# Regional and Business Studies

# Regional and Business Studies

# CONTENTS

# ASSESSING CORPORATE SUSTAINABILITY WITH REPERTORY GRID BASED PERSONAL CONSTRUCT PSYCHOLOGY

## Henning BUNDTZEN

Kaposvár University, Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba Sándor u. 40.

### ABSTRACT

*Corporate sustainability (CS) is becoming a key feature for preparing an organization for the future challenges of its competitive environment. It has expanded from corporate social responsibility (CSR) by adding the dimensions of ethical, environmental, economic and cultural responsibility whilst asking for a long-term perspective of sustainability for the aforementioned subjects. This paper summarizes the concept of corporate sustainability focusing on the most relevant topics of recent scientific literature. The findings are compared to the results of 61 repertory grid interviews to evaluate how far corporate sustainability is already carried into practical notion. It is tested whether this type of interview technique and the underlying theory of personal constructs allow a visualization of the CS status of an organization. In addition, this article gives a brief outlook on the interconnection of leadership, corporate culture and corporate sustainability.*
Keywords: corporate sustainability, corporate social responsibility, repertory grid analysis, personal construct psychology

## INTRODUCTION

Ecological and social responsibility are increasingly important topics in the business environment of today's operating corporations. Even corporate social responsibility is already difficult to comply with, it has been complemented by another important dimension (*Engert et al.*, 2016). Firstly, it is important to define a common understanding about the term corporate sustainability. A wide definition is given by Dyllick and Hockerts: "…*meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the needs of future stakeholders as well*" (*Dyllick and Hockerts*, 2002). In this paper we follow the definitions made by Hahn, Aras and Crowther who included the dimension of societal influence, environmental impact, organizational culture and finance (*Aras and Crowther*, 2008) which corresponds mainly to the three principles: environmental integrity, social equity and economic prosperity defined by Hahn (*Hahn and Figge*, 2011).

Internally, leadership from a business perspective is the most important driver of CS. This is a proactive approach instead of reacting after bad press for example (*Ashrafi et al.*, 2018). From the outside of a company a demand for sustainable business practices is driven by reputation, shifting customer preferences as well as legal requirements like legislation (*Lozano*, 2015). Nevertheless, organizations still have difficulties to put this

necessity into practice (*Ameer and Othman*, 2011). In the first step corporate sustainability must become part of the business strategy to have a chance to be implemented in practice. The second challenge is to put it into operational practice of all the organizations' employees (*Bonn and Fisher*, 2011). The underlying question is always how this affects a company's performance, as the topic has to move from the idea that it is only a cost factor to a perspective that corporate sustainability can even improve an organization's performance (*Sen and Bhattacharya*, 2001) and is a must to secure the long term future of a company (*Ameer and Othman*, 2012).

It is crucial that internal motivations by leadership are commonly more proactive than any externally forced motivations. One internal motivation which is becoming increasingly important is attracting and retaining employees. Due to population changes, a lack of workers has evolved into a common problem (*Epstein and Roy*, 2001). Alongside corporate sustainability can improve the employee's commitment and motivation, it has a positive side effect. That way it can even be a key driver of the financial performance of a company (*Lozano*, 2015; *Sen and Bhattacharya*, 2001). Another advantage of incorporating CS is that it can boost innovation within an organization alongside a social trend and increase a product's quality while simultaneously even lower the economical footprint. Reduction of waste as an originally internal motivation can reduce costs on the other side (*Lozano*, 2013; *Hahn et al.*, 2017).

External motivations or drivers can be for example to improve trust outside the company with stakeholders, like customers or suppliers, which coincides with the stakeholder centred definition made by *Dyllick and Hockerts*. It can even go that far that an organization needs to earn a "license to operate" (*Frankental*, 2001). Anther external factor can be access to certain markets as an example. An improved customer satisfaction and an enhanced corporate and brand reputation are examples of external motivations linked to corporate sustainability as well (*Dunphy et al.*, 2007).

Lozano did a comprehensive research on the relevance of the internal drivers and motivations that lead to an effective implementation of a corporate sustainability system linked to the business strategy of a company (*Lozano*, 2012). Some of the most frequent mentioned drivers of interviewed top-level managers highlighted proactive leadership, a business case, precautionary principles or the company´s culture as internal drivers (*Schaltegger and Lüdeke-Freund*, 2012). As external drivers reputation, customer demands and legislation were highlighted by the executives (*Lozano*, 2013). Hahn tried to create a standard process to incorporate sustainability and corporate social responsibility into the management and leadership of a company (*Hahn*, 2012). Only if a sustainable approach and sustainable thinking are part of the company's vision and strategy, it can be lived on an operational level (*Eweje*, 2011). When getting empirical insights, though the topic is brought up leaving the interviewee thinking about sustainability, whilst before it might not have been of relevance for the organization's work ethics (*Klettner et al.*, 2013).

## MATERIALS AND METHODS

As a basis for this research 61 repertory grid structured interviews were carried out within an organization. The research object is a wholesale company in the consumer industry with approximately 500 employees of which 21 staff members are in leadership roles. The

company is led by two general managers who, besides the founder, are also shareholders of the organization. The company has experienced 45 years of growth and accomplished 200 Mio. € turnover in 2018. The forecast and current business development is positive with a turnover increase forecasted for 2019 and 2020. Overall, the organization is financially healthy, paying above standard pay scale. Employees have the possibility to invest into a shareholding company so that they directly participate in the success of the corporation. Fluctuation among employees is on a comparably low level. Recruitment of additional staff is still unproblematic and applicants state that they have been told about the great working atmosphere. Hence a high employer attractiveness is presumed.

The main objective of the research is to analyse the corporate culture and leadership culture of the organization by conducting repertory grid structured interviews with all 21 members of the management team and 40 employees throughout all departments of the organization. The employees were selected in proportion to the size of each department. The repertory grid technique originates from George Kelly's personal construct theory (*Kelly*, 1955). Kelly suggested in his theory that individuals continuously strive to make sense of their own world and their place within this world, just like scientists (*Cassell et al.*, 2000). Within the scope of this research the theory is applied to an organization surrounding an individual. This means that an originally psychological theory on how people make sense of their own world is used to evaluate how employee make sense or judge the organization they are working for. Personal construct psychology (PSP) claims that individuals develop personal constructs or theories of themselves and their organization based on the sum of their experiences (*Fransella et al.*, 2003). The conducted repertory grid interviews based on Kelly's theory of personal constructs allow furthermore an unbiased qualitative and quantitative method (*Robertson*, 2003) to evaluate which role sustainability plays in the company culture. The applied repertory grid technique asks the interviewed person to construe in their own wording what they associate with the elements that are presented to them (*Goffin*, 2002). This way their perception of the world around them is construed in their own "personal constructs" or measurement which reflect by which means they evaluate and judge the elements which represent the organization (*Kelly*, 2002). Instead of asking direct questions the interviewees, they are only confronted with elements that surround them as an employee of the investigated organization. The determination of elements has to follow some basic rules to ensure a holistic coverage of the research topics. The main criteria for choosing elements are if these are homogenous in the sense that they are from the same category, they should be representative to the topic investigated and unambiguous to the interviewee (*Easterby-Smith et al.*, 1996). *Wright and Lam* propose in addition the use of more heterogeneous elements that signify a meaningful representation of the domain of interest (*Wright and Lam*, 2002). The following 27 elements were used to represent the organization and are designed to develop constructs in association with the investigated topics (*Table 1*).

The 27 elements are clustered into 3 main topics. It becomes evident that CS is not directly included in these clusters. This was done on purpose as some obvious elements may directly trigger thoughts of sustainability, which would have resulted in falsified results. The inductive approach of repertory grid still allowed the interviewees to state CS related constructs whilst not bringing up thoughts that they do not use in the context of judging the organization they are working for.

**Table 1**

### All 27 applied elements

| All elements | | |
|---|---|---|
| **The organization & market** | **Leadership & Motivation** | **Quality and internal processes** |
| The company as it used to be | Myself today | HR |
| The company today | My direct manager | Logistics/Warehouse |
| The company in 2.5 years | The company without leadership | Sales Department |
| The ideal company | Ideal leadership | Product management / purchase |
| A negative company | Leadership culture | IT |
| The companies brand | Myself as a manager | Marketing |
| The market in the future | CEO 1 | Employee culture |
| An unpleasant competitor | CEO 2 | Quality principle |
| A meaningful company | A highly motivated person | An efficient process |

The technique lets the interviewees compare a triad of 3 different elements of the set of 27 to construe their personal constructs. They were confronted with 3 elements and then asked, "in what way are two of these elements similar to each other and different from the third one". The elements surround the people during their work and are linked to company culture and leadership. This way these objects are part of the people's daily thoughts about their environment (*Senior and Swailes*, 2004). Elements like "quality principle" or "an efficient process" support creative thinking to ideally elicit a diverse number of qualitatively distinguishable metaphors that describe the corporate culture. The comparison method chosen is "triad oppositional" (*Easterby- Smith et al.*, 1996). Kelly proclaimed that we analyse and describe our world by likenesses and differences of constructs. This bipolarity of personal constructs allows the design of repertory grids (*Fransella*, 2003). The interviewees state a contrary one to their originally created construct. As an evaluation method a tetrapolar field was chosen, to enable a divers set of possible evaluations (*Senior and Swailes*, 2004). This process was repeated until no further constructs were elicited.

Within the above-mentioned set of elements, the following elements and coordinates can be put into the context of corporate sustainability as they potentially lead to thoughts about the ecological footprint of the company or the quality of its products (*Table 2*).

Especially "A meaningful company" and "The market in the future" have the potential of evoking constructs that can be directly associated with corporate sustainability. This way their perception of the world around them is translated into personal constructs which reflect by which means they evaluate and judge the elements that are presented to them (*Kelly*, 2002). The constructs consist of the

natural wording by the interviewed people based on the sum of their experiences. This way probands do not answer to questions and factors that they have not thought about before which case could it be when asking them how relevant they see for example leadership commitment in the context of corporate sustainability.

**Table 2**

**Coordinates of the main CS relevant element**

| No | Element | x | y | z |
|----|---------|------|------|------|
| 1 | The company today | -7.59 | 20.68 | 12.30 |
| 2 | Ideal leadership | 27.92 | -8.85 | 1.02 |
| 3 | A meaningful company | 28.22 | -9.00 | 0.08 |
| 4 | Leadership culture | 1.71 | 17.47 | 10.32 |
| 5 | Employee culture | -5.80 | 10.96 | 11.73 |
| 6 | The market in the future | 21.80 | -9.81 | -0.89 |
| 7 | A negative company | -37.01 | 8.34 | -3.86 |
| 8 | The companies brand | 11.60 | 8.67 | 9.81 |
| 9 | The ideal company | 32.08 | -9.99 | 0.80 |

The collected repertory grid data was analysed with a specialized software that uses generalized Procrustes analysis (GPA) to determine the unique coordinates of each construct and element. GPA allows to analyse and visualize three dimensional data matrices (*Mak et al.*, 2013). The analysis indicates how the derived constructs are grouped together and in which relation they stand to each other. The software allows to determine the distances between the ranked elements and statistical indicators are produced to show the likelihood of constructs appearing next to each other by coincidence (*Senior and Swailes*, 2004; *Tomic et al.*, 2015). The system clusters them automatically in dependence on their alignment towards each other. The interviews were carried out in the time frame from November 2018 to April 2019.

The elicitation of the above mentioned elements does not allow to predict any derived constructs but the context determines that topic related constructs are created (*Fransella*, 2003). The reviewed literature suggests that corporate sustainability is a relevant and important topic within business strategy and leadership to ensure the employees' commitment and retention (*Engert and Baumgartner*, 2016). Especially confronting employees, the CEOs and all corporate managers with the element's quality principle and their perception of their market and company in the future alongside with their perception of the brand leads to the following three hypotheses:

$H_1$: *The repertory grid analysis allows to draw a picture of the status quo of Corporate Sustainability of an organization*

$H_2$: *The personal constructs reassure the relevance of sustainability in business operations and strategy*

$H_3$: *Leadership has a direct impact on the CS status of an organization*

## RESULTS AND DISCUSSION

Each repertory grid structured interview compiled in average 12 personal constructs related to the company's culture, strategy and sustainability status. All 782 constructs were dissected by generalized Procrustes analysis (GPA) which produces a three dimensional cognitive space of all constructs and elements (*Tomic et al.*, 2015). This enables to draw conclusions about the semantic corridors, distances between the elements and the association of the probands with their company culture and the status of corporate sustainability. The following table lists all CS related constructs including the GPA produced unique coordinates (*Table 3*).

**Table 3**

**Coordinates of CS related personal constructs**

| No | Element | x | y | z |
|----|---------|-----|-----|-----|
| **Profit before quality** | | | | |
| 1 | Profit before Quality | -9.34 | 31.60 | 11.22 |
| 2 | Focus on profit and sales | -10.95 | 15.62 | 32.45 |
| 3 | Sales-driven | -8.22 | 14.91 | 29.42 |
| 4 | Follow-up costs for new low-cost providers are not taken into account | -25.25 | 28.62 | -5.84 |
| 5 | Damaged reputation due to poor quality | -38.48 | 10.13 | -9.46 |
| 6 | Price is more important than quality | -22.65 | 27.80 | -14.30 |
| 7 | React only to complaints (not proactively) | -30.10 | 20.81 | -4.45 |
| 8 | Set price before quality, no quality control | -32.46 | 13.35 | 21.67 |
| 9 | Driven by the market | -19.32 | 26.59 | 21.52 |
| 10 | Pure profit-seeking (antisocial business conduct) | -10.68 | 31.38 | -6.37 |
| 11 | Set to old values | -28.52 | 12.75 | 14.68 |
| 12 | Pollution of the environment | -30.56 | 22.71 | -2.69 |
| **Ecology** | | | | |
| 13 | Sustainability (not only profit optimization) | 14.95 | -34.72 | 4.23 |
| 14 | Increase quality, detect product defects early and act accordingly | 31.51 | -8.28 | -8.68 |
| 15 | Ecological sustainability | 6.91 | -34.94 | -10.43 |
| 16 | Clear quality standards (or management) | 31.38 | -15.84 | -13.49 |
| **Company and brand reputation** | | | | |
| 17 | Try to establish the company as a brand (not only company logo) | 35.92 | 10.76 | 6.40 |
| 18 | Ideals and values are pursued | 35.06 | 7.13 | 1.10 |
| 19 | Stand out from the crowd in terms of quality | 30.27 | 9.79 | 12.35 |
| 20 | Good working environment (team spirit/success) | 31.56 | 11.79 | 12.36 |
| 21 | Improve market reputation and perception | 24.22 | -2.26 | 26.01 |
| 22 | High willingness to perform through social activities | 36.39 | 8.01 | -1.97 |

An example construct is "pollution of the environment" on which for example the elements "The company today", "the brand" or "our company culture" are rated on a scale from 0 to 100. The personal constructs of the interviews were people qualitatively reviewed to assess their linkage to sustainability. One analysis that was done is to check which constructs come up with a relevance of: "The market in the future" (grading >80%) and "the brand of the company" (grading >80%). 97 constructs out of 782 fulfil these criteria whilst 22 can be related to corporate sustainability. Hence 2,8 % percent of personal constructs are sustainability related issues. They were clustered by the location in the three-dimensional grid as shown in table 1 and visualized in figure 1. The utilized repertory grid tool allows to draw a three-dimensional space of the coordinates of these elements and constructs. This way the semantic corridors become visible. In addition, the status quo of the organization with regards to the above-mentioned CS can be visualized. Referring to $H_1$: *The repertory grid analysis allows to draw a picture of the status quo of Corporate Sustainability of an organization* it can be concluded that a repertory grid analysis on the basis of the PSP by Kelly is an adequate possibility to visualize and analyse the CS estate of a company. It can be critically discussed whether a different design of elements would have generated a different set of results. Here a fine line between giving room for CS related thoughts and triggering them by obviously related elements has to be drawn. The following picture visualizes the CS status of the organization in 2019 (*Figure 1*).

**Figure 1**

**Three-dimensional visualization of the repertory grid results**
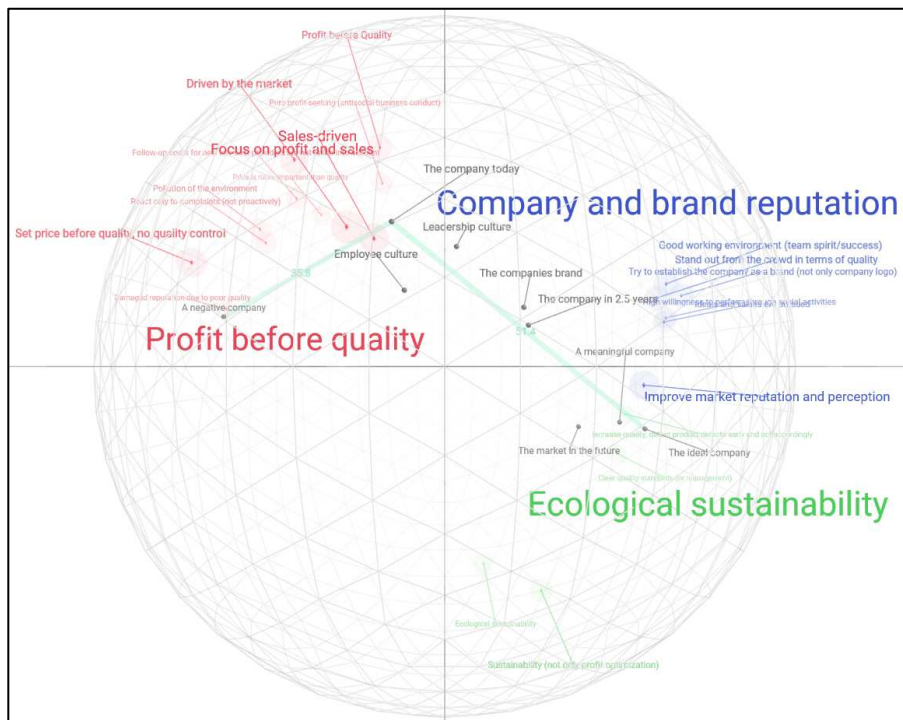
Centrically aligned elements are coordinated in a three-dimensional space. The genuine constructs are grouped into coloured clusters. The headings were chosen by the researcher to allow a prompt comprehension of the three main semantic corridors. The CS status of the organization is described by the location of the element "The company today" which is allocated in the semantic corridor summarized by "Profit before quality", as most constructs relate to this topic. In contrast, the elements "A meaningful company" and the "The market in the future" are located in the corridor that is headed by "Ecological sustainability". So even the interviewees do not rate their own organization highly for these constructs, they associate the construct being relevant in their market of the future. The low percentage of directly CS relevant constructs though leads to the conclusion that at a current stage it is not a relevant topic in judging the organization. In consequence $H_2$: *The personal constructs reassure the relevance of sustainability in business operations and strategy* can be rejected for the underlying research case as only 2,8% of constructs are CS relevant according to Lozano's criteria (*Lozano*, 2013). For this, constructs were reviewed that were highly relevant for the companies' brand and the market in the future.

To assess whether leadership has a direct impact on the CS status of an organization, the data set allows a possibility of measurement. The congruence of the semantic corridor of the "Leadership culture", "Employee culture" and "The company today" can indicate their degree of correlation. The following image (*Figure 2*) highlights all constructs and elements that lie in a corridor of 45 degrees centred around the element "The company today".

**Figure 2**

**Semantic corridor of 45° for "The company today"**

As all three elements lie relatively close to each other in the three-dimensional cognitive space, it can be concluded that $H_3$: *Leadership has a direct impact on the CS status of an organization.* The two closest constructs "Driven by the market" and "Profit before quality" reassure $H_1$ as they stand representative for the other constructs of this corridor. Critically it must be stated that the deficiency of CS implementation of this organization derives from a small basis for proving hypothesis three. In this context a time dependent analysis would produce more significant results.

## CONCLUSION

Only in 2,8% of the personal constructs of the interviewed people are linked to corporate sustainability relevant topics like societal influence, environmental impact or organizational culture (*Rego et al.*, 2015). This finding leads to a rejection of hypothesis 2 that the personal constructs of the investigated research subject reassure the relevance of sustainability in business operations and strategy. Neither within the minds of the leaders nor of the employees the above-mentioned topics play an important role. Critically it has to be stated that this research was linked to one corporation, hence it is not possible to draw economy- wide conclusions. Further research should be done if the number of sustainability constructs of the general managers and leaders of the company coincide with the relevance and number of sustainability constructs of employees. It means if the leaders consider CS as an important subject, this rubs off on the staff members of their department. That way it can be measured how effectively the leadership incorporates sustainability into the business.

Positively it can be concluded that applying Kelly's personal construct psychology with the help of repertory grid structured interviews is an adequate possibility to draw a picture of the CS status of an organization.  For further research it would be interesting what kind of results are elicited when applying the methodology to another organization or the same organization after several years.

Finally, it can be concluded that corporate sustainability is directly associated with leadership and company culture. As CS is still not strongly implemented in the investigated organization, the basis for this conclusion is not very strong. As a result of this research the organization implemented a strategy definition progress and integrated for the first-time corporate sustainability into its mission statement. To evaluate the effectiveness of the implementation of different approaches to implement CS into operations it would be highly interesting to carry out the same research in 2,5 to 3 years after the first conduct. This may produce a valuable data set on how effective different CS implementation processes are and how strongly they depend on leadership involvement.

## ACKNOWLEDGEMENT

# REFERENCES

Ameer, R., Othman, R. (2011): Sustainability Practices and Corporate Financial Performance: A Study Based on the Top Global Corporations. In: Journal of Business Ethics, 108. 1. 61-79. p. doi: 10.1007/s10551-011-1063-y

Aras, G., Crowther, D. (2008): Corporate Sustainability Reporting: A Study in Disingenuity? In: Journal of Business Ethics, 87. S1. 279-288. p. doi: 10.1007/s10551-008-9806-0

Ashrafi, M., Adams, M., Walker, T.R., Magnan, G. (2018): "How corporate social responsibility can be integrated into corporate sustainability: a theoretical review of their relationships." In: International Journal of Sustainable Development & World Ecology, 25. 8. 672-682. p. doi: 10.1080/13504509.2018.1471628

Bonn, I., Fisher, J. (2011): Sustainability: the missing ingredient in strategy. In: Journal of Business Strategy, 32. 1. 5-14. p. doi: 10.1108/02756661111100274

Cassell, C., Close, P., Duberley, J., Johnson, P. (2000): Surfacing embedded assumptions: Using repertory grid methodology to facilitate organizational change. In: European Journal of Work and Organizational Psychology, 9. 4. 561-573. p. doi: https://doi.org/10.1080/13594320050203139

Dunphy, D.C., Griffith A.; Benn, S. (2007): Organizational change for corporate sustainability. A guide for leaders and change agents of the future. London: Routledge, 346 p. ISBN: 0415393299

Dyllick, T., Hockerts, K. (2002): Beyond the business case for corporate sustainability. In: Business Strategy and the Environment, 11. 2. 130-141. p. doi: 10.1002/bse.323

Easterby-Smith, M., Thorpe, R., Holman, D. (1996): Using repertory grids in management. In: Journal of European Industrial Training, 20. 3. 3-30. p. doi: 10.1108/03090599610114138

Engert, S., Baumgartner, R.J. (2016): Corporate sustainability strategy – bridging the gap between formulation and implementation. In: Journal of Cleaner Production, 113. 822-834. p. doi: 10.1016/j.jclepro.2015.11.094

Engert, S., Rauter, R., Baumgartner, R.J. (2016): Exploring the integration of corporate sustainability into strategic management: a literature review. In: Journal of Cleaner Production, 112. 2833-2850. p. doi: 10.1016/j.jclepro.2015.08.031

Epstein, M. J., Roy, M.-J. (2001): Sustainability in Action: Identifying and Measuring the Key Performance Drivers. In: Long Range Planning, 34. 5. 585-604. p. doi: 10.1016/s0024-6301(01)00084-x

Eweje, G. (2011): A Shift in corporate practice? Facilitating sustainability strategy in companies. In: Corporate Social Responsibility and Environmental Management, 18. 3. 125–136. p. doi: 10.1002/csr.268

Frankental, P. (2001): Corporate social responsibility – a PR invention? In: Corporate Communications: An International Journal, 6. 1. 18-23. p. doi: 10.1108/13563280110381170

Fransella, F. (ed.) (2003): International Handbook of Personal Construct Psychology. Chichester: Wiley, 528 p. ISBN-10: 0470847271

Fransella, F., Bell, R., Bannister, D. (2003): A Manual for Repertory Grid Technique. Chichester: Wiley, 280 p. ISBN: 978-0-470-85490-7

Goffin, K. (2002): Repertory Grid Technique. In: Partington, D. (ed.): Essential Skills for Management Research, 199-225. p. doi: 10.4135/9781848605305.n11

Hahn, R. (2012): ISO 26000 and the Standardization of Strategic Management Processes for Sustainability and Corporate Social Responsibility. In: Business Strategy and the Environment, 22. 7. 442-455. p. doi: 10.1002/bse.1751

Hahn, T., Figge, F. (2011): Beyond the Bounded Instrumentality in Current Corporate Sustainability Research: Toward an Inclusive Notion of Profitability. In: Journal of Business Ethics, 104. 3. 325-345. p. doi: 10.1007/s10551-011-0911-0

Hahn, T., Figge, F., Pinkse, J., Preuss, L. (2017): A Paradox Perspective on Corporate Sustainability: Descriptive, Instrumental, and Normative Aspects. In: Journal of Business Ethics, 148. 2. 235-248. p. doi: 10.1007/s10551-017-3587-2

Kelly, G.A. (1955): The Psychology of Personal Constructs. New York: Norton

Klettner, A., Clarke, T., Boersma, M. (2013): The Governance of Corporate Sustainability: Empirical Insights into the Development, Leadership and Implementation of Responsible Business Strategy. In: Journal of Business Ethics, 122. 1. 145-165. p. doi: 10.1007/s10551-013-1750-y

Lozano, R. (2012): Towards better embedding sustainability into companies' systems: an analysis of voluntary corporate initiatives. In: Journal of Cleaner Production, 25. 14-26. p. doi: 10.1016/j.jclepro.2011.11.060

Lozano, R. (2013): A Holistic Perspective on Corporate Sustainability Drivers. In: Corporate Social Responsibility and Environmental Management, 22. 1. 32-44. p. doi: 10.1002/csr.1325

Rego, A., Cunha, M.P.e., Polónia, D. (2015): Corporate Sustainability: A View From the Top. In: Journal of Business Ethics, 143. 1. 133-157. p. doi: 10.1007/s10551-015-2760-8

Robertson, A. (2003): Making Sense of the 'Group Mind'. In: Fransella F. (ed.): International handbook of personal construct psychology. Chichester: Wiley 339-348. p. doi: 10.1002/0470013370.ch34

Schaltegger, S., Lüdeke-Freund, F. (2012): The "Business Case for Sustainability" Concept: A Short Introduction. Lüneburg. Centre for Sustainability Management (CSM), 14. p. ISBN 978-3-942638-22-7

Sen, S., Bhattacharya, C.B. (2001): Does Doing Good Always Lead to Doing Better? Consumer Reactions to Corporate Social Responsibility. In: Journal of Marketing Research, 38. 2. 225-243. p. doi: 10.1509/jmkr.38.2.225.18838

Tomic, O., Berget, I., Næs, T. (2015): A comparison of generalised procrustes analysis and multiple factor analysis for projective mapping data. In: Food Quality and Preference, 43. 34-46. p. doi: 10.1016/j.foodqual.2015.02.004

Wright, R. P., Lam, S. S. K. (2002).: Comparing Apples with Apples: The Importance of Element Wording in Grid Applications. In: Journal of Constructivist Psychology, 15. 2. 109-119. p. doi: 10.1080/10720530252808692

Correspondent author:

**Henning BUNDTZEN**
Kaposvár University
Doctoral School in Management and Organizational Sciences
H-7400 Kaposvár, Guba Sándor u. 40.
e-mail: henning.bundtzen@outlook.de

# FACTORS INFLUENCING CONSUMER BEHAVIOR TO PURCHASE SUSTAINABLE COSMETIC PRODUCTS IN A GERMAN CONTEXT

**Stefanie BRÜCKEL, Sandra SCHNEIDER**

Kaposvár University, Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba Sándor u. 40.

## ABSTRACT

*In today's markets, corporate social responsibility is a new consumer expectation. Organizations across all industries are trying to meet these expectations by building a positive reputation and sending a signal to their stakeholders. However, consumers' environmental behavior is not always the result of their positive attitudes towards environmental issues. Potentially, their environmentally friendly attitudes are contradicted by their actual behavior. This means that people, who have positive attitudes about sustainable products and state that they would purchase them, may not actually buy them after all. In addition, consumers often do not wish to spend more money on buying sustainably, even if they have higher expectations towards sustainable products or companies. Further research is therefore needed to explain the gap between consumer awareness and actual purchasing behavior. In several contexts, environmentally friendly consumption, called sustainable consumption, has been explained by the theory of planned behavior (TPB), such as when buying food or apparel. Sustainable consumption often results from planned decisions rather than hedonic reasons.*
Keywords: environmental purchase decisions, sustainable consumption, sustainable cosmetics, theory of planned behavior

## INTRODUCTION

Very few topics have experienced a newfound and revived interest in the recent decade alike the topic of sustainability (*Gonzalez*, 2018; *McDonald et al.*, 2012; *Miniero et al.*, 2014; *White et al.*, 2019). Already in 1987, the *Brundtland Report* formulated by the United Nations constituted that the continuance of human civilization required of each generation to engage in business practices that safeguarded not only the current generation's livelihood but also the one of generations to come (*Brundtland*, 1987). Subsequently, the view on environmental and sustainability concerns as being instrumental and relevant not only for mankind but especially the economic sector, has grown. Increasingly experiencing the effects of climate change, with water and clean air resources drastically diminishing, and pictures of entire slums being built and one-use plastic have led to the topic of sustainability moving to the forefront of our everyday lives as well as business practices. While in the latter the term "triple-bottom" line was coined as a strategic mean to value environmental goals equivalently to social and economic ones (*European Commission*, 2001), environmental awareness has been of interest to the individual consumer for a few years and cumulated recently into activism

throughout all demographics and nearly all levels of society with individuals like Greta Thunberg being defined as the figurehead of these movements.

Indisputably, individual and social activism is needed in order to tackle the multitude of problems society is already and will be facing furthermore in the future in terms of providing amongst others habitable land, potable water, clean air to breathe. But of corresponding value will be the organized activism of organizations, corporations, economies and governments as the latter define and subsidize the framework for individuals and companies alike to pursue a more sustainable lifestyle, while organizations and companies, which focus on their triple-bottom line and make this an inherent element of their mission, proliferate opportunities for individuals to bring their natural interest of caring for this planet into the workplace as well.

Since the topic of sustainability has become of increasing interest in the last decade, a number of industries have invested into adapting their operations accordingly (e.g. coffee, automobile, consumer goods) (*Chang and Watchravesringkan*, 2018). Recently, another industry has started to incorporate more strongly a more sustainable mindset into its production by sourcing and utilizing more organic ingredients (*Ashraf et al.*, 2019; *Demirtas*, 2018; *Emekci*, 2019; *Tarkiainen*, 2005). This industry is the cosmetics industry, which will be the focus of the following analysis. From the outset, it must be mentioned that cosmetics in the understanding of this paper refers to not only make-up and toiletries but also skin- and haircare as well as perfumes and hygiene articles. It is important to make this distinction as 'cosmetics' might at first only be associated with products naturally more of interest to women. However, given the five categories mentioned above, make-up only amounts to 19% of the cosmetic market, whereby skin- and haircare are in fact the largest categories with 39% and 21% respectively (*L'Oréal*, 2015). In addition to a market that is split into only a small number of main product categories which appeal to a large segment of the society, the fact that the cosmetics market is largely controlled by five multinational enterprises making up 50% of the market share (*Vazquez-Burguete et al.*, 2017) facilitated the decision to place the study into this context.

The main goal of this research is to analyze which factors influence German consumers in their purchasing behavior when buying sustainable cosmetic products. With the next section explaining the utilized model of *Theory of Planned Behavior*, further sections provide information regarding the structure, distribution and implementation of an online survey that was run for two months in the summer of 2019 and amounted to 268 responses in total, out of which in the end n=245 were used in the analysis. Eventually, a discussion of the findings will be provided and a conclusion drawn before the paper closes with a short reflection on the limitations this research encountered.

## CONCEPTUAL FRAMEWORK

The *Theory of Planned Behavior* model (TPB) focuses on the attitudes and behavior that have the strongest impact on an individual's purchasing choices (*Ajzen*, 1985, 1991). The model hereby demonstrates the relation between five constructs – attitude, subjective norms, purchase intention, perceived behavioral control and behavior (*Ajzen*, 2008) – and how each of them influences the individual's purchase intention.

Through the application of the TPB, researchers have been able to provide stable evidence of consumption patterns and purchasing intensions (*Conner et al.*, 2000; *Martin et al.*, 2010; *Norman et al.*, 1999; *Zemore and Ajzen*, 2014). Aside from being a well-received and -researched model, another strength of the TPB is the possibility to extend the model for further constructs, which might be of particular interest with regards to the research field. In the underlying research, two additional constructs were added, namely trustworthiness and perceived consumer effectiveness. While each of the constructs will be analyzed individually in the following, it must be said that the reason to append the original model was twofold. First, since cosmetic products can directly impact on a person's health if hazardous ingredients are used, trusting a product or a company is the basis for the consumer to even consider engaging in purchasing behavior (*Pudaruth et al.*, 2015). Secondly, individuals often state that they feel their own individual contribution to live a more sustainable, eco-friendly life, but it does not have a measurable effect (*Newsom et al.*, 2005; *Paladino*, 2005; *Peattie*, 2001). Thus, in the context of cosmetic products it is especially interesting to see whether the consumption of products in daily use and towards the improvement of external characteristics of the consumer is significantly shaped by the intrinsic motivation of an individual to primarily purchase eco-friendlier options for the benefit of sustainability.

**Trustworthiness**
As mentioned before, the construct of trustworthiness was added to the original TPB model because it is believed that consumers engaged in purchasing intentions need to be willing to rely on the information provided by the seller of being true (*Jarvenpaa et al.*, 2000). While the concept of trust has been researched in a multitude of different research fields, in the context of consumer behavior it has been found that trust is a factor any consumer engages in on different levels during the purchasing experience (*Sekhon et al.*, 2014). The psychological process involved herein accumulates in customers believing and trusting the integrity of a cosmetic product producer and thus considering to purchase one of their products (*Berry and Parasuraman*, 1991). In this way, trust becomes an instrumental and integral part of a consumer's attitude towards a potential purchase.

*H1: The greater the trustworthiness (TW) of sustainable cosmetics is, the greater the purchase intention (PI) for sustainable cosmetics is.*

**Subjective norms**
When speaking of subjective norms, both innate and indiscernible pressures presented to the consumer through the upbringing, socialization and environment as well as more offensive, external expressions of peer pressure are referred to. In this understanding, subjective norms describe the social environment each consumer finds themselves in and that shapes the attitudes towards a certain product as much as it is a determent of the purchasing intention (*Du et al.*, 2017; *Teng and Lu*, 2016; *Hansen et al.*, 2018). *Newholm and Shaw* (2002) found that with the more globalized, digitalized and also more expressive world of today social norms were also constructed and influenced through various channels of the media, pop culture and education. In aggregation, social norms are the pressures each individual perceives as

motivating influences to comply in the purchasing behavior with important persons of reference or in order to confirm with perceived expectations.

*H2: The greater the influence of the subjective norm (SN) on the purchase of sustainable cosmetics is, the greater the purchase intention (PI) for sustainable cosmetics is.*

**Attitudes**

In the original TPB model, *Ajzen* 1991 stated that positive attitudes towards a product lead to a more favourable evaluation of the product by the consumer. Attitudes develop from an individual's belief about what performing a certain act (*Fishbein and Ajzen*, 1975) means, and similarly to subjective norms, are formed by the social environment, health concerns, product quality, the environmental knowledge and consciousness of the individual consumer (*Demirtas*, 2019) and the experiences any consumer has and makes throughout life. Attitudes can be both positive and negative but it is presumed that a more positive attitude towards a product leads to a higher likelihood of the positive consequences of an engagement in purchasing intention.

*H3: The more positive the attitude (AT) towards sustainable cosmetics is, the greater the purchase intention (PI) for sustainable cosmetics is.*

**Perceived behavioral control**

While an individual's impact on any purchasing decision might be limited, in the context of sustainable consumption, the perceived behavioral control gains additional weight as despite their environmental intentions, sustainably minded consumers might end up not purchasing the more sustainable product (*Carrington et al.*, 2010) for either of the following two reasons. Either, because the perception is that purchasing a sustainable product brings no added value if the majority of customers remains purchasing traditionally less eco-friendly products or because the products are too expensive or not readily available enough for the consumer to be willing to go through the additional effort. Thus, the contemplation of individual perceived behavior control must occur before the intention of engaging in a purchase intent even begins, as only this way a positive outcome of the consideration leads to purchase intent and behavior (*Chang and Watchravesringkan*, 2018).

*H4: The greater the perceived behavioral control (PBC) in relation to the purchase of sustainable cosmetics is, the greater the purchase intention (PI) for sustainable cosmetics is.*

Given the second dimension of PBC mentioned before, it is also described as the perceived difficulty or ease of an individual being able to carry out behavior and being able to overcome any volatile external factors that might interfere with a person's actual behavior towards purchasing a sustainable cosmetic product (*Ajzen*, 1991; *Taylor and Todd*, 1995).

*H5: The greater the perceived behavioral control (PBC) in relation to the purchase of sustainable cosmetics is, the more positive the actual behavior (BE) to buy sustainable cosmetics is.*

**Perceived consumer effectiveness**

Along the same lines of PBC, the belief that the individual's actions might have a positive impact on solving an environmental issue as a result of the individual efforts (*Gonzalez et al.*, 2015) plays a large role in the constitution of an individual's belief system. Similarly, to TW, PCE is a mainly psychological variable that attempts to explain certain attitudes

found and yet has been to be one of the best predictors for ecologically conscious behavior (*Akehurst et al.*, 2012; *Straughan and Roberts*, 1999; *Moisander*, 2007).

*H6: The greater the perceived consumer effectiveness (PCE) through the use of environmentally friendly products is, the more positive the attitude (AT) towards sustainable cosmetics is.*

## Purchase Intention

Eventually, the main indicator in the TPB is the intent, as the best indicator and determining factor for a purchasing behavior (*Singh and Verma*, 2017). The intent is viewed as the most important and best predictor because it can also be seen as a direct antecedent of behaviour (*Fishbein and Ajzen*, 1975). Yet, good intentions alone do not always translate into behavior in cases where other factors become overwhelming (e.g. price or previous experiences) (*Bray et al.*, 2011) and overshadow the intent. According to TPB, the execution of behavior is the joint function of intentions and perceived behavioral control (*Tarkianinen and Sundqvist*, 2005)

*H7: The more positive the purchase intention (PI) for sustainable cosmetics is, the more positive the actual behavior (BE) for sustainable cosmetics is.*

## Survey and items

The survey used in this research consisted of a total number of 29 questions with at least two questions (items) being allocated to each of the previously described constructs. The items were confirmed through the research of *Ashraf et al.* (2019), *Demirtas* (2019) and *Emekci* (2019). The survey closed with four questions regarding the demographics of the respondents and a comment box for open-ended feedback.

## MATERIALS AND METHODS

The constructs of the developed explanatory model for the acceptance of sustainable cosmetics are latent variables that were measured based on established scales. The scales were adapted to the present context and translated into German. A 5-point Likert scale was used continuously to measure the items. While the construct *Subjective norms* is a formative latent variable, the other variables were operationalized reflectively. The data collection was conducted as an online survey from July 30th to September 26th 2019. In total, there were 268 returns. All data records with more than 20% missing values were removed (22 cases and 1 question). The remaining data set still contains 0.15% missing values, which is however only a small percentage. Nevertheless, since the estimates of structural equation models require complete data sets (*Weiber and Mühlhaus*, 2013), the missing values were supplemented by mean value replacement. One disadvantage of using the mean value is a possible distortion of the quantiles or variances (*Göthlich*, 2009). However, due to the very low proportion of missing values, the risk is assessed as very low and this procedure is applied.

Thus, a total of n=245 data records are available. The sample consists of 66.12% female and 33.88% male respondents. Comparing the ratio to the actual population distribution in Germany (50.65% and 49.35%, respectively), women are overrepresented in the sample. Almost 60% of the participants were between the age of 26 and 45. Only about 16% are younger than 25 years. Slightly more than 24% of

the respondents were 46 years and older. The interviewees over 65 years are relatively underrepresented. Almost 40% have a partner and children. Another 35.5% live with a partner but without children. Nearly 25% are single or widowed and are focusing entirely on themselves in their decision-making process.

For the first assessment of the data set, the position and scattering measures were checked. It can be seen that the respondents used the entire scale (1-5) for almost all indicators. Six indicators have a median of 5 and a standard deviation of less than 0.84. This suggests that most of the respondents have the same subjective perception for these six indicators.

## RESULTS AND DISCUSSION

At first, the reliability of the items was examined (*Table 1*). The factor loadings of 4 items are less than 0.7 and were removed from the measuring model. The remaining factor loadings of items were above 0.704 and significant at $p < 0.001$.

**Table 1.**

### Reliability of reflective indicators

| Construct | Indicator | Presumed Effect | Loading | t-value | One-sided p-value |
|---|---|---|---|---|---|
| Attitude | AT_001 | + | 0.704 | 16.343 | 0.000 |
| | AT_002 | + | 0.820 | 25.705 | 0.000 |
| | AT_003 | + | 0.836 | 28.305 | 0.000 |
| | AT_004 | + | 0.856 | 37.933 | 0.000 |
| | AT_005 | + | 0.779 | 20.079 | 0.000 |
| Behavior | BE_001 | + | 0.884 | 60.185 | 0.000 |
| | BE_002 | + | 0.823 | 28.382 | 0.000 |
| | BE_003 | + | 0.613 | 9.197 | 0.000 |
| Perceived Behavioral Control | PBC_001 | + | 0.832 | 34.293 | 0.000 |
| | PBC_002 | - | -0.197 | 2.024 | 0.043 |
| | PBC_003 | + | 0.440 | 6.040 | 0.000 |
| | PBC_004 | + | 0.834 | 32.263 | 0.000 |
| | PBC_005 | + | 0.875 | 49.021 | 0.000 |
| Perceived Consumer Effectiveness | PCE_001 | + | 0.899 | 40.838 | 0.000 |
| | PCE_002 | + | 0.878 | 27.011 | 0.000 |
| Purchase Intention | PI_001 | + | 0.913 | 77.433 | 0.000 |
| | PI_002 | + | 0.895 | 43.550 | 0.000 |
| Trustworthiness | TW_001 | + | 0.484 | 2.987 | 0.003 |
| | TW_002 | + | 0.749 | 15.166 | 0.000 |
| | TW_003 | + | 0.788 | 19.156 | 0.000 |
| | TW_004 | + | 0.828 | 21.206 | 0.000 |

In a next step, the internal consistency reliability and the convergent validity of the reflective multi-item scales were evaluated by calculating Cronbach's alpha, average variance extracted (AVE) and internal consistence value (IC).

All Cronbach's alphas exceeded the required value of 0.7 (*Nunnally and Bernstein*, 1994) and every AVE as well as IC value clearly surpassed the required threshold value of 0.5 and 0.6 respectively (*Bagozzi and Yi*, 1988). Discriminant validity based on Fornell-Larcker was fulfilled (*Table 2*). Furthermore, evaluating of the cross loadings show that no indicator loading is higher compared to the other constructs than its own construct (*Homburg and Giering*, 1996).

**Table 2**

**Squared construct correlations and AVE values**

| | AVE | Attitude | Behavior | Perceived Behavioral Control | Perceived Consumer Effectiveness | Purchase Intention |
|---|---|---|---|---|---|---|
| Attitude | **0.641** | | | | | |
| Behavior | **0.809** | 0.566 | | | | |
| Perceived Behavioral Control | **0.747** | 0.683 | 0.742 | | | |
| Perceived Consumer Effectiveness | **0.789** | 0.433 | 0.530 | 0.462 | | |
| Purchase Intention | **0.817** | 0.529 | 0.660 | 0.669 | 0.583 | |
| Trustworthiness | **0.665** | 0.556 | 0.452 | 0.536 | 0.351 | 0.373 |

Turning to the formative measured construct, all item weights of the formative measurement models are positive and differ significantly from zero. One item does not show a positive weight as assumed but in fact a negative one (PBC_002). Since the t-value is also not significant, this item was removed from the model. The t-values of the other two items are significant or even highly significant. After elimination, the remaining VIF values are all less than 2. There are no problems detectable due to multicollinearities (*Hair et al.*, 2017).

On the basis of a valid measuring model, a structural model was analyzed by examining the explanatory power of the model as well as the predictive power of the respective independent variables. To test the theoretical models, PLS path modelling using the software application SmartPLS 3 was applied (*Ringle et al.*, 2015). As no multicollinearity issues were perceived and inner VIFs showed values less than five (*Hair et al.*, 2017), the explanatory power by examining $R^2$ of the main dependent variables was assessed first. The endogenous variables are determined by the coefficient of determination $R^2$adj. *Purchase*

*Intention* shows an $R^2_{adj}$ of 45% and *Behavior* 60%. Both have a moderate explanatory power. *Attitude* shows an $R^2_{adj}$ of only 18% and falls below the limit of weak explanatory power. In the next step, the predictive power of the independent variables was analyzed by examining the standardized estimates of path coefficients and their significance (*Figure 1*).

**Figure 1.**

**Path analysis results**
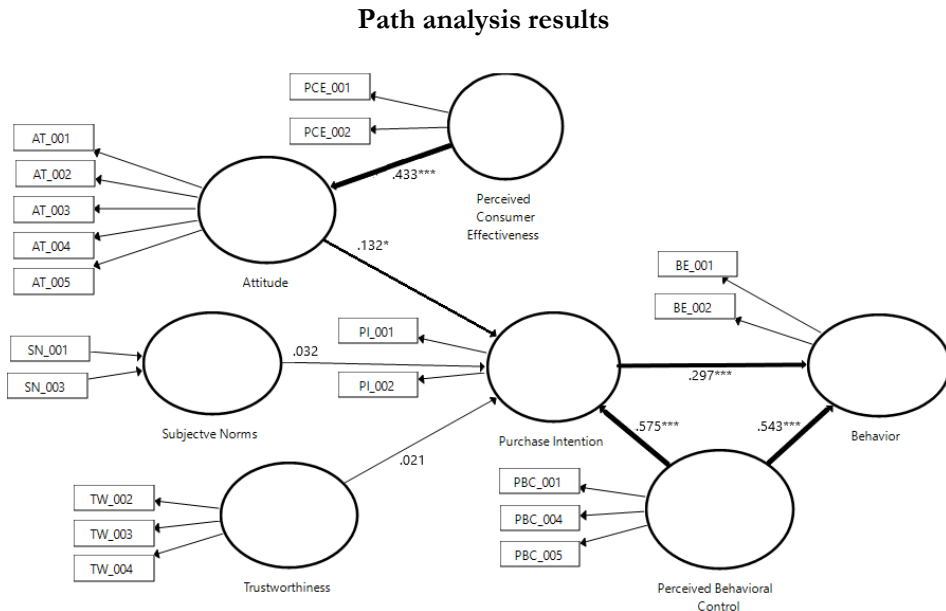


(*** p < 0.001; * p < 0.10; without * = not significant)

In the hypothesized model, five out of seven path coefficients are significant. The results confirm most of the constructs of the original TPB model. *Purchase intention* ($\beta=0.297$, $p\leq0.001$, $f^2=0.12$) has a positive influence on *behaviour*. Also p*erceived behavioral control* shows nearly the same impact on p*urchase intention* ($\beta=0.575$, $p\leq0.001$, $f^2=0.30$) as the *behaviour* ($\beta=0.543$, $p\leq0.001$, $f^2=0.41$). The *subjective norms* show an insignificant and very low impact ($\beta=0.03$, $p\geq0.1$, $f^2=0.001$). It seems that the *subjective norms*, other than in the TPB model, have no effect on the *purchase intention*. The last TPB-construct is *attitude*. This shows a significant but limited influence on *purchase intention* ($\beta=0.132$, $p\leq0.1$, $f^2=0.01$). The *perceived consumer effectiveness* shows a significant impact on *attitudes* ($\beta=0.43$, $p\leq0.001$, $f^2=0.23$). The additional construct *trustworthiness* has no impact on *purchase intention* ($\beta=0.02$, $p\geq0.1$, $f^2=0.001$). The blind folding shows that the prediction relevance of the model is given, as all values are larger than 0 (*Weiber and Mühlhaus*, 2013).

**CONCLUSION**

Based on the TPB model, the perceived behavioral control shows an impact on the purchase intention and buying behavior of sustainable cosmetics. Therefore, it

should be important to give the customers the opportunity to inform themselves and decide to buy without external control. It makes sense to include this freedom of choice in marketing communication.

Both an improved perceived company image as well as social pressure were found to be irrelevant for the consumer in this analysis. Similarly, trustworthiness showed no influence on the intention to purchase a sustainable cosmetic product.

The median of attitudes of 5 shows that the interviewee's convictions towards sustainable cosmetics is generally very similar. However, the variance explained by the model is only low indicating that there must be other influencing variables. These should be determined in further research with a focus on explaining the attitude and intention to buy. Furthermore, this research paper did not look for moderating variables, which future research could include.

The perceived consumer effectiveness has a high influence on the attitude. The respondents have the feeling that with sustainable cosmetics and other environmentally friendly products they are protecting the environment and making a positive contribution. The survey was conducted exclusively in Germany. However, sustainable cosmetics are also offered in other countries. In order to obtain an international picture of the influence factors and to eliminate social and cultural biases, the same research should be carried out in further countries as well.

## REFERENCES

Ajzen, I. (1985): From intentions to actions: a theory of planned behavior. In: Kuhl, J., Beckman, J. (eds.): Action Control: From Cognition to Behavior, Berlin Heidelberg: Springer-Verlag, 11-39. p. ISBN: 978-3-642-69748-7

Ajzen, I. (1991): The theory of planned behavior. In: Organizational Behavior and Human Decision Processes, 50. 2. 179-211. p. doi: 10.1016/0749-5978(91)90020-T

Ajzen, I. (2008): Consumer attitudes and behavior. In Haugtvedt, C.P., Herr, P.M., Cardes, F.R. (Eds): Handbook of Consumer Psychology, New York, NY, Lawrence Earlbaum Associates, 525-548. p. ISBN-13: 9780805856033

Akehurst, G., Afonso, C., Gonçalves, H.M. (2012): Re-examining green purchase behaviour and the green consumer profile: new evidences. In: Management Decision. 50. 5. 972-988. p. doi: 10.1108/00251741211227726

Ashraf, M.A., Joarder, M.H.R., Ratan, S.R.A. (2019): Consumers' anti-consumption behavior toward organic food purchase: an analysis using SEM. In: British Food Journal. 121. 1. 104-122. p. doi: 10.1108/BFJ-02-2018-0072

Bagozzi, R.P., Yi, Y. (1988): On the Evaluation of Structural Equation Models. In: Journal of the Academy of Marketing Science. 16. 1. 74-94. p. doi: 10.1007/BF02723327

Berry, L.L., Parasuraman, A. (1991), Marketing Services: Competing through Quality. New York: The Free Press, 212. p. ISBN-13: 9780029030790

Bray, J., Johns, N., Kilburn, D. (2011): An exploratory study into the factors impeding ethical consumption. In: Journal of Business Ethics. 98. 4. 597-618. p. doi: 10.1007/s10551-010-0640-9

Brundtland, G. (1987): Our Common Future: The World Commission on Environment and Development, Oxford University Press, Oxford. 416. p. ISBN-13: 978-0192820808

Carrington, M.J., Neville, B.A., Whitwell, G.J. (2010): Why ethical consumers don't walk their talk: towards a framework for understanding the gap between the ethical purchase intentions and actual buying behavior of ethically minded consumers. In: Journal of Business Ethics. 97. 1. 139-159. p. doi: 10.1007/s10551-010-0501-6

Chang, H.J., Watchravesringkan, K.T. (2018): Who are sustainably minded apparel shoppers? An investigation to the influencing factors of sustainable apparel consumption. In: International Journal of Retail and Distribution Management, 46. 2. 148-162. p. doi: 10.1108/IJRDM-10-2016-0176

Conner, M., Norman, P., Bell, R. (2000): The theory of planned behavior and healthy eating. In: Health Psychology, 21. 2. 194-201. p. doi: 10.1037/0278-6133.21.2.194

Demirtas, B. (2019): Assessment of the impacts of the consumers' awareness of organic food on consumption behavior. In: Food Science and Technology. 39. 4. 881-888. p. doi: 10.1590/fst.10518

Du, S., Bartels, J., Reinders, M., Sen, S. (2017): Organic consumption behavior: A social identification perspective. In: Food Quality and Preference. 62. 190-198. p. doi: 10.1016/j.foodqual.2017.07.009

Emekci, S. (2019): Green consumption behaviours of consumers within the scope of TPB. In Journal of Consumer Marketing. 36. 3. 410-417. p. doi: 10.1108/jcm-05-2018-2694

European Commission (2001): Green Paper. Promoting a European Framework for Corporate Social Responsibility. [online] <URL: https://ec.europa.eu/commission/presscorner/api/files/document/print/en/doc_01_9/DOC_01_9_EN.pdf>

Fishbein, M., Ajzen, I. (1975): Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading, MA: Addison-Wesley, 578. p. ISBN-13: 978-0-201-02089-2

Gonzalez, A. (2018): Making sustainability a lifestyle rather than a philosophy. In: International Trade Forum. 3. 3.p.

González, E.M., Felix, R., Carrete, L., Centeno, E., Castaño, R. (2015): Green shades: a segmentation approach based on ecological consumer behavior in an emerging economy. In: Journal of Marketing Theory and Practice. 23. 3. 287-302. p. doi: 10.1080/10696679.2015.1032395

Göthlich, S.E. (2009) Zum Umgang mit fehlenden Daten in großzahligen empirischen Erhebungen. In: Albers, S., Klapper, D., Konradt, U., Walter, A., Wolf, J. (eds) Methodik der empirischen Forschung. Wiesbaden: Gabler Verlag, 119-135. p. doi: 10.1007/978-3-322-96406-9_9

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M. (2017): A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 2nd ed., Los Angeles: Sage Publication, 384. p. ISBN-13: 978-1483377445

Hansen, T., Sørensen, M.I., Eriksen, M.L.R. (2018): How the interplay between consumer motivations and values influences organic food identity and behavior? In: Food Policy. 74. 39-52. p. doi: 10.1016/j.foodpol.2017.11.003

Homburg, C., Giering, A. (1996): (DE) Konzeptionalisierung und Operation-alisierung komplexer Konstrukte – Ein Leitfaden für die Marketingforschung. In: Marketing: ZFP; Journal of Research and Management, 18. 1. 3-24. p.

Jarvenpaa, S.L., Tractinsky, N., Vitale, M. (2000): Consumer trust in an internet store. In: Information Technology and Management. 1. 45-71. p. doi: 10.1023/a:1019104520776

L'Oréal (2015). Annual Report 2014. [online]<URL: https://www.loreal-finance.com/system/files/2019-10/LOREAL_Annual_Report_2014_ENG.pdf>

Martin, R.J., Usdan, S., Nelson, S., Umstattd, M.R., LaPlante, D., Perko, M., Shaffer, H. (2010): Using the theory of planned behavior to predict gambling behaviour. In: Psychology of Addictive Behaviors. 24. 1. 89-97. p. doi: 10.1037/a0018452

McDonald, S., Oates, C.J., Alevizou, P.J., Young, C.W., Hwang, K. (2012): Individual strategies for sustainable consumption. In: Journal of Marketing Management. 28. 3-4. 445-468. p. doi: 10.1080/0267257x.2012.658839

Miniero, G., Codini, A., Bonera, M., Corvi, E., Bertoli, G. (2014): Being green: from attitude to actual consumption. In: International Journal of Consumer Studies. 38. 5. 521-528. p. doi: 10.1111/ijcs.12128

Moisander, J. (2007): Motivational complexity of green consumerism. In: International Journal of Consumer Studies. 31. 4. 404-409. p. doi: 10.1111/j.1470-6431.2007.00586.x

Newholm, T., Shaw, D. (2002): Studying the ethical consumer: a review of research. In: Journal of Consumer Behaviour. 6. 5. 253-270. p. doi: 10.1002/cb.225

Newsom, J.T., Mcfarland, B.H., Kaplan, M.S., Huguet, N., Zani, B. (2005): The health consciousness myth: Implications of the near independence of major health behaviors in the north American population. In: Social Science & Medicine. 60. 2. 433-437. p. doi: 10.1016/j.socscimed.2004.05.015

Norman, P., Conner, M., Bell, R. (1999): The theory of planned behavior and smoking cessation. In: Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association. 18. 1. 89-94. p. doi: 10.1037/0278-6133.18.1.89

Nunnally, J.C., Bernstein, I.H. (1994): Psychometric Theory. 3rd ed., New York: McGraw-Hill Education. 736. p. ISBN-13: 978-0070478497

Paladino, A. (2005). Understanding the green consumerism: An empirical analysis. Journal of Customer Behaviour, 4. 1. 69-102. p. doi: 10.1362/1475392053750306

Peattie, K. (2001): Golden goose or wild goose? The hunt for the green consumer. In: Business Strategy and the Environment. 10. 4. 187-199. p. doi: 10.1002/bse.292

Pudaruth, S., Juwaheer, T.D., Seewoo, Y.D. (2015): Gender-based differences in understanding the purchasing patterns of eco-friendly cosmetics and beauty care products in Mauritius: a study of female customers. In: Social Responsibility Journal. 11. 1. 179-198. p. doi: 10.1108/srj-04-2013-0049

Ringle, C.M., Wende, S., Becker, J.-M. (2015). SmartPLS 3. Boenningstedt: SmartPLS GmbH. [online] <URL: http://www.smartpls.com>

Sekhon, H., Ennew, C., Kharouf, H., Delvin, J. (2014): Trustworthiness and trust: influences and implications. In: Journal of Marketing Management. 30. 3-4. 409-430. p. doi: 10.1080/0267257x.2013.842609

Singh, A., Verma, P. (2017): Factors influencing Indian consumers' actual buying behaviour towards organic food products. In: Journal of Cleaner Production. 167. 473-483. p. doi: 10.1016/j.jclepro.2017.08.106

Straughan, R., Roberts, J. (1999): Environmental segmentation alternatives: a look at green consumer behaviour in the new millennium. In: Journal of Consumer Marketing. 16. 6. 558-575. p. doi: 10.1108/07363769910297506

Tarkiainen, A., Sundqvist, S. (2005): Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. In: British Food Journal. 107. 11. 808-822. p. doi: 10.1108/00070700510629760

Taylor, S., Todd, P.A. (1995): Understanding Information Technology Usage: A Test of Competing Models. In: Information Systems Research. 6. 2. 144-176. p. doi: 10.1287/isre.6.2.144

Teng, C.-C., Lu, C.-H. (2016): Organic food consumption in Taiwan: Motives. involvement. and purchase intention under the moderating role of uncertainty. In: Appetite. 105. 95-105. p. doi: 10.1016/j. appet.2016.05.006

Vázquez-Burguete, J.L., Sahelices-Pinto, C., Lanero-Carrizo, A. (2017): Corporate social responsibility and consumer behavior in the cosmetics sector: a study in the Spanish context. In: International Review on Public Nonprofit Market. 14. 3. 375-390. p. doi: 10.1007/s12208-017-0178-y

Weiber, R., Mühlhaus, D. (2013): (DE) Strukturgleichungsmodellierung – Eine anwendungs-orientierte Einführung in die Kausalanalyse mit Hilfe von AMOS, SmartPLS und SPSS. 2nd ed. Berlin: Springer-Lehrbuch. doi: 10.1007/978-3-642-35012-2

White, K., Habib, R., Hardisty, D.J., (2019): How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. In: Journal of Marketing. 83. 3. 22-49. p. doi: 10.1177/0022242919825649

Zemore, S.E., Ajzen, I (2014): Predicting substance abuse treatment completion using a new scale based on the theory of planned behavior. In: Journal of Substance Abuse Treatment. 46. 2. 174-182. p. doi: 10.1016/j.jsat.2013.06.011

Corresponding author:

**Stefanie BRÜCKEL**
Kaposvár University,
Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba Sándor u. 40.
stefanie.bruckel@ke.hu

# Determinants of Adopting a Zero Waste Consumer Lifestyle

## Zsuzsa SĂPLĂCAN[1], Brigitta MÁRTON[2]

[1]Babeș-Bolyai University, Faculty of Economics and Business Administration,
RO-400591 Cluj-Napoca, Teodor Mihali Str. 58-60.
[2]Moholy-Nagy University of Art and Design, H-1121 Budapest, Zugligeti u. 9-25.

### ABSTRACT

*As of 2019, Euromonitor International predicted that one of the most emerging consumer trends would be the aspiration and acting for a plastic-free world. The concept of Zero waste has been widely discussed in production technology and waste management literature, however, in recent years environmentally conscious consumers also decided to get more involved in concrete - and sometimes radical - waste reduction actions, even lifestyle changes. These initiatives were also supported by the authorities by banning certain single-use plastic items in the European Union by 2021. Media and social media personalities also have thematized the waste pollution problem and have brought closer to the population the principles of zero waste lifestyle. While the environmentally conscious consumer behavior has been researched widely before, the diffusion of zero waste principles at household level has not been in the researchers' focus. The present study aims to conceptualize and then identify the dimensions and the determinants of a zero waste consumer lifestyle. Questionnaire-based research has been delivered on a sample of 378 people active in zero waste social media groups in Hungary. Our results reveal that the waste reduction initiatives are the most important components of the zero waste behavior; however, dimensions of reusing and recycling products, packages or waste are also identified. The zero waste consumer is driven by altruistic motivations, is nonconformist, guided by his own values and convictions, shows positive attitude towards zero wasters' efforts, follows social media influencers' videos in zero waste matters and is active in social media groups.*
Keywords: zero waste, consumer lifestyle, TRA, 3R, social media

## INTRODUCTION

On a daily basis we receive shocking information and pictures on the damages caused by unstoppable plastic pollution and other waste issues. Solid waste has become one of the largest global environmental issues (*Minelgaitė and Liobikienė*, 2019). The European Commission proposed a circular economy vision and the introduction of a zero waste strategy (*European Commission,* 2014), in order to increase the more efficient use of the resources, to reduce the waste generation and leakage and to promote an economically and environmentally sustainable growth. A zero waste strategy provides benefits to the community, changes the people's lifestyle about consumption patterns and their attitudes towards waste disposal, ensures economic and financial benefits, environmental benefits and also specific benefits for industries and their stakeholders (*Pietzsch et al.,* 2017).

The waste generated during the whole value chain has become a global and collective issue. Some environmentally sensitive consumers feel that they would take control, and initiate a bottom-up changing. For the year 2019, Euromonitor International predicted that one of the most sharply emerging consumer trends would be the aspiration and acting for a plastic-free world (*Angus and Westbrook,* 2019). Zero waste is becoming a trend and creating a buzz across Europe and beyond (*Zero Waste Europe,* 2019). Social media can amplify this buzz and helps to propagate the movement.

The zero waste concept traditionally was developed in production and supply chain management on the company level, and in the waste management on city or community level (*Lehmann,* 2011b). It is a holistic concept of the waste handling problem in the twenty-first century (*Zaman,* 2015). However, several studies on the zero waste principles neglect the demand side of the waste problem and the willingness and forms of the consumers' participation in zero waste value chains (*Kirchherr et al.,* 2017). The zero waste lifestyle re-frames the practice of shopping, consumption and disposal of the waste. For example, to perform package-free shopping, consumers have to learn new competences and knowledge, need to develop own buying and storage infrastructure (*Fuentes et al.,* 2019). Even so, recently the consumer awareness towards environmentally friendly consumer behavior has been emerging more than ever. The zero waste consumer movement is at the intersection of the two different topics: the zero waste management practices developed on the organization level and the environmentally friendly behavior on the individual or household level.

While the environmentally conscious consumer behavior has been researched widely before in literature, the diffusion of zero waste principles on individual and household level has not been in the researchers' focus. Therefore, the aim of this study is to conceptualize the zero waste lifestyle, to identify its dimensions, and to explore the determinants of a zero waste lifestyle adoption.

**Conceptualization zero waste consumer lifestyle**

Zero waste (ZW) was one of the most studied topics in the past decade in waste management (*Zaman,* 2016). Being at the intersection of several disciplines, it is also a controversial subject. The term "zero waste" was first used by Dr. Paul Palmer in 1973 for recovering resources from chemicals (*Zaman,* 2015). According to the most recent definition of the ZW, formulated by the Zero Waste International Alliance, ZW is "The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health." (*ZWIA,* 2018). This definition is more operational and task-oriented, in comparison with the older one, which defined ZW as an "ethical, economical, and efficient and visionary [goal], to guide people in changing their lifestyles and practices to emulate sustainable natural cycle, where all discarded materials are designed to become resources for others to use […]" (*ZWIA,* 2018).

In the ZW concept, the waste is seen as a resource created at the different stages of a product's value chain, including production and consumption (*Zaman,* 2016) that

should be used again, instead of incinerating or disposed of in a landfill. In this chain the waste should be reintroduced in the production process through reuse, recycle, reassemble, resell, redesign or reprocess. Thus, the ZW principles contribute to the circular economy (*Lehmann,* 2011a; *Zaman,* 2016; *Pietzsch et al.,* 2017). *Kirchherr et al.* (2017) provide a definition for the circular economy similar to the ZW principles. I.e. the circular economy, as an economic system that replaces the 'end-of-life' concept with reducing, reusing, recycling and recovering materials in production, distribution and consumption phase of their life cycle (*Kirchherr et al.,* 2017).

In a circular economy, waste reducing, reusing, and recycling (3R waste hierarchy) behaviors play central roles, 3R theory being a widely accepted tool of waste management (*Ma et al.,* 2017). The waste hierarchy shows how waste avoidance is preferred in the first place, above reuse and recycling (*Lehmann,* 2011a). On the other hand, this waste hierarchy on the household level contributes towards achieving sustainable consumption (*Pandley et al.,* 2017).

The Reduction principle refers to minimizing the amount of waste through the improvement of efficiency in production and reducing consumption. This could be realized e.g. using more efficient technologies, less packaging or a simpler lifestyle. The Reuse principle stands for using again a product or a component/material of the product according to the original purpose (*European Parliament* 2008). On the consumer side this consists of choosing reused and remanufactured products, preferring durable products (*Prendeville et al.,* 2014). The Recycle principle refers to the recovery operation when waste is reprocessed into products or materials, it could happen for the original or other purposes. It includes the reprocessing of organic materials, too (*European Parliament,* 2008). *Minelgaitė and Liobikienė* (2019) in their study also use the 3R principles as the dimensions of waste management.

According to *Kirchherr et al.* (2017), the circular economy strategy involves micro level agents, such as companies or consumers, meso level economic and social ecosystems and macro level entities such as cities, geographic regions, countries. The emergence of the circular economy drives the development of new business models and responsible consumer behavior patterns (*Kirchherr et al.,* 2017).

The concept of ZW is continuing to be adopted by individuals, families on the household level (*Zaman,* 2016; *Hannon and Zaman,* 2018). While the value chain ends at the consumer, the consumer should be included in the waste management strategies, and some of the tasks should be delegated to the consumers. *Zaman* (2015) put the proposed waste avoidance strategy into consumers' responsibilities, which means avoiding over-consumption and promoting sustainable consumption. *The Planet Aid* (2016) organization defines the ZW as "a lifestyle where people aim to eliminate their trash output completely. This means no plastic, no wrappers, no garbage".

The consumer's involvement in several ecologically friendly behavior in every stage of the consumption process became crucial in solving several environmental problems (*Onel and Mukherjee,* 2017). The 3R strategy has been developed at a meso or macro level, but is there a possibility to apply at the household level? The environmentally conscious consumer behavior and consumer profile have been researched for decades (*Webster,* 1975). For example, *Webster* (1975) found that recycling behavior is part of the socially conscious behavior. *Zimmer et al.* (1994)

identified seven dimensions of environmental concern, including concern for waste (waste control, landfills, recycling, etc.), concern for wildlife (wildlife, habitat protection, deforestation, etc.), concern for the biosphere (biosphere protection, ozone depletion, etc.), concern for popular issues (labeling, environmental education, etc.), concern for health (water, air pollution, etc.), energy awareness (clean energy, energy conservation, etc.), and concern for environmental technology (biotech, composting etc.). *Robert and Bacon* (1997) identified six factors of the environmentally conscious consumer behavior, such as products from recycled paper, saving (fossil) energy, waste recycling issues, eco-conscious decision making, increasing energy efficiency and reducing electricity consumption. *Li et al.* (2019) also identified a series of operationalized pro-environmental behavior, such as recycling waste, other waste management issues, energy consumption, transport usage, purchasing green products or purchasing eco-friendly appliances (*Li et al.,* 2019).

Besides the more holistic approaches of environmentally conscious consumer behavior studies, several specific topics that involve the consumer have been investigated in the consumer literature. In trying to identify the 3R model components in case of the environmentally conscious consumer behavior, it can be concluded that Reducing and Reusing behavior appear implicitly in the waste concerns, while the Recycling gains special attention and place in consumers' environmental concerns.

As part of the environmentally conscious consumer behavior, the Recycling behavior of consumers and its antecedents have been widely researched in consumer literature (*Davies et al.,* 2002; *Izagirre-Olaizola et al.,* 2015; *Kirchherr et al.,* 2017; *Onel and Mukherjee,* 2017; *Pandley et al.,* 2017; *Minelgaitė and Liobikienė,* 2019;). Recently, some studies have also mentioned reducing behavior issues (*Graham-Rowe et al.,* 2014; *Mintz et al.,* 2019). Reusing aspects, such as second-hand shopping, donation or resell appears in several fashion and clothing related researches (*Weber et al.,* 2016).

Thus, we consider that ZW lifestyle is a subset of environmentally friendly, or green consumer behavior, which manifests in a concrete and much-focused strategies and actions undertaken by consumers regarding waste management on the household level. It is focused on reducing solid waste, reusing the discarded products and recycling the incidentally created waste at the end of the product's life cycle. It can be applied at any segment of the life, regarding food, clothing, electronic products, etc. and all related services (food service, cleaning, etc.) or in any steps of the purchasing and consuming journey. In order to identify the components of the ZW lifestyle, we formulate the following research question:

*RQ1 - Which are the dimensions of the zero waste consumer lifestyle?*

## Determinants of the Zero waste consumer lifestyle

The determinants of the pro-environmental consumer behavior have been researched widely before. While the environmentally friendly behavior is a wider concept, encompassing several aspects of the reduction of pollution, the ZW is focused mainly on solid waste issues on household level regarding food, cosmetics, hygienic and household products and textile waste management. The majority of

the studies related to one or more aspects of the ZW investigate the recycling behavior (*Davies et al.,* 2002; *Khan et al.,* 2019), the other dimensions of the 3R model are rarely examined (*Mintz et al.,* 2019).

A lot of the environmentally conscious consumer studies are developed either on the Theory of Reasoned Action (TRA) (*Fishbein and Ajzen,* 1975) or on the Theory of Planned Behavior (TPB) by *Ajzen* (1991) (*Liobikienė et al.,* 2016; *Khan et al.,* 2019; *Li et al.,* 2019). According to these theories, the attitude towards the action and the social pressure are significant predictors of the intention to act. In addition to these two determinants, the TPB also includes the perceived behavioral control as an important predictor of the behavioral intention (*Ajzen,* 1991).

The *attitude towards the action* is in the center of several environmentally friendly behavior studies. The attitude reflects how favorable it is perceived by the consumer to perform the behavior (*Ajzen,* 1991). In several environmentally conscious behavior studies it has been found that a more positive attitude results in higher likelihood to be involved in a recycling action (*Davies et al.,* 2002; *Ma et al.,* 2017).

While the *subjective norm* is one of the major predictors of the intention to behave in a certain way, and indirectly of the actual behavior, the results of the studies are divergent. Subjective norm refers to consumers' perceived social pressure to whether to perform or not the behavior (*Li et al.,* 2019). While some authors found that subjective norm is an important predictor of the recycling behavior (*Khan et al.,* 2019) or on the purchasing green products (*Liobikienė et al.,* 2016), others have not identified its significant impact on the recycling behavior (*Davies et al.,* 2002; *Ma et al.,* 2017). In an international setting *Mintz et al.* (2019) found that social norms predict in Germany the waste minimization and recycling in every condition but in Israel social norm was significant in waste minimization and recycling only when it was easy to do it.

When it comes to the ZW consumer behavior, it is important to define who are the reference persons of the subjective norm: the non-ZW individuals or the ZW individuals, whereas the plastic-free lifestyle ideas are considered as niche behavior, yet (*Angus and Westbrook,* 2019). Therefore, in completion of the subjective norm, meaning following others, the *personal norm* could also be investigated as a possible predictor of the ZW lifestyle adoption. Personal norm is an important individual difference that reflects the sense of personal obligation towards self-standards (White et al., 2019). It has been found that a stronger personal norm increases the attention to the environmental friendliness of packaging during the buying decision process (*Thøgersen,* 1999).

Motivations of waste management issues is a quite complex system (*Moisander,* 2007). *Li et al.* (2019) mark motivation as one of the factors which influences the pro-environmental behavior. Exploring the motivations behind waste reduction is an essential step to designing effective solutions for the waste problem (*Graham-Rowe et al.,* 2014). The bipolar interpretation of the motivation in an environmentally conscious context is a common approach, implying individual vs. collective motivation (*Moisander,* 2007) or altruistic vs. egoistic motivation (*McDougle et al.,* 2011). *Altruistic motivations* are a significant predictor of engagement in recycling (*Izagirre-Olaizola et al.,* 2015). On the other hand, *egoistic motivation* has a negative impact on environmental concern (*Onel and Mukherjee,* 2017). Egoistic

motivation means self-concern, consumer calculating the personal cost and the benefit of the action.

Conscious consumers are influential, and they are more likely to spread information to others (*Angus and Westbrook,* 2019). *Social media* and online influencers could be seen as a booster of the ZW principles on the household level. *Bedard and Tolmie* (2018) found a positive relationship between levels of social media usage and levels of green purchase intentions. They also found that online interpersonal influence has an impact on green purchase intentions. Instagram accounts focusing on zero waste are important sources of inspiration and show that pro-environmental principles can be incorporated into our lifestyle. This motivates the social media consumers to follow the zero waste influencers' example (*Fuentes et al.,* 2019).

The research sought to examine the influence of the classical TRA variables on the ZW behavior extended with motivational factors and the impact of social media usage. The conceptual model behind the research design is represented in *Figure 1*. In the model, in the case of the Reuse dimension, the waste is enclosed in quotation marks because, according to the circular economy concept, the reusable waste is not waste anymore, but it is a valuable input for other activities. We formulate the following research question in order to investigate the antecedents of the ZW lifestyle:

*RQ2 - Which are the determinants of the zero waste lifestyle adoption on the consumer level?*

**Figure 1**

**Conceptual framework**
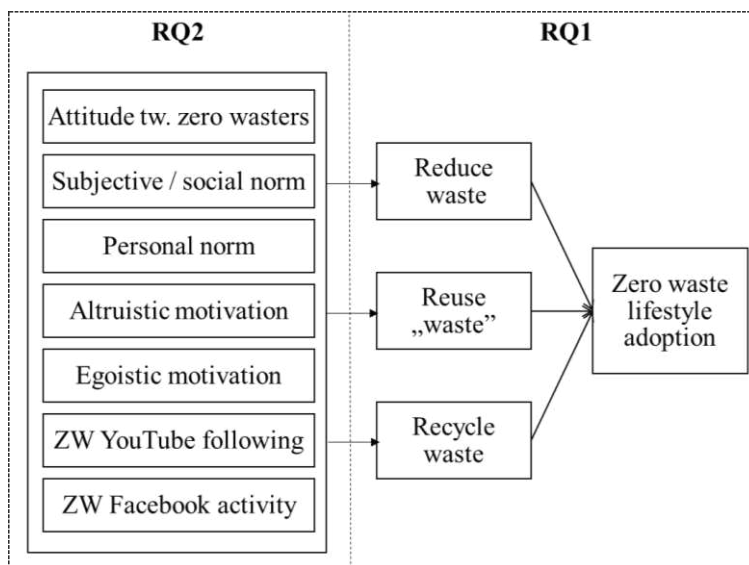


**MATERIALS AND METHODS**

The data collection was undertaken in June-August 2019 through an online questionnaire. The distribution channels of the questionnaire were four different

Facebook groups for zero wasters in Hungary. We used these channels because of the easiness to reach those who consume social media content in this topic and can express their opinion on this issue. On the other hand, these groups bring together a huge number of green consumers (one of the groups has 24 000 members, the others have between 900-3,000 members). In addition to this, social media is the main channel for zero wasters to share information about this lifestyle.

**Table 1**

**Sample's characteristics**

| Variable | Category | Frequency | Percent |
|---|---|---|---|
| **Gender** | female | 333 | 88% |
| | male | 43 | 11% |
| | no answ. | 2 | 1% |
| **Age** | 18-25 years | 148 | 39% |
| | 26-35 years | 128 | 34% |
| | 36-45 years | 70 | 19% |
| | above 46 years | 32 | 8% |
| **Location** | capital | 106 | 28% |
| | other city | 204 | 54% |
| | rural | 68 | 18% |
| **Education** | General school | 4 | 1% |
| | High school | 50 | 13% |
| | Undergraduate student | 101 | 27% |
| | University/college graduate | 223 | 59% |
| **Marital status** | Married with child | 133 | 35% |
| | Couple without child | 131 | 35% |
| | Single | 80 | 21% |
| | Married without child | 34 | 9% |
| | Total | 378 | 100% |

We received 378 responses, more than 88% of the respondents were female, 54% of them live in cities outside the capital, and 73% of them are aged between 18-35 years (*Table 1*). Women are overrepresented in this sample, but this shows that the zero waste thinking influences mostly the household choices which are mostly headed by women (*Straughan and Roberts,* 1999), and also they are more open to this lifestyle (*Laroche et al.,* 2001).

The adoption of the ZW lifestyle (ZW life adopt) variable was measured by a single-item Likert-scale, the Reducing, Reusing and Recycling dimensions were measured by 25 items Likert scales, derived from literature (*Straughan and Roberts,* 1999) and from ZW blog and video recommendations. The altruistic (ALTRmot) and egoistic (EGOmot) motivation also were measured by 8 item Likert scales. The

subjective norm (SN), the personal norms (PN) and the attitude towards zero wasters (ZWatt) were measured by two-item Likert scales each, while the social media activity including watching ZW YouTubers (ZW YT watching) and being active on ZW Facebook groups (ZW FB activity) were measured by 3-point scales on frequency (never - often).

The data were analyzed with IBM SPSS – 23 statistic program. For the multi-item construct such as the Reducing, Reusing and Recycling dimensions, respectively for the altruistic and egoistic motivation Exploratory Factor Analyses were performed using the Principal Component Analysis method, with Varimax rotation. Factors with eigenvalue above 1 were extracted. After that, for each factor created, the arithmetic mean of the factor items was calculated. The central result of the factor analysis is presented in the result section. Then a Multiple Linear Regression procedure was applied, first for each three ZW dimension, as dependent variables, then for the general ZW lifestyle adoption as dependent, and Reducing, Reusing and Recycling as independent variables.

## RESULTS AND DISCUSSION

According to the factor analysis, the original list of the 25 ZW behavior items was reduced to 16 items. The eliminated items were not representative for our sample, such as bamboo toothbrush or textile napkin usage, and they got very low general scores, or they did not correlate well with the other factor items. The exploratory factor analysis then returned three factors which explain 52.8% of the total variance. All the factor loadings were above the 0.5 value (*Table 2*), which is acceptable for this sample size (*Sajtos and Mitev,* 2007).

**Table 2**

**ZW lifestyle dimensions factors**

| Dimension | Item | Mean | Stnd. Dev. | Factor Loading* | Cronbach's alpha |
|---|---|---|---|---|---|
| Reduce | Own shopping bag | 4.53 | 0.87 | 0.712 | 0.856 |
| | Own textile bag for vegetables | 3.67 | 1.49 | 0.668 | |
| | Own water bottle | 4.29 | 1.10 | 0.655 | |
| | No straw | 4.06 | 1.31 | 0.639 | |
| | Avoid plastic | 3.95 | 1.06 | 0.631 | |
| | Textile bag patisseries | 3.71 | 1.34 | 0.619 | |
| | Seek package-free | 3.79 | 1.16 | 0.605 | |
| | No printing | 3.55 | 1.42 | 0.583 | |
| | No disposable tools | 3.89 | 1.08 | 0.547 | |
| | Own food box | 2.99 | 1.47 | 0.532 | |

Continued from the page before

| | | | | | |
|---|---|---|---|---|---|
| Reuse | Second-hand or sustainable clothes | 2.97 | 1.30 | 0.844 | 0.722 |
| | Second-hand products | 3.19 | 1.27 | 0.769 | |
| | Natural fiber clothes | 3.56 | 1.19 | 0.572 | |
| | Products from recycled material | 3.17 | 1.26 | 0.514 | |
| Recycle | Compost/Rot | 2.84 | 1.73 | 0.812 | 0.504 |
| | Collect selective garbage | 4.25 | 1.20 | 0.586 | |
| *Principal component, Varimax rotation, KMO=0.879 | | | | | |

The analyses returned a KMO 0.879>0.8 which is a very good fit (*Sajtos and Mitev,* 2007). The first factor was identified as the Reducing, the second as the Reusing and the third one as Recycling factor. Additional Cronbach's Alpha has been calculated in order to measure the internal reliability of the dimension scales. For the Reduce and Reuse dimension the $\alpha$>0.7, and can be considered (*Vaske et al.,* 2017). For the Recycle dimension, we have a Cronbach alpha of 0.504, which might be problematic. However, it is known that there is not a consensus on the acceptable threshold of the Cronbach's Alpha (*Taber,* 2018). So, we would accept this dimension, as the factor analysis returned this factor, and the correlation of the Composting item is the highest with the Selective garbage collecting item. Nevertheless, further research can be undertaken to refine the scale.

Overall, the usage of own shopping bag (4.53), the usage of own water bottle (4.29) and the selective garbage collection (4.25) are the more practiced waste management consumer activities. Refusing the plastic straws also has a high value (4.06). This does not mean that these are equally associated with the ZW lifestyle by the consumers. As the factor analysis revealed, these activities belong at least to two different dimensions of acting against waste production on the consumers' level.

After the factor analysis, a Multiple Linear Regression model was built in order to confirm the predictor value of the three identified factors (Reduce, Reuse and Recycle) on the general ZW lifestyle perception (RQ1). The three ZW dimensions explaining power is $R^2$=0.390, and returned that only the Reduce dimension is a significant predictor at 0.05 level ($\beta$=0.583, p<0.001). The Reuse dimension is close to being significant, but actually, it is not ($\beta$=0.080, p=0.088), while the Recycle dimension has no effect on the perceived ZW lifestyle ($\beta$=0.003, p=0.946) (*Table 3*).

In order to check multicollinearity, the Variance inflation factor (VIF) statistics have been applied. Also, the normality of the standardized residuals was checked. No multicollinearity and normality problems have been identified in the case of the regression models.

After the factors were revealed, for each ZW dimension a Multiple Linear Regression analysis was applied, using as independent variables the social norm vs. individualistic values, the altruistic vs. the egoistic motivation, the attitude towards the zero wasters and the level of activity on different social media platforms (RQ2).

**Table 3**

**Determinants of the ZW lifestyle adoption**

| Model | | B | Std. Error | Beta | t | Sig. |
|---|---|---|---|---|---|---|
| Dependent Variable: ZW life adopt Adjusted R²=0.390 | (Constant) | 1.147 | 0.188 | | 6.115 | 0.000 |
| | REDUCE | 0.663 | 0.057 | 0.583 | 11.630 | 0.000 |
| | REUSE | 0.081 | 0.047 | 0.080 | 1.710 | 0.088 |
| | RECYCLE | 0.002 | 0.036 | 0.003 | 0.067 | 0.946 |

In the case of Reducing dimension six out of seven covariates were found to be significant. Conforming to the mainstream's norm (SN) has a negative impact on reducing adoption ($\beta$=-0.154, p<0.001), while personal norm, meaning following the own principles and values, influences positively the reducing adoption ($\beta$=0.129, p=0.002). Altruistic motivation is the second strongest predictor of Reducing behavior ($\beta$=0.283, p<0.001), while the egoistic motivation does not have an impact on waste reduction initiatives. The attitude towards the zero wasters influences positively the waste reduction ($\beta$=0.130, p=0.003). Both YouTube watching frequency and Facebook group activity have a positive impact on reducing behavior. Moreover, the Facebook group activity is the strongest predictor of reducing behavior ($\beta$=0.330, p<0.001). These variables all together explain R²=41.5% of the variation in the dependent variable (*Table 4*).

**Table 4**

**Determinants of the ZW lifestyle dimensions**

| Model | | B | Std. Err. | Beta | t | Sig. |
|---|---|---|---|---|---|---|
| Dependent Variable: REDUCE Adjusted R²=0.404 | (Constant) | -0.217 | 0.394 | | -0.550 | 0.583 |
| | SN | -0.143 | 0.038 | -0.154 | -3.746 | 0.000 |
| | PN | 0.136 | 0.043 | 0.129 | 3.154 | 0.002 |
| | ALTRmot | 0.409 | 0.065 | 0.283 | 6.333 | 0.000 |
| | EGOmot | -0.004 | 0.040 | -0.005 | -0.110 | 0.912 |
| | ZWatt | 0.212 | 0.071 | 0.130 | 2.999 | 0.003 |
| | ZW YT watching | 0.147 | 0.049 | 0.125 | 2.975 | 0.003 |
| | ZW FB activity | 0.358 | 0.047 | 0.330 | 7.619 | 0.000 |
| Dependent Variable: REUSE Adjusted R²=0.164 | (Constant) | 0.988 | 0.528 | | 1.871 | 0.062 |
| | SN | -0.154 | 0.051 | -0.146 | -3.005 | 0.003 |
| | PN | 0.184 | 0.058 | 0.153 | 3.167 | 0.002 |
| | ALTRmot | 0.231 | 0.087 | 0.141 | 2.673 | 0.008 |
| | EGOmot | 0.022 | 0.053 | 0.022 | 0.418 | 0.676 |
| | ZWatt | -0.018 | 0.095 | -0.010 | -0.191 | 0.848 |
| | ZW YT watching | 0.181 | 0.066 | 0.136 | 2.740 | 0.006 |
| | ZW FB activity | 0.245 | 0.063 | 0.199 | 3.885 | 0.000 |

Continued on the next page

Continued from the page before

| Dependent | (Constant) | 0.832 | 0.702 | | 1.186 | 0.236 |
|---|---|---|---|---|---|---|
| Variable: | SN | -0.231 | 0.068 | -0.168 | -3.405 | 0.001 |
| RECYCLE | PN | 0.037 | 0.077 | 0.023 | 0.474 | 0.636 |
| Adjusted | ALTRmot | 0.399 | 0.115 | 0.186 | 3.469 | 0.001 |
| R²=0.143 | EGOmot | 0.080 | 0.071 | 0.059 | 1.130 | 0.259 |
| | ZWatt | 0.057 | 0.126 | 0.024 | 0.454 | 0.650 |
| | ZW YT watching | 0.032 | 0.088 | 0.018 | 0.360 | 0.719 |
| | ZW FB activity | 0.346 | 0.084 | 0.215 | 4.134 | 0.000 |

For the Reusing and Recycling behavior, the SN remained as a negative predictor for adopting the behavior (β=-0.146, p=0.003; β=-0.168, p=0.001), the ZW Facebook group activity the strongest positive predictor (β=0.199, p<0.001; β=0.215, p<0.001), and the ALTRmot also a strong positive covariate of these behaviors (β=0.141, p=0.008; β=0.186, p=0.001). In the case of Recycling behavior, no other variable has been found significant. In the case of Reusing behavior the PN guidance (β=0.153, p=0.002) and the ZW YT watching (β=0.136, p=0.006) have also a positive impact (*Table 4*).

## CONCLUSIONS

The aim of the study was to outline the behavioral dimensions of the zero waste lifestyle on the consumer level and to identify the predictors of this behavior. According to our results, reducing waste is considered by consumers as the main dimension of the ZW lifestyle. In a ZW system and a 3R hierarchy, reducing waste is also considered to be the main priority (*Lehmann*, 2011a). This result could be explained by the fact that it is the easiest to apply in everyday life if we take a closer look at the involved items. Having their own shopping bag, textile bags for patisseries or for vegetables, an own water bottle and food box, refusing plastic straw and other disposable eating paraphernalia could be managed independently from the others, on the household level of each consumer. These individually performable efforts are seen by the respondents as the main components of the ZW lifestyle. The acquisition of reused products and items require some infrastructure on the supply side to be adopted by consumers. Recycling activities also need specific infrastructure. Despite the fact that the selective garbage collecting gained high individual score, meaning that it is widely adopted behavior, it is not seen by the respondents as a ZW lifestyle component. Thus, ZW lifestyle is something more personal in the eyes of those who practice it, shaped by the individual effort of each.

Regarding the determinants of the ZW lifestyle, we have found some insightful results. The zero wasters are individualistic people, they follow their own principles, and they are nonconformists towards the mainstream's lifestyle. They are guided by altruistic motivations and have a positive attitude towards people who are living ZW. Contrarily to other studies that found a positive impact or no impact of

subjective norms on certain ZW activities, the present study found a significant negative impact of following the behavior of people around consumers. This means that the ZW adoption is sabotaged by the conformity to the generally adopted lifestyle. When the number of followers of the ZW principles reaches the critical mass, probably this barrier will disappear. There are already signs of embracing eco-friendly ideas not only by niche suppliers but also by conventional companies (*Angus and Westbrook,* 2019). In order to ZW go mainstream, social media platforms are important vehicles for ZW messages. Those consumers, who are more committed to ZW lifestyle, are more active in social media either as followers or as posters – a phenomenon already signalled by previous studies (*Fuenteset al.,* 2019).

As a limitation of our study it should be mentioned that the sample was not representative of the population as the women respondents were heavily overrepresented. However, in several environmentally conscious behavior studies it has been found that women with high education levels and from the urban areas are more willing to employ green behavior (*Straughan and Roberts,* 1999). Another limitation, and also a suggestion for further research, is to test the ZW dimension scale before analyzing other covariates. This scale creation and refining process offer valuable and unexplored opportunities for further research. Also, other covariates can be included in this study to outline better the ZW adoption behavior patterns. In several studies, the perceived behavioral control or convenience issues (*Liobikienė et al.,* 2016; *White et al.,* 2019) are found to be important predictors of the environmentally friendly behavior.

The ZW concept on the consumer level still seems to be a bottom-up movement, which, for example, is not associated with the already widely adopted recycling activities. In order to benefit from the social and economic opportunities offered by pro-environmental consumer movements, the investigation of the ZW consumer lifestyle remains a promising research topic.

## REFERENCES

Ajzen, I. (1991): The Theory of Planned Behavior. In: Organization Behavior and Human Decision Processes, 50. 2. 179-221 p.

Angus, A., Westbrook. G. (2019): Top 10 Global Consumer Trends 2019. [online] <URL: https://go.euromonitor.com/white-paper-EC-2019-Top-10-Global-Consumer-Trends.html>

Bedard, S.A.N., Tolmie, C.R. (2018): Millennials' Green Consumption Behaviour: Exploring the Role of Social Media. In: Corporate Social Responsibility and Environmental Management, 25. 6. 1388-1396 p. doi: 10.1002/csr.1654

Davies, J, Foxall, G. R., Pallister, J. (2002): An Integrated Model of Recycling. In: Marketing Theory, 2. 1. 29-113 p. doi: 10.1177/1470593102002001645

European Commission (2014): Towards a Circular Economy: A Zero Waste Programme for Europe. [online] <URL: https://ec.europa.eu/environment/circular-economy/pdf/circular-economy-communication.pdf>

European Parliament and Council (2008): Directive 2008/98/EC of the European Parliament And of the Council of 19 November 2008 on Waste and Repealing Certain Directives. In: Official Journal of the European Union. [online] <URL: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN>

Fishbein, M., Ajzen, I. (1975): Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Boston: Addison-Wesley, 578 p. ISBN-13: 978-0201020892

Fuentes, C., Enarsson, P., Kristoffersson, L. (2019): Unpacking package free shopping: Alternative retailing and the reinvention of the practice of shopping. In: Journal of Retailing and Consumer Services, 50. 258-265. p. doi: 10.1016/j.jretconser.2019.05.016

Graham-Rowe, E., Jessop, D.C., Sparks, P. (2014): Identifying motivations and barriers to minimising household food waste. In: Resources, Conservation and Recycling, 84. 15-23. p. doi: 10.1016/j.resconrec.2013.12.005

Hannon, J., Zaman, A. (2018): Exploring the Phenomenon of Zero Waste and Future Cities. In: Urban Science, 2. 3. 90. p. doi: 10.3390/urbansci2030090

Izagirre-Olaizola, J., Fernández-Sainz, A., Vicente-Molina, M.A. (2014): Internal determinants of recycling behaviour by university students: a cross-country comparative analysis. In: International Journal of Consumer Studies, 39. 1. 25-34. p. doi: 10.1111/ijcs.12147

Khan, F., Ahmed, W., Najmi, A. (2019): Understanding consumers' behavior intentions towards dealing with the plastic waste: Perspective of a developing country. In: Resources, Conservation and Recycling, 142. 49-58. p. doi: 10.1016/j.resconrec.2018.11.020

Kirchherr, J., Reike, D., Hekkert, M. (2017): Conceptualizing the circular economy: An analysis of 114 definitions. In: Resources, Conservation and Recycling, 127. 221-232. p. doi: 10.1016/j.resconrec.2017.09.005

Laroche, M., Bergeron, J., Barbaro-Forleo, G. (2001): Targeting consumers who are willing to pay more for environmentally friendly products. In: Journal of Consumer Marketing, 18. 6. 503-520. p. doi: 10.1108/eum0000000006155

Lehmann, S. (2011a): Optimizing Urban Material Flows and Waste Streams in Urban Development through Principles of Zero Waste and Sustainable Consumption. In: Sustainability, 3. 1. 155-83. p. doi: 10.3390/su3010155

Lehmann, S. (2011b.): Resource Recovery and Materials Flow in the City: Zero Waste and Sustainable Consumption as Paradigms in Urban Development. In: Sustainable Developement Law & Policy, 11. 1. 28-68 p.

Li, D., Zhao, L., Ma, S., Shao, S., Zhang, L. (2019): What influences an individual's pro-environmental behavior? A literature review. In: Resources, Conservation and Recycling, 146. 28-34. p. doi: 10.1016/j.resconrec.2019.03.024

Liobikienė, G., Mandravickaitė, J., Bernatonienė, J. (2016): Theory of planned behavior approach to understand the green purchasing behavior in the EU: A cross-cultural study. In: Ecological Economics, 125. 38-46. p. doi: 10.1016/j.ecolecon.2016.02.008

Ma, J., Hipel, K.W., Hanson, M.L., Cai, X., Liu, Y. (2018): An analysis of influencing factors on municipal solid waste source-separated collection behavior in Guilin, China by Using the Theory of Planned Behavior. In: Sustainable Cities and Society, 37. 336-343. p. doi: 10.1016/j.scs.2017.11.037

McDougle, L.M., Greenspan, I., Handy, F. (2011): Generation Green: Understanding the Motivations and Mechanisms Influencing Young Adults' Environmental Volunteering. In: International Journal of Nonprofit and Voluntary Sector Marketing, 341. 325-341 p. doi: 10.1002/nvsm.431

Minelgaitė, A., Liobikienė, G. (2019): Waste problem in European Union and its influence on waste management behaviours. In: Science of The Total Environment, 667. 86-93. p. doi: 10.1016/j.scitotenv.2019.02.313

Kaplan Mintz, K., Henn, L., Park, J., Kurman, J. (2019): What predicts household waste management behaviors? Culture and type of behavior as moderators. In: Resources, Conservation and Recycling, 145. 11-18. p. doi: 10.1016/j.resconrec.2019.01.045

Moisander, J., (2007): Motivational complexity of green consumerism. International Journal of Consumer Studies, 31. 4. 404-409. p. doi: 10.1111/j.1470-6431.2007.00586.x

Onel, N., Mukherjee, A. (2017): Why do consumers recycle? A holistic perspective encompassing moral considerations, affective responses, and self-interest motives. In: Psychology & Marketing, 34. 10. 956-971. p. doi: 10.1002/mar.21035

Pandey, R.U., Surjan, A., Kapshe, M. (2018): Exploring linkages between sustainable consumption and prevailing green practices in reuse and recycling of household waste: Case of Bhopal city in India. In: Journal of Cleaner Production, 173. 49-59. p. doi: 10.1016/j.jclepro.2017.03.227

Pietzsch, N., Ribeiro, J.L.D., de Medeiros, J.F. (2017): Benefits, challenges and critical factors of success for Zero Waste: A systematic literature review. In: Waste Management, 67. 324-353. p. doi: 10.1016/j.wasman.2017.05.004

Planet Aid (2016): What Is the Zero-Waste Movement? [online] <URL https://www.planetaid.org/blog/what-is-the-zero-waste-movement>

Prendeville, S., Sanders, C., Sherry, J., Costa, F. (2014): Circular Economy: Is it enough?. EcoDesign Centre: Wales, UK. [online] <URL: https://pdfs.semanticscholar.org/943c/814c3300b69a06bd411d2704ec3baa3a0892.pdf>

Roberts, J.A., Bacon, D.R. (1997): Exploring the Subtle Relationships between Environmental Concern and Ecologically Conscious Consumer Behavior. In: Journal of Business Research, 40. 1. 79-89. p. doi: 10.1016/s0148-2963(96)00280-9

Sajtos, L., Mitev, A. (2007): SPSS kutatási és adatelemzési kézikönyv (in Hung.). Budapest: Alinea Kiadó. 402. p. ISBN: 978-963-9659-08-7

Straughan, R.D., Roberts, J.A. (1999): Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. In: Journal of Consumer Marketing, 16. 6. 558-575. p. doi: 10.1108/07363769910297506

Taber, K.S. (2017): The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. In: Research in Science Education, 48. 6. 1273-1296. p. doi: 10.1007/s11165-016-9602-2

Thøgersen, J. (1999): The Ethical Consumer. Moral Norms and Packaging Choice. In: Journal of Consumer Policy, 22. 4. 439-460. p. doi: 10.1023/a:1006225711603

Vaske, J.J., Beaman, J., Sponarski, C.C. (2017): Rethinking Internal Consistency in Cronbach's Alpha. In: Leisure Sciences, 39. 163-173 p. doi: 10.1080/01490400.2015.1127189

Weber, S., Lynes, J., Young, S. B. (2016): Fashion interest as a driver for consumer textile waste management: reuse, recycle or disposal. In: International Journal of Consumer Studies, 41. 2. 207-215. p. doi: 10.1111/ijcs.12328

Webster, Jr., F.E. (1975): Determining the Characteristics of the Socially Conscious Consumer. Journal of Consumer Research, 2. 3. 188-196. p. doi: 10.1086/ 208631

White, K., Habib, R., Hardisty, D.J. (2019): How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. In: Journal of Marketing, 83. 3. 22-49.p. doi: 10.1177/0022242919825649

Zaman, A.U. (2015): A comprehensive review of the development of zero waste management: lessons learned and guidelines. In: Journal of Cleaner Production, 91. 12-25. p. doi: 10.1016/j.jclepro.2014.12.013

Zaman, A.U. (2016): A comprehensive study of the environmental and economic benefits of resource recovery from global waste management systems. In: Journal of Cleaner Production, 124. 41-50. p. doi: 10.1016/j.jclepro.2016.02.086

Zero Waste Europe (2019): The Zero Waste Lifestyle. [online] <URL: https://zerowasteeurope.eu/zero-waste-in-lifestyle/>

Zimmer, M.R., Stafford, T.F., Stafford, M.R. (1994): Green issues: Dimensions of environmental concern. In: Journal of Business Research, 30. 1. 63-74. p. doi: 10.1016/0148-2963(94)90069-8

ZWIA (Zero Waste International Alliance)(2018): Zero Waste Definition. [online] <URL: http://zwia.org/zero-waste-definition/>

Correspondent author:

**Zsuzsa SĂPLĂCAN**
Babeş-Bolyai University
Faculty of Economics and Business Administration
RO-400084, Cluj-Napoca, Str. Mihail Kogălniceanu, nr. 1
e-mail: zsuzsa.pal@econ.ubbcluj.ro

# Marketing in German Veterinary Practices Are Rural Veterinarians Keep Pace with Time?

## Erik Diez[1,2], László Ózsvári[3]

[1]Tierärztliches Kleintierzentrum Wahlstedt GmbH, D-23812 Wahlstedt, Wiesenweg 2-8
[2]Kaposvár University, Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba S. utca 40.
[3]University of Veterinary Medicine, Department of Veterinary Forensics and Economics,
H-1078 Budapest, István utca. 2.

### ABSTRACT

*The veterinary profession in Germany changed significantly in the past 20 years, and nowadays it can be categorized according to the specializations with a high emphasis on the target species (e.g. dogs, cats). Furthermore, the veterinary practice owners and managers are facing challenges of the fast-growing vet market, as well as the digitalization and its new marketing instruments and tools. The aim of our study was to survey if the German rural mixed animal veterinarians were keeping pace with time and investing in the marketing of their practices. A survey amongst pet owners and mixed animal veterinary practices was conducted regarding the marketing activities in the veterinary practices by using questionnaires in the district of Cloppenburg, Lower-Saxony, Germany, between February and June 2018. The questionnaires were spread through a Facebook group for pet owners and via email to the vet practitioners and we received 60 answers from pet owners and 21 answers from vet practices. The results show that the German mixed animal veterinary practices do not only lack marketing knowledge but the marketing strategies and tools as well. The surveyed veterinary practices neglected to improve their marketing communication activities, therefore, failed to analyze their customers' needs. They usually did not invest in vet marketing services that would otherwise generate new customers or keep the existing clients. It can be concluded that the marketing trainings for the veterinary practice managers and owners working in the German rural areas would be a major need.*
Keywords: veterinary medicine, marketing, business, management

## INTRODUCTION

The veterinary profession in Germany changed significantly in the past 20 years, and nowadays it can be categorized according to the specializations with a high emphasis on the target species (e.g. dogs, cats). Furthermore, the veterinary practice owners and managers are facing challenges of the fast-growing vet market, as well as, the digitalization and its new marketing instruments and tools (*Wessels et al.,* 2014). The core focus of the veterinary profession still relies on delivering good and quality care for animals. But, as a business, the veterinary practices must also focus on the affordability and economic feasibility of their services. The problem is that the undergraduate veterinary education in many countries still lacks the teaching of economics with all its facades, e.g. controlling, organizational behaviour, marketing

and human resources management (*Cake et al.,* 2016). Furthermore, the postgraduate education of veterinary graduates rarely focuses on developing business, communication and marketing skills, it is rather solely based on the development and specialization in clinical and medical competences (*Bachynsky et al.,* 2013; *Blättner and Matzner,* 2010).

Additionally, in the last decade the way the vets communicate with their clients changed drastically from a monologue, where the vet is giving orders, to the vet in dialogue with the client (*Blättner and Matzner*, 2010; *Brown,* 2018). The client is not exclusively relying on the education or position of a veterinarian any more. Clients nowadays appear to know the diagnosis even before entering the practice and like to be more closely involved in the decision-making process of the treatment of their animals. Through research on the web, the client relies on non-professional sources, blog articles or solely on google, to find a diagnosis for the pets' problem (*Wessels et al.,* 2014). Furthermore, via new ways of communication, e.g. whatsapp, facebook, youtube, etc., any business has "new media" channels to communicate with their clients or potential clients (*Molhoek and Endenburg,* 2009; *Wessels et al.,* 2014).

Despite the ways of communication and marketing tools have changed, the basics of marketing have not. As already pointed out by *Clarke and Chapman* (2012), marketing is not only about the advertisement, the promotion and the special offers, it is also about the clients, the customers, as well as, the staff in the veterinary practice. The customer relationship has to be balanced out with the knowledge of the staff and the veterinary surgeons. A veterinary surgeon can be high class but if he fails to communicate efficiently with the customer, the animal owner could perceive the value of the vet's services in a different way than perceived by the veterinary professional (*Brown,* 2018; *Clarke and Chapman,* 2012). Corporate companies know about the importance of marketing and employ specialists in marketing to analyse the market trends and to develop new services and products to promote their sales. Veterinary practices generally do not employ specialists in marketing nor they actively engage in it. However, it is essential to know what the customer wants or needs and to adapt to the changes in the customers requirements. It is the key to the success of the veterinary practice (*Blättner and Matzner,* 2010; *Thiele,* 2009).

Although, some studies show that a large percentage of veterinarians across Europe use sufficient marketing and market analysis tools for their practice, the aim of our study was to survey if the German rural mixed animal veterinarians followed this trend or not.

## MATERIAL AND METHODS

A survey amongst pet owners and mixed animal veterinary practices was conducted regarding the marketing activities and tools in veterinary practices by using questionnaires in the district of Cloppenburg, Lower-Saxony, Germany, between February and June 2018. A questionnaire consisting of 17 questions was made for pet owners by using Microsoft Forms and its link was spread via the facebook group "Cloppenbürger", which currently has almost 14,000 members. The questions aimed at the pet owners' satisfaction with their veterinarians, their marketing communication

and the services that they would like to get offered by them. This questionnaire was answered by 60 clients. A second questionnaire consisting of 12 questions was made for veterinary practice owners/managers by using Microsoft Forms and its link was sent to 16 mixed animal veterinary practices working in the district of Cloppenburg. 21 answers were received. This questionnaire mainly focused on the marketing activities, tools that are used in the rural mixed animal vet practices. Both questionnaires were based on previous veterinary marketing surveys that were conducted in Hungary, Cyprus and Israel (*Levy,* 2014; *Michaelidou,* 2012; *Ózsvári,* 2007, 2014).

## RESULTS AND DISCUSSION

**Pet owners' questionnaire**
Out of the 60 surveyed pet owners 78.3% had dogs, 23.3% cats, 10% horses, 6% birds, 6% pigs and 5% cattle (every respondent owned at least one pet animal, but could have more animals). Half of the participants changed their veterinarian at least once in their lifetime and 25% of these cases were due to communication difficulties and/or not effective consultations. 95% of the pet owners would choose their veterinarian on the basis of competence (95%) and only 21% according to the price level or location of the vet clinic.

In Germany it is forbidden to advertise the vet clinics or practices actively, so the best way of promotion is still word-of-mouth, since most of the respondents found their veterinarian through this way (68.3%). Only 8.3% of the pet owners found their vet through social media or the internet or when they passed by in front of the clinic. Concerning the available parking facilities, almost half of the participants (48%) were neutral towards the sufficient number of parking lots, whereas 23.3% thought that it was very important and 18.3% it was not important at all. Only 5% of the pet owners care about the sufficient public transport to the practice. Albeit, 80% of their veterinarians had a webpage according to the surveyed pet owners, only 13.3% of the clients checked the content for news and received any information from it.

70% of the surveyed customers usually fix an appointment before seeing their vet and 70% of them make it through a phone call. 67% of the owners did not receive any vaccination reminders, 25% of them were reminded by phone calls, 7% had reminder emails and 1% of the vets used SMS to remind their clients of vaccinations. Only 26.6% of the clients were given workshops or lectures by their vets concerning topics like nutrition, breeding or tips for raising pets. The pet owners were asked whether they would attend such an informational event for a small charge and 46.6% would do so. Only 5% of the pet owners buy petfood regurarly at their veterinarian. Finally, participants were asked which extra services they would like to get offered by their veterinarian and 33.3% of them would like to have physiotherapy and nutritional consultations, 31.6% seminars on their pets' health and 16.6% dog trainings.

**Veterinary practice questionnaire**
62% of the patient turnover in the surveyed mixed animal vet practices were dogs and cats, 19% horses, 15% farm animals and 4% others. The number of veterinarians working in the surveyed practice is shown in *Figure 1*.

**Figure 1**

**The number of veterinarians working in the surveyed practices (n=21)**
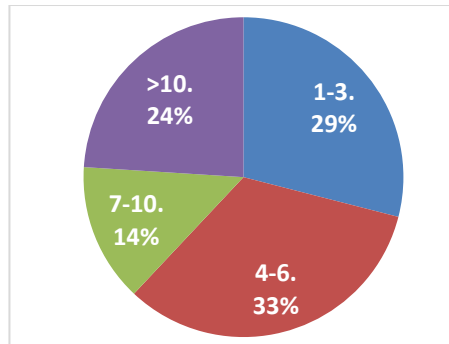


43% of the practice owners employed 1-3 vet technicians, 29% 4-6, 10% 7-10 and 19% had more than ten veterinary technicians being employed. 86% of the surveyed vet practices work together with external specialists, mainly on nutrition (*Figure 2*).

**Figure 2**

**The type of cases when the surveyed vet practices work with external specialists (n=21)**
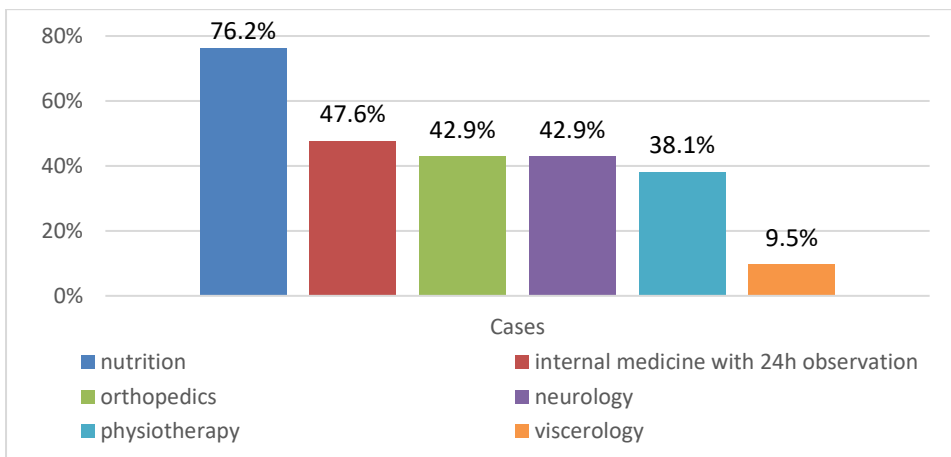


Concerning the promoting activities, 85.7% of the participating vets had a homepage and 14.3% updated the website weekly, whereas 52.4% have never renewed or updated it. 57% of the webpage updates were done by one employee or the owner of the practice, but 23.8% of them outsourced this duty to a professional webdesigner or IT specialist. *Figure 3* shows the social media usage of the surveyed practices, and only 19% of the respondents used Facebook and 76% did not use social media at all.

**Figure 3**

**The use of social media in the surveyed vet practices (n=21)**
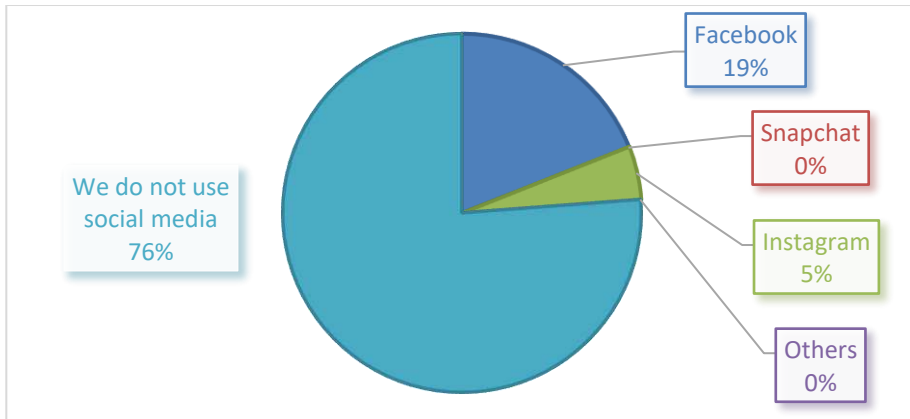


More than half of the responding vet practices (52.4%) used newsletters or vaccination reminders for their clients, whereas the rest did not use any of the reminder services. The most preferred way of the vet practices to communicate with their clients was the phone call (53.8%), the second one the email (30.8%), but 7.7% of them still used postal letters. Most of the surveyed vet practices offered for sale pharmaceutical products, pet food and herd health management services (*Figure 4*).

**Figure 4**

**Special and/or additional services being provided
by the surveyed vet practices (n=21)**
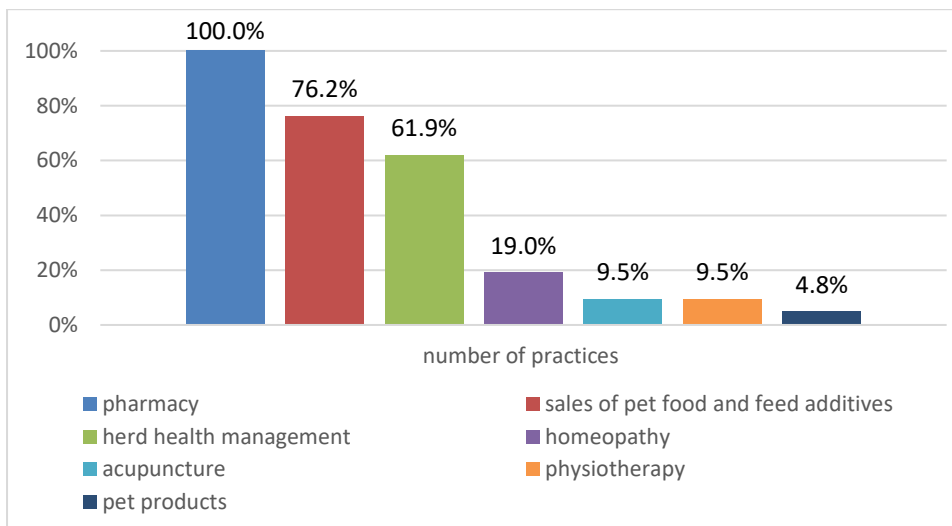
## CONCLUSIONS

This study introduces the idea that marketing in the veterinary practice differs between the urban and rural areas in Germany, which is very similar to the Hungarian situation (*Ózsvári,* 2007, 2014). The results show that most of the mixed animal veterinary practices in the rural areas do lack marketing knowledge and strategies. The data show that marketing communication tools in the rural vet practices are used inadequatly or unsufficiently, which further yields the question whether the participants would actively engage and improve their marketing activities in the future. Several rural German veterinary practices have neglected their marketing communication activities so far. The study identified differences between the clients' needs and the services offered by the veterinarians. Therefore, it can be concluded that the surveyed rural practices fail to survey and analyze the market and customer needs.

The results showed a lack of investments in marketing services that could generate new customers or keep the existing clients; only 8.3% of the clients had information about their potential veterinarian through social media, whereas over 68% through word-of-mouth, which is still the most effective way of promotion in rural areas. 83.3% of the surveyed vets did not use thes social media at all, which is an unexpectedly high rate even compared to findings of surveys made in Cyprus and Hungary (*Michaelidou,* 2012; *Ózsvári,* 2014). Furthermore, most of the rural vet practices had a webpage, but more than half of them did not update them regurarly. This suggests that there was investment into the internet activity, but most of the mixed animal practices neglect to use it and communicate through it with their current and/or potential clients, although it would be important for the new generation of clients. The data highlights the need for improvement in the marketing communication, promotion activities in the rural German veterinary practices, especially when they try to attract the younger generation of clients.

The findings show that almost all of the surveyed veterinarians work with external specialists on different fields, such as orthopedics, neurology, nutrition and physiotherapy. Furthermore, most of them offered additional or special services, mostly pharmacy, herd screening, sales of feed additives, pet food and pet shop products, but there is a lack of physiotherapy, acupuncture, homeopathy and nutritional consultations, which would be more requested by the pet owners according the survey results. These outcomes are parallel with the Cypriotic and Hungarian vet practice features (*Michaelidou,* 2012; *Ózsvári,* 2014).

To sum up, it can be concluded that the marketing trainings for the veterinary practice managers and owners working in the German rural areas, as well as the improvement of undergraduate veterinary education on marketing and management, would be a major need.

## REFERENCES

Bachynsky, E.A., Dale, V.H.M., Kinnison, T., Gazzard, J., Baillie, S.(2013): A survey of the opinions of recent veterinary graduates and employers regarding early career business skills. In: Veterinary Record, 172. 23. 604. p. doi: 10.1136/vr.101376

Blättner, A., Matzner, W. (2010): Die gesunde Tierarztpraxis: Marketing und Kommunikation. Stuttgart: Enke Verlag, 71. p. ISBN 10: 3830410948

Brown, B. (2018): The Dimensions of Pet-Owner Loyalty and the Relationship with Communication, Trust, Commitment and Perceived Value. In: Veterinary Sciences, 5. 4. 95. p. doi: 10.3390/vetsci5040095

Cake, M.A., Bell, M.A., Williams, J.C., Brown, F.J.L., Dozier, M., Rhind, S.M., Baillie, S. (2016): Which professional (non-technical) competencies are most important to the success of graduate veterinarians? A Best Evidence Medical Education (BEME) systematic review: BEME Guide No. 38. In: Medical Teacher, 38. 6. 550-563. p. doi: 10.3109/0142159x.2016.1173662

Clarke, C., Chapman, M. (2012): BSAVA Manual of Small Animal Practice Management and Development, Quedgeley, Gloucester UK: British Small Animal Veterinary Association, 535. 544. p ISBN 978-1-905319-40-4

Levy, M.C. (2014): Business Plan for a Small Animal Practice in Israel. MSc. diploma work. Szent István University, Faculty of Veterinary Sciences, Budapest. 62. p.

Michaelidou, C. (2012): Business Plan for a Small Animal Practice in Cyprus. MSc. diploma work. Szent István University, Faculty of Veterinary Sciences, Budapest. 45. p.

Molhoek, A.W., Endenburg, N. (2009). The effectiveness of marketing concepts in veterinary practices. In: Tijdschrift voor diergeneeskunde. 134. 1. 4-10. p.

Ózsvári, L. (2007): Main characteristics and expectable tendencies of the management, income and number of patients in Hungarian small animal and mixed practices. MBA thesis, Webster University, Szent István University, Gödöllő. 60. p.

Ózsvári L. (2014): Practice management in Hungarian small animal veterinary clinics. 347-358. p. In: Illés B.CS., Dunay A., Slocinska, A. (eds.): New trends in Management in the 21st Century. Monograph. Czestochowa, Poland: University of Technology, Czestochowa, 413. p.

Thiele, S. (2009): Die gesunde Tierarztpraxis: Kundenorientierung und Positionierungsstrategien. Stuttgart, Germany: Enke Verlag, 136. p. ISBN-10: 3830410859

Wessels, R., Lam, T., Jansen, J. (2014): Communication in Practice – The Vet's Manual on Clienthusiasm. Nijmegen, NL: Communication In Practice, 230. p. ISBN: 978-90-822321-0-3

Corresponding author:

**Eric DIEZ**
Kaposvár University
Doctoral School in Management and Organizational Sciences
H-7400 Kaposvár Guba S. u. 40.
e-mail: dr.erikdiez@gmail.com

# THE ANALYSIS OF THE CROSS-BORDER CORPORATE PROFIT'S TAXATION

## Rita KOROSECZNÉ PAVLIN, Diána KOPONICSNÉ GYÖRKE

Kaposvár University, Faculty of Economic Science, H-7400 Kaposvár, Guba Sándor u. 40.

## ABSTRACT

*Ensuring the same competition conditions for the companies in EU requires tax harmonization between Member States. In this paper, we review some elements of the harmonization efforts. We will discuss the OECD guidelines on direct taxation and the transfer price regulation as a way to regulate corporate tax optimization behaviour. Based on the Effective Average Tax Rate we introduce the differences in the taxation of profits between Member States. The Common Consolidated Corporate Tax Base is one of the key elements in the harmonization of cross-border corporate profit taxation, so our study has a special focus on the proposal. The undisputed advantage of the CCCTB would be the simplification of the taxation of transactions between Member States. However, it also raises the question of how it limits the ability of each Member State to attract capital and to what extent can assign the profit tax to the given country in proportion to the operation of a company and with this how to realize that the base of the corporate tax focuses on the place of activity.*
Keywords: tax competition, tax harmonization, Common Consolidated Corporate Tax Base

## TAXATION OF CROSS BORDER ACTIVITIES

National tax systems evolved at the beginning of the 20th century with the rules of economies that are more closed than today. At that time, companies were still typically based in the country where they had official seat and individuals also earned income in their own country, so the application of the 'home state' principle in taxation did not create conflicts between countries. National tax systems did not have to take into account international economic processes, and therefore taxation could only serve domestic governmental purposes. However, as a result of globalization processes, not only trade has become international, but also the transfer and outsourcing of tasks between different countries have become common. Globalization has made the capital market more mobile, which has also entailed corporate profit tax mobility. And the transfer of tax bases between countries gives some countries the opportunity to use their tax policies to create a more favourable tax environment than others to attract capital (*Sivák*, 2001).

The country's tax differentials play an increasingly important role in determining where companies invest, as some countries offer investors favourable tax conditions in order to create jobs and generate higher budget revenues.

## TAX COMPETITION

The overall impact of globalization on tax systems has both positive and negative elements. Taxing states are adversely affected by the fact that the free movement of capital offers a new opportunity to minimize the tax payable. At the same time, tax competition encourages countries to reduce taxes on mobile factors of production. Governments remain responsible for carrying out the public tasks of each country, and it is therefore in their fundamental interest to protect the tax base, which is the main revenue source of the budget. In the competition certain companies may enjoy the tax advantages of tax havens (even with zero tax payments) while using domestic public services.

To compensate for the fiscal deficit caused by the decline in tax revenues, public burdens on less mobile factors of production, in particular consumption taxes, will increase, which could lead to distortions in the tax structure. Indeed, in a system which does not favour the formation of internal capital, external resources are likely to be obtained only at the expense of the domestic taxpayer (*Balogh*, 2004).

The OECD plays a leading role in international action against harmful tax competition. According to its 1998 report (*OECD*, 1998), tax competition can be harmful if it distorts financial and investment processes, thereby undermining the fairness of tax structures and impairing tax morale.

The problem is also on the agenda of the European Union. At the end of 1997, the Council of the European Union adopted a Code of Conduct for Business Taxation (*Council of the European Union*, 1998.). According to this paper member states can undertake in their future tax regulations refraining from creating solutions that would allow harmful tax competition and, on the other hand withdrawing their previous rules that provided incentives influencing business establishment in the Union.

The EU Code and the mentioned OECD Guidelines share the same main statements, the main difference between them is that while the Code covers business activities, the general principles of the OECD Directives cover a broader scope. In addition, the OECD typically considers tax havens (close to zero tax measures) harmful, while in the European Union, low (harmful) levels of taxation can be identified relative to an average. In corporate taxation, exceptional preferences are considered unauthorized tools. One way of stopping tax competition may be to properly harmonize national tax systems, which face resistance in several cases.

## TAX HARMONIZATION

National tax policy is an essential tool for the economic policies of the member states, but ensuring the same market conditions in the competition for companies in the European Union requires tax harmonization between member states. Therefore, if necessary, the European Union influences the taxation policy of the member states by tools of tax harmonization, while, if not necessary, it gives room for taxation arising from the sovereignty of the states. The aim of European tax law is to eliminate tax conflicts arising from international relations and differences between national tax

systems, in favour of completion and functioning of the single market. That is why the European Union is developing common guidelines concerning the member states' tax systems to avoid tax avoidance and double taxation. Tax harmonization in the area of indirect taxation can be said to be adequate, but slow in the area of direct taxation. The most important obstacle is the rule of the requirement of unanimity in the decision making about taxation. The Council in a consultation procedure acting unanimously on a proposal from the Commission shall adopt directives relating to the harmonization of direct and indirect taxation. It is very difficult to reach unanimity on the level of the 28 member states, especially in the case of member states with different levels of economic development. However, the ad hoc decision-making and interpretative activities of the European Court of Justice and the non-legislative bodies of the Union in the form of resolutions in the process of tax harmonization provide some solution. As a result, more and more regulations are adopted, which are non-binding, do not constitute a source of law, have no sanctions, but are still accepted and followed up by member states on a voluntary basis.

Article 2 of the Treaty of Rome contains the requirements which have required harmonization of the laws of the member states of the European Economic Community and sets as objective:

- the establishment of the internal market where the free movement of goods, capital, persons and services is realized
- the establishment of the same competition conditions and the harmonization of national law,
- the establishment of the economic and monetary union.

Tax rules which are obstacles to the free movement of goods and services, income and capital across borders have played an important role among national legislation which inhibit effective operation of the common market.

The objective of tax harmonization is to resolve international tax conflicts arising from the differences and clashes between national tax systems and to harmonize national rules which impede the functioning of the internal market. However, it is not intended to create a federal tax system above the states.

In the process of approximation of European tax laws, member states are facing fierce resistance, as tax law is an element of national fiscal policy sovereignty and such an element of fiscal stability that member states are reluctant to give up.

**Directives on direct taxation**

Directives are the main source of positive harmonization. In the field of corporate taxation, the directive on mergers (*Council*, 1990a), on parent companies and their subsidiaries (*Council*, 1990b), on arbitration and on taxation applicable to interest and royalty payments (*Council of the European Union*, 2003) should be highlighted.

In business life the merger or division of businesses is a day-to-day transaction. Most transactions are merely legal changes and the new company will continue its activity as a legal successor. For accounting point of view, it is usually the case that a company with assets with a market value above book value is created. Based on this, the tax rules would prescribe profit tax. In contrast, in many cases, the business would continue its operation and therefore there will not be real capital outflow, so it does

not seem fair to tax owners on unrealized assets. National rules, in most cases, follow the principle of continuity that transformation does not generate profit tax payment in itself. Interpretation of the situation between member states is very important because, in connection with the common market, there are several cases where transformations (mergers) happen between undertakings in different member states that is why we call the associated directive a merger directive. Its essence is to ensure that, even in the case of mergers of companies from different member states, a tax on profits based on continuity on national level is deferred.

In addition to mergers between companies in different member states, it is often happens that a parent company has a subsidiary in another member state. Obviously, the parent company expects a dividend from the operation of the subsidiary, which it obtains each year. If the parent – subsidiary dividend is paid on national level, the national legislation exempts dividend income from withholding tax. Accordingly, it was also necessary to provide the possibility of tax exemptions for the payment of parent – subsidiary dividends between member states. The purpose of the parent companies and subsidiaries directive is therefore to exempt profit distributions from profit tax and thus to avoid the double taxation of parent companies. According to the directive, a 10 percent ownership stake can already be equated with parent company status.

The directive on the taxation of interest and royalties between associated companies should be applied by Member States since 2005. This means that you must exempt interest and royalty payments from withholding tax between companies with direct or direct shareholdings of at least 25% in different member states.

## TRANSFER PRICING AND TAX OPTIMIZATION

### EU regulation on clearing prices

International tax law contains a detailed definition of associated companies, whereby companies within a group of companies are considered to be associated if they are able to influence each other's decisions with respect to their ownership structure or function. Due to their related nature, they do not necessarily use the market price in their transactions with each other but, for tax purposes, the optimum price according to tax law. The tax laws of individual countries want to prevent this so-called tax optimization and therefore require associated companies to use so-called usual market price in their transactions with each other namely, the prices that would be used between independent parties in a similar transaction.

Each Member State requires the use of market prices between associated companies and the proof with appropriate documentation, and therefore it may be a significant additional administrative burden for a multinational company to document the applied market prices to the tax authorities of each country. However, the practices of the tax authorities of different member states may differ, so it may happen that one member state accepts the same price while another one does not. As a result, double taxation may occur, so the European Union has set up a Joint Transfer Pricing Training Forum (JTPF), which has been operating informally since 2002 and in institutional form since 2006 to address issues related to transfer pricing.

Transfer pricing rules require a great deal of group-level information that is not available at individual subsidiaries. Therefore, for subsidiaries, the required information obligation can only be fulfilled through close cooperation with the group and represents a significant administrative burden for multinational enterprises. As a result of the transfer pricing regulation, the proper definition of profit tax base by country has been realized, after that companies' tax burdens are based on the differences in tax reliefs and rates in the member states. Therefore, in the following, we examine how the actual tax burden in Hungary developed between 2008 and 2018.

## TAXATION OF CORPORATE PROFITS IN THE EU

Profit tax revenues vary across EU member states, due to differences in tax base definition and tax rates. *Figure 1* below shows that in the most (mainly Central and Eastern European) member states the profit tax revenue as a share of the GDP is much below the EU average.

**Figure 1**

### Corporate profit tax revenue as a proportion of GDP (2018)
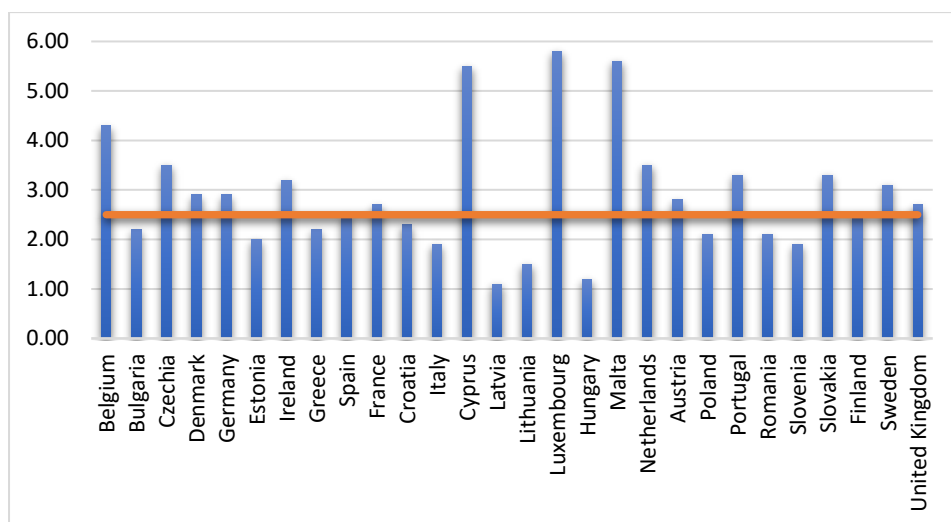


Source: Based on *Eurostat* (2019)

In Europe, the weighted average corporate tax rate has been steadily declining, while in the 1980s it was 38.8 percent, today the corporate tax burden on corporate profits has fallen to an average of 22.5 percent (*Asen*, 2019). Organizations operating in Hungary have had to pay an even lower 9% corporate profit tax since 2017, which is the lowest value in the EU member states (*Figure 2*).

The main reason for the general corporate tax rate reduction trend is the strengthening of the states' ability to compete and attract capital. Thanks to the development of technology and as an effect of globalization investors has become

much more flexible, so the composition of their corporate tax base and tax reliefs and the level of tax rates in a given country are a key consideration when investing.

**Figure 2**

**The corporate tax rates in Europe 2018**



Source: https://files.taxfoundation.org/20190206165815/FINAL.png
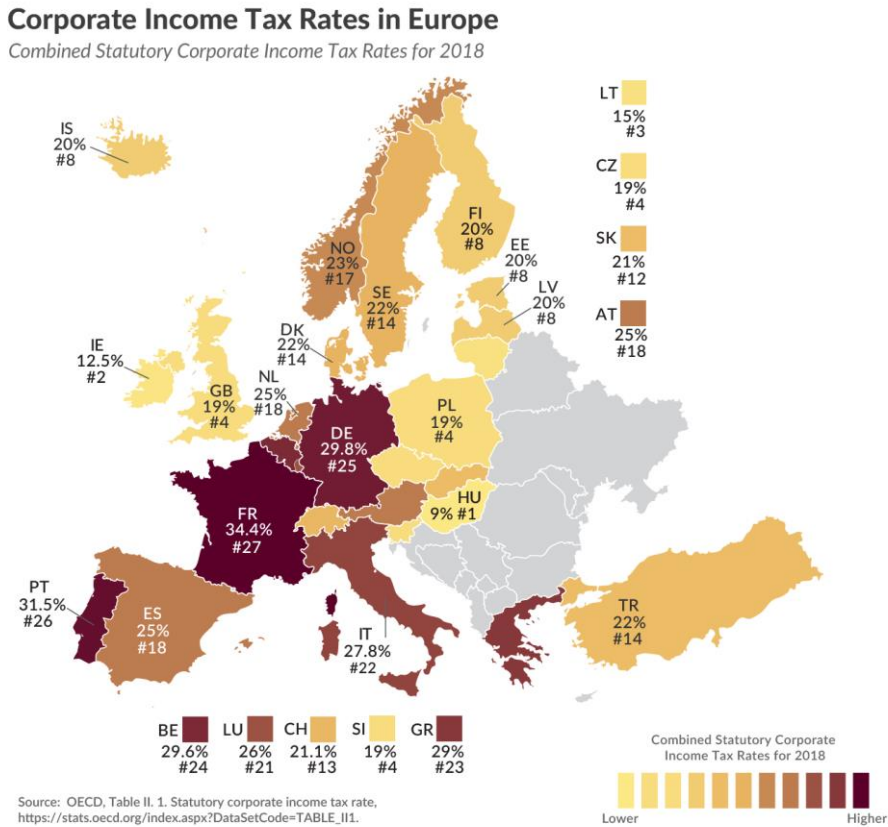
Each year, the European Economic Research Center publishes the effective tax rate for each EU member state. The effective tax rate is defined by the method of Devereux and Griffith. In essence, the method describes how big the profit tax will be in a given country for a putative investment (*Hajdu*, 2012). In addition to corporation tax, all tax liabilities that are based on corporate profits are included in the calculation. For example, in Hungary, in addition to the 9% corporate tax, there is a 2% local business tax and a 0.3% innovation contribution.

The tax burden in the EU-28 has not changed significantly in recent years. In each examined years, the lowest tax burden was assumed for Bulgaria each year, 10% as it can be seen in *Figure 3* as well.

**Figure 3**

**Trends in the corporate tax burden in EU Member States (2008-2018)**
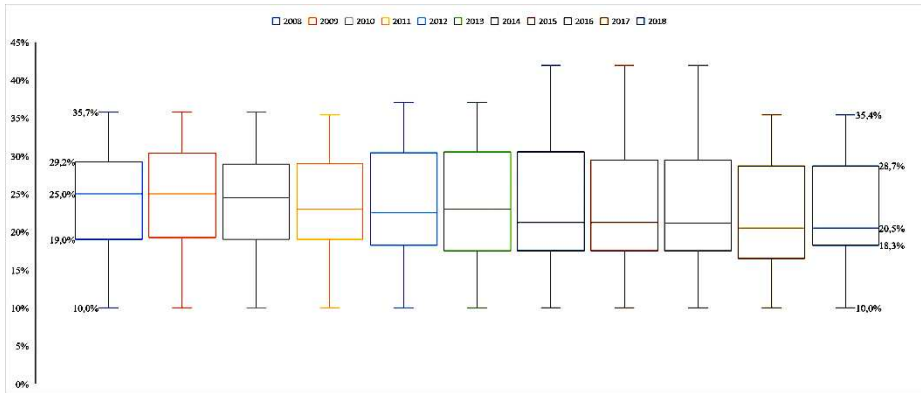


Source: Based on *ZEW* (2018)

It can be seen that the standard deviation of the data was the highest in the period 2014-2016, due to the increase of the tax burden in France to nearly 42% in the period 2014-2016. The increase was caused by the increase of the special corporation tax from 8.3% to 14%. Since 2017, this special tax has been reduced by the French government to 3.3%, so the tax burden has also decreased to 35.4%. Nevertheless, companies still have to pay the highest tax burden in France (among EU member states). On data of the boxplot it can be seen that the median of the tax burden shows a significant decrease. While the average tax burden declined by 1.4 percentage points over the 10-year period (from 23.62% to 22.22%), the median reduced by 4.5 percentage points. This suggests that more and more member states have begun to reduce their corporate profit tax rates (*Figure 4*).

**Figure 4**

**Change in corporate tax burden from 2008 to 2018 (% points)**
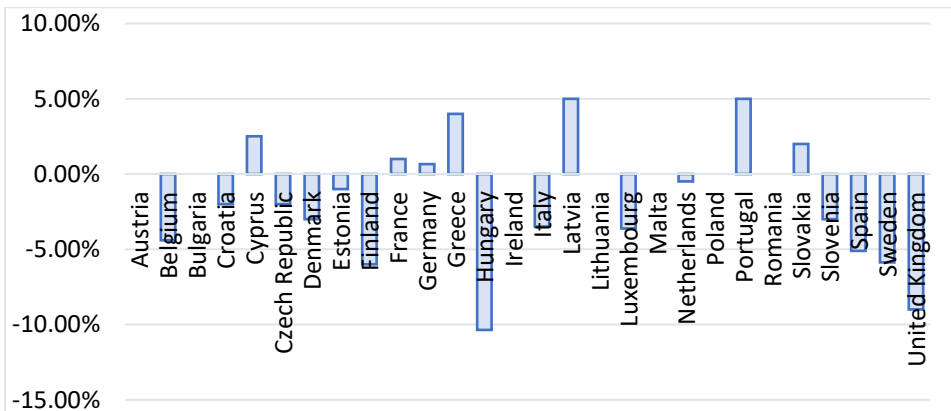


Source: Based on *ZEW* (2018)

Out of the EU28 countries, corporate tax burden increased in 9 member states (Cyprus, France, Greece, Latvia, Portugal and Slovakia), remained unchanged in 7 member states (Austria, Bulgaria, Ireland, Lithuania, Malta, Poland and Romania) and decreased in 12 member states. The most significant decrease can be seen in Hungary, as it decreased from 22.44% in 2008 to 11.09% due to the reduction of the corporate tax rate and the elimination of the special tax.

In order to eliminate tax competition from different tax burdens and administrative burdens related to transfer pricing, there has been ongoing discussion in the European Union for several years on the definition of a common consolidated corporate tax base.

## THE COMMON CONSOLIDATED CORPORATE TAX BASE AS AN INSTRUMENT OF TAX HARMONIZATION

Common Consolidated Corporate Tax Base (CCCTB) first emerged in 2001 and as a result of several years of work, on March 16, 2011 (*Commission of the European Communities*, 2001), the European Commission submitted a proposal for a directive on an EU level calculation of Common Consolidated Corporate Tax Base (*European Commission*, 2019). According to this, on one hand the calculation of the tax base would happen in the same way in every country, so it would be "common". on the other hand, the tax base of each member of that group of companies would be calculated together (consolidated) and then the tax base would be allocated to each member state according to certain rules. Member states would levy their tax rates on the tax base to which they are assigned. Illustrating on an example, businesses operating in several countries would calculate their tax base according to one rule. The tax base calculated on European level would be allocated to certain countries according to certain specific criteria (such as the turnover of the business, the value of the assets, the wage costs), and then the tax base calculated in the above mentioned way would be taxed at the country's own tax rate. This system is very similar to the US tax system, where businesses share their tax base in similar ways across the states. However, the difference is that in the US there is a federal tax system and a tax as well, so a common tax base is needed.

The new corporate tax system:

- will be obligatory for large multinational groups, but companies with revenues of more than EUR 750 million per year globally will be taxed at the actual place where their profits are generated;
- will close the loopholes currently associated with the profit reallocation from tax reasons;
- will encourage companies to finance their activities by raising equity and exploiting market opportunities instead of borrowing;
- will support innovation through tax incentives for R&D related to real economic activity.

The CCCTB does not regulate the rate of corporate tax, as this area remains a member state competence. It creates, however, a more transparent, efficient and fair system for calculating the tax base for cross-border businesses, which will radically reform corporate taxation across the EU (*European Commission*, 2016a).

Businesses will now need to apply a single regulatory system and submit a single tax return to their national tax authorities for all their EU activities. The CCCTB is expected to reduce its regulatory compliance time by 8% annually and by up to 67% to set up a subsidiary, so businesses can start their foreign activities easily (*European Commission*, 2016b).

The CCCTB also contributes to the wider objectives of improving growth, employment and investment and is expected to increase the total amount of investment in the European Union by up to 3.4%.

Its important advantage is that companies can include their profits in one member state and their losses in another one in their tax base, thereby avoiding double taxation.

The CCCTB bridges aggressive tax planning and eliminates transfer pricing which are the main tools of tax evasion. The harmonization would have clear advantages for companies active in the EU, but on the other hand, a lot of member states fears for its fiscal autonomy. The introduction of the CCCTB requires the consent of all member states, which, however, is still uncertain due to the fragmentation of member states. According to the Commission, this arrangement may also be introduced in the context of enhanced cooperation, which requires the consent of at least nine member states, in accordance with existing EU legislation.

**Its essence, methodology**

Before examining the operation of the CCCTB, we introduce how companies determine their corporate tax base. Currently, a multinational company-group with subsidiaries in several member states has to determine their tax base individually and submit their tax returns on the basis of the national rules of that member state. Each tax return contains the information determined on the basis of the results of that subsidiary. The corporate tax base is determined on the basis of the profit before tax according to the Hungarian regulation (Act LXXXI of 1996[1]). The profit before tax has to be modified by various tax base corrections. The tax base adjustments result in the tax base of the business. 9% of the tax base is payable in Hungary as corporate tax. In the current system, if a multinational company makes a loss in one member state while its other company is profitable, the profitable member company will have to pay tax because the profit cannot be consolidated with the loss-making member's loss. The introduction of the CCCTB would change this by consolidating the tax base of the member companies, i.e. a loss in one member state would reduce the profits generated by a subsidiary in another member state. According to the plan, the group would submit a consolidated corporate tax return that includes the tax base, corporate tax and all other necessary information for all of its member companies. The CCCTB does not deal with the issue of tax benefits, so theoretically the corporation tax on a given subsidiary, as defined above, could be reduced by the tax relief offered by the member state.

Following the consolidated determination of the corporate tax base, the multinational company distributes the CCCTB among its subsidiaries on the basis of

---

[1] https://net.jogtar.hu/jogszabaly?docid=99600081.tv

a sharing formula. The theoretical background of the sharing formula is the ratio of economic presence in the member state. The economic presence is proposed to be characterized by the following factors: number of employees, cost of labour, value of assets, revenue. From the CCCTB rules, the sharing formula is the most controversial issue among member states. This is because, depending on the sharing formula, member states' corporate tax revenues may decrease or increase compared with current ratios and tax competition could increase.

All wages and salaries paid to the employee (wages, dividend, bonuses, etc.) must be taken into account in the wage bill. The problem is that wage levels vary significantly across the Union, so without weighting the wage level in the member states there is a risk that where labour force is cheaper, there the share of tax base would be unreasonably little.

The valuation of assets raises additional questions, as it does not matter whether it is necessary to consider them at market value, at total cost or at accounting value. However, the valuation of intangible assets is very difficult, these are highly mobile, so they can be easily used as part of a formula for profit-sharing. In addition, it is an important question whether we consider leased assets to be included or not, which can also provide tax planning (leasing instead of purchasing assets).

In connection with revenue, a distinction should be made between reckoning at the place of origin and arrival. In the case of accounting at the place of origin, revenue is taken into account at the place of dispatch of the goods, in the case of accounting at the place of arrival, revenue is generated where the goods are put on the market. Origin accounting may give rise to a profit shift (it is up to the enterprise to decide where to dispatch the goods).

Besides the factors, the weighting of the individual factors in the formula is an important issue. Sharing is possible based on the so-called Massachusetts formula with equal weights (used by most US states in the 1950s) or with different weights (in recent years in the USA revenue is represented by different weights in the formula, in 2004 23 states used a formula where the share of the wage and property was 25% and the income's one was 50%; according to the Canada-formula the share of the revenue and the wage was 50-50%).

On the basis of the sharing formula, the Commission envisages that the tax base of company A may be determined as follows.

$$\frac{1}{m} * \frac{\text{Rev}^A}{\text{Rev}^{\text{Group}}} + \frac{1}{n} \left[ \frac{1}{2} * \frac{\text{Wage cost}^A}{\text{Wage cost}^{\text{Group}}} + \frac{1}{2} * \frac{\text{Numb.emp}^A}{\text{Numb.emp}^{\text{Group}}} \right] + \frac{1}{o} * \frac{\text{Asset value}^A}{\text{Asset value}^{\text{Group}}} \quad (1)$$

where: m+n+o=1

In the sharing formula, numerators include company A's sales revenue, wage cost, number of employees and asset value. The formula compares this data to the data defined on the group level. The sharing formula weighs the three factors, but the exact extent of the weights has not been decided yet. Here is an example to illustrate the formula.

A company-group consists of A and B companies. Company A is a company registered in Hungary, company B is in Germany. A is only active in Hungary and B is exclusively active in Germany. The results are summed up in *Table 1*.

**Table 1**

**The sharing formula in practice**

|  | Company A Hungary | Company B Germany | Group |
|---|---|---|---|
| Revenue | 100 | 200 | 300 |
| wage costs + number of employees | 50 | 150 | 200 |
| Asset value | 100 | 250 | 350 |
| Proportion of the tax base per country | 28,97% | 71,03% |  |

Based on the sharing formula, 28.97% of the Common Consolidated Tax Base is allocated to Hungary and 71.03% to Germany.

## CONCLUSION

National tax policy is an essential tool for the economic policies of the member states, but ensuring the same conditions in the market competition for companies in the European Union requires tax harmonization between member states. One of the most important elements of the harmonization efforts is the introduction of transfer pricing regulation in the field of profit taxation, which has helped to reduce aggressive tax planning slightly between countries. However, transfer pricing documentation is a significant administrative burden for businesses. In the long term, the EU's aims are to create a harmonized profit tax system, the first step in which member states should agree to establish a so-called common consolidated corporate tax base. The conciliation process has not reached the necessary agreement so far, so we can only evaluate the proposal with models built on the vision methodology. An indisputable advantage of the CCCTB would be the lower corporate administrative burden and the definition of taxation between member states. However, there are several concerns about the common tax base. One of the arguments against is the Central and Eastern European countries' one, as in these countries wide range of investment tax base and tax incentives can be applied. All of these would appear as a capital attractive fiscal policy instrument in national taxation, but opponents believe it would be deprived in the case of the introduction of a common corporate tax base on European level. Nevertheless, if we look at the relationship between the EATR and FDI on *Figure 5,* we can see that the inflow of foreign capital into Hungary increased significantly between 2008 and 2016, when the tax burden was nearly constant. However, with the significant decline in 2017, FDI showed no increase.

All of these are obviously not surprising, since the FDI is influenced by several other economic/legal factors besides the tax burden on profits. On the other hand, the reduction of the tax burden has a long-term effect, so we cannot draw accurate conclusions over a year.

Another disadvantage of the CCCTB is that its application would be restricted to EU member states. However, most multinational companies also have significant activities outside the EU, which would not be required to determine a common tax

base. To illustrate this, it is worth examining Wizz Air Hungary Kft's profit taxation and the country-specific interest of its operations. Wizz Air Hungary Aviation Limited Liability Company provides scheduled air passenger services within Europe and to the Middle East. The annual report includes the data of the Hungarian company and its branches (in Poland, in Bulgaria, in Switzerland, in Romania, in the Czech Republic, in Serbia, in Lithuania, in Macedonia, in Latvia, in Slovakia, in Georgia, in Ukraine, in the UK, in Greece, in Austria and in Cyprus) but this is not a consolidated report because branches are not legally distinct companies. From a tax point of view, it is important to underline that aviation-related activities are taxable under Article 8 of the OECD Model Convention in the state where the company has its place of effective management. In the case of Wizz Air Hungary Kft., the central management has been carried out in Switzerland since 1 April 2010. Accordingly, Switzerland is entitled to tax the profits of the enterprise.

**Figure 5**

**The corporate tax burden and FDI in Hungary**
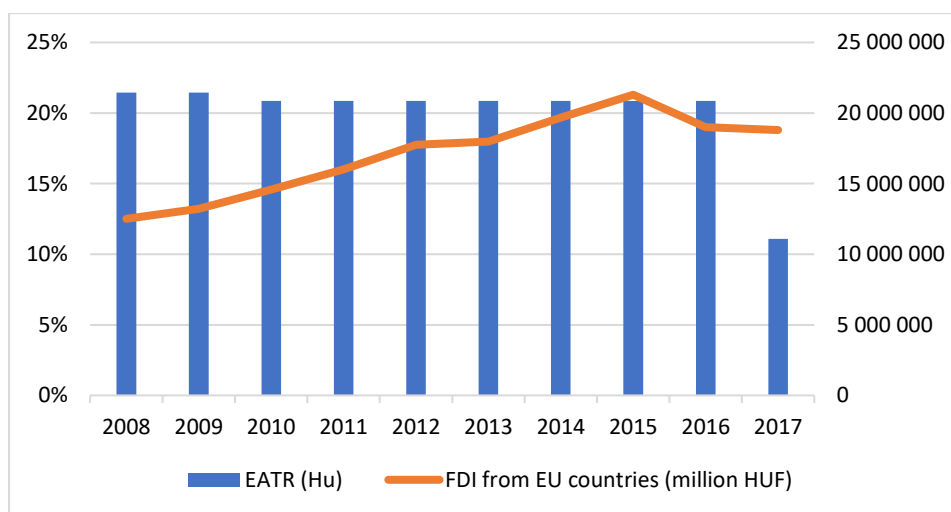


Source: Source: Based on *ZEW* (2018) and *MNB* (2019)

The company's after-tax profit for 2018 was EUR 261,155 thousand, of which almost every branch has a negative after-tax profit (*Figure 6*). A total of EUR 364,016 thousand in after-tax profits can be attributed to the headquarters, which in this case is Budapest. Therefore, from corporate profit tax's point of view of, it can be concluded that the highest income can be tied to the headquarters, however, according to the OECD directive, not Hungary but Switzerland is entitled to profit taxation and the Hungarian budget loses significant tax revenue. All of this underlines the disadvantage of maintaining other provisions of the OECD Model Convention (in this case, taxation of sea and inland shipping and air traffic) and extending it to EU member states during examining the introduction of the CCCTB.

**Figure 6**



**The share of the individual branches
in the after-tax profit of Wizz Air Hungary Kft**
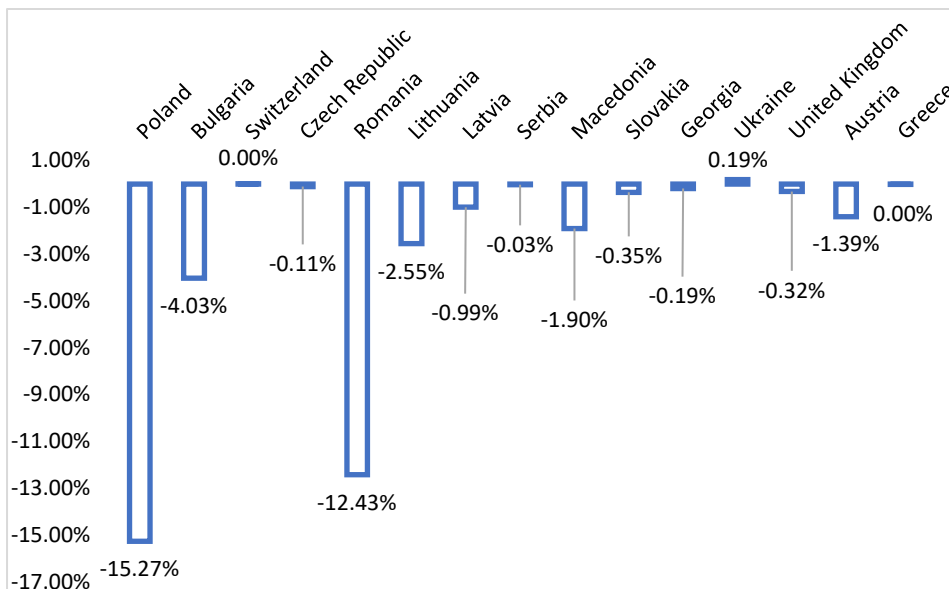
Source: Based on *Wizz Air Hungary Kft.* (2018)

## REFERENCES

Asen, E. (2019): Corporate Income Tax Rates in Europe. [online]<URL: https://taxfoundation.org/corporate-tax-rates-europe-2019/>

Balogh, L. (2004): Döntsd a tőkét? (in Hung.) In: Hitelintézeti Szemle, 3. 5. 22-37. p.

Commission of the European Communities (2001): Communication from the Commission to the Counil, the European Parliament and the Economic and Social Committee; Towards an Internal Market without tax obstacles; A Strategy for Providing Companies with a Consolidated Corporate Tax Base for their EU-wide activities. [online] <URL: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2001:0582:FIN:EN:PDF>

Council (1990a): Council Directive 90/434/EEC of 23 July 1990 on the common system of taxation applicable to mergers, divisions, transfers of assets and exchanges of shares concerning companies of different Member States. In: Official Journal L 225, 20/08/1990 1-5 p. [online] <URL: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31990L0434&from=EN>

Council (1990b): Council Directive 90/435/EEC of 23 July 1990 on the common system of taxation applicable in the case of parent companies and subsidiaries of different Member States. In: Official Journal L 225, 20/08/1990 6-9 p. [online] <URL: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX: 31990L0435&from=EN>

Council of the European Union (1998): Conclusions of the ECOFIN Council meeting on 1 December 1997 concerning taxation policy. In: Official Journal C 002, 06/01/1998 1-6 p. [online] <URL: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31998Y0106(01)&from=EN>

Council of the European Union (2003): Council Directive 2003/49/EC of 3 June 2003 on a common system of taxation applicable to interest and royalty payments made between associated companies of different Member States. In: Official Journal L 157, 26/06/2003 49-54 p. [online] <URL: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32003L0049&from=EN>

European Commission (2016a): Corporate Tax Reform. [online] <URL: https://ec.europa.eu/taxation_customs/sites/taxation/files/ctr_factsheet2016.pdf>

European Commission (2016b): Commission proposes major corporate tax reform for the E. [online] <URL: https://ec.europa.eu/commission/presscorner/detail/en/IP_16_3471>

European Commission (2019): Common Consolidated Corporate Tax Base. [online] <URL: https://ec.europa.eu/taxation_customs/business/company-tax/common-consolidated-corporate-tax-base-ccctb_en>

Eurostat (2019): Taxation in 2018 Tax-to-GDP ratio up to 40.3% in EU. [online] <URL: https://ec.europa.eu/eurostat/documents/2995521/10190755/2-30102019-AP-EN.pdf/68739572-f06a-51e4-3a5b-86e660a23376>

Hajdu, E (2012): A tényleges társasági adóterhelés mérése és trendje az Európai Unióban. (in Hung.) In: Gazdaság és Társadalom 2012. különszám, 132-156 p. doi: 10.21637/gt.2012.00.08.

MNB (2019): BPM6 módszertan szerinti adatok (in Hung.) [online] <URL: https://www.mnb.hu/statisztika/statisztikai-adatok-informaciok/adatok-idosorok/viii-fizetesi-merleg-kozvetlen-tokebefekteesek-kulfolddel-szembeni-allomanyok/kozvetlentoke-befekteesek/bpm6-modszertan-szerinti-adatok>

OECD (1998): Harmful Tax Competition. An Emerging Global Issue. 84. p. Paris: OECD Publishing, ISBN: 9789264162945 doi: 10.1787/9789264162945-en

Sivák, J. (2001): A globalizáció árnyoldala – a káros adóverseny. (in Hung.) In: Pénzügyi Szemle 5. 397-406. p.

Wizz Air Hungary Kft. (2018): Annual Report 2018. [online] <URL: https://wizzair.com/static/docs/default-source/downloadable-documents/corporate-website-transfer-documents/annual-reports/wizz_air_holdings_plc_annual_report_and_accounts_2018_3a126a45.pdf>

ZEW (2018): Project for the EU Commission TAXUD/2018/DE/307. Intermediary Report 2018. Effective Tax Level. Using the Devereux/Griffith Methodology. [online] <URL: https://ec.europa.eu/taxation_customs/sites/taxation/files/final_report_2018_effective_tax_levels_revised_en.pdf>

Correspondent author:

**Diána KOPONICSNÉ GYÖRKE**
Kaposvár University
Faculty of Economic Science
H-7400 Kaposvár, Guba Sándor u. 40.
e-mail: gyorke.diana@ke.hu

# RESPONSIBLE RECRUITING IN INSURANCE SALES A HARD FACTS MEASUREMENT APPROACH

## Gerriet HINRICHS

Kaposvár University, Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba Sándor u. 40.

### ABSTRACT

*Recruiting processes imply a considerable potential for waste of resources, both in general and in the insurance sales area focused here. A comprehensible measure for sustainability in sales was identified and information offers of large German insurers on job offers in the field of sales force were analysed. While the recruitment of lateral entrants has no measurable influence on sustainable sales, clear correlations between the information offered for future salespeople and sustainable results were found. In addition, a clear negative correlation between multi-level marketing and sustainable insurance sales was found.*
Keywords: salesforce; recruiting; occupational change; lateral entry

## INTRODUCTION

In accordance with *Bundestag* (2017), the topic of CSR basically reports on the following subjects:

- Environmental issues (consumption of resources, emissions, environmental protection);
- Employee issues (diversity, safety at work);
- Social issues (support for the local community);
- Respect for human rights;
- Combating corruption and bribery.

To date, CSR has only been associated with the topic of "recruiting" in such a way that future employees can, in the ideal case, inform themselves about the company's sustainable behaviour towards current employees. This paper makes it clear, however, that the recruiting process as such can and should be designed to be sustainable.

**Sustainability in recruiting in general**
According to a recent survey of 1004 employees, 19% are acutely looking for a job with better pay and 9% are looking for a job with a better work-life balance (*ManpowerGroup Deutschland*, 2019). But which company actually gives this information in a job advertisement or a career homepage? To anticipate the result: Not a single one of the 30 companies surveyed has mentioned a specific salary. The lack of this single piece of information alone must lead to thousands of false expectations.

By definition, excessive use of resources is not sustainable. In recruiting, the following resources are consumed by both the recruiter and the applicant:

- Time (application, preparation, interview, follow-up);
- Money (photo, coffee, suitable clothing);
- Fuels on the way to interviews.

According to the current statistics of the German Federal Labour Office, there are nearly 800.000 open vacancies registered (*BA*, 2019). According to the German Institute for Employment Research, the reporting rate in the second quarter of 2019 was 49.6% (*IAB*, 2019). This results in a number of vacancies in the order of 1.4 million.

A poor recruitment process regularly leads to more interviews than absolutely necessary. But what happens on the resources side if there is only ONE redundant one-hour interview per open position? Here is my calculation of 1.4 million unnecessary interviews:

- With an average of 10km of journey per route and economical 5 litres of petrol per 100 km, this results in a consumption of 1.4 million litres of petrol, obtained from approx. 2.5 million litres of crude oil corresponding to 16,000 barrels. This would emit 3,318 tonnes of $CO_2$ and cause fuel costs of €1.8 million.
- An applicant needs at least 2 hours including arrival and departure plus interview preparation. The interviewer will as well need minimum 1 hour. This leads to 4.2 million hours, corresponding to 175.000 days, 478 years. A total of at least 6 human lives can be said to have been wasted.
- With a professional interviewer, the company has a considerably low expenditure of time, since preparation and follow-up are minimal and no travel time is booked if the interview takes place on the premises of the company. In fact, interviews rarely take place in pairs, but I would like to calculate a minimum. Companies therefore pay at least 1.4 million hours or 175,000 working days of 8 hours or 795 workplaces of 220 days per year, which is too much.

The apparent triviality in the relationship between recruiting and sustainability can clearly be denied in view of these figures. Especially against the background that these figures have to be multiplied by a high factor in real practice.

**Transparency in the recruiting process**

Unlike in a private relationship, however, in a professional context one does not allow oneself months or years to commit oneself firmly to each other, but decides this after a discussion depending on the market situation. The probationary period begins only after the conclusion of a contract. Good expectation management is therefore important in this context from the outset.

The more honest and transparent the application and mutual introduction phase, the lower the fluctuation rate will probably be during the probationary period. On the part of the employer, there is danger that he will make a vacancy more attractive than it is to recruit workers who, if realistically presented, could choose a better option. If, in addition, appropriate exit barriers are created in order to achieve a locked-in effect, a position will be filled in the short or medium term, but in the long term the employee will be dissatisfied with the job and will even lose it once

productivity is higher. The employer's sustainable and responsible conduct is therefore to be found through absolute transparency in the task, guidelines and remuneration. The fact that a recruiter is usually the professional in the field of job interviews also obliges him to answer unsolicited questions about the unpleasant aspects of the job, which the applicant usually does not ask due to a lack of routine.

A long-term contact person is perceived positively by the customer, especially in insurance sales (*Hofmann*, 2014) and contributes positively to the overall company brand. Customers are also more loyal and willing to pay a higher price for a product if they know that the employees will be treated fairly (*Brodie et al.*, 2009).

This implies the opposite effect when an employee leaves the company. Fluctuation results in customers having to reveal their finances to another unknown person, which is perceived as unpleasant. Basically, it can be assumed that every factor that increases the probability of fluctuation leads to a decrease in customer satisfaction and loyalty.

In this context, the fact examined in this paper that most German insurance companies employ lateral entrants in sales, i.e. people who previously had a very different profession and are accordingly weak in terms of their expertise, must also be addressed in any case.

In principle, lateral entrants have a higher probability of fluctuation than long-term employees (*Griffeth et al.*, 2000). If these people from outside the industry are additionally given a too blurred picture of the profession before being hired, there is a high probability that they will either be less successful or less satisfied with the working conditions than expected (*Borghans and Golsteyn*, 2006; *Meglino and DeNisi*, 1987). Both in turn lead to increased fluctuation.

**Measurement of CSR in Insurance Sales**
Compared to other industries, besides the mobility of the salespeople, insurance sales is not really energy-intensive. Even the statistics from the Federal Environment Agency show only manufacturing and manufacturing industries as the main consuming industries of coal, gas and electricity (*Destatis*, 2019). So if it is not energy consumption, what measure of CSR and sustainability can be applied to insurance sales?

As a first approach, I have devoted myself to the CSR reports of insurance companies. The content of these reports must be at least the following:

Legal basis: §289c (CSR-Richtlinie-Umsetzungsgesetz) (*Bundestag*, 2017) "at least the following aspects" :

- Environmental concerns, for example:
  - Emissions;
  - Water consumption;
  - Air pollution;
  - Use of renewable and non-renewable energies;
  - Protection of biological diversity;
- Employee issues:
  - Gender equality;
  - Working conditions;
  - Respect for workers' rights;

- Social concerns:
  - Dialogue on regional level;
  - Ensuring the protection and development of local communities;
- Respect for human rights:
  - Avoidance of human rights violations;
- Combating corruption and bribery:
  - Instruments to combat corruption and bribery;

Current studies (cf. on this *Zielke et al.*, 2019; *Bertelsmann Stiftung*, 2012; *Hobelsberger et al.*, 2019) define further sub-items under the above aspects and ultimately count the number of criteria fulfilled. The results are rankings of sustainability reports that evaluate the communication skills of a company's marketing department rather than sustainable behaviour in normal operations. Since the reporting requirement is not very concrete, the CSR reports are currently not meaningful, let alone comparable. Either they consist only of the contents prescribed by law (in case of doubt they are even more comparable) or marketing brochures with a volume of more than 100 pages are published. One approach could of course be to count the number of social projects, number of pages of CSR report, categories of CSR report or saving of resources. In the area of recruiting, the number of words in relation to employees could even be measured in relation to the rest.

In my opinion, these figures are more or less arbitrary. When it comes to the sale of insurance policies, it is about good advice when concluding a contract and regular support and, if necessary, adapting the contract to new life circumstances during the term. If the first condition is not fulfilled, i.e. if a product has been sold that is not optimal for the customer or has not been understood by the customer, the customer will revoke the contract within a short period of time. If the support and possible adjustment should fail to take place, the contract may become suboptimal for the customer during the term and the probability of a termination or premium exemption increases considerably (*Pourrahidi et al.*, 2014) and (*Gründl et al.*, 2001).

The only variable that is the result of sustainable sales in insurance sales is the cancellation rate.

The following hypotheses result from the preceding paragraphs:

*H₁: Companies that employ lateral entrants are less sustainable due to the increased probability of fluctuation.*

*H₂: Companies that provide more specific information about a lateral entry are more sustainable than companies that provide less information.*

*H₃: Companies with a MLM-salesforce are less sustainable due to a large number of sideline workers who only work for a short time.*

## MATERIAL AND METHODS

### Data

Cancellation rates of life insurance companies are provided yearly by the Federal Supervisory Office for Financial Services (BaFin - Bundesanstalt für Finanzdienstleistungsaufsicht). The primary insurance statistics (2018) were used as database. (*BaFin*, 2019)

Data are available on 87 insurance companies, whereby Protektor LV AG is a protection fund and must therefore be excluded. One company had a portfolio of € 0 at the end of the financial year and was not taken into account, either. The analyses only included insurance companies which recorded positive new sales in 2019, i.e. whose products are still actively sold. Accordingly, 4 companies were excluded.

6 companies recorded a new premium income of less than € 10 million. This is not based on real new sales, but on dynamic increases. These companies were not included in the calculations, either. Since sustainability in sales is to be analysed, direct insurers were not taken into account, as there is usually little or no demand actively stimulated by a salesperson. Several companies of the same group were combined and an arithmetic mean of the cancellation rates in relation to the insurance portfolio at the end of the financial year was computed. This results in a number of 32 insurance companies surveyed.

**Self collected data**

The legal form of the parent company of the corporation has been identified. A distinction is made here between stock corporations, mutual companies and public companies.

Furthermore, the job advertisements and career homepages of the insurance groups with an exclusive salesforce and under the supervision of BaFin were examined. These platforms were examined for the mention of certain information for entering sales, such as

- Application for lateral entry possible
- Location-specific tender
- Explicitly success-oriented payment
- Employed or self-employed
- Various dummies on activity and access requirements

ARAG was excluded from the analysis because this Group no longer has its own life insurance company.

Concrete information on working time should also be included in the study as an exogenous variable, but was not found in any of the enterprises analysed.

In cases where the career home page and the job advertisement were contradictory, I took the information from the job advertisement because it can be assumed that a candidate would rather apply for a specific job than for a general job advertisement (*Feldman and Klaas*, 2002).

As the dependent variable (cancellation rate) is interval scaled, simple or multiple OLS-regression is feasible.

## RESULTS AND DISCUSSION

The hypotheses are expected to be confirmed due to the logical derivation. I attach particular importance to a precise testing of the underlying assumptions.

The variables used are abbreviated as follows:
- Cancellation rate 2018 = CR2018;
- Lateral entry possible (Dummy) = LATERAL;

- Sum of information provided = SUMINFO;
- Multi-Level-Marketing (Dummy) = MLM.
  OLS-regressions and tests are carried out using STATA 13.
  The first hypothesis deals with differences in the duration of customer relations
between companies that accept unskilled workers and those who do not.

*H₁: Companies that employ lateral entrants are less sustainable due to the increased probability of fluctuation.*

The corresponding regression equation for this is as follows:

$$CR2018 = \beta_0 + \beta_1 LATERAL + u \tag{1}$$

*Figure 1* shows the result of the simple OLS.

**Figure 1**

**OLS results LATERAL-CR2018**

| Source | SS | df | MS | | Number of obs = | 31 |
|---|---|---|---|---|---|---|
| | | | | | F( 1, 29) = | 0.65 |
| Model | 2.77889376 | 1 | 2.77889376 | | Prob > F = | 0.4260 |
| Residual | 123.61788 | 29 | 4.26268553 | | R-squared = | 0.0220 |
| | | | | | Adj R-squared = | -0.0117 |
| Total | 126.396774 | 30 | 4.21322581 | | Root MSE = | 2.0646 |

| CR2018 | Coef. | Std. Err. | t | P>|t| | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| LATERAL | .6842391 | .847449 | 0.81 | 0.426 | -1.048989 | 2.417467 |
| _cons | 3.3375 | .729956 | 4.57 | 0.000 | 1.844572 | 4.830428 |

It is obvious that this hypothesis cannot be supported due to the lack of significance of the exogenous variable. Nevertheless, the result is interesting: Both the p-value and especially the confidence interval, which is ambiguous even from the sign, practically reject a correlation between the acceptance of lateral entrants and the cancellation rate. This can be used as valuable information for recruiting decisions of a company.

In the following steps only those companies are considered which actually offer the possibility of lateral entry into sales.

*H₂: Companies that provide respectively more specific information about a lateral entry are more sustainable than companies that provide less information.*

In order to test this hypothesis, the following important information should actually be taken into account, but was not found in any of the companies' pages:

- Financial risk in salespeople's compensation system;
- Vacation days;
- Language requirements;
- Requirement of well-ordered financial circumstances;
- Requirement for a flawless certificate of good conduct;

- Requirement of an own car;
- Driving licence requirement.

As the last 5 points in particular are recruitment requirements rather than job descriptions, resources are wasted in the application process in every case, as recruitment cannot be executed if the criteria are not met.

The job advertisements and career homepages of the companies were examined to determine whether information was provided on the following factors:

- Was it already clear in the headline that lateral entry was possible?
- Was a specific place of work mentioned?
- Was a concrete compensation plan mentioned?
- Was an above-average salary prwas success-oriented?
- Has it been mentioned whether it is a job as an employee or self-employed?
- Has it been mentioned that acquiring new customers is part of the profession?
- Has it been mentioned that there is an existing customer-pool to start working?
- Has it been mentioned that official training as an insurance specialist has to be completed?
- Has it been mentioned that this training is free of charge?
- Has it been mentioned that contact with the customer must be actively sought?
- Was there any prospect of flexibility or a good work-life balance?

The resulting dummies with the corresponding information were then summed up to the factor SUMINFO. The OLS regression model is as follows:

$$CR2018 = \beta_0 + \beta_1 SUMINFO + u \qquad (2)$$

Results of this regression are shown in *Figure 2*.

**Figure 2**

### OLS results SUMINFO-CR2018

```
      Source |       SS       df       MS              Number of obs =      23
-------------+------------------------------           F(  1,    21) =   10.63
       Model |  40.4467109     1  40.4467109           Prob > F      =  0.0037
    Residual |  79.9124195    21  3.80535331           R-squared     =  0.3361
-------------+------------------------------           Adj R-squared =  0.3044
       Total |   120.35913    22  5.47086957           Root MSE      =  1.9507


------------------------------------------------------------------------------
      CR2018 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     SUMINFO |  -.7445769   .2283839    -3.26   0.004    -1.219527   -.2696266
       _cons |   7.776996   1.221559     6.37   0.000     5.236625    10.31737
------------------------------------------------------------------------------
```

Obviously there is both a significant and relevant relationship between the amount of information available for the candidate before applying and the cancellation rate. The unambiguous sign of the confidence-interval shows that companies providing a more realistic job preview (RJP) (*Meglino and DeNisi*, 1987)

have a lower cancellation rate. According to the RJP concept, this may be the phenomenon of a lower turnover rate.

A glance at the data quickly makes it clear that all companies with the multi-level marketing feature allow lateral entrants. Since structured sales is the sales channel that is most revenue-oriented, the following hypothesis is obvious as a supplement to the previous model:

*H₃: Companies with a MLM-salesforce are less sustainable due to a large number of sideline workers who only work for a short time.*

The model is now as follows:

$$CR2018 = \beta_0 + \beta_1 SUMINFO + \beta_2 MLM + u \tag{3}$$

Results of this regression are shown in *Figure 3*.

## Figure 3

### OLS results SUMINFO-MLM-CR2018

| Source | SS | df | MS | | Number of obs = | 23 |
|--------|-----|-----|-----|---|---|---|
| | | | | | F( 2, 20) = | 13.45 |
| Model | 69.022842 | 2 | 34.511421 | | Prob > F = | 0.0002 |
| Residual | 51.3362884 | 20 | 2.56681442 | | R-squared = | 0.5735 |
| | | | | | Adj R-squared = | 0.5308 |
| Total | 120.35913 | 22 | 5.47086957 | | Root MSE = | 1.6021 |

| CR2018 | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. Interval] | |
|--------|-------|-----------|---|---------|----------------------|---|
| SUMINFO | -.4938494 | .2020631 | -2.44 | 0.024 | -.9153457 | -.0723532 |
| MLM | 3.565429 | 1.068581 | 3.34 | 0.003 | 1.336409 | 5.79445 |
| _cons | 6.047402 | 1.129266 | 5.36 | 0.000 | 3.691795 | 8.403009 |

These results look very clear at first sight. The variable MLM has a large positive impact on the cancellation rate while reducing the significance-level of the SUMINFO variable up to a nevertheless acceptable value of lower than 5%. Some tests are now being carried out. *Figure 4* and *Figure 5* show the results of the graphical respectively numerical analysis to test the homoscedasticity requirement. I chose the Breusch-Pagan test instead of the White test because of the limited number of observations and the dummy-variable MLM.

Obviously, the assumption of homoscedasticity is violated. The non-homogeneous variance of the residuals could therefore lead to an overestimation of the model.

*Figure 6* and *Figure 7* show the results of the analysis to test the normal distribution of residuals.

Both the graphical and numerical analyses show a violation of the assumption of normally distributed residuals at a significance level of 5%. I test whether the violations affect the model quality by a robust regression.

**Figure 4**

### Graphical test on homoskedasticity 1st model



**Figure 5**

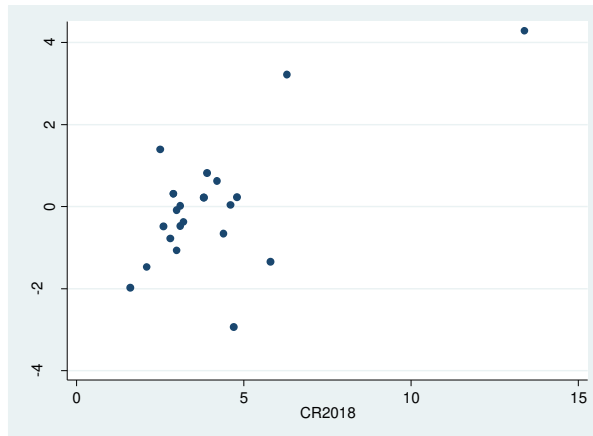### Numerical test on homoskedasticity 1st model

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of CR2018

        chi2(1)      =    17.91
        Prob > chi2  =   0.0000
```
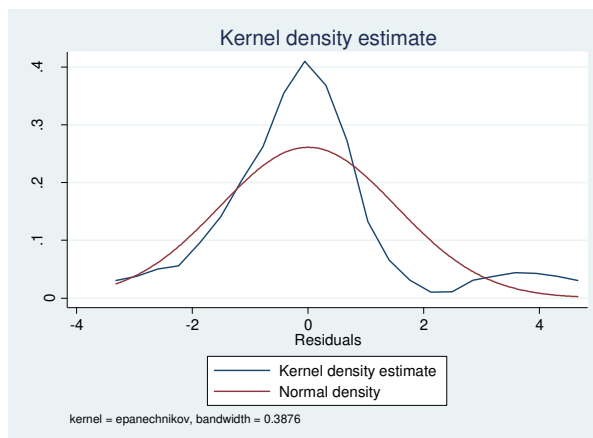
**Figure 6**

### Graphical test on normality 1st model

**Figure 7**

### Numerical test on normality 1st model

```
              Skewness/Kurtosis tests for Normality
                                            ——— joint ———
   Variable |   Obs   Pr(Skewness)   Pr(Kurtosis)   adj chi2(2)   Prob>chi2
   —————————————————————————————————————————————————————————————————————————
     Fehler |    23      0.0357         0.0400          7.51         0.0235
```

**Figure 8**

### Robust regression 1st model

```
Linear regression                              Number of obs =      23
                                               F(  2,   20) =     3.49
                                               Prob > F      =  0.0499
                                               R-squared     =  0.5735
                                               Root MSE      =  1.6021


                            Robust
     CR2018 |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
   —————————————————————————————————————————————————————————————————————————
    SUMINFO |  -.4938494   .2191812   -2.25   0.036    -.9510535   -.0366453
        MLM |   3.565429    1.75133    2.04   0.055    -.0877812    7.21864
      _cons |   6.047402   1.139444    5.31   0.000     3.670563    8.424241
```

As can be seen from *Figure 8*, the robust regression results in considerable changes in the significance levels. Although both variables are still significant at the 5% level, the considerable increase in the confidence interval of the variable MLM down to the negative can, however, be classified as intolerable. It must therefore be assumed that the model overestimates the explanatory power of the variables.

This causes me to adapt the model by logarithmizing the dependent variable CR2018:

$$\log(CR2018) = \beta_0 + \beta_1 SUMINFO + \beta_2 MLM + u$$

Results of this regression are shown in *Figure 9*.

The significance levels do not differ significantly from those of the original model. The tests are then repeated.

*Figure 10* and *Figure 11* show the results of the graphical respectively numerical analysis to test the homoscedasticity requirement. The variance of the residuals is graphically much more harmonic and the Breusch-Pagan test gives no reason to reject the null hypothesis. So, the new logarithmic model does *not* violate the assumption of homoscedasticity.

*Figure 12* and *Figure 13* show the results of the analysis to test the normal distribution of residuals.

**Figure 9**

## OLS results log-model

| Source | SS | df | MS | | Number of obs = | 23 |
|---|---|---|---|---|---|---|
| | | | | | F( 2, 20) = | 10.97 |
| Model | 2.10609472 | 2 | 1.05304736 | | Prob > F = | 0.0006 |
| Residual | 1.91938245 | 20 | .095969122 | | R-squared = | 0.5232 |
| | | | | | Adj R-squared = | 0.4755 |
| Total | 4.02547716 | 22 | .182976235 | | Root MSE = | .30979 |

| logCR2018 | Coef. | Std. Err. | t | P>|t| | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| SUMINFO | -.091053 | .0390711 | -2.33 | 0.030 | -.1725539 | -.0095522 |
| MLM | .6003781 | .2066217 | 2.91 | 0.009 | .1693728 | 1.031383 |
| _cons | 1.670024 | .2183558 | 7.65 | 0.000 | 1.214542 | 2.125506 |

**Figure 10**

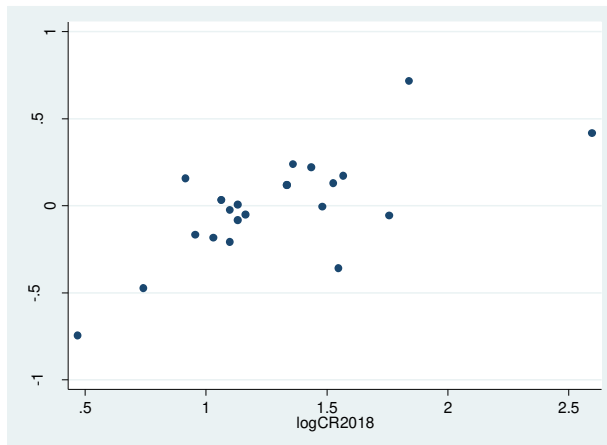## Graphical test on homoskedasticity log-model



**Figure 11**

## Numerical test on homoskedasticity log-model

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of logCR2018

        chi2(1)     =      0.13
        Prob > chi2 =   0.7206
```
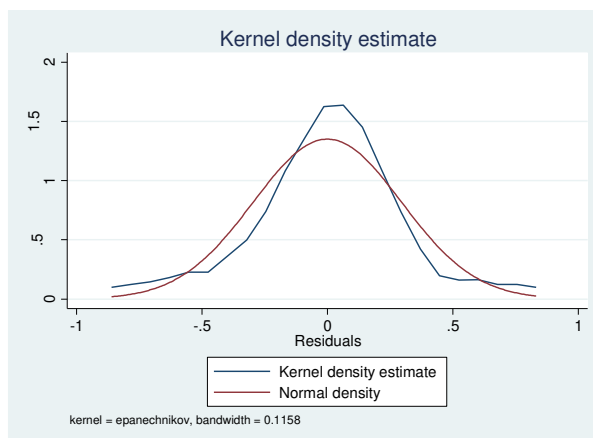
**Figure 12**

### Graphical test on normality log-model



**Figure 13**

### Numerical test on normality log-model

Skewness/Kurtosis tests for Normality

| Variable | Obs | Pr(Skewness) | Pr(Kurtosis) | adj chi2(2) | joint Prob>chi2 |
|---|---|---|---|---|---|
| Fehlerneu | 23 | 0.6497 | 0.0853 | 3.56 | 0.1688 |

Both the graphical and numerical analyses give no reason to conclude that the normal distribution assumption would be violated in the revised log-model.

As a final test I check the correlation of the explanatory variables. It can be seen in *Figure 14* that the variance inflation factor is clearly close to 1 and leads to harmless values of multicollinearity. To be concrete, the standard error of the MLM-variable coefficient is just 1.077 times larger than if it was completely uncorrelated with the SUMINFO-variable

**Figure 14**

### Numerical test on multicollinearity log-model

| Variable | VIF | 1/VIF |
|---|---|---|
| MLM | 1.16 | 0.861700 |
| SUMINFO | 1.16 | 0.861700 |
| Mean VIF | 1.16 | |

The log model thus passes the essential tests and the results can be considered valid. The better the RJP, the lower the cancellation rate is. The presence of an MLM in turn significantly increases the cancellation rate.

## CONCLUSIONS

Recruiting processes bring with them a considerable potential for wasting resources, both in general and in the area of insurance sales focused here. A plausible measure of sustainability in sales has been identified. While the recruitment of lateral entrants has no measurable influence on sustainable sales, clear correlations between the information offered for future salespeople and sustainable results were found. Any additional information has a positive effect on sustainability. In addition, a clear negative correlation between multi-level marketing and sustainable insurance sales has been found. Whether this applies to every type of MLM could be the subject of future research.

## REFERENCES

BA (2019): Tabellen Gemeldete Arbeitsstellen (Monatszahlen) Deutschland September 2019. Germany: Statistik der Bundesagentur für Arbeit. 17. p. [online] <URL: https://statistik.arbeitsagentur.de/Statistikdaten/Detail/201909/iiia4/gem-stellen/gem-stellen-d-0-201909-pdf.pdf>

BaFin (2019): Erstversicherungs-statistik 2018. Hg.v. Bundesanstalt für Finanz-dienstleistungsaufsicht. Bonn: Bundesanstalt für Finanzdienstleistungs aufsicht [online] <URL: https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Meldung/2019/meldung_191108_Statistik_Erstversicherer.htmlBertelsmann Stiftung (2012): CSR WeltWeit. Ein Branchenvergleich. [online] <URL: http://www.endeva.org/wp-content/uploads/2014/11/CSR_Weltweit_final_handout.pdf-2.pdf>

Borghans, L., Golsteyn, B.H.H. (2006) : Skill transferability, regret and mobility. In: IZA Discussion Papers, No. 2021, Bonn: Institute for the Study of Labor (IZA), [online] <URL: https://www.econstor.eu/bitstream/10419/33440/1/509597327.pdf>

Brodie, R.J., Whittome, J.R.M., Brush, G.J. (2009): Investigating the service brand: A customer value perspective. In: Journal of Business Research 62. 3. 345-355. p.

Bundestag (2017): Gesetz zur Stärkung der nichtfinanziellen Berichterstattung der Unternehmen in ihren Lage- und Konzernlageberichten (CSR-Richtlinie-Umsetzungsgesetz) vom 11. April 2017. In: Bundesgesetzblatt Teil I Nr. 20, 2017. 40. p. [online] <URL: https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl117s0802.pdf%27%5D__1586251243267>

Destatis (2019): Kohle-, Erdgas- und Strom-verbrauch der Betriebe im Verarbeit-enden Gewerbe 2017. Wiesbaden: Statistisches Bundesamt [online] <URL: https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Energie/Verwendung/Tabellen/kohle-erdgas-strom.html>

Feldman, D.C., Klaas, B.S. (2002): Internet job hunting: A field study of applicant experiences with on-line recruiting. In: Human Resource Management, 41. 2. 175–192. p. doi: 10.1002/hrm.10030

Griffeth, R.W., Hom, P.W., Gaertner, S. (2000): A meta-analysis of antecedents and correlates of employee turnover: update, moderator tests, and research implications for the next millennium. In: Journal of Management, 26. 3. 463-488. p. doi: 10.1177/014920630002600305

Gründl, H., Stehle, R., Waldow, T. (2003): Zur Vorteilhaftigkeit von Kapitallebens-versicherungen gegenüber alternativen Anlageformen – Eine Analyse aus Anlegersicht. In: Schmalenbachs Zeitschrift Für Betriebswirtschaftliche Forschung, 55. 6. 549-577. p. doi: 10.1007/bf03372715

Hofmann, M.O. (2014): Is the hybrid customer for real? : the customer in the insurance industry of the future. In: Stadler, R., Brenner, W., Herrmann, A. (eds.): How to succeed in the digital age : strategies from 17 top managers. Frankfurt/Main: Frankfurter Allgemeine Buch, 121-130. p. ISBN-13: 978-3956010422

Hobelsberger, C., Westermann, U., Dietsche, C. Lautermann, C., Kampffmeyer, N., Kaminski, G., Engelmann, T., Bowry, J. (2019): Monitoring der nich-finanziellen Berichterstattung – Befunde und Beobachtungen nach dem ersten Zyklus der CSR-Berichtspflicht in Deutschland. Berlin: Institut für ökologische Wirtschaftsforschung (IÖW) GmbH. 48. p. [online] <URL: https://www.ranking-nachhaltigkeitsberichte.de/data/ranking/user_upload/2018/Monitoring_der_nichtfinanziellen_Berichterstattung.pdf>

IAB (2019): IAB Stellenerhebung. Nürnberg: Institut für Arbeitsmarkt- und Berufs-forschung, [online] <URL: https://www.iab.de/stellenerhebung/download>

ManpowerGroup Deutschland (2019): Bevölkerungsbefragung Jobzufriedenheit 2019. Eschborn: ManpowerGroup Deutschland GmbH. [online] <URL: https://www.manpowergroup.de/fileadmin/manpowergroup.de/Studien/MPG_190923_Jobzufriedenheit_2019.pdf>

Meglino, B.M., DeNisi, A.S. (1987): Realistic Job Previews: Some Thoughts on Their More Effective Use in Managing the Flow of Human Resources. In: Human Resource Planning, 10. 3. 157-162. p.

Pourrahidi, R., Pour Kiani, M., Jafari, M. (2014): An empirical investigation on factors influencing customer loyalty and their relationships with quality of services: A case study of insurance firm. In: Management Science Letters, 187-192. p. doi: 10.5267/j.msl.2013.11.013

Zielke, C., Zielke M., Plönnes, C. (2019): CSR-Auswertung Deutscher Versicherer. Aachen: Zielke Research Consult GmbH. [online] <URL: https://www.fundresearch.de/fundresearch-wAssets/docs/CSR-Auswertung-Deutscher-Versicherer.pdf>

Corresponding author:

**Gerriet HINRICHS**
Kaposvár University
Doctoral School in Management and Organizational Sciences
H-7400 Kaposvár, Guba Sándor u. 40.
gerriet@whytokio.com

# KATE RAWORTH – DOUGHNUT ECONOMICS: SEVEN WAYS TO THINK LIKE A 21ST CENTURY ECONOMIST (2017)

**Florian ROSS**

Kaposvár University, Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba Sándor u. 40.

## ABSTRACT

*What if we started economics not with established theories, but with humanity´s long-term goals and how to achieve them? This is the question, Kate Raworth asks in her book "Doughnut Economics". She criticizes that our economical acts and decisions are based on the economic theories of the 1960s, which are mainly focused on a continuous and infinite growth. She suggests an update to the 21st century economy, which accounts not just for our well- being and prosperity, but for that of our planet as well. To make the missing factors in classic economies visible, she developed a "Doughnut Model", which includes twelve aspects of our social foundation, as well as nine planetary boundaries and explains that the ideal space of our economy is between these two elements. Her work is a wake-up call to transform our capitalist worldview, which is targeting to growth, into a more balanced, sustainable perspective that allows both humans and the planet to thrive.*
Keywords: New Economics, sustainable development, economic model, ecological economics

## INTRODUCTION

Did you know that global warming will increase between 1.0–3,5 °C until 2100? (*Kessel,* 2000). An associated rise of sea level is also expected and due to that, the number of people at risk from flooding by coastal storm surges is predicted to increase from the current 75 million up to 200 million in a scenario of mid–range climate changes. (*Patz et al.,* 2005). Further impacts of this warming to the planet like nature catastrophies, droughts or famines can just be estimated. These threats are not new. When Kate Raworth grew up in the 1980s in London, the problem was already existing and when she saw that bad news in television, she knew that she wanted to work one day in a profession, where she could make the world a better place. So, she decided to study economics in Oxford and after graduating, she started working for the Unites Nations and later for Oxfam. After twenty years of work for these organizations, she came back to the Universities of Oxford and Cambridge to work as a professor. In 2017, she published her book "Doughnut Economics: Seven ways to think like a 21st century economist". This paper will give an overview about the book´s key points and will figure out further research questions.

## DISCUSSION

From Raworth's point of view, the current economic market system has three major weaknesses. The first one is the ecological context, which is not included in that model.

Everything is about increasing growth rates but forgets about the planet and its needs. The second one is work, which is not accounted. This includes all kinds of work which is invested in parenting or doing the housework. Helping other people without getting paid is counted to that, too. All that is work and creates value, but does not appear in any calculation. The last weakness is inequality. As known, the difference between the richest and the poorest people in the world is strongly increasing and the current market system intensifies that problem (*Davies et al.*, 2015). Those failures were the motivation for Kate Raworth to develop the Doughnut Model and the consequential advice.

## THE DOUGHNUT

Indeed, the model really looks like a doughnut (*Figure 1*). The inner circle of the Doughnut represents our social foundation, which means all the basic needs we have like water, food or housing. The outer circle represents our ecological ceiling. These boundaries, like climate change, air pollution or land conversion were not invented by Kate Raworth, but scientifically evaluated by a group of scientists under the administration of Johan Rockström and Will Steffen. (*Rockström et al.,* 2009).

**Figure 1**

**The Doughnut model?**
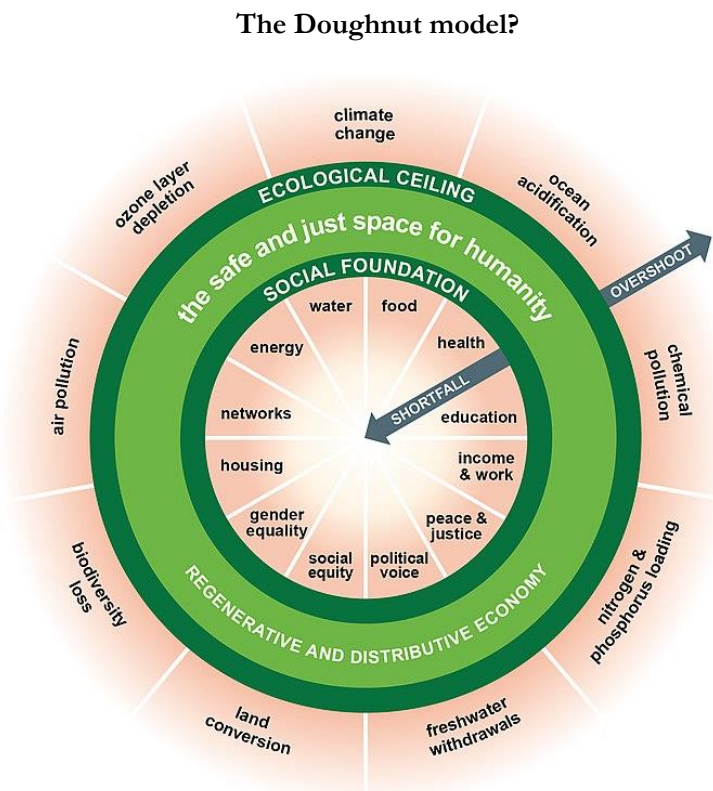


Source: https://upload.wikimedia.org/wikipedia/commons/1/12/Doughnut_(eco nomic_model).jpg

If we stay between these two limitations, we are in the safe and just space for humanity, where all people can live in wealth and prosperity and where we do not shoot over the planet's boundaries. If we fall inside the inner circle, the people have to suffer because they cannot cover their daily needs. If the use of resources and environmental pollution are so high that they hurt the planet, the economy crosses the ecological ceiling and goes outside the outer circle. At the moment we are outside of both boundaries. So, how can we ensure that we stay inside the safe and just space for humanity? Kate Raworth suggests to renew the way of how we think about economics and comes up with her 7 ways, to think like a 21st century economist.

## 1. Change the goal
Economics is about consumption and as known, the best indicator of how much an economy consumes is the GDP. This is probably the most important figure to measure. It is expected that the GDP grows from year to year up to 5% and if an economy does not fulfill these expectations, it is deemed bad. Donella Meadows, an American scientist said: "Growth is one of the stupidest purposes ever invented by any culture. We´ve got to have an enough." *(Raworth*, 2017). Raworth notes, that this 20th century strategy of growth pushed a lot of societies into deep inequality and the world into an ecological collapse. A high quantity of people falls short with their daily needs, but at the same time, we are pushing too much pressure to our planet and our liv–sustaining systems, which led to climate changes or the breakdown of biodiversity. It is time to get into the sweet spot of the Doughnut and to replace the goal of endless growth for a new one, a 21st century goal. This goal is clear from Raworth´s point of view: To cover both, our as well as our planet's needs and to live in balance with our environment.

## 2. See the big picture
Traditional economics describes the economy always with the same picture, the circular–flow diagram between companies and households. In that description, economy is an isolated system without any relations to other systems. That theory presumes that the markets are so efficient to let them run free, the state is too incompetent to meddle, everyone benefits from trade and that the society quasi does not exist. So, the triumph of the markets was almost inevitable and have been driving us to financial and ecological crises. Also, the statement that the financial markets cannot fail was clearly disapproved in the global financial crash, which puts the first theory into question, too. Raworth says, it is time to draw the economy in a new way, where it is embedded in larger systems like the society, the earth or the solar system with the goal to put it in service to life.

## 3. Nurture human nature
In the focus of economics is the Homo Economicus. According to definition, it is a rationally thinking person. To visualize the Homo Economicus, he can also be described as a person who stands alone, with the money in his hand, the calculator in his brain, knows every price and has the nature at his feet. It can be observed that the more economy students study, the more self–interested the Homo Economicus

becomes. Kate Raworth says, we cannot keep living in that way, we have to change ourselves from self-interested to socially reciprocating, from fixed preferences to fluid values and from isolated to interdependent ones. That will give us the opportunity to nurture human nature, and due to that, more chances to get in the safe and just space of the Doughnut.

**4. Get savvy with systems**
Raworth shows that economy is a complex, constantly changing system and not a simple, stable one like the economists in the 19th century invented. Those economists were inspired by Newton's laws of physics of how the planets were moving, so they were looking for laws to describe the market movements. The result was that they were trying to transform their ideas into maths and developed models, which are based on equilibriums. The fault in this calculation is that economy is too complex and depends on too many factors. Furthermore, equilibriums do not always exist. Systematic thinking is more helpful to understand the dynamics of economics a, which can be summarized in a pair of feedback loops. Because of that, Raworth says that 21st century economists do not see themselves as engineerswho control the economy, but as gardeners who take care and shape it.

**5. Design to distribute**
The basic for that way is the Kuznet curve, which says that when an economy develops, market forces first increase and later decrease economic inequalities. It means that the income per capital first rises to a maximum and causes inequality, until it can decrease it. Raworth criticizes that the economic inequality is not an economical need, it is more a design error. 21st century economists have to recognize that a lot of possibilities exist to design economies with the result of more equality when distributing their created values. It means that it is much more, than just distributing incomes, but wealth. Especially when that wealth comes from possessing land, companies, and technologies or from the creation of money.

**6. Create to regenerate**
Economics regarded a clean environment for a long time as a luxury good, which was just available for the higher classes. That way of thinking was forced by the environmental Kuznet curve, which indicates that the environmental pollution has to increase first, until the economic growth can decrease it. Raworth disagrees with that theory because there are no proofs that this will happen. She says that the environmental damage is a result of a degenerative orientation of the industry and that we need a new economical thinking in the next century, which has a regenerative orientation and a more circular approach. We should change our business model which eats up the planet's resources and spits out just waste into a system, which turns waste back into valuable goods.

**7. Be agnostic with growth**
Traditional economists regard constant economic growth as essential, but in nature nothing grows infinitely. We have to realize that the economic growth must

eventually reach a limit. Kate Raworth suggests that the traditional exponential growth curve has to be replaced by the s curve, focusing on a level where we can cover both, our as well as our planet's needs to live in harmony with our environment.

## CONCLUSION AND FURTHER RESEARCH QUESTIONS

Kate Raworth offers with Doughnut Economics a completely new way, a 21st century way of economical thinking. The interesting point is that her ideas are not that new as they seem, it is much more back to the economic roots, which we might have lost. Economics comes from the Greek words oikos (household) and nemein (manage or distribute) (*Singer,* 1958). That definition leads inevitably to the question if it is really householding what the 20th century economics stands for because householding is about working with the resources which are available and not overshooting them. But how to avoid an overshoot when the economies are aiming for infinite growth rates on a finite planet? Is that even possible?

Kate Raworth doesnot recommend concrete actions, how to transform her theories and to apply them, but after reading that book, a thinking process is started and that is probably one of the author's goals. But how can we ensure that the book´s results will influence our future economies? From my perspective, there is just one way. We will not be able to change economics overnight, but we can change it in the future, when we realize that the students of today are the decision makers of tomorrow and due to that fact we should rethink, what we teach at universities, because the key to change lies in education.

## REFERENCES

Davies, J., Sandström, S., Shorrocks, A., Wolff, E. (2009): The Level and Distribution of Global Household Wealth. [online] <URL https://www.nber.org/papers/w15508.pdf> doi: 10.3386/w15508

Kessel, D.G. (2000): Global warming – facts, assessment, countermeasures. In: Journal of Petroleum Science and Engineering, 26. 1-4. 157-168. p. doi: 10.1016/s0920-4105(00)00030-9

Patz, J.A., Campbell-Lendrum, D., Holloway, T., Foley, J.A. (2005): Impact of regional climate change on human health. In: Nature, 438. 7066. 310-317. p. doi: 10.1038/nature04188

Raworth, K. (2017): Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist. Vermont, USA: Chelsea Green Publishing. 320 p. ISBN-13: 978-1603586740

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F.S., Lambin, E.F., Lenton, T.M., Scheffer, M., Folke, C., Schellnhuber, H.J., Nykvist, B., de Wit, C.A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P.K., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R.W., Fabry, V.J., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., Foley, J.A. (2009): A safe operating space for humanity. Nature, 461. 7263. 472-475. p. doi: 10.1038/461472a

Singer, K. (1958). Oikonomia: An Inquiry into Beginnings of Economic Thought and Language. In: Kyklos, 11. 1. 29-57. p. doi: 10.1111/j.1467-6435.1958.tb00247.x

Correspondent author:

**Florian ROSS**
Kaposvár University
Doctoral School in Management and Organizational Sciences
H-7400 Kaposvár, Guba Sándor u. 40.
e-mail: ross.florian@gmx.de

# How Max Roser's "Our World In Data" Contributes to Raising Awareness and Combating Climate Change

**Atilla WOHLLEBE**

Kaposvár University, Doctoral School in Management and Organizational Sciences,
H-7400 Kaposvár, Guba Sándor u. 40.

### ABSTRACT

*With the website OurWorldInData.org economist Max Roser, University of Oxford, explains to make progress against the world's largest problems by making corresponding research and data publicly available. This discussion paper will address the question of how Our World In Data contributes to solving the challenges of climate change based on the article "CO2 and Greenhouse Gas Emissions" by Hannah Ritchie and Max Roser. This discussion paper comes to the conclusion that Ritchie and Roser are proposing less concrete solutions and instead are combining data that are already publicly available. This is not how they create new solutions, but they show clearly the need for action worldwide. The fact that most of the data shown is publicly available gives their message a particular strength: Ritchie and Roser show how clear the need for action should actually be for all political decision-makers.*
Keywords: climate change, sustainability, Our World In Data, Max Roser

## INTRODUCTION

Since about the beginning of the 2010s, there has been an increased interest in Germany in the topic of sustainability, which seems to have replaced environmental protection in a more specific sense. Especially since mid-2018, interest in sustainability has increased massively (*Google*, 2019b). Not surprisingly, the massive increase in the interest in sustainability also occurred during the period in which the "Fridays For Future" movement emerged (*Google*, 2019c), whose representatives call for concerted and determined global action against the progression of climate change (#*Fridays For Future*, 2019).

The growing interest in sustainability - at least in Germany - coincides with the launch of the project Our World in Data, which was founded in the summer of 2014 (*DomainTools,* 2019). The work of the project will be published on the corresponding website ourworldindata.org. The German economist Max Roser, a researcher at Oxford University, is the founder of the project and has set himself the task of providing a long-term perspective on the development of the world, rather than limiting himself to short-term events. The project website says: "Our World in Data presents the empirical evidence on global development in entries dedicated to specific topics" (*Our World In Data,* 2019a).

Within the framework of the project, various statistics on different topics will be presented and, as a rule, explained or interpreted in order to show the readers the

connections. The thematic complexes include questions on the development of the world population (*e.g.* with regard to life expectancy, age structures, gender relations or child mortality), health (*e.g.* with regard to air pollution, causes of death, tobacco consumption or malaria), food and nutrition (*e.g.* with regard to hunger, famine, land use or the use of fertilisers) or energy (e.g. access to energy, production of energy or the use of fossil fuels) (*Our World In Data,* 2019b).

In this review paper, the author addresses the question of whether and how Our World in Data contributes to education and/or combating climate change. This is based on an article that Ritchie and Roser first published on the project's website in 2017 and revised extensively in October 2018 (*Ritchie and Roser*, 2018). The article focuses on $CO_2$ and greenhouse gas emissions. In addition to the question of the extent to which connections are shown and explained in addition to mere data, the focus is on the question of whether the corresponding article also provides concrete approaches to solving the problems described.

## DISCUSSION

The discussion on whether and to what extent the project Our World in Data contributes to solving the challenges of climate change is based on the article "$CO_2$ and Greenhouse Gas Emissions", first published by Ritchie and Roser in 2017 and updated in 2018 (*Ritchie and Roser*, 2018).

The article by the authors, which contains a total of around 10,000 words, is divided into sections after an introduction. First, the development of $CO_2$ emissions over time is presented, followed by explanations on per capita $CO_2$ emissions, annual $CO_2$ emissions and cumulative observations. Ritchie and Roser then show the consumption-based (trade-adjusted) $CO_2$ emissions as well as the emissions by fuel and by sector. Then they explain the global inequalities in $CO_2$ emissions (*Ritchie and Roser*, 2018). Roser, in particular, has already addressed issues of global inequality in other research projects (*Atkinson et al,*. 2017; *Sterck et al,*. 2018; *Nolan et al.,* 2018).

The last third deals first with emissions of other greenhouse gases, again from different perspectives. This is followed by explanations of possible future scenarios on emissions, on greenhouse gas concentrations in the atmosphere, on $CO_2$ emissions and on the prosperity and $CO_2$ intensity of economies (*Ritchie and Roser*, 2018).

In the introduction, Ritchie and Roser first introduce the topic of greenhouse gases, which cannot only be held responsible for climate change, but above all, contribute significantly to the climate of Planet Earth: without greenhouse gases, the Earth's climate would be around 18 degrees Celsius below zero (*Ma*, 1998). In the following, Ritchie and Roser discuss that with industrialization, the average global temperature anomalies have also increased significantly over the past 175 years (*Ritchie and Roser*, 2018). The relationship between global climate change and greenhouse gas emissions is scientifically proven (*Field et al,* 2014).

In their article, Ritchie and Roser then show various developments over time and various snapshots from different perspectives on the development and distribution of $CO_2$ emissions. In particular, two findings are to be emphasized: first, carbon dioxide emissions have risen massively in recent years and decades (*Ritchie and Roser*,

2018). Since 1950 alone, global $CO_2$ emissions have increased sevenfold (*Le Quéré et al.,* 2018). Secondly, greenhouse gas emissions are highly heterogeneous among the individual countries of the world. Among the countries with the highest emissions are the oil states of the Middle East, *i.e.* Kuwait, the UAE and Qatar. Ritchie and Roser summarize these data in their article as far as possible without evaluation, comprehensibly and precisely. This can easily give the impression of a few clear causers of the emissions, whereby the subsequent cumulative consideration of $CO_2$ emissions paints a picture that especially the United States as well as Russia and China are major emitters (*Ritchie and Roser,* 2018).

Ritchie and Roser ring in a similar process - an unambiguously seeming fact turns out to be more complex than it initially seems – with the introduction of the term "consumption-based" calculation of $CO_2$ emissions: Up to this point, the authors have reported $CO_2$ emissions in their article on a production-based basis in principle, as provided for by the guidelines of the Intergovernmental Panel for Climate Change (*Eggleston et al.,* 2006). In the consumption-based analysis of $CO_2$ emissions, international trade between nations is taken into account. If country A imports a product X from country B and the product has been produced in country B, the $CO_2$ emissions for product X would be added to country B in the production-based analysis. In the consumption-based analysis, however, the $CO_2$ emissions for product X are attributed to country A. In particular, those countries that are heavily dependent on imports of goods and merchandise are now showing significantly worse values than before. Countries that are particularly weak in the production and export of $CO_2$-intensive products are also emitting particularly strongly from this perspective. Switzerland and Luxembourg, as well as Togo and Botswana, are among the countries with the highest $CO_2$ emissions in the world. China, Iran and Russia, on the other hand, emit very little $CO_2$ (*Ritchie and Roser,* 2018).

According to this analysis of consumption-based $CO_2$ emissions (based on *Peters et al.,* 2012), Ritchie and Roser show that the 16 richest percent of the world's population not only emit 39 percent of production-based $CO_2$ emissions, but as much as 46 percent of consumption-based $CO_2$ emissions, with energy production being the most important sector that has been growing particularly strongly for years. Consequently, the relationship between a country's $CO_2$ emissions and GDP per capita as well as poverty results from this: With a few exceptions, it can be summed up practically nationwide that $CO_2$ emissions increase with a country's prosperity (*Ritchie and Roser*, 2018).

In many publications and sometimes also in the popular media (*Kühni and Roser*, 2017, *Käppeler*, 2016, *Matthews*, 2017), the authors enjoy some attention with their comments on $CO_2$ and greenhouse gas emissions: With their article, the authors Hannah Ritchie and Max Roser Stand today list more than 70 citations listed on Google Scholar (*Google*, 2019a). The Swedish poverty researcher Hans Rosling also quotes parts of the article in his book "Factfulness" and refers about ten times to the project Our World In Data (*Rosling et al.*, 2018). *Bill Gates* (2018) describes Roser as one of his favourite economists.

With regard to the style of the article, it can be said that the authors focus mainly on the visualization of data that is practically always publicly available. *Ritchie and Roser*

(2018) put these data into context with each other, show connections - sometimes surprising ones - and discuss them; scientifically, but without overwhelming the general reader at the same time. They also refer to the uncertainties and limitations of the data they present, for example in the measurement and estimation of $CO_2$ emissions, as *Liu et al.* (2015), for example, point out for China.

It should also be noted that *Ritchie and Roser* (2018) focus on the description and explanation of existing data. However, they do not make any proposals on how to reduce $CO_2$ emissions or greenhouse gases. Nor are their statements an offensive plea in this direction: Both the present article in particular and Our World in Data in general are above all a representation of the status quo and the past, primarily on data that are generally „in any case" publicly available.

## CONCLUSION

The aim of this paper is to use the article „$CO_2$ and Greenhouse Gas Emissions" as an example to show how Our World in Data contributes to education and/or combating climate change. The article was first examined structurally and then in terms of content, and the authors' approach was presented.

*Ritchie and Roser* (2018) also introduce the less inclined reader to the topic of $CO_2$ and greenhouse gas emissions, thus enabling easy access to sometimes complex scientific work. The authors succeed in conveying a clear message to the reader, for example on the responsibility of wealthy nations in the context of climate change, without having to explicitly name them. In particular, those sections that compare classic economic measures such as GDP per capita or poverty with $CO_2$ emissions or present emissions not only based on production but also on consumption make this particularly clear.

The fact that, in principle, all the data used would be publicly available - and one could ask oneself why anyone would have to reprocess them at all - seems not so much a shortcoming, but even beneficial to the actual message: The data that *Ritchie and Roser* (2018) show point to a clear responsibility, but at the same time political decision-makers still seem to lack the will (or the pressure) to act. Using climate change as an example, Our World in Data shows precisely those data that show the world's existing development potential.

## ACKNOWLEDGEMENT

## REFERENCES

#FridaysForFuture (2019): Youth climate strikers open letters to world leaders. [online] <URL: https://www.fridaysforfuture.org/youth-letters>

Atkinson, A.B., Hasell, J., Morelli, S., Roser, M. (2017): The Chartbook of Economic Inequality. In: INET Oxford Working Paper No. 2017-10. 59. p.

DomainTools (2019): Whois Record for OurWorldIndata.org [online] <URL: http://whois.domaintools.com/ourworldindata.org>

Eggleston, H.S., Buendia, L, Miwa, K, Ngara, T, Tanabe, K. (eds.)(2006): IPCC Guidelines for National Greenhouse Gas Inventories. Vol. 1 – Vol. 5, Hayama, Japan: Global Environmental Strategies (IGES), on behalf of the IPCC Japan. ISBN 4-88788-032-4 [online] <URL: https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html

Field, C.B., Barros V.R., Dokken D.J., Mach K.J., Mastrandrea M.D., Bilir T.E., Chatterjee M., Ebi K.L., Estrada Y.O., Genova R.C.,Girma B., Kissel E.S., Levy A.N., MacCracken S., Mastrandrea P.R., White L.L. (eds.).(2014): IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, New York: Cambridge University Press, 1132. p. ISBN 978-1-107-05807-1 [online] <URL: https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-PartA_FINAL.pdf

Gates, B. (2018), Tweet via Twitter, 21 April 2018, [online] <URL: https://twitter.com/BillGates/status/987721112049070080>

Google (2019 a), Citations on Google Scholar of „CO2 and Greenhouse Gas Emissions". [online] <URL: https://scholar.google.co.uk/scholar?hl=en&as_sdt=0%2C5&sciodt=0%2C5&as_ylo=2016&cites=9538856327775533560%2C14912966969373231836&scipsc=&q=CO2+and+Greenhouse+Gas+Emissions&btnG=>

Google (2019b): Trends in „Sustainability" and „Environment Protection".[online] <URL: https://trends.google.com/trends/explore?date=all&geo=DE&q=%2Fm%2F0hkst,%2Fm%2F04gg7xx>

Google (2019c), Trends in „Sustainability" and „Fridays for Future".[online] <URL: https://trends.google.com/trends/explore?date=all&geo=DE&q=%2Fm%2F0hkst,Fridays%20for%20Future>

Käppeler, C. (2016): "99 Prozent können irren" – Interview Der Ökonom Max Roser zeigt mit seinem Blog „Our World in Data" und bei Twitter, wie fortschrittlich wir sind. [online] <URL: https://www.freitag.de/autoren/christine-kaeppeler/99-prozent-koennen-irren>

Kühni, O., Roser, M. (2017): Der Kartograph von Oxford. [online] <URL: https://schweizermonat.ch/der-kartograph-von-oxford/>

Le Quéré, C., Andrew, R. M., Friedlingstein, P., Sitch, S., Hauck, J., Pongratz, J., Pickers, P.A., Korsbakken, J.I., Peters, G.P., Canadell, J.G., Arneth, A., Arora, V.K., Barbero, L., Bastos, A., Bopp, L., Chevallier, F., Chini, L.P., Ciais, P., Doney, S.C., Gkritzalis, T., Goll, D.S., Harris, I., Haverd, V., Hoffman, F.M., Hoppema, M., Houghton, R.A., Hurtt, G., Ilyina, T., Jain, A.K., Johannessen, T., Jones, C.D., Kato, E., Keeling, R.F., Goldewijk, K.K., Landschützer, P., Lefèvre, N., Lienert, S., Liu, Z., Lombardozzi, D., Metzl, N., Munro, D.R., Nabel, J.E.M.S., Nakaoka, S., Neill, C., Olsen, A., Ono, T., Patra, P., Peregon, A., Peters, W., Peylin, P., Pfeil,

B., Pierrot, D., Poulter, B., Rehder, G., Resplandy, L., Robertson, E., Rocher, M., Rödenbeck, C., Schuster, U., Schwinger, J., Séférian, R., Skjelvan, I., Steinhoff, T., Sutton, A., Tans, P.P., Tian, H., Tilbrook, B., Tubiello, F.N., van der Laan-Luijkx, I.T., van der Werf, G.R., Viovy, N., Walker, A.P., Wiltshire, A.J., Wright, R., Zaehle, S., and Zheng, B. (2018): Global Carbon Budget 2018. In: Earth System Science Data, 10. 4. 2141-2194. p. doi: 10.5194/essd-10-2141-2018

Liu, Z., Guan, D., Wei, W., Davis, S. J., Ciais, P., Bai, J., Peng, S., Zhang, Q., Hubacek, K., Marland, G., Andres, R. J., Crawford-Brown, D., Lin, J., Zhao, H., Hong, C., Boden, T. A., Feng, K., Peters, G. P., Xi ,F., Liu, J., Li, Y., Zhao, Y., Zeng, N., He, K. (2015): Reduced carbon emission estimates from fossil fuel combustion and cement production in China. Nature, 524. 7565. 335-338. p. doi: 10.1038/nature14677

Ma, Q (1998): Greenhouse Gases: Refining the Role of Carbon Dioxide. [online] <URL: https://www.giss.nasa.gov/research/briefs/ma_01/

Matthews, B.H. (2017): Our World in Data? [online] <URL: https://medium.com/@bretthmatthews/our-world-in-data-2a948a15b8ed

Nolan, B., Roser, M., Thewissen, S. (2018): GDP Per Capita Versus Median Household Income: What Gives Rise to the Divergence Over Time and how does this Vary Across OECD Countries? In: Review of Income and Wealth, 65. 3. 465-494. p. doi: 10.1111/roiw.12362

Our World In Data (2019a), Why are we working on Our World In Data? [online] <URL: https://ourworldindata.org/motivation>

Our World In Data (2019b), Research and data to make progress against the world's largest problems. [online] <URL: https://ourworldindata.org/>

Peters, G.P., Davis, S.J., Andrew, R. (2012): A synthesis of carbon in international trade. In: Biogeosciences, 9. 8. 3247–3276. p. doi: 10.5194/bg-9-3247-2012

Ritchie, H., Roser, M (2018): CO$_2$ and Greenhouse Gas Emissions. [online] <URL: https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>

Rosling, H., Rosling, O., Rönnlund, A.R. (2018): Factfulness: Ten Reasons We're Wrong About the World--and Why Things Are Better Than You Think. New York: Flatiron Books, 352. p. ISBN-13: 978-1-250-10781-7

Sterck, O., Roser, M., Ncube, M., Thewissen, S. (2018): Allocation of development assistance for health: is the predominance of national income justified? In: Health Policy and Planning, 33 (suppl_1), i14–i23. doi: 10.1093/heapol/czw173

Correspondent author:

**Atilla WOHLLEBE**
Kaposvár University
Doctoral School in Management and Organizational Sciences
H-7400 Kaposvár, Guba Sándor u. 40.
e-mail: atilla.wohllebe@gmail.com