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**MANAGEMENT
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Poverty Reduction: Analysis of Factors Affecting Poverty in Lithuania

The purpose of this paper is to evaluate poverty reduction possibilities determining the effect of average wage and unemployment on poverty, identifying the factor that is a more important predictor of poverty in Lithuania. Based on scientific literature analysis, we identify the factors that determine the phenomenon under study. We perform a statistical analysis of the collected data in the period of 2008–2021 to identify trends and patterns in the factors under consideration. The ordinary least squares method allows to estimate the impact of the selected factors on poverty. The results show that unemployment has a statistically significant positive effect (based on the sign of the estimated parameter of the regression model) on poverty, while average wage has a statistically significant negative effect on poverty. Based on the obtained results, we present possible solutions to company managers on how they could contribute to reducing poverty in the country. We conclude that company managers could apply more sustainable development goals in their businesses, reduce gender inequality, increase wages, hire unskilled workers, and help them to improve. In this way, company managers could contribute to reducing poverty in the country.

Keywords: average wage, ordinary least squares, poverty, unemployment.

Šio darbo tikslas – įvertinti skurdo mažinimo galimybes, lemiančias vidutinio darbo užmokesčio ir nedarbo daromą įtaką skurdui. Remdamiesi mokslinės literatūros analize, nustatėme veiksnius, lemiančius tiriamą reiškinį. Atlikome duomenų, surinktų 2008–2021 m. laikotarpiu, statistinę analizę ir nustatėme nagrinėjamų veiksnių tendencijas bei dėsningumus. Įprastas mažiausių kvadratų metodas leidžia įvertinti pasirinktų veiksnių įtaką skurdui. Rezultatai rodo, kad nedarbas turi statistiškai reikšmingą teigiamą poveikį (remiantis įvertinto regresijos modelio parametro ženklų) skurdui, o vidutinis darbo užmokestis turi neigiamą statistiškai reikšmingą įtaką skurdui. Atsižvelgdami į gautus rezultatus, įmonių vadovams pateikiame galimus sprendimus, kaip galima prisidėti prie skurdo mažinimo šalyje: taikyti darnaus vystymosi tikslus, mažinti lyčių nelygybę, didinti atlyginimus, samdyti ne kvalifikuotus darbuotojus ir padėti jiems tobulėti.

Raktiniai žodžiai: vidutinis atlyginimas, įprasti mažiausi kvadratai, skurdas, nedarbas.

Introduction

Poverty is a social phenomenon when people's income is too low to meet even

the most basic needs. Lack of income causes obstacles that limit a person's full-fledged life, the access to various services, and hinders participation in society. This

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is a very important and relevant topic not only in developing but also in developed countries. Today this problem is even more relevant due to the events of the recent years in the world, such as the COVID-19 pandemic, the increase in energy prices, the migrant crisis, the war in Ukraine, etc. These events affected people all over the world, especially the poor ones. Representatives of this social group often experience discrimination, are forced to feel guilt and shame, so it also affects the mental health of children and adults.

Alleviating all types of poverty is the first step towards sustainable development. The agenda of the United Nations organization envisages the implementation of this goal (and the remaining sixteen sustainable development goals) by 2030. To achieve these goals faster and reduce the problem of poverty effectively, initiatives must be taken by the main engine of the economy - businesses. In today's world, it is extremely important that companies are socially responsible and try to contribute to the implementation of the sustainable development goals. Although poverty reduction is only one of the seventeen goals of the United Nations organization, these goals are closely related, they all create a better tomorrow for everyone and undoubtedly contribute to poverty reduction. Therefore, the involvement of businesses in the implementation of these goals is extremely important. Thus, the importance and relevance of this problem is indisputable, so at the end of this paper, we will present several suggestions on how the country's businesses could contribute to poverty reduction.

Most previous studies examine the determinants of poverty in a country, for example, T. Kindling (2018), S. Kapelyuk (2015), World Bank (2015), O. J. Sotomayor (2020), M. Campolieti, M. Gunderson and B. Lee (2012), M. Y. Saari et al. (2016), R. M. Campos-Vazquez and G. Esquivel (2022), etc. However, some studies examine many factors, perform different kind of analysis, use different methods, etc., and thus produce different results. In this study we concentrate only on two factors, i.e., unemployment and average wage, since these factors seem to be the most important and we want to determine which one of them has a major effect on poverty.

The research object is the effect of average wage and unemployment on poverty. **The aim of research** is to access whether average wage or unemployment has a higher impact on poverty in Lithuania. **The problem of research** can be determined by a question: which one of two factors, i.e., average wage or unemployment, has a higher impact on poverty level?

A few **research methods** are used in this study, i.e., a comparative analysis of literature, a statistical and graphical analysis of the data and econometric analysis using ordinary least squares for time series data.

The paper is organized as follows. The second section presents a review of theoretical literature on factors affecting poverty. The third section describes the methodology of the research. The next section presents estimation results, and the last section concludes this study.

Theoretical analysis

Poverty is understood as a lack of resources, leading to the fact that a set of individuals, a social group or a social stratum cannot meet their basic needs, cannot take care of themselves. The problem of poverty involves economic, psychological, political, technological, socio-cultural and other elements that are closely interrelated (Olilingo, Putra, 2020). A. Šileika and R. Zabarauskaitė (2006) stress that poverty is one of the most relevant problems faced not only by the residents of Lithuania, but also by the developed countries of the world. In 2000, at the United Nations Millennium Summit, which was attended by 189 countries of the world, the Millennium Development Goals were mentioned, one of the most important of which was to reduce population poverty and social exclusion (Šileika, Zabarauskaitė, 2006).

It can be observed that the definitions of poverty are similar and refers to those people whose income is too low for people to be able to take care of themselves needs and this causes many other problems, such as stress, dissatisfaction with life, dissatisfaction with the government, etc.

According to D. Barčiukienė (2007), poor people in big cities, towns and villages receive very low income from work. Mostly people work temporarily. This could include seasonal and informal jobs. However, such jobs do not ensure permanence in a person's life. In addition, when working informally, a person cannot use the guarantees provided by social insurance. It is necessary to emphasize that "poverty is especially encouraged by long-term unemployment, i.e., when there is no work for more than 12 months period" (Zabarauskaitė, 2005,

p. 5). D. Kšivickienė (2006, p. 83) states that "having a job is one of the safeguards that ensure protection against poverty. Work identifies a person's needs, talents, social and economic status". Also, work helps to ensure income, satisfaction of needs, self-realization.

The concept of poverty is ambiguous, it changes as society develops and living standards change in the country. A brief and comprehensive definition of poverty is difficult because it affects many people's situation, aspects of his or her situation in the community (physical, social, moral, psychological, etc.). Material poverty is usually defined as the lack of material resources of a certain population group, when a person cannot reach a certain standard of living in the country (relative poverty) or meet minimum personal needs (absolute poverty). The poor people cannot participate fully in economic, social, and civic life, they cannot enjoy life standards and quality of life that are the norm in that society.

Poverty in itself is not only about a lack of income, but its manifestations also include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion, and under-participation when making decisions. As United Nations (n.d.) state, "in 2015, more than 736 million people lived below the international poverty line. Around 10 percent of the world population (pre-pandemic) was living in extreme poverty and struggling".

The United Nations define unemployment as the main cause of poverty. Unemployment is an economic and social phenomenon when a certain part of people who are able and willing to work cannot get a job. According to the causes, temporary, structural, and cyclical

unemployment are distinguished. Temporary unemployment refers to the normal job search process when the unemployed have access to the labour market qualifications that meet the demand (after leaving the previous job for personal reasons, after fixed-term employment contracts, who are looking for a job for the first time after graduation, after changing their place of residence and other), and is determined as the number of job vacancies that corresponds to the number of unemployed persons in the same occupations number in the same city or region.

At the micro level, businesses can contribute to reducing unemployment by implementing more programs. Also, companies could hire unskilled workers who find it difficult to find job. When hiring new employees, they could finance the relevant in-service training. Such an approach is particularly important in the context of poverty, as it helps people living below the poverty line to gain knowledge and experience that allow them to have higher disposable income.

Regarding the period before the COVID-19 pandemic, i.e., in 2018, about 8.6 percent of the world's people lived in poverty. In 2020, more than one hundred million people were pushed into extreme poverty. This number continues to grow due to the ongoing war in Ukraine, inflation, food shortages and other threats. It is predicted that by 2030 the global poverty rate will reach 7 percent (United Nations, 2022). According to a study conducted by L. Gorman (2006), when unemployment increases by 1 percentage point, the poverty rate increases by 0.4-0.7 percentage points, and by 10 percent raising the wage reduces the poverty

rate by 2 percentage points. These results confirm the definite relationship between poverty, unemployment, and wages.

A 2020 study found that a 7 percent increase in average household income in the United States led to a 2 percent decrease in poverty. According to the study, increasing the living wage theoretically reduces poverty, but in practice this is not always the case, as it must be considered that increasing wages may be unprofitable for some employers, so there is a risk that unemployment will increase and poverty will increase as well (Gorman, 2006).

Many scientists analysed the phenomenon of poverty and the factors influencing this phenomenon. For example, D. Barčiukienė (2007), M. Campolieti et al. (2012), R. M. Campos-Vazquez, G. Esquivel (2022), D. Dahliah, A. N. Nur (2021), T. Gindling (2018), S. Kapelyuk (2015), M. Y. Saari et al. (2016), O. J. Sotomayor (2021) and other scientists analysed poverty and the factors affecting this phenomenon. Some studies are described in more detail in Table 1. As can be seen, in their research, researchers usually single out unemployment and minimum wages (or income) as factors affecting poverty. However, some studies analyse many factors, some of them analyse only one factor that affects poverty, they use different methods, analyse different countries, regions, and therefore the obtained results differ.

It is interesting to note that none of the studies described analysed average wage as a factor influencing poverty. Because of this research gap, in our study we want to analyse the average wage, which we believe should have an impact on poverty as well as the minimum wage.

Table 1. Research on factors affecting poverty

Author(s) name and surname (year)	Analysed period	Analysed countries/ regions	Variables that affect poverty	Results
D. Barčiukienė (2007)	1996-2004	Lithuania (urban and rural areas)	<i>Unemployment¹, household income, level of education, development of physical and social infrastructure, belonging to the most vulnerable groups, lack of information.</i>	When there are unemployed people in the family, it becomes more closed, conflicts increase, it becomes more vulnerable. Poor people receive very low labour income.
M. Campolieti, et al. (2012)	1997-2007	Canada	<i>Minimum wages.</i>	Minimum wages do not have a statistically significant effect on poverty.
R. M. Campos-Vazquez, G. Esquivel (2022)	2019-2020	Mexico	<i>Minimum wages.</i>	Poverty decreased by 11-13 percent due to the higher minimum wage increase.
D. Dahlih, A. N. Nur (2021)	2010-2020	East Luwu (Indonesia)	<i>Unemployment, human development index, gross domestic product.</i>	Unemployment has a positive and insignificant effect on the poverty level.
Nurdiana et al. (2020)	2009-2018	South Sulawesi Province (Indonesia)	Economic growth, inflation, <i>unemployment.</i>	Unemployment affects poverty.
O. J. Sotomayor (2021)	n.d.	Brazil	<i>Minimum wages, inequality.</i>	Within three months of the minimum wage increase, poverty and inequality decreased by 2.8 and 2.4 percent, respectively.
R. Zabarauskaitė (2006)	2001	Vilnius city municipality, Molėtai district municipality	Number of persons on social assistance, number of persons living in the village, number of children in households, household income from the main economic activity, <i>unemployment rate, education level.</i>	The biggest problem that leads to poverty is long-term unemployment.

The conceptual framework of the research is presented in Figure 1. Based on the research problem, literature review and the conceptual framework, the following hypotheses are proposed in this study:

H1: Higher unemployment increases poverty.

H2: Higher average wage decreases poverty.

¹ Factors under the interest of this study are italicized.



Fig. 1. Conceptual framework

Summarising the results of the theoretical analysis, it can be emphasized that poverty is understood as a lack of resources that leads to economic, technological, psychological, political, sociocultural, and other problems. This is one of the most pressing problems facing low-income countries.

Methodology

This paper analyses poverty and its two determinants, i.e., average wage and unemployment, in order to assess the impact of these factors on poverty, and more precisely, to determine which of them has a greater impact on poverty. Poverty as a phenomenon can be measured by the *absolute poverty rate*. It is an indicator expressed by the share of people with equivalent disposable income less than the absolute poverty threshold. The *absolute poverty threshold* (minimum amount of consumption needs) is the amount needed to meet the most basic food and non-food needs of a person. In Lithuania, the Ministry of Social Security and Labour of the Republic of Lithuania annually calculates the amount of this threshold (Official Statistics Portal, 2022a).

One more important indicator when talking about poverty is the *at-risk-of-poverty threshold* which is defined as a relative income level which would

qualify households with disposable income below this amount as living in poverty. At-risk-of-poverty indicators are calculated using at-risk-of-poverty threshold equal to sixty percent of the equivalent median disposable income (Official Statistics Portal, 2022b).

When it comes to poverty, there are more indicators that are used for analysis by researchers or policy makers, for example, at-risk-of-poverty gap (Official Statistics Portal, 2022a, 2022b), Gini index, poverty headcount ratio at national poverty lines, multidimensional poverty index (World Bank, 2022), etc.

This research is conducted using a multiple regression model with time series data for Lithuania in the period 2008-2021. The description of the research variables is provided in Table 2. Data sources: Official Statistics Portal (2023), World Bank (2023), and Country Economy (2023).

A general form of a multiple regression model is:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \dots + u_t,$$

where: Y denotes the predicted variable; X_1 and X_2 are predictors; β_0 represents the constant term; β_1 and β_2 coefficients denote the average predicted change in Y from a one unit rise in X_1 or X_2 , respectively; t means time period; u_t is the error term (Hyndman, Athanasopoulos, 2018; Chumney, Simpson, 2006).

Table 2. Variables of the model

Variable	Variable abbreviation	Indicator
Poverty	<i>Poverty</i>	Absolute poverty rate (share of people living at risk of poverty)
Unemployment	<i>Unem</i>	Unemployment rate (% of total labour force)
Average wage	<i>Wage</i>	Average annual wage (thousand euros)

Source: the authors' calculation.

In this study we analyse poverty (*Poverty*) as a predicted variable (Y) in the model while unemployment (*Unem*) and average wage (*Wage*) are predictors (Xs) of the model. The regression model of this study can be written as the following expression:

$$Poverty_i = \beta_0 + \beta_1 Unem_i + \beta_2 Wage_i + u_i.$$

In order to test the research hypotheses, we run a regression model using ordinary least squares (referred to as OLS) method. The main idea behind this method is to minimize the sum of squared residuals. The goodness-of-fit of the model is measured by the coefficient of determination which ranges between 0 and 1 (the closer to 1, the better the model). The statistical significance of the model is tested using F-test, while the statistical significance of the parameters is tested using t-test (p-value<0.05) (Chumney, Simpson, 2006). Other steps are also taken to obtain valid results of the regression model:

- Outliers' detection. Outliers are observations that are far from the rest of the data, i.e., exceptions. Identification of outliers in the dataset is performed using standardized residuals method. An observation is considered to be an outlier if the

absolute magnitude of the standardized residual exceeds 3 standard deviations.

- Testing the normality of residuals. Shapiro-Wilk test is used to check for the normality of residuals (p-value higher or equal to 0.05).
- Multicollinearity check. Multicollinearity is a phenomenon when independent variables are correlated with each other. This phenomenon can distort the results of the regression model because it creates unnecessary information. It is very important to solve this problem in the model. A multiple regression model is most appropriate when there is no relationship between the independent variables.
- In this paper, variance inflation factor (VIF) is used to detect the problem of multicollinearity. VIF above 5 indicates that the problem exists (Daoud, 2017).
- Autocorrelation check. Autocorrelation is a phenomenon when errors are correlated with each other. It can be positive or negative. The most used test for autocorrelation detection is the Durbin-Watson *d* test. The hypotheses of this test:

- H_0 : residuals are uncorrelated.
- H_1 : autocorrelation exists.

If the Durbin-Watson d statistic is between 1.5 and 2.5, it is concluded that there is no autocorrelation. If this statistic is below 1.5, it means there is a positive autocorrelation. If the Durbin-Watson d statistic is greater than 2.5, it means there is negative autocorrelation.

Given that the paper aims to determine the factor that is more important for the prediction of poverty, the standardized coefficients of the regression model are tested. Unemployment and average wage are measured in different units; thus, the evaluation of the standardized coefficients is convenient to decide which of them has a higher effect on the predicted variable. The standardized regression coefficient is calculated by multiplying the resulting regression coefficient by the standard deviation of X and dividing it by the standard deviation of Y (Siegel, Wagner, 2022).

Results of the research

Statistical and graphical analysis of the data. Based on the collected data from 2008 to 2021, the main descriptive statistics are presented in Table 3. As can be seen, the average absolute poverty rate during the analysed period was 29.20% (the lowest rate was in 2021 – 24.50% and the highest rate was in 2010 – 34.00%). The mean of the average annual wage in the analysed period was 10091.50 euros, while the average unemployment rate was 10.11%.

A visual representation of the data² is provided in Figure 2.

It can be seen from the graph that the absolute poverty rate varied slightly throughout the analysed period and was the highest in 2010. The unemployment rate was also the highest in 2010. This could have happened due to the global financial crisis in 2008. However, in general, after 2010 the unemployment rate in the analysed period decreased in the country, except for 2020, when the

Table 3. Descriptive statistics

Descriptive statistic	Absolute poverty rate	Unemployment rate	Average annual wage
Mean	29.20	10.11	10.09
Median	29.45	8.81	8.37
St. deviation	2.91	3.78	3.98
Minimum value	24.50	5.83	6.74
Maximum value	34.00	17.81	18.56

² In this graph, average wage is expressed in euros.

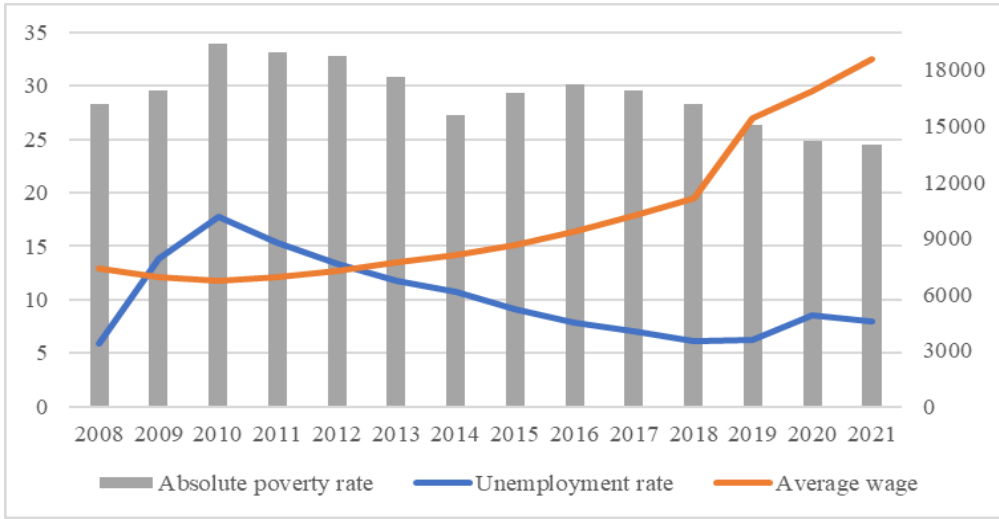


Fig. 2. Poverty and its determining indicators in Lithuania, 2008-2021

unemployment rate increased. This could have happened due to the COVID-19 virus that started in 2019. At that time, the absolute poverty rate decreased. The average annual wage in Lithuania is growing from 2010 as the economic situation is increasing in the country.

Econometric analysis. In this paper, poverty is considered as predicted variable (Y) of the regression model, while unemployment and wage are predictors (Xs). The first step in econometric analysis is to check data for the outliers. Standardized residuals analysis revealed that there are no exceptions in the collected data. Shapiro-Wilk normality test was used for the detection of normality of residuals. Based on the result of this test, we can state that the residuals of the model are normally distributed (p-value is greater than 0.05, it is 0.08).

A multiple regression model is most appropriate when there is no relationship between the independent variables,

thus, it is important to check for multicollinearity. In this paper, we analyse whether there is a multicollinearity problem with reliance on variance inflation factor. VIF values for each independent variable were equal to 1.45. It is lower than 5, thus, we can state that there is no problem of multicollinearity in the model. Thus, both independent variables, i.e., unemployment and wage are not correlated with each other.

The most used test for autocorrelation check is the Durbin-Watson *d* statistic. This test is used in this paper to find out whether the errors of the regression model are correlated with each other. We hypothesized that H_0 : the errors are not autocorrelated, and H_1 : positive or negative autocorrelation exists in the model. The result of the Durbin-Watson *d* statistic is 1.53 and we can conclude that there is no autocorrelation problem in the regression model.

Based on the F-test, it is concluded that the model is statistically significant (p-value is equal to 0.00, i.e., it is less than 0.05). After evaluating the coefficient of determination, it can be said that the predictors explain 79.1% of the variation in poverty. Using the data, we obtained the following regression results:

$$\text{Poverty} = 30.55 + 0.31 * \text{Unem} - 0.44 * \text{Wage}.$$

p-value (t-test) = (0.00) (0.04) (0.00)

p-value of t-test for both predictors is less than 0.05, it means, the parameters are statistically significant. Based on the obtained results, we can conclude that both hypotheses are confirmed:

H1: Higher unemployment increases poverty.

H2: Higher average wage decreases poverty.

Given that the paper aims to determine the factor that is more important for the prediction of poverty, the standardized coefficients of the regression model are determined: standardized coefficient for *Wage* is equal to -0.60, while for unemployment (*Unem*) it is equal to 0.40. We can conclude that average wage has a higher impact on poverty.

Conclusions

The problem of poverty is multidimensional, it involves economic, psychological, political, technological, socio-cultural and other elements (Olilingo, Putra, 2020). Poverty is not only a lack of income, but it is also associated with hunger, limited access to education, exclusion and other problems. As A. Šileika and R. Zabarauskaitė (2006) point out,

all the countries face with the problem of poverty.

Scientists pay attention to the problem of poverty. They analyse various factors that can influence the growth of poverty. However, it is noteworthy that researchers in their studies usually single out unemployment and the minimum wage (or income) as factors affecting poverty. However, some studies analyse many factors, some - only one factor that affects poverty, different methods are used, different countries and regions are analysed, which is why the results obtained differ. The purpose of this study is to analyse two factors that affect poverty and determine which one affects poverty more.

One of the predictors of this research is unemployment rate as unemployment is singled out as the main cause of poverty. It is defined as a social and economic phenomenon when a certain part of those who are able and willing to work cannot get a job. The biggest problem is long-term unemployment. Another predictor of the model is average annual wage since scientists usually analyse wage or income as a very important factor for poverty predictions.

For the analysis of poverty, we chose an absolute poverty rate indicator.

This research is conducted using a multiple regression model with time series data for Lithuania in the period 2008-2021. Based on the research problem, literature review and the conceptual framework, the two hypotheses are proposed in this study: (H1) Higher unemployment increases poverty, (H2) Higher average wage decreases poverty.

In order to test the research hypotheses, we ran a regression model using OLS method. The results revealed that an increase in unemployment by 1 percentage point leads to an increase in poverty by 0.31 percentage point; also, when average wage increases by 1 thousand euros, poverty decreases by 0.44 percentage point. The standardized coefficients of the regression model exposed that average wage has a higher impact than unemployment on poverty.

Based on the research results, recommendations can be made to company managers. Businesses could implement more programs to help reduce unemployment, take more into account sustainable development goals to help reduce gender inequality, and include women in the labour market with gender-neutral wages. Also, company managers could hire unskilled workers who find it difficult to find work. When hiring

new employees, managers could fund appropriate in-service training. Such an approach would help people living below the poverty line to gain knowledge and experience that would lead to higher disposable incomes. Indeed, companies' managers could organize various actions that would support families and persons living in poverty. In this way, the companies would earn a good name and contribute to reducing the level of poverty. They could also establish supplements for the families or children of hard-living workers, help with school shopping, and set up summer camps for children. Thus, there are many ways in which business leaders can reduce the unemployment rate in the country, which affects the poverty rate. By helping to reduce unemployment, business leaders would save people who are struggling and living below the poverty line.

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SKURDO MAŽINIMAS: SKURDUI POVEIKĮ DARANČIŲ VEIKSNIŲ ANALIZĖ LIETUVOJE

S a n t r a u k a

Šiame straipsnyje siekiama nustatyti vidutinio darbo užmokesčio ir nedarbo įtaką skurdui, identifikavus svarbesnį skurdą prognozuojantį veiksni. Teorinėje darbo dalyje atlikta mokslinės literatūros analizė padėjo nustatyti veiksnius, lemiančius tiriamą reiškinį. Išanalizavus 2008–2021 m. laikotarpio duomenis Lietuvoje, sudarytas tiesinės regresijos modelis, kuriame prognozuojamas kintamasis – skurdas, prognozuojantys kintamieji – nedarbas ir vidutinis darbo užmokestis. Pritaikius įprastą mažiausių kvadratų metodą, įvertinta pasirinktų veiksnių įtaka skurdui.

Ir sudarytasis modelis, ir gauti parametru įverčiai yra statistiškai reikšmingi. Rezultatai rodo, kad nedarbas daro statistiškai reikšmingą teigiamą poveikį skurdui (didina), o vidutinis darbo užmokestis turi neigiamą statistiškai reikšmingą įtaką skurdui (mažina). Remiantis gautais rezultatais,

galima daryti išvadą, kad abi tyrimo hipotezės patvirtina: (H1) Didėjantis nedarbas didina skurdą ir (H2) Didėjantis vidutinis darbo užmokestis mažina skurdą.

Atsižvelgiant į tai, kad darbe siekiama identifiikuoti veiksnį, svarbesnį skurdo prognozei, nustatyti standartizuoti regresijos modelio koeficientai: standartizuotas darbo užmokesčio koeficientas lygus $-0,60$, nedarbo koeficientas lygus $0,40$. Taigi galima daryti išvadą, kad vidutinis darbo užmokestis labiau veikia skurdą.

Atsižvelgdami į gautus rezultatus, įmonių vadovams pateikiame galimus sprendimus, kaip prisidėti prie skurdo mažinimo šalyje: versle taikyti darnaus vystymosi tikslus, mažinti lyčių nelygybę, didinti atlyginimus, samdyti nekvalifikuotus darbuotojus ir padėti jiems tobulėti.

Virtual Communities of Practice as a Knowledge Sharing Tool: Recommendations for International Business

Knowledge sharing is essential for a person to grow individually and professionally. In recent years, international businesses have tended to realize the importance of having a good knowledge management system in place. The COVID-19 pandemic, back in 2020 brought a shift to the way of how companies operate with the majority turning to remote work. As a result, companies needed to adapt their knowledge sharing strategies to more remote possibilities. To guarantee that the employees are sharing their knowledge and are able to learn from others, more businesses started to adopt innovative tools for knowledge sharing. One of such tools is virtual communities of practice that brings a chance for employees to have a collaborative tool where they are connected with likeminded people. The objective of this article is to provide recommendations for ensuring knowledge sharing through virtual communities in international business organizations. To achieve this objective, potential knowledge sharing practices in the context of international business are discussed. Additionally, an original research methodology based on virtual ethnography for identifying knowledge sharing practices in an international business organization is presented, and the qualitative research findings are discussed and interpreted.

Keywords: virtual communities of practice, knowledge sharing, international business, knowledge types.

Asmeniniam ir profesiniam tobulėjimui svarbu dalytis žiniomis. Pastaraisiais metais tarptautinės įmonės pastebėjo gerai veikiančios žinių valdymo sistemos svarbą. COVID-19 pandemija 2020 m. pakeitė įmonių veikimo būdą – daugelis parėjo į nuotolinį darbą. Dėl šios priežasties įmonės turėjo pritaikyti savo žinių dalijimosi strategijas prie nuotoliu dirbančių darbuotojų. Tad pradėjo naudoti inovatyvias žinių dalijimosi įrankius, kad užtikrintų darbuotojų žinių dalijimąsi bei mokymąsi vienas iš kito. Vienas tokių įrankių – virtualios bendruomenės, kai darbuotojai gali bendrauti ir dalytis žiniomis su kolegomis, turinčiais tokių pačių interesų. Šio straipsnio tikslas – parengti dalijimosi žiniomis užtikrinimo per virtualias praktikos bendruomenes rekomendacijas, skirtas tarptautinėms verslo organizacijoms. Siekiant įgyvendinti tikslą, aptariamos galimos žinių dalijimosi praktikos tarptautinio verslo kontekste, pateikiama originali virtualios etnografijos požiūriu grįsta žinių dalijimosi praktikos identifikavimo tarptautinėje verslo organizacijoje tyrimo metodika bei aptariami ir interpretuojami kokybinio tyrimo rezultatai.

Raktiniai žodžiai: virtualios praktikos bendruomenės, žinių dalijimasis, tarptautinis verslas, žinių tipai.

Introduction

Knowledge sharing is one of the most important concepts in the world nowadays.

The ability of a person to learn new abilities allowed him to survive, however this learned knowledge needed to be shared with others to ensure the growth of the

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community. According to the researchers - knowledge sharing is an interaction between individuals where the raw material being shared is knowledge (Castaneda, Cuellar, 2020).

Knowledge sharing is important in the personal and professional life of an individual. International businesses are starting to understand the importance of right knowledge management strategy in the company. As the world went into lockdown back in 2020, it was important for the companies to ensure the knowledge exchange between employees and therefore more virtual knowledge sharing tools were adapted into daily business operations (Blagov, Anand, 2022). For the companies it is also important to ensure that employees are communicating with one another and are creating team spirit in their community (Davidavičienė, Al Majzoub, Meidute-Kavaliauskiene, 2020). However, there is a visible gap of usage between open and collaborative knowledge-sharing tools such as virtual communities of practice. Virtual communities of practice are an effective way to share knowledge between individuals that are connected by the same interests and international businesses should put more emphasis on creating open spaces for these communities to strive.

The research analyzing the aspects of knowledge sharing has been increasing in numbers during the past decades. In scientific literature it is possible to find a broad variety of research done on topics related to knowledge sharing. One of these topics are knowledge management. Back in 2014, B. Meihami and H. Meihami stated that knowledge management is the process in business during which organizational managers improve

overall performance by setting the way of how to manage organizational knowledge better (Meihami, Meihami, 2014). In 2016, R. Nowacki and K. Bachnik described process of knowledge management as a willingness of a company to introduce an innovative way to process information in order to execute business strategy (Nowacki, Bachnik, 2016). Overall, the majority of scientists describe knowledge management as a process through which companies can manage their interorganizational knowledge in order to reach the designated goals.

As the field of knowledge management has gained interests from the researchers, the companies started to recognize the importance of correctly managing their knowledge to gain a competitive advantage. Researchers started talking about employees' motivations to share their personal knowledge with others. In 1997, Robert J. Vallerand created the *hierarchical model of intrinsic and extrinsic motivations* (HMIEM) (Vallerand, 1997). The model considers multiple motivational representations in diverse settings, how these various motivations are related, and the factors that influence and have an impact on these representations of motivation. The individual motivation to participate in virtual communities of practice, can be separated into three categories: intrinsic, extrinsic, and community motivation. If the person is motivated by intrinsic motivational factors, he is motivated by performance and the ability to share knowledge. These people do not seek rewards, but rather enjoy helping others. If the person is motivated by intrinsic factors, he feels that by sharing the knowledge with others, he takes his personal life into

his own hands and uses his powers to improve it (Wang, Zhang, Jin-Xing Hao, Chen, 2019). Furthermore, a person can be motivated by extrinsic factors. These factors are rewards granted to employees, mostly these rewards are monetary (Setiawan, Kurniabudi, Fernando, 2016).

With personal motivation, employees are expressing the need for knowledge sharing, however the international companies are the ones that provide tools for this. With the changing world around, knowledge-sharing tools are evolving. The first generation of knowledge-sharing tools were designed to resolve issues that are related to geographical distance of workers or temporary challenges in daily life. The second generation of knowledge sharing tools are designed to reduce social distance in work since the majority of the teams can work from home and meet only online (Lee, Wang, Yeoh, Ikasari 2020).

In international businesses, second generation knowledge sharing tools are not used as wisely as they could. Second generation tools like social media, video conferencing or sharing and storing documents online are used way less than tools such as email or companies' intranet (Deloitte, 2013).

Within virtual teams, knowledge sharing can simultaneously happen in a few different online platforms. This may happen since some platforms are more user friendly or have specific functionalities or features that are necessary for the employees (Lee, Wang, Yeoh, Ikasari, 2020). The most valuable tool for sharing knowledge within virtual teams is collaboration sites while simultaneously this being the most important tool while performing at work. Chat groups

and direct messaging also is viewed as a useful tool to maintain relationships between team members, while at the same time helping the members to obtain new knowledge (Trees, 2021).

Even though companies adopted new virtual collaboration tools, there is still a visible gap in usage of open and joined collaboration tools. Communities of practice are not visible as a useful tool to perform daily job functions; however, communities allow the employees to connect with like-minded colleagues and all of this is critical to ensure innovation, creative problem solving and knowledge sharing inside the organization. Therefore, there is a need to understand the activities of virtual communities of practice to understand how knowledge is shared in them.

The aim of research is to prepare recommendations for boosting knowledge sharing through virtual communities of practice in international business settings.

The objectives of research:

1. To conduct a literature review on knowledge sharing practices in international business.
2. To carry out a qualitative analysis on knowledge sharing in virtual communities of practice in international business.

Literature review

Types of knowledge

Each person during their life have obtained different knowledge that they are able to share. Knowledge that can be shared is divided into two main

dimensions: tacit and explicit knowledge. Tacit knowledge was first described back in the 20th century and is considered to be a knowledge that is hard to articulate to others (Mohajan, 2017; Smith, 2001). Tacit knowledge is the knowledge we draw in actions like driving, operating a machine. It is hard for a person to describe how to ride a bicycle but is easier to show. Tacit knowledge is personal, mostly gained from other people.

Due to the difficulty writing down the tacit knowledge individuals have; managers are more likely to turn to explicit knowledge. Explicit knowledge is considered to be data or information that is coded, stored, and spread within people. This kind of knowledge is easily transferred and shared within individuals (Smith, 2001). Explicit knowledge is considered to be logical and objective. Explicit knowledge is easily transferred since it is related to theories (Maravilhas, Martins, 2018). This type of knowledge is considered to be technical knowledge that can be described in formal meetings, manuals. Explicit knowledge is mostly shared via electronic methods, prints or other methods that are considered to be formal ones. For a person to gain explicit knowledge he needs to have a formal education or needs to finish some structural studies (Smith, 2001). Since this type of knowledge is easily coded and stored it is also way faster to be shared.

During more recent years, the knowledge type division has grown. Based on the recent research, it is possible to find more knowledge types than only tacit and explicit. These knowledge types are:

- Implicit
- Declarative
- Procedural

- Posteriori
- A priori (Drew, 2023, Gasik, 2011).

The additional knowledge types allow to understand, that each individual has their own personal knowledge that is gained via different experiences. Within teams, this knowledge can be shared via social interactions. Companies need to ensure that social interactions are constant in the organization in order to keep the knowledge sharing.

Knowledge sharing practices in international business

For the international companies to succeed in knowledge sharing, first of all they need to figure out the knowledge management strategies best suitable for their company goals. In scientific literature, researchers have identified two different strategies the companies can use to enable the knowledge sharing in their organization.

The first strategy that can be used in knowledge management is called *codification*. The main idea of codification is the people-to-document approach. If the company is using this method the main goal is to capture, codify, store and reuse the information gained from individuals. The collected knowledge later can be used to reach the set goals by the company (Bolisani, Padova, Scarso, 2020).

The second strategy is *personalization*. In personalization strategy, knowledge management is focused on person-to-person interaction. While using this method, the main focus is on the sharing of tacit knowledge using tools such as human interaction or social networking (Bolisani, Padova, Scarso, 2020).

The correctly identified strategy can allow the business to choose the knowledge sharing tools that will be based on what types of knowledge the company wants employees to share. The communities of practice in the recent years gained popularity as it brings the possibility to merge knowledge sharing and societal activities in the company. While participating in the community employees feel the sense of belonging and for this reason, they share more which brings the knowledge into the company.

Virtual communities of practice as a knowledge sharing tool

Maintaining and continuously exploiting an organization's intellectual capital has grown to be a challenging task. Changes in organizational structures and employee distances from one another are putting traditional organizational boundaries to the test. In the past years, communities of practice (CoP) have become an important tool for companies in their knowledge management policies. The term communities of practice (CoP) are defined as an activity in which participants are sharing understanding and concerns about what they are doing and how it affects them and the community itself. (Ardichvili, 2008).

Virtual communities of practice are similar to CoP, however, to share their knowledge these communities use an internet connection. (Wenger-Trayner, Wenger-Trayner, 2015) Virtual communities of practice not only use online learning platforms or websites but also encourage real-time learning methods such as online conferences to remove

geographical barriers and bring the possibility to attract an interactive and diverse crowd. (Bermejo-Caja, Koatz, Orrego, 2019) Virtual communities of practice play the main role in the knowledge management strategies inside the company and within different ones. Moreover, it is being argued that these virtual communities should be considered an important tool for collective learning in the organization (Ardichvili, 2008).

Back in 1996, I. Nonaka, H. Takeuchi and K. Umemoto proposed a SECI model that helps to explain the movement of tacit and explicit knowledge through different phases and how it helps for an individual and organization to gain new knowledge and broaden the already existing knowledge (Nonaka, Takeuchi, Umemoto, 1996). In this model, *externalization process* explains how the knowledge is shared in virtual communities of practice. During the externalization process tacit knowledge is changed to explicit knowledge and takes on forms of metaphors, models, or concepts. In organizational settings, this happens when companies are documenting the processes. The main aim of this process is to generalize the collective knowledge, which later could be transferred to the newcomers in the company (Nonaka, Takeuchi, Umemoto, 1996).

Organizations can benefit substantially from knowledge sharing through virtual communities of practice. As people share their expertise and experiences, new knowledge can be created, which can improve organizational processes and procedures, clarify goals and objectives, and lead to more informed decision-making. The new organizational

knowledge that results can then be leveraged to drive innovation, improve performance, and boost competitiveness.

Research methodology

Research method: As the main idea is to analyze the online communities within specific business the chosen strategy needs to explain the analyses of communities. Therefore, it is important to approach this research using *Netnography*. Netnography uses not intrusive research methods such as observation that allows a researcher to immerse himself in an online community, participate in its activities real-time. (Addeo, Delli Paoli, Esposito, Bolcato, 2019). Based on this information, the data was collected using observation method. This helps to analyze the online community in their comfort zone, therefore will provide a splendid view on how knowledge is being shared within these communities.

The sample: The research was conducted in the international business working around Northern Europe. The main sector where business is focusing

is computer software development, however they also provide consultation, accounting, and investment services. The company is promoting open communication, internal learnings, and self-management therefore they have created virtual communities, where people can meet up and discuss the topics, they find passion for.

In total three virtual communities of practice were observed, the characteristics of each community are presented in Table 1.

Research timeframe: from 16th of January 2023 until 30th of April 2023.

Research data analysis: *the deductive coding* system was chosen. Based on the types of knowledge and the nature of virtual communities of practice, the deductive coding system allowed to create a few codes beforehand and this technique assisted in focusing the coding on topics that were recognized to be essential. Additionally, the deductive coding system narrows down the numbers of codes which could lead to more generalized cases (Skjott Linneberg, Korsgaard, 2019).

The research data was analyzed using MaxQDA platform. As each observed virtual community of practice had their

Table 1. Characteristics of communities

Name of community	Number of members	Topics of interest	Communication channels
Community 1	18	Celebrations (personal and national holidays, specific days) Communication	Google meets; Google chat; Slack channel.
Community 2	13	Benefits; HR topics	Google meets; Slack channel.
Community 3	10	Motivation; Internal learnings.	Google meets; Slack channel.

Source: prepared by the authors.

own document of transcribed conversations, the data was structured accordingly from the most information found to the least. Overall, 3 documents were analyzed using MaxQDA program. While performing the coding, 18 codes connected with the research topic were created. In total 191 segments were coded.

Research ethics: At the first stage of research, all virtual communities of practice were contacted. They were informed about the future research, and they had a chance to plan a meeting or write down the questions they had about the research. Once the consent from the virtual community was gained and the access to communication platforms were granted, all members of the community were informed about the ongoing research and also, they were informed about the possibility of withdrawing from the research as any time. All gathered information was coded to protect the anonymity of the community members and the company itself. The transcribed conversations were used strictly for the research, therefore it was not stored or shared.

Research limitations: empirical research has its own limitations. Firstly, the research was conducted in one chosen international business operating in Northern Europe. The organization itself has its own unique culture and technological decisions that may impact the virtual communities of practice. For this reason, it may be hard to transfer the findings of this empirical research to other companies. Secondly, the sample size of the empirical research was three virtual communities of practice. The bigger sample size would have allowed gaining a broader understanding of how

virtual communities of practice share knowledge and therefore the findings of this empirical research may be not applicable generally.

Findings and discussions

In the conversations of virtual communities of practice, these types of knowledge were recognized:

1. Tacit
2. Explicit
3. Implicit
4. Declarative
5. A posteriori

After the shared knowledge types were identified, a coding system was created. Under types of knowledge, characteristic features were coded. Figure 1 presents the coding system created.

Five types of knowledge were recognized while reading the discussions held by the communities. The discussions observed provided the data that consisted of the main themes, that were identified in the process of extracting information relevant to the research.

All three observed communities have shared declarative knowledge: *"I was thinking something simpler, like a chocolate Milka in a heart shape?"* (Community 1), *"I think this is a little too much <...> for one person"* (Community 1), *"<...> maybe not all employees are interested in that?"* (Community 2), *"I think there is no one fits all model."* (Community 2), *"I see your point, however, then it would not make sense <...>"* (Community 3), *"I think it depends on the cause we want to donate <...>"* (Community 3).

As a virtual community of practice is a tool to share tacit knowledge, the

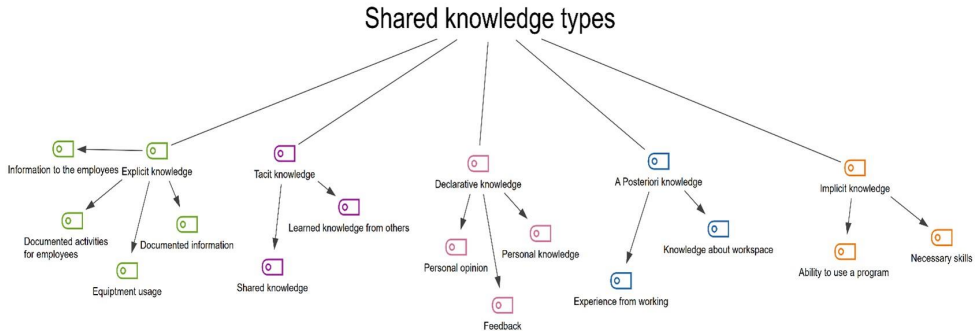


Fig. 1. Map of shared knowledge types

observed communities also expressed this type of knowledge: “<...> in the morning we gathered for some heart-shaped snacks in the kitchen and let everyone know that the quiz will be held at 11 am” (Community 1), “It was all right, <...> they are not as popular though.” (Community 1), “I was informed that at the moment not enough people are registered for this discount <...>” (Community 2), “I talked with employees we thought could be our lectures in internal learning sessions <...>” (Community 2), “So right now we have three ideas on how to spend the points <...>” (Community 3), “<...> we got a request to boost the internal learning of the employees.” (Community 3).

Explicit knowledge was also shared within all observed communities: “I created a poster about the quiz so let’s put it into our intranet” (Community 1), “<...> we should make a post regarding this.” (Community 1, p. 2), “<...> let’s create an event where the employees could join.” (Community 1), “<...> we do have our site where all information is posted.” (Community 2), “we could post some information into our intranet about that <...> and at the same time we

could promote the possibility to use the services of our partners” (Community 2), “Currently had around 3 computers and 4 monitors. The computers we have at the moment we can use them <...>” (Community 3), “After this meeting, we can post that the auction will be held <...>” (Community 3).

A posteriori knowledge type was only observed in Community 1 and 3: “I think something like this could happen in the spring, when more people are coming to the offices” (Community 1), “all of us comes to the office on different times, it will be hard to invite everyone on the same time” (Community 1), “I know that last year all the computers and other gadgets that were older than 5 years could be bought <...>” (Community 3), “<...> something similar happens every new year and people are eager to participate in such events.” (Community 3).

Implicit knowledge type was witnessed in Community 1 and 2: “<...> I know they use this program in different quiz shows.” (Community 1), “<...> I will work on the quiz looks using the platform” (Community 1), “<...> from softer skills person needs to be sharply minded

understanding the logic of the code and of course ambitious.” (Community 2), “<...> we have only a few junior people who know how to automatize the process <...>” (Community 2).

In observed conversations only Community 1 was the one that shared all knowledge types. The shared knowledge types depended on the communities’ interests of topics; however, all communities were open to the opinion of their members during the discussions.

Depending on the topic of the discussion, one person can share a few types of knowledge within a sentence or few. In Figure 2, the relationship between the knowledge types recognized is presented.

Code *learned knowledge from others* that is coded under tacit knowledge segment, has the strongest relationship with code *feedback*: “<...> thanks for letting us know <...> but I am thinking about the

movie night and I suggest to not create a survey <...>” (Community 1), “<...> I talked with employees we though could be our lectures in internal learning sessions, so they would be up for it, however, at the moment they do not have time for such activity <...> so I suggest postponing this activity a bit <...>” (Community 2). In a collaborative setting it could suggest that giving feedback is an important way to increase learning between community members and it is granted together with the knowledge acquired from others. Additionally, the smaller bubble next to “*personal opinion*” could also suggest that community members are sharing their own opinion, and this is looked at as an opportunity to share personal perspectives: “<...> I did not know the other items for the auction then yes, I totally agree that the monitor should be the last one to sell.” (Community 3).

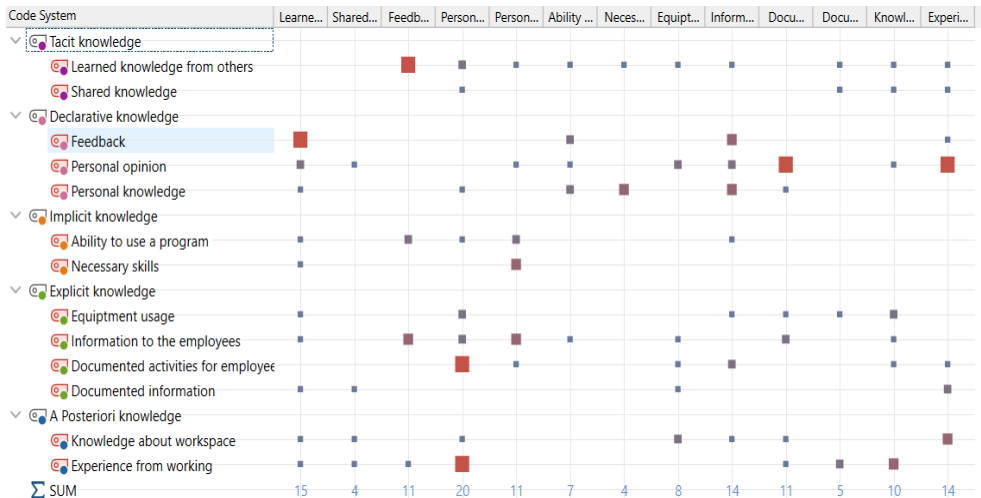


Fig. 2. Relationship between knowledge types¹

¹ The relationship between knowledge types is represented in squares – the bigger the square, the stronger the relationship.

Next to the code “*personal opinion*” it is visible that the main co-occurrences happened with two codes: “*documented activities to the employees*” and “*experience from working*”: “<...> we got a request to boost the internal learning of the employees and I was thinking we could do is a raise in the compensation on the internal learning that are held by the employees or some other hub where people could share their passions and what they do on their free time. <...> something like this happens almost each year <...>” (Community 3).

Knowledge sharing activities in virtual communities of practice took place using different platforms. These platforms are presented in Table 2.

All of the communities are using the solutions provided by Google. Different from two communities, virtual community 1 uses google chat platform for daily communication. While observing these virtual communities of practice during the empirical research it was understood that the company allows communities to take time from their workday once a week and brings them a chance to use this time wisely and discuss with other

members of the community about the topics of their interest. This shows that the company cares about the activities of the communities and sees them as a good tool for improving collaboration between employees and also a platform where the members are able to discuss and share their personal knowledge. However, while observing the virtual communities of practice it was noticed that not all communities are consistent with their activities. From the observed communities, only one of them was consistent with the weekly virtual meetings and additionally had a Google chat where members of the community updated each other daily. The other two communities did not have a chat platform that was known during the research and was not present in all of the virtual meetings. This could lead to a suggestion that not all members of the virtual community are looking at this tool as a platform for collaboration between different employees and also do not view it as a platform where employees are able to share the knowledge they have obtained. The community that stayed consistent in their

Table 2. How knowledge is shared in virtual communities of practice

Community name	Platforms used for communication	How is knowledge shared?	Does community have a moderator?
Community 1	Google Chat; Google Meet; Slack channel.	One document each meeting; Discussion based on the topic.	No, but discussion is held mostly by the same people each time.
Community 2	Google Meet; Slack channel	Documents such as survey results; Discussion based on the topic of meeting.	No, but discussion is held by the same people.
Community 3	Google Meet; Slack channel.	Discussion about the topics of the meeting.	No, but discussion is mostly moderated by one person.

Source: prepared by the authors.

activities was able to share more knowledge between the members and the types of knowledge shared were more interconnected with each other it leads to the thought that the members from a such community are able to get a more positive experience and also broadens their knowledge during each virtual meeting of the community.

While observing the activities of the virtual community of practice, it was witnessed that the knowledge sharing is mostly based on the discussions of the community members. However, the expressed personal knowledge usually stayed between the discussion and was not documented in written form. Even though virtual communities of practice are doing what they are supposed to and bring the possibility for the employees to collaborate and share their personal knowledge, for international business it does not bring a lot of advantage if the knowledge stays within the members of the employees. Some documented information reaches employees not participating in the activities of the community via the companies' intranet, however, it is a small amount compared to the knowledge shared during the discussions. These findings lead to a suggestion that the company does a good job while trying to implement the virtual communities of practice into their knowledge management strategy, however, the communities themselves may lack the understanding of what their purpose is.

Overall, it is congratulated that international business applies more unique resolutions to their knowledge management strategy, however, the members of the virtual community of practice may lack some understanding of the purpose

of their community and this leads to tacit knowledge staying within the members of the community and the company is will not be able to use this knowledge in the future.

Recommendations for international business

Based on the research findings, the chapter provides what goals for the company to ensure the successful activities of the virtual communities of practice and recommendations on how to reach them.

Companies should encourage virtual communities of practice to document shared knowledge. For the company to ensure that knowledge is shared and will stay within the company, there is a need to encourage members of the communities to document the shared knowledge. This could be done by encouraging members to document the shared best practices, and what lessons were learned during their activities. Additionally, the company could provide guidelines or templates that would show the members of the community how to document this information. The company also could provide a platform where this shared and documented knowledge is stored, and it would be available to all employees in the company even ones who are not participating in the virtual communities of practice.

Companies should create a knowledge-sharing culture. This can be accomplished by recognizing and rewarding individuals who share their knowledge, as well as by providing the appropriate resources and encouraging involvement. Companies should also support diversity and inclusivity, as well as monitor and assess

knowledge sharing and urge individuals to document shared knowledge. Companies can cultivate a culture of knowledge sharing by creating a collaborative environment in which people feel empowered to share their knowledge, resulting in increased organizational performance and competitiveness.

Companies should keep track of knowledge sharing activities in virtual communities of practice. This involves tracking the frequency and quality of shared knowledge and evaluating its influence on company performance. Companies can understand which topics and areas generate the most interest and dedicate resources to addressing knowledge gaps by keeping track of and evaluating knowledge sharing. Additionally, businesses can identify and address any barriers to knowledge sharing that may arise during the process, such as a lack of participation, insufficient documentation, or technical issues. Companies can ensure that they are utilizing the potential of their collective knowledge and remaining competitive in the marketplace by regularly monitoring and analyzing knowledge sharing through virtual communities of practice.

Conclusions and future research directions

Knowledge sharing in international companies can be based on different strategies. These strategies allow the company to adopt the best suitable knowledge-sharing tools that will ensure sustainable knowledge-sharing. As one such tool, companies can create virtual communities of practice. As the activities

of these communities are based on the collaboration of the employees, during the discussions, members are able to exchange more personal knowledge than via emails due to being surrounded by like-minded people. Additionally, based on the SECI model (Nonaka, Takeuchi, Umemoto, 1996), members of the community are able to transfer tacit knowledge into explicit knowledge and it allows the company to retrieve this information in the future. Theoretical solutions provided an understanding that virtual communities of practice may be a great knowledge-sharing tool where different types of knowledge can be exchanged in a comfortable zone for the employees.

A qualitative research method was chosen to understand what types of knowledge are shared within the virtual communities of practice. Netnography was chosen as it allows the researcher to observe communities without disrupting the comfort zone communities have created. Observation method allow the researcher to collect data in real-time and allow to see the broader view on how knowledge is shared in virtual communities of practice.

The empirical research was performed in an international IT enterprise. The virtual communities of practice in the company are separated by the topics of interest and each week they have a dedicated time when all members are meeting to discuss new issues, tasks, or goals of the community. Overall, the main shared knowledge types were tacit, explicit, declarative, and a posteriori knowledge. This led to the suggestion that the virtual communities of practice in international IT enterprise are sharing

the personal knowledge they have obtained in their professional and personal life however, for the community it does not bring a lot of new organizational knowledge as the information shared within the members are not documented.

Several recommendations for future research can be made based on the findings of the empirical research on virtual communities of practice in an international business. First, future research could look into how knowledge sharing practices differ across industries or sectors within virtual communities of practice. This would provide insight into the distinct problems and opportunities for information sharing that exist in various situations. Furthermore, future research could look into how virtual communities of practice can be integrated into an

organization's overall knowledge management strategy. This would aid in determining the most efficient methods of leveraging virtual communities of practice as part of a larger organizational learning and knowledge sharing framework. Future study could also concentrate on the role of technology in enabling knowledge exchange within virtual communities of practice. This would aid in determining the most effective technical tools and platforms for facilitating knowledge sharing in virtual communities of practice. Overall, these research recommendations can contribute to a better understanding of information sharing patterns in virtual communities of practice and can help businesses design more successful knowledge management strategies.

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VIRTUALIOS PRAKTIKOS BENDRUOMENĖS KAIP DALIJIMOSI ŽINIOMIS ĮRANKIS: REKOMENDACIJOS TARPTAUTINIAM VERSLUI

S a n t r a u k a

Žinių dalijimasis – viena svarbiausių koncepcijų dabartiniame pasaulyje. Gebėjimas mokytis leido žmogui išgyventi, tačiau buvo būtina pasidalyti išmokta informacija, kad būtų užtikrintas bendruomenės augimas.

Tačiau dalytis žiniomis svarbu ir profesionaliame gyvenime. Tarptautinės įmonės pradeda suprasti, kaip svarbu užtikrinti dalijimąsi žiniomis, kad būtų pasiekti išsikelti tikslai. 2020 m. pasaulį sukrėtusi COVID-19 pandemija privertė įmones apmąstyti žinių dalijimosi strategijas bei pritaikyti jas darbuotojams, dirbantiems nuotoliniu. Dėl šių priežasčių įmonės ėmė taikyti daugiau virtualių žinių dalijimosi įrankių.

Vienas tokių įrankių – virtualios praktikos bendruomenės. Į šias bendruomenes susijungia žmonės, turintys tokių pačių interesų ir linę dalytis informacija. Dėl pasaulį uždariusios pandemijos virtualios praktikos bendruomenės tarptautiniame versle pripažintos kaip svarbi detalė žinių dalijimosi procese, tačiau pastebima spraga tarp tarptautinių įmonių, kurios šį įrankį taiko savo strategijose.

Šiame straipsnyje bandoma suprasti žinių dalijimosi būdus virtualiose praktikos bendruomenėse, kad būtų galima dar plačiau juos taikyti tarptautinio verslo žinių dalijimosi strategijose. Duomenys šiam straipsniui buvo renkami tarptautinėje įmonėje, dirbančioje Šiaurės Europos regione. Virtualių praktikos bendruomenių stebėjimas leido surinkti duomenis tyrimui. Duomenys

buvo analizuojami naudojantis MaxQDA platforma, kuri leido suprasti, kokios rūšies žinios buvo dalytasi virtualios praktikos bendruomenėse bei pasiūlė galimus sprendimus, skirtus stiprinti žinių dalijimąsi virtualiose praktikos bendruomenėse.

Žinių dalijimasis virtualiose praktikos bendruomenėse remiasi atviromis diskusijomis per virtualius susitikimus bei privačiais pokalbiais, kurie sujungia visus bendruomenės narius. Bendruomenių nariai atviroi dalijasi asmenine patirtimi, darbo vietoje įgytomis žiniomis ar asmenine nuomone apie konkrečias temas. Tačiau šiose bendruomenėse trūksta naujų organizacinių žinių kūrimo, kadangi virtualių praktikos bendruomenių nariai nefiksuoja savo diskusijų.

Tarptautinėms įmonėms rekomenduojama skatinti virtualias praktikos bendruomenes dokumentuoti žinias, kuriomis buvo pasidalyta per susitikimą. Tai padėtų įmonėms plėsti organizacijos žinias bei užtikrintų jų prieinamumą ateityje. Įmonės taip pat turėtų sukurti kultūrą, kurioje skatinama dalytis žiniomis. Tarptautinės įmonės turėtų stebėti bei vertinti žinių dalijimąsi virtualiose praktikos bendruomenėse, kad užtikrintų, jog bendruomenių nariai naudingai praleidžia susitikimo laiką bei plečia savo ir kitų žinias. Taigi papildomas įmonės įsitraukimas padėtų nariams suprasti virtualių praktikos bendruomenių tikslą bei sukurtų galimybę kurti naujas organizacines žinias.

Country Logotype Visual Attractiveness: Eye-Tracking-Based Model

Country logotype is always considered as a visual part of country branding. This research addresses the country logotype elaboration problem while answering the question: how to attract consumer attention to a country logotype using different combinations of its elements. The aim of the article is to develop an eye-tracking based model of country logotype visual attractiveness. The paper presents experimental research using an eye-tracking system; visual attention to logotypes of European countries was assessed to determine the specific eye-catching elements of a logotype. The analysis revealed that in order to attract consumer visual attention, no visual association with a country is necessary; also, the logotype is preferred to be colorful, having high complexity, and shaped letters must be used. The analysis of the research results enabled elaborating a model of country logotype visual attractiveness, which might be used to facilitate the creation of country logotype.

Keywords: country logotype, eye-tracking, visual attention.

Šalies logotipas laikomas vizualia šalies prekių ženklo dalimi. Šiame tyrime nagrinėjama šalies logotipo kūrimo problema bei atsakoma į klausimą, kaip pritraukti vartotojų dėmesį į šalies logotipą, naudojant skirtingus jo elementų derinius. Straipsnio tikslas – sukurti žvilgsnio trajektorija pagrįstą šalies logotipo vizualinio patrauklumo modelį. Straipsnyje pristatomas eksperimentinis tyrimas, taikant žvilgsnio sekimo sistemą. Buvo vertinamas vizualinis dėmesys Europos šalių logotipams, siekiant nustatyti konkrečius vizualinį dėmesį traukiančius logotipo elementus. Analizė atskleidė: norint pritraukti vartotojo vizualinį dėmesį, nereikia vizualinės asociacijos su šalimi; logotipas turi būti spalvingas, vizualiai sudėtingas, pasitelkiamos įmantrios raidės. Tyrimo rezultatų analizė leido sukurti šalies logotipo vizualinio patrauklumo modelį, kurį galima naudoti kuriant šalies logotipą.

Raktiniai žodžiai: šalies logotipas, žvilgsnio sekimas, vizualinis dėmesys.

Introduction

Tourism has been recognized as one of the most rapidly developing areas of the service sector in the entire world (Liu and Chou, 2016); moreover, for socio-economic progress it was named as one of the principal drivers (Najda-Janoszka and Kopera, 2014). Contemporary tourism market is characterized by the fast

growing competition among countries, which is often accompanied with thorough marketing activities. Same as organizations make strategic marketing decisions to ensure sustainable competitive advantage in response to the continuously changing environment (Aghayev and Israfilzade, 2022), to attract visitors and tourists, many countries, towns, and regions are elaborating place marketing

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and branding strategies. S. P. Rainisto (2003) argues that “place marketing is used for multiple goals, such as to build a positive image for the place and attract enterprises, tourists, institutions, events, etc.” (p. 12). Place marketing is often provided based on the methods and tools of general marketing, e.g., M. Kavatzis (2009) suggests that places have been applying the methods of corporate-level marketing; however, in this case the marketed product is a place. To achieve their positions in the tourism industry, countries adopt international marketing strategies to create a position in consumer minds and to become visible and attractive on the global scale (Lee et al., 2012). S. Same (2014) argues that country branding activities are driven by the need for differentiation; moreover, according to A. Michelson and K. Paadam (2016), places are using creative branding methods on purpose to strengthen their competitive advantages in tourist’s perception. Countries are creating, developing, and redeveloping their brands in order to gain visible and exceptional positions in tourists’ consciousness. A wide body of scientific literature on country branding suggests that it has to be considered as an important part of country marketing.

Today’s environment is more and more visually oriented (Foroudi et al., 2014). Logotypes are considered being a main component of corporate visual identity, therefore, are used to evoke positive emotions, transmit meaning, or reinforce recognition of the company and brand (van der Lans et al., 2009). According to Lee et al. (2012), countries strive to search for place-related symbols and apply them to communicate some

distinctive and unique characteristics of the place to the global consumers, and this process is very similar to marketing communications provided by companies. In a framework of branding a company M. Tero (2012) determines three specific elements encompassed into a brand: brand’s name, its graphic element, and a slogan. Most of the logotypes used by different brands have all the three elements. Supporting the idea that a place can be regarded as a product, a logotype of a place is also supposed to encompass them. In case of a country, a name of brand would be country’s name, and variations with graphic elements and a slogan can be made for evoking visual attractiveness. Logos are often presented in different medias, e.g., digital and web advertising, on packaging, business cards, various annual reports, etc. (Lee et al., 2012). However, in a framework of country marketing and branding, the effect obtained by a logotype might be different if compared to general marketing of goods and services. Therefore, the encompassed elements of the logotype and different their combinations might result in different consumer reactions by attracting visual attention differently. According to Q. Li et al. (2016), visual attention is widely analyzed in the tourism field; however, the authors emphasize the necessity for deeper research of consumers’ viewing behavior toward visual materials in the field a tourism marketing. **The article addresses** relevant scientific as well as managerial **problem**: how to attract consumer attention to a country logotype using different combinations of its elements? **The aim of this research** was to take part in clarification of considerations regarding country logotype

visual attractiveness by assessing the influence of different combinations of country logotype elements on visual attention. By addressing the scientific problem and reaching the aim, article's contribution will result in developing a model of country logotype visual attractiveness based on combined methods: eye-tracking and survey.

The article is structured as follows. Firstