1998); Putsis Jr, W.P., Dhar, R. (1998); Dekimpe, M.G., Hanssens, D.M., Silva-Risso, J.M. (1999); Collins, A., & Burt, S. (2006); Cheng, J.M., Chen, L.S., Lin, J.Y., Wang, E.S. (2007); Hsu, H., Lai, C. (2008), Lee, D., Hyman, M.R. (2008); Gómez, M., & Rubio Benito, N. (2008); Spyra, Z. (2014)
Distinguishing oneself from competitive retail chains	Richardson, P.S., Dick, A.S., Jain, A.K. (1994); Baltas, G., Doyle, P., Dyson, P. (1997); Sethuraman, R., Cole, C. (1999); Cotterill, R.W., Putsis Jr, W.P. (2000); Collins-Dodd, C., Lindley, T. (2003); Apfelbaum, E., Gerstner, E., Naik, P.A. (2003); Liu, T., Wang, C. (2008); Witek-Hajduk, M.K. (2015)
An increase in loyalty to the store	Baltas, G., Doyle, P., Dyson, P. (1997); Cotterill, R.W., Putsis, Jr, W.P., Dhar, R. (2000); Cotterill, R.W., Putsis, Jr, W.P. (2001); Liu, T., Wang, C. (2008), Binninger, A.S. (2008)
Attracting price-sensitive and cost-conscious consumers	Richardson, P.S., Dick, A.S., Jain, A.K. (1994); Baltas, G., Doyle, P., Dyson, P. (1997); Putsis, Jr, W.P., Dhar, R. (2001); Chintagunta, P.K., Bonfrer, A., Song, I. (2002); Pauwels, K., Srinivasan, S. (2004); Sayman, S., Raju, J.S. (2004); Soberman, D.A., Parker, P.M. (2004)

Source: own study based on distributed data with emphasis to (Hyman, Kopf & Lee, 2010).

As the above table shows, the most often repeating benefits from owning private labels by retailers can be divided into three groups:

- Economic benefits – a good relation of price to quality in the case of private label products influences the growth of interest in them among consumers and translates into higher sales. The reduced price is achieved through lower production costs (mass production), more efficient logistics and reduced expenditure on advertising activities;

- Benefits connected with the identification of the firm on the market and an increase in the attractiveness of assortment – according to Dodd and Lindley (2003), private labels are the extension of the store image and can substantially influence the perception of a retailer among the consumers. The consumer, encouraged by the price and a variety of products offered by a chain of private labels, will be more eager to come to the store and will fill in the basket not only with products offered only in a given chain but also with other needed goods (of manufacturer labels) whose margin is higher than in the case of private labels, which will increase the revenue;
- Benefits connected with cooperation with suppliers – a decision about the introduction of labels changes the relationship between the seller and the buyer in the chain, since the retailer is at the same time a client (product recipient) and a competitor (private labels compete on the shelves with the manufacturer products). The situation increases the retailer's negotiating leverage and gives greater control over the product, which was exercised by the producer so far.

4. Benefits from the launch of private label for a producer

Cooperation of producers with retailers as for supplying them with products marked with their private labels is the expression of the marketing orientation and effective reduction of uncertainty and risk of activity in the turbulent environment. As Sudolska (2011, p. 152) points out, the limitation of so-called demand risk should be emphasized here, among others, (lack of an individual firm's capability of following changes in the behaviours of end buyers and creating a competitive market offer for them in the long term), as well as non-innovativeness risk (the firm is not able to cope independently with the dynamics of technological processes and the dynamics of innovations within products). Table 2 presents selected papers in Polish and foreign literature in which the benefits and motivations of producers cooperating with retail chains within the scope of private labels were studied.

Table 2. Benefits from the launch of private label for a producer

Benefits	Literature
Growth of revenues (permanent sales, economies of scale in purchase and the use of production capacity)	Tarzijan, J. (2004); Oubina, J., Rubio, N., & Jesús Yagüe, M. (2006); Soberman, D.A., Parker, P.M. (2006); Kiczmachowska, E. (2007); Witek-Hajduk, M.K. (2015)
An increase in bargaining power (particularly of smaller producers) in relation to large retail chains	Gómez, M., Benito, N.R. (2008); Altintas, M.H., Kilic, S., Senol, G., Isin, F.B. (2010)
Creation of barriers to market entry	Stopczyński, B. (2010)

Source: own study based on distributed data with emphasis to (Hyman, Kopf & Lee, 2010).

Retailer private labels tempt suppliers with undoubtedly fast opportunity to raise sales. For firms which believe that they cannot undertake adequate activities or they cannot afford costly processes of brand creation and breaking through to the consumer awareness, delivering private label products may be a chance for a better use of production capacity and the economies of scale (Spyra, 2017, p. 53). The above-presented literature overview indicates the possibility to divide

determinants inclining manufacturers to cooperate in manufacturing private label products into three main groups of factors:

- Economic factors – producers can make higher profits on manufacturing private labels, which will be related to the use of the economies of scale with the purchase of raw materials and materials for the production of both their brands and private labels ordered for the retailer, which will allow to achieve lower cost base, whereas the permanence of sales will make it possible to optimize and utilize unused production capacity. Moreover, the producer achieves quite a large saving due to the lack of financial engagement in the costs of promotion of private label goods, which in this situation is taken over in full (most often) by the retailer;
- Relational factors – the growth of bargaining power (particularly of smaller manufacturers) in relations with retail chains, which, competing so far on the market with a high level of the homogeneity of offers could not break through with their offer among supplier with a large market share;
- Competitive factors – establishment of cooperation with a retailer is also a barrier to the market entry for other producers (a part of the network sells only their own products or products of selected two or three manufacturers in a given assortment group) increasing their market share.

Among other benefits for producers we should also mention (Adameczyk, 2016, p. 10) the improvement of relations with the retailer, which may positively affect the way of offering manufacturer products by the retailer or the access to information on the preferences and choices made by consumers.

The above deliberations enable to show a few major reasons most strongly influencing the development of private labels. These are, among others:

- growing competition on the market and rising marketing costs related to the creation of manufacturer brands; D’Aveni and Piłat (2010) claim that the consequence of fierce market competition is the phenomenon of so-called “commodification” of products, namely the loss of uniqueness and “emotional attractiveness” of manufacturer brands in the eyes of customers, and the only feature enabling their differentiation becomes the price (after: Spyra, 2013, p. 248);
- strong correlation between the development of retailer private labels and the economic situation – in the cases of a difficult economic situation in the country, private labels, more beneficial in terms of price, often become the alternative chosen by a customer looking for savings in the basic expenses;
- the growing level of bargaining power of retail outlets towards producers correlated with the growth of concentration in trade – integrated networks have “more to say” during negotiations due to their increasing purchasing power;
- trends of replacing traditional forms of trading by modern ones, related to the improvement of the condition of logistical systems and the development of distribution, intensify the development of private labels (Cuneo et al., 2015);
- integrating private labels into a “shopping experience” of contemporary consumers, who are characterized by effective and pragmatic attitude to shopping (smart shopping trend – for more see, among others: (Green Atkins & Kim, 2012; Pantano & Timmermans, 2014).

5. Conclusion

The above in-depth analysis of the problem of benefits of private label form the manufacturer's and retailer's perspective leads to the conclusion that owning private labels in the assortment offered is, on the one hand, a prerequisite proving the survival of a firm on the market, and on the other hand, the evidence of innovativeness and openness to changes in customer needs. The main determinants of competitiveness, noticeable in the case of large chains, include: profitability, opportunity to distinguish oneself and build loyalty among customers, which are positively correlated with the launch of private label products by a retail chain.

Private labels positively influence the profit made by retailers, primarily considering the opportunity to apply an increased margin and the possibility to use the economies of scale during shopping. Stock replenishment of the outlets served (all stores belonging to a given chain) with private label products is a solid quantitative advantage and an opportunity to sell goods for the retailer.

As Dawes and Nenycz-Thiel (2013) rightly observe, private labels of retail chains often compete more with private labels of other retail chains than with brands belonging to manufacturers. Although inside a store of a given retail chain there is no space for competing with brands belonging to other retail chains (Nenycz-Thiel et al., 2010), the consumer chooses not only a product marked with a specific label but also the store in which they do shopping. With a similar level of prices and quality of products marked with private labels belonging to retail chains competitive to each other, the availability of these products related to the number and location of points of sale, as well as activities in marketing communication become more and more important (Baran, 2016). Private label as a brand fully controlled by a retailer enables to introduce products not available in the offer of manufacturers – at a lower price, innovative performance characteristics or any combination of price, quality and function. This potential of a variety of detailed solutions in the area of the trademark strategy is the reason for which building a unique image of a retail chain, shaped around different values – both savings (financial rationality) and prestige, are more and more often regarded the superior goal of a trademark (Małkowska-Borowczyk, 2010, p. 82).

Bibliography

1. Adamczyk, P. (2016). Współpraca międzynarodowych sieci handlowych z producentami towarów oznaczonych marką detalisty: proces wyboru lokalnych dostawców. *Gospodarka Materialowa i Logistyka*, 1, 8-15.
2. Aggarwal, P., & Cha, T. (1998). Asymmetric Price Competition and Store vs. National Brand Choice. *Journal of Product and Brand Management*, 7(3), 244-253.
3. Altintas, M.H., Kilic, S., Senol, G., & Isin, F.B. (2010). Strategic Objectives and Competitive Advantages of Private Label Products: Manufacturers' Perspective. *International Journal of Retail & Distribution Management*, 38(10), 773-788.
4. Apelbaum, E., Gerstner, E., & Naik, P.A. (2003). The Effects of Expert Quality Evaluations versus Brand Name on Price Premiums. *Journal of Product and Brand Management*, 12(3), 154-165.
5. Baltas, G. (1997). Determinants of Store Brand Choice: A Behavioral Analysis. *Journal of Product and Brand Management*, 6(5), 315-324.

6. Baltas, G., Doyle, P., & Dyson, P. (1997). A Model of Consumer Choice for National vs. Private Label Brands. *Journal of the Operational Research Society*, 48(10), 988-995.
7. Baran, R. (2016). Kierunki i uwarunkowania zmian w zakresie stosowania marek należących do pośredników handlowych. *Handel Wewnętrzny*, 2(361), 31-40.
8. Bennett, P.D. (Ed.). (1995). *Dictionary of Marketing Term*. Chicago: AMA.
9. Binninger, A.S. (2008). Exploring the Relationships between Retail Brands and Consumer Store Loyalty. *International Journal of Retail & Distribution Management*, 36(2), 94-110.
10. Cheng, J.M., Chen, L.S., Lin, J.Y., & Wang, E.S. (2007). Do Consumers Perceive Differences among National Brands, International Private Labels and Local Private Labels? The Case of Taiwan. *Journal of Product and Brand Management*, 16(6), 368-376.
11. Chintagunta, P.K., Bonfrer, A., & Song, I. (2002). Investigating the Effects of Store-brand Introduction on Retailer Demand and Pricing Behavior. *Management Science*, 48(10), 1242-1267.
12. Collins, A., & Burt, S. (2006). Private Brands, Governance, and Relational Exchange within Retailer-manufacturer Relationships: Evidence from Irish Food Manufacturers Supplying the Irish and British Grocery Markets. *Agribusiness*, 22(1), 1-20.
13. Collins-Dodd, C., & Lindley, T. (2003). Store Brands and Retail Differentiation: The Influence of Store Image and Store Brand Attitude on Store Own Brand Perceptions. *Journal of Retailing and Consumer Services*, 10(6), 345-352.
14. Connor, J.M., & Peterson, E.B. (1992). Marketstructure Determinants of National Brand-private Label Price Differences of Manufactured Food Products. *Journal of Industrial Economics*, 40(2), 157-171.
15. Cotterill, R.W., & Putsis, Jr, W.P. (2000). Market Share and Price Setting for Private Labels and National Brands. *Review of Industrial Organization*, 17, 17-39.
16. Cotterill, R.W., & Putsis, Jr, W.P. (2001). Do Models of Vertical Strategic Interaction for National and Store Brands Meet the Market Test? *Journal of Retailing*, 77(1), 83-109.
17. Cotterill, R.W., Putsis, Jr, W.P., & Dhar, R. (2000). Assessing the Competitive Interaction between Private Labels and National Brands. *Journal of Business*, 73(1), 109-137.
18. Cuneo, A., Milberg, S.J., Benavente, J.M., & Palacios-Fenech, J. (2015). The Growth of Private Label Brands: A Worldwide Phenomenon? *Journal of International Marketing*, 23(1), 72-90.
19. D'Aveni, R., & Piłat, K. (2010). Utowarowienie – cichy zabójca zysków. *Harvard Business Review*, 92(4).
20. Dawes, J., & Nenycz-Thiel, M. (2013). Analyzing the Intensity of Private Label Competition across Retailers. *Journal of Business Research*, 66(1), 60-66.
21. De Wuif, K., Odekerken-Schröder, G., Goedertier, F., & Van Ossel, G. (2005). Consumer Perceptions of Store Brands versus National Brands. *Journal of Consumer Marketing*, 22(4), 223-232.
22. Dekimpe, M.G., Hanssens, D.M., & Silva-Risso, J.M. (1999). Long-run Effects of Price Promotions in Scanner Markets. *Journal of Econometrics*, 89(1), 269-291.
23. Domański, T. (2001). *Strategie marketingowe dużych sieci handlowych*. Warszawa: PWN.
24. Gómez, M., & Benito, N.R. (2008). Manufacturer's Characteristics that Determine the Choice of Producing Store Brands. *European Journal of Marketing*, 42(1/2), 154-177.
25. Green Atkins, K., & Kim, Y.K. (2012). Smart Shopping: Conceptualization and Measurement. *International Journal of Retail & Distribution Management*, 40(5), 360-375.

26. Hsu, H., & Lai, C. (2008). Examination of Factors Moderating the Success of Private Label Brands: A Study of the Packaged Food Market in China. *Journal of Food Products Marketing*, 14(4), 1-20.
27. Huang, M., Jones, E., & Hahn, D.E. (2007). Determinants of Price Elasticities for Private Labels and National Brands of Cheese. *Applied Economics*, 39(5), 553-563.
28. Hyman, M.R., Kopf, D.A., & Lee, D. (2010). Review of Literature – Future Research Suggestions: Private Label Brands: Benefits, Success Factors and Future Research. *Journal of Brand Management*, 17(5), 368-389.
29. Keller, K. (2011). *Strategiczne zarządzanie marką. Kapitał marki – budowanie, mierzenie i zarządzanie*. Warszawa: Wolters Kluwer.
30. Kiczmachowska, E. (2007). Motywy producentów podejmowania produkcji pod markami detalistów w Polsce. *Marketing i Rynek*, (10), 20-26.
31. Kienzler, I., & Romanowski, R. (2009). *Leksykon handlowy*. Warszawa: C.H. Beck.
32. Kłosiewicz-Górecka, U. (2015). Marki własne w tworzeniu przewagi konkurencyjnej przedsiębiorstw handlowych i produkcyjnych. *Gospodarka Materialowa i Logistyka*, (12), 3-11.
33. Lee, D., & Hyman, M.R. (2008). Hedonic/Functional Congruity between Stores and Private Label Brands. *Journal of Marketing Theory & Practice*, 16(3), 219-232.
34. Liu, T., & Wang, C. (2008). Factors Affecting Attitudes toward Private Labels and Promoted Brands. *Journal of Marketing Management*, 24(3/4), 283-298.
35. Małkowska-Borowczyk, M. (2006). O istocie marki handlowej. [in:] M. Sławiński (Ed.), *Handel we współczesnej gospodarce*. Poznań: Wydawnictwo Akademii Ekonomicznej w Poznaniu.
36. Małkowska-Borowczyk, M. (2010). Współzależność siły marki sieci handlowej i siły marek własnych. *Zeszyty Naukowe Uniwersytet Ekonomiczny w Poznaniu*, 154, 81-88.
37. McCarthy, M.S., & Norris, D.G. (1999). Improving Competitive Position Using Branded Ingredients. *Journal of Product & Brand Management*, 8(4), 267-285.
38. Nenycz-Thiel, M., Sharp, B., Dawes, J., & Romaniuk, J. (2010). Competition for Memory Retrieval between Private Label and National Brands. *Journal of Business Research*, 63(11), 1142-1147.
39. Nowak, M., & Śmigielska, G. (2015). Ewolucja marki własnej na rynku FMCG w Polsce. *Marketing i Rynek*, 2, 10-16.
40. Oubina, J., Rubio, N., & Jesús Yagüe, M. (2006). Strategic Management of Store Brands: An Analysis from the Manufacturer's Perspective. *International Journal of Retail & Distribution Management*, 34(10), 742-760.
41. Pantano, E., & Timmermans, H. (2014). What is Smart for Retailing? *Procedia Environmental Sciences*, 22, 101-107.
42. Pauwels, K., & Srinivasan, S. (2004). Who Benefits from Store Brand Entry? *Marketing Science*, 23(3), 364-390.
43. Putsis, Jr, W.P. (1997). An Empirical Study of the Effect of Brand Proliferation of Private Label – National Brand Pricing Behavior. *Review of Industrial Organization*, 12(3), 355-371.
44. Putsis, Jr, W.P., & Dhar, R. (1998). The Many Faces of Competition. *Marketing Letters*, 9(3), 269-284.
45. Putsis, Jr, W.P., & Dhar, R. (2001). An Empirical Analysis of the Determinants of Category Expenditure. *Journal of Business Research*, 52(3), 277-291.

46. Richardson, P.S., Dick, A.S., & Jain, A.K. (1994). Extrinsic and Intrinsic Cue Effects on Perceptions of Store Brand Quality. *Journal of Marketing*, 58(4), 28-36.
47. Richardson, P.S., Jain, A.K., & Dick, A. (1996). Household Store Brand Proneness: A Framework. *Journal of Retailing*, 72(2), 159-185.
48. Santos-Vijande, M.L., del Río-Lanza, A.B., Suárez-Álvarez, L., & Díaz-Martin, A.M. (2013). The Brand Management System and Service Firm Competitiveness. *Journal of Business Research*, 66(2), 148-157.
49. Sayman, S., & Raju, J.S. (2004). Investigating the Cross-category Effects of Store Brands. *Review of Industrial Organization*, 24(2), 129-141.
50. Schreijen, S. (2011). Private Label vs. Brands: An Inseparable Combination. *Ranobank International Food & Agribusiness Research and Advisory*. Retrieved on 29/05/2018, from: <http://hugin.info/133178/R/1499322/434858.pdf>.
51. Sethuraman, R., & Cole, C. (1999). Factors Influencing the Price Premiums that Consumers Pay for National Brands over Store Brands. *Journal of Product and Brand Management*, 8(4), 340-351.
52. Sławińska, M. (2002). *Zarządzanie przedsiębiorstwem handlowym*. Warszawa: PWE.
53. Sławińska, M. (red.). (2008). *Kompendium wiedzy o handlu*. Warszawa: PWN.
54. Soberman, D.A., & Parker, P.M. (2004). Private Labels: Psychological Versioning of Typical Consumer Products. *International Journal of Industrial Organization*, 22(6), 849-861.
55. Soberman, D.A., & Parker, P.M. (2006). The Economics of Quality-equivalent Store Brands. *International Journal of Research in Marketing*, 23(2), 125-139.
56. Spyra, Z. (2013). Miejsce wartości dla klienta w kształtowaniu modeli biznesowych krajowych producentów marek własnych detalistów. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Problemy Zarządzania, Finansów i Marketingu*, 31, 247-263.
57. Spyra, Z. (2014). Rola relacji z dostawcami i odbiorcami w kreowaniu współczesnych modeli biznesu krajowych producentów marek własnych detalistów. *Studia Ekonomiczne*, (182), 121-134.
58. Spyra, Z. (2017). Uzależnienie od dostawców i odbiorców jako źródło ryzyka w kanale marketingowym – perspektywa producentów marek własnych detalistów. *Studia Ekonomiczne*, 321, 38-56.
59. Stopczyński, B. (2010). Marki własne – instrument konkurowania detalistów na rynku polskim. *Handel Wewnętrzny*, (1), 22-28.
60. Sudolska, A. (2011). *Uwarunkowania budowania relacji proinnowacyjnych przez przedsiębiorstwa w Polsce*. Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika.
61. Tarzijan, J. (2004). Strategic Effects of Private Labels and Horizontal Integration. *International Review of Retail, Distribution and Consumer Research*, 14(3), 321-335.
62. Vahie, A., & Paswan, A. (2006). Private Label Brand Image: Its Relationship with Store Image and National Brand. *International Journal of Retail and Distribution Management*, 34(1), 67-84.
63. Wang, H., Wei, Y., & Yu, C. (2008). Global Brand Equity Model: Combining Customer-based with Product-market outcome Approaches. *Journal of Product & Brand Management*, 17(5), 305-316.
64. Witek-Hajduk, M.K. (2015a). Cele wytwarzania przez producentów produktów pod markami detalistów. *Gospodarka Materialowa i Logistyka*, (11), 24-31.

65. Witek-Hajduk, M.K. (2015b). Motywy stosowania marek detalisty z perspektywy sieci detalicznych działających w Polsce. *Gospodarka Materialowa i Logistyka*, 12, 12-19.
66. Wyatt, R.J., Gelb, B.D., & Geiger-Oneto, S. (2008). How Social Insecurity and the Social Meaning of Advertising Reinforce Minority Consumers' Preference for National Brands. *Journal of Current Issues & Research in Advertising*, 30(1), 61-70.

Chapter 20

The Correlation between Mood and Trading Behavior

Olfat Chalha

1. Introduction

Is financial specialist's mood a noteworthy driver of investment decision making? What are the variables that affect the mood of investors? Is trading behavior important for understanding the formation of expected return as well as the risk tolerance?

The link amid feel and trading behavior is a relatively new field that advanced in the past few decades. People in a positive mood generally assess good outcomes compared to people in a negative mood. It is important to study how mood effects affect the investors and to understand the correlation between them.

Psychological evidence and casual intuition predict that mood affects the trading behavior. In addition, there is a large psychological literature that shows that current mood has a major effect on decision making, trouble solving, and actions.

This thesis examines the relationship among the variables of mood and trading behavior. It often defines the mood of the investors in emotional terms such as happy, sad, nervous, optimistic, pessimistic, quiet, energetic, or enthusiastic.

Economists study the behavior of people assuming that all people perform in a rational way. There is a relation between mood and risk tolerance of investors which can affect the selections they make and thus affect their trading behavior. Financial literacy also affects the investors' financial behavior; the more financially literate someone is, the better his/her financial behavior engagement will be (Wagner, 2013).

Numerous studies show the link amid feel and investment decision making and how feelings affect them. Characters that are in pleasant moods make confident and hopeful selections. A very strong result is that pleasant investors have more optimistic assessments of several kinds (Wright & Bower, 1992; and the survey of Bagozzi, Gopinath & Nyer, 1999).

This study will analyze how mood plays a major role in affecting the investment decision-making and prove that both valence and actuation levels of aggregate mindset are important in foreseeing pattern continuation in stock prices. Findings would help investors better understand and manage their moods during investment.

2. Definition of moods and trading behavior

Mood: a momentary shape of sentiment at an exacting time – can have power over all trading transactions and decisions because it has many effects on the expectations of future decisions, as well as it has effects on risk preferences (Hirshleifer, 2001; Baker & Wurgler, 2007; DellaVigna, 2009).

According to Frijida (1993), mood is a type of spread emotional situation which is the result of exterior actions, experiences, or the interior character of the investor. Despite the fact that mood is a worldwide situation that is, described as optimistic and pessimistic; it can also be more exact, for example, cheerful mood, or angry mood.

The emotional positions and situations comprise particular spirits for example, jealousy, envy, anger, and fear, but moods are wide positions of mind for example pleasant and optimistic, or sad and pessimistic. The hypothesis of moods proposes that the mood of people is temporal (Siemer, 2005), although moods last more than feelings and emotions. Furthermore, humors incline by individual point of views to be unaffected, and different than emotions, they are not deliberate balanced situations (Sizer, 2000).

3. Evolution of major moods and trading behavior theories

The market behavior has been developed over the years (De Bondt, Palm & Wolff, 2004; Thaler, 1993) from the visions of mental and rational psychology that integrate the illogical rudiments of cognitive biases and sentiments, for instance herding actions, performance and behavior, into models of financial decision making.

Various reviews in brain science demonstrate that weather which is one of the variables that affect mood significantly affects human conduct and states of mind.

Saunders (1993) is one of the first researchers that concentrate the impacts of overcast cover on stock returns.

From 1927 to 1962 and from 1962 to 1989 periods, Saunders; reached the conclusion which indicated that the profits of stock on 100% cloudy and rainy days are lower than days which 20% or less cloudy. On the other hand, (Trombley, 1997), indicated that there is no obvious correlation between weather and stock returns.

Also, Hirshleifer and Shumway (2003) analyze darkness and stock returns for 26 nations amid 1982 and 1997 as he studied and inspected the effects of weather from different points of view to see if there is a correlation between mood, daylight, and behavior as the mental and psychological writing predicts. Mood is debatably a significant concentrating instrument in economic trading behavior (Etzioni, 1988), and a correlation tool with fast and effective decision-making (Forgas, 1998).

There is a study that mentioned repeatedly by investors which is misattribution in which persons incline to trait their moods to the wrong trends that lead to false decisions (Frijda, 1988; Schwarz & Clore, 1983). For instance, satisfying people that are persuaded by fine climate may automatically trait this emotion to promising life prospects. Schwarz and Clore (1983) discussed that investors have a tendency to link their life pleasures and happiness far higher during good weather and sunny days than during pouring days, despite the fact that their wellbeing does not alter daily.

Woody Dorsey's Triunity Theory suggests that there are three different and particular side effects of the market which relate to how financial specialists feel (Psychological), think (Fun-

damentals) and act (Technical). By considering and measuring these three segments, we land at a full investigation of the market. Each of these market capacities are dependably in disequilibria to some degree. These relentless imbalances result in systemic contributing mistakes. Identifying the errors of other market participants, in turn, leads to venture opportunities.

Some numeral studies have claimed that there is a link between mood and emotions and they are as one part of one single system (Bower, 1981; Clark & Isen, 1982). Discussing these models, each event, idea, and sensation state is signified inside a huge network in memory by a node and is linked to other nodes through a great association. Isen (1984) says that this system has a very elastic construction, which may certainly change its association liable on the recovery cues. With this conceptualization (Isen, 1984), optimistic mood will have power on the cognitive capability, as well as the creativity on the problem solving.

According to AIM (affect infusion model), an optimistic attitude is predictable to raise the risk tolerance, while on contrast a pessimistic attitude would lower it (Forgas, 1995), in the meantime selective attention (Rusting & Larsen, 1995) causes the biased probabilities to be interpreted inversely. When in a pleasant and optimistic mood, the trader inclines to emphasize on optimistic signals in the surroundings. On the other hand, an unpleasant mood changes the attention of investors to the negative features of the circumstances. In contrast, MMH (mood maintenance hypothesis), progressive by Isen and other researchers (Isen & Labroo, 2003; Isen & Patrick, 1983), proposes pleasant investors have more caution, but unpleasant investors have larger recklessness. As per this hypothesis, people in a positive mood need to proceed in that state, so they are unwilling to take risks that could bring about misfortunes that would move them into a terrible mind-set. Though, when in a negative mood, they will act less carefully in the expectations of taking a chance, which would move them back into a pleasant and optimistic mind-set.

4. Relationship between mood and trading behavior

Regardless of a variety of studies and researchers, it is generally approved that mood affects the mental functions by stimuli their investment decision making (Forgas & George, 2001). One of the important and widely known theories that support the association amid feel and trading performance are:

- The mood of information model,
- The associative network theory,
- The evolutionary theory of hedonism.

4.1. The mood of information model

Feelings -as- information theory conceptualizes the task of subjective experiences including moods, emotions, met cognitive experiences, and bodily sensations. It accepts that individuals take care of their sentiments as a wellspring of data, with various emotions giving distinctive sorts of data. Though sentiments evoked by the objective of judgment give substantial data, emotions that are because of an irrelevant impact can lead us off track.

The utilization of sentiments as a wellspring of data takes after an indistinguishable standards from the utilization of some other data. Despite filling in as a premise of judgment, sentiments

educate us about the way of our present circumstance and our points of view are tuned to meet situational prerequisites.

4.2. The associative network theory

The informational role of feeling is exacerbated by comparable awareness and evokes processes, emphasized by the associative network theory (Bower, 1981). Hence, traders in a happy mood will have more positive and pleasant memories, as well as their concentration is bearing for extra optimistic stimuli. While in sad feeling traders' memories are unpleasant, and concentration is going away to more negative stimuli.

In this manner we may have a node for happiness, with which are related all our cheerful recollections. Nodes can likewise restrain each other a frame or negative affiliation. Hence when we are upbeat it is hard to consider tragic things, and the other way around.

In acquainted system models, memory is understood as an allegorical system of intellectual ideas, for example, articles, occasions, and thoughts reliable by joins mirroring the quality of relationship between sets of ideas. Such models usually incorporate thoughts regarding "spreading initiation" to speak to the procedures of memory recovery. As indicated by such models, ideas that are by and by being considered are said to be "enacted", and "excitation" spreads from these down interfacing pathways to related ideas. Affiliations that have been encountered more intermittently in the past are most likely going to be more grounded and are addressed in helpful framework models by pathways through which excitation can spread more quickly.

4.3. The theory of hedonism

The "hedonism", alludes to variously related hypotheses about what is beneficial for us, how we ought to act, and what rouses us to carry on in the way that we do. Every hypothesis perceives joy and inconvenience as the main vital components of whatever wonders they are intended to represent.

If the theories recognized pleasure and pain as just two important elements, as an option of the one of a kind essential of what they are telling, at that point they would not be nearly as loathed as they all may be.

Philosophical hedonists have a tendency to center around epicurean speculations of significant worth. As a hypothesis of significant worth, gratification expresses that all and just joy is basically important and all and just agony is inherently not profitable. Gluttons, by and large, characterize joy and agony comprehensively, for instance, physical and mental wonders.

5. Positive correlation between mood pleasantness and trading behavior

Many researchers have shown mood in attention and awareness (Mayer et al., 1992), such that when traders are happy they recognize circumstances as more optimistic, and when traders are sad they observe the circumstances as more pessimistic. This is related to main things that affect the investors' decisions and risk tolerance.

5.1. Traders' mood and investment decision

It has been assessed that due to an optimistic state of mind signals safety and pessimistic state of mind signals danger, investors are less wary and utilize more heuristics in their basic leadership forms when in a wonderful disposition, when contrasted with when investors are in a repulsive mindset (Schwarz & Bless, 1991).

For instance, individuals will probably practice the accessibility heuristic (Tversky & Kahneman, 1973) when in a pleasant temperament, assessing future activities in light of the remarkable quality of data to them at the time. The truth that the energy of state of mind is thought to be most grounded when the mindset is related to a related occasion implies that inclination got from past market conduct will have the more amicable impact on future conduct than coincidental temperament, unrelated to market performance.

5.2. Feel, risk awareness, and risk attractive

Scientists have likewise discovered a state of mind congruency in individuals' forecasts about what's to come. When they are in a pleasant temperament individual are idealistic and glad, and when in an unpleasant temperament they are more negative about the future (Nygren et al., 1996).

Correspondingly, in a wonderful mood individuals take a low risk and in an upsetting state of mind, they take a high risk (Mittal & Ross, 1998). Additionally, it has likewise been discovered that when investors are pleasant they perceive occasions and activities as circumstances, and when they are unpleasant they perceive occasions as dangers (Mittal & Ross, 1998).

These results entail that the more investors' mood is pleasant, the less market will be supposed to be hazardous, and then decision makers will assign more funds to the market, leading stock costs to increase. Similarly, so as to stay away from any additional risk in situations apparent as fear and pressure (Mano, 1994), financial specialists' information about upsetting state of mind in the market, will tend to offer their advantages or purchase just at lower costs, and so decrease the market.

Not exclusively would investors be able to foresee that mood affect the impression of risk, however there are evidence showing that mood of investors can affect their level of risk, especially when they are low. In the investment framework, Au et al. (2003) found that stakeholders who are pleasant have a high percentage of confident and taking risk. A number of studies has been loyal to unpleasant mood, but then lately it has been found that traders who are unpleasant are less enthusiastic to take risks than normal traders mood (Yuen & Lee, 2003), and this will lead to low returns.

6. Variables of moods

There are numerous different elements that affect the mood of investors. There are some research evidence indicate that environmental variables that affect investors' mood (weather, length of day, weekend effect, Monday and holiday's effect, traffic effect) affect investors' way of trade and volume.

Sunshine affects mood and mood can form behavior. It is then reasonable to test if weather is correlated to economic results, for example market return. The weather effect is known by some (Saunders, 1993; Hirshleifer & Shumway, 2003), and requested an implementation in data mining by others (Kramer & Runde, 1997).

Thus, climate is broadly supposed to stimulate investors' mood. For instance, the broadly held convictions of individuals think they feel happier on days with a lot of daylight as identified with dull and raining days. Despite the fact that this connection gives off an impression of being sound judgment (Watson, 2000), it is capturing to comprehend that the quantity of studies and examines on the intention between every day climate and state of mind is tolerably little (Keller et al., 2005). In inspecting such a relationship, recurrent impacts of climate must be famous from everyday impacts.

In reading the special effects of climate on feelings, numerous researches have concentrated entirely on individuals with seasonal affective disorder (SAD), a complaint that includes frequent fall/ winter main gloomy incidents that concern in the spring (Molin et al., 1996; Oren et al., 1994; Young et al., 1997).

As well as, there is another variation on mood which is the calendar effects. For example, Traffic effect, Monday effect, weekend effect and holiday effect.

Simple calendar-driven investment approaches have captivated academic investigators and market contributors for periods. A number of these calendar effects are well recognized and are now occasionally measured to be conventional facts of financial markets. For instance, Haug and Hirschey (2006) deliver experiential evidence on the January effect, Lakonishok and Smidt (1988) on the turn-of-the-month (TOM) effect, Cross (1973) on the weekend effect, and Ariel (1990) on the holiday effect.

In addition, there are other effects including working on Saturday and Sunday versus working from Monday till Friday and work versus nonworking situations on mood. It was expected that both ends of the week and nonworking times would be aligned with enhanced prosperity, and that these relations would be parleyed by unrivaled fulfillment of self-sufficiency and seeing needs. Besides, it was accepted that a significant part of the end of the week impact would be represented by the work as opposed to nonworking contrast, given that work exercises are relied upon to be associated with a lower feeling of freedom and relatedness than nonworking exercises.

Results uncovered these suppositions, demonstrating that for laborers, end of the week and nonworking exercises were connected with various indications of prosperity, and these relations were fairly or completely mediated by essential mental need fulfillment.

Flow mental research minds the truth of week after week cyclist in state of mind (Cranford et al., 2006). Current discoveries accurately prescribe two primary examples: The end of the week impact, whereby inclination is more hopeful and less negative on ends of the week than whatever is left of the week, and the blue Monday phenomenon (BMP), whereby Monday's state of mind is more regrettable than that of different days of the week.

Rossi and Rossi (1977) set up that idealistic inclinations were higher on Friday through Sunday and that terrible states of mind lower on Saturday and Sunday. This examination loans bolster for an end of the week impact, for the most part if Friday is considered some portion of the end of the week. McFarlane, Martin, and Williams (1988) additionally discovered arrangement for an end of the week impact in state of mind.

7. Criticism

Sentiment administration models and explore discoveries can lead for the presumption that there might be a negative connection amongst mind-set and exchanging conduct. A few scientists demonstrate state of mind incongruent procedures that give to keep up or settle one's mind-set (Parrott & Sabini, 1990).

According to Forgas (1995), temperament differentiating reacting is an indiscreet mind-set administration approach proposed to achieve influence control. As a result, though early reacting is state of mind fitting, after reactions can be disposition incongruent.

Mood disparate procedures involve a negative relationship stuck amongst mind-set and market execution. Alike to the past segment, the contentions isolated among the negative connection between state of mind pleasant nature and securities exchange conduct into impacts of basic leadership systems and risk taking conduct.

7.1. Negative relationship between mood pleasantness and trading behavior

Despite the fact that various reviews stipulated that those in a pleasurable state of mind are level to committing errors and are more at risk to intellectual predispositions (Forgas, 1998), extra review has uncovered that those in a good mind-set are more careful and fruitful leaders (Lewinsohn & Mano, 1993). In perspective of the way that certainty exchanging includes exchange low and sell high, one may therefore figure that a detailed pleasant inclination can control brokers to offer stocks when costs are high, bringing about a negative connection between revealed state of mind and ensuing business sector conduct.

7.2. Mood, risk perception, and risk taking

On the contrary to studies seeing pleasant temperament lead for lower risk knowledge and unpleasant mind-set prompting to higher risk understanding, additionally inquire about has affirmed that a pleasant disposition drives individuals to focus more on the hurting parts of conceivable misfortune than on the advantages of pick up, in this way expanding risk aversion. This review depends on the temperament conservation demonstrate, as indicated by which individuals need to secure their optimistic states (Clark & Isen, 1982).

Such risk avoidance alongside those in a good state of mind happens especially when a lot is on the line and dealers have a considerable measure to lose. Consequently, in the condition of the share trading system, positive state of mind joined with a high danger of future misfortune, may in reality direct to chance loath conduct, and taking after expulsion from the market. Absolutely, Liao, Huang, and Wu recently found that when lender cheerfulness is high, support supervisors are slanted to offer, so neutralizing the feeling and prompting to market declines.

In the meantime concerning leaders who rehearse obnoxious mind-sets, it has been found that irritated decision makers are set up to go out on a limb than non-upset leaders, and are prepared to danger more cash when they perceive great likelihood to win (Mano, 1992). Related results were gotten with profound respect to unsafe arranged choices. When they evident higher likelihood to make a turnover, leaders in an unpalatable temperament were more energetic to get dangers than chiefs in a pleasant state of mind (Dunegan, Duchon & Barton, 1992). Porcelli and Delgado too demonstrated that weight prompts to higher hazard taking in making a wager and more reliance on natural instead of precise basic leadership.

Therefore, in states of stock exchanging, announced repulsive temperaments may manual for an expanded affinity to get chances in the market, pouring costs higher.

8. Conclusion

The focus of this chapter was to understand that current mood has a major impact on decision making, problem solving, and actions. This paper show that many variables like weather, holidays, weekends, and traffic have a strong correlation with mood and then affect positively the return and the risk tolerance of them. In addition, economists study the behavior of people assuming that all people perform in a rational way. There is a relation between mood and risk tolerance of investors which can affect the selections they make and thus affect their trading behavior.

Bibliography

1. Au, K., Chan, F., Wang, D., & Vertinsky, I. (2003). Mood in Foreign Exchange Trading: Cognitive Processes and Performance. *Journal of Applied Social Psychology*, 18, 821-830.
2. Bagozzi, R.P., Gopinath, M., & Nyer, P.U. (1999). The Role of Emotions in Marketing. *Journal of the Academy of Marketing Science*, 12, 648-653.
3. Camerer, C., Loewenstein, G., & Prelec, D. (2005). Neuroeconomics: How Neuroscience Can Inform Economics. *Journal of Economic Literature*, 71(1), 87-114.
4. Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor Psychology and Security Market Under- and Overreactions. *Journal of Finance*, 67(5), 808.
5. DeBondt, W.F.M., Muradoglu, G., Shefrin, H., & Staikouras, S.K. (2008). Behavioral Finance: Quo Vadis? *Journal of Applied Finance*, Fall/Winter.
6. De Bondt, W.F.M., & Thaler, R. (1993). Betting on Trends: Intuitive Forecasts of Financial Risk and Return. *International Journal of Forecasting*, 9(3), 355-371.
7. De Bondt, W.F.M., & Thaler, R. (1985). Does the Stock Market Overreact? *The Journal of Finance*, 40(3), 793-805.
8. Handley, I.M., Lassiter, G.D., Nickell, E.F., & Herchenroeder, L.M. (2004). Affect and Automatic Mood Maintenance. *Journal of Experimental Social Psychology*, 3(2), 451-460.
9. Howarth, E., & Hoffman, M.S. (1984). A Multidimensional Approach to the Relationship between Mood and Weather. *British Journal of Psychology*, 4(5), 124-129.
10. Lee, K., & Allen, N.J. (2002). Organizational Citizenship Behavior and Workplace Deviance: The Role of Affect and Cognitions. *Journal of Applied Psychology*, 2(3), 203-222.
11. Mann, L. (1992). Stress, Affect, and Risk Taking. [in:] J.F. Yates (Ed.), *Risk-taking Behavior*. Oxford England: John Wiley & Sons.
12. Russell, J.A. (1980). A Circumplex Model of Affect. *Journal of Personality and Social Psychology*, 3(1), 558-572.
13. Tversky, A., & Kahneman, D. (1973). Availability: A Heuristic for Judging Frequency and Probability. *Cognitive Psychology*, 5(2), 207-232.

Authors

<i>Oleksandr Baranovskyi</i>	Banking University, Ukraine
<i>Urszula Bukowska</i>	Cracow University of Economics, Poland
<i>Olfat Chalha</i>	Cracow University of Economics, Poland
<i>Dragomir Dimitrijević</i>	University of Kragujevac, Serbia
<i>Adam Figiel</i>	Cracow University of Economics, Poland
<i>Karolina Gąszcz</i>	Cracow University of Economics, Poland
<i>Nataliia Ilchenko</i>	Kyiv National University of Trade and Economics, Ukraine
<i>Andrzej Jaki</i>	Cracow University of Economics, Poland
<i>Milan Kostić</i>	University of Kragujevac, Serbia
<i>Myroslava Khutorna</i>	Banking University, Ukraine
<i>Dagmar Lesakova</i>	University of Economics in Bratislava, Slovak Republic
<i>Iryna Manczak</i>	Cracow University of Economics, Poland
<i>Gordana Marjanović</i>	University of Kragujevac, Serbia
<i>Anatolii Mazaraki</i>	Kyiv National University of Trade and Economics, Ukraine
<i>Vladimir Mihajlović</i>	University of Kragujevac, Serbia
<i>Hubert Obora</i>	Cracow University of Economics, Poland
<i>Karolina Orzel</i>	Cracow University of Economics, Poland
<i>Grażyna Plichta</i>	Cracow University of Economics, Poland

<i>Katarzyna Sanak-Kosmowska</i>	Cracow University of Economics, Poland
<i>Nenad Stanišić</i>	University of Kragujevac, Serbia
<i>Andrzej Szplit</i>	The Jan Kochanowski University in Kielce, Poland
<i>Marcin Szplit</i>	The Jan Kochanowski University in Kielce, Poland
<i>Irena Śliwińska</i>	Cracow University of Economics, Poland
<i>Maciej Walczak</i>	Cracow University of Economics, Poland
<i>Ryszard Węgrzyn</i>	Cracow University of Economics, Poland
<i>Irmina Włodarska</i>	Cracow University of Economics, Poland
<i>Piotr Wójtowicz</i>	Cracow University of Economics, Poland
<i>Piotr Zajac</i>	Cracow University of Economics, Poland
<i>Artur Żuwała</i>	Cracow University of Economics, Poland

This work inscribes into the series of publications under the common title Knowledge – Economy – Society, which constitute one of the effects of many years' cooperation between the academic environment of the Faculty of Management at the Cracow University of Economics and employees and doctoral students of other faculties of the University, with representatives of different Polish academic circles, as well as representatives of foreign academic circles. Results of such cooperation are the following books published by the Foundation of the Cracow University of Economics:

- Oczkowska R., Mikula B. (eds.) (2011), *Knowledge – Economy – Society. Challenges of the Contemporary World*,
- Lula P., Mikula B., Jaki A. (eds.) (2012), *Knowledge – Economy – Society. Transfer of Knowledge in the Contemporary Economy*,
- Malina A., Oczkowska R., Rojek T. (eds.) (2012), *Knowledge – Economy – Society. Dilemmas of the Contemporary Management*,
- Lula P., Mikula B., Jaki A. (eds.) (2013), *Knowledge – Economy – Society. Global and Regional Challenges of the 21st Century Economy*,
- Malina A., Oczkowska R., Rojek T. (eds.) (2013), *Knowledge – Economy – Society. Challenges of the Contemporary Management*,
- Jaki A., Mikula B. (eds.) (2014), *Knowledge – Economy – Society. Managing Organizations: Concepts and Their Applications*,
- Lula P., Rojek T. (eds.) (2014), *Knowledge – Economy – Society. Contemporary Tools of Organizational Resources Management*,
- Malina A., Oczkowska R., Plichta J. (eds.) (2014), *Knowledge – Economy – Society. Contemporary Organizations in the Process of Institutional Transformations*,
- Oczkowska R., Śmigieliska G. (eds.) (2014), *Knowledge – Economy – Society. Dilemmas of the Economic Resources Management*,
- Oczkowska R., Śmigieliska G. (eds.) (2014), *Knowledge – Economy – Society. Problems of Management and Financing Economic Activity*,
- Borowiecki R., Jaki A., Lula P. (eds.) (2015), *Knowledge – Economy – Society. Challenges of Contemporary Economies in the Face of Global Market Conditions*,
- Malina A., Oczkowska R., Kaczmarek J. (eds.) (2015), *Knowledge – Economy – Society. Challenges and Development Trends of Modern Economy, Finance and Information Technology*,
- Mikula B., Rojek T. (eds.) (2015), *Knowledge – Economy – Society. Reorientation of Paradigms and Concepts of Management in the Contemporary Economy*,
- Oczkowska R., Śmigieliska G. (eds.) (2015), *Knowledge – Economy – Society. Challenges for Enterprises in Knowledge-Based Economy*,
- Kosiorowski D., Snarska M. (eds.) (2016), *Knowledge – Economy – Society. Selected Challenges for Statistics in Contemporary Management Sciences*,
- Lula P., Rojek T. (eds.) (2016), *Knowledge – Economy – Society. Contemporary Aspects of Economic Transformations*,
- Malina A., Węgrzyn R. (eds.) (2016), *Knowledge – Economy – Society. Challenges and Development of Modern Finance and Information Technology in Changing Market Conditions*,
- Oczkowska R., Jaki A., Mikula B. (eds.) (2016), *Knowledge – Economy – Society. Strategies, Concepts and Instruments of Management*,
- Oczkowska R., Śmigieliska G. (eds.) (2016), *Knowledge – Economy – Society. Contemporary Problems of Managing Human Resources and Corporate Finance*,
- Jaki A., Mikula B. (eds.) (2017), *Knowledge – Economy – Society. Strategies, Management in the Face of Contemporary Challenges and Dilemmas*,
- Oczkowska R., Śmigieliska G. (eds.) (2017), *Knowledge – Economy – Society. Macro- and Microeconomic Problems of the Knowledge-based Economy*,
- Seweryn R., Rojek T. (eds.) (2017), *Knowledge – Economy – Society. Selected Problems of Dynamically Developing Areas of the Economy*,
- Ulman P., Węgrzyn R., Wójtowicz P. (eds.) (2017), *Knowledge – Economy – Society. Challenges of Modern Finance and Information Technologies*.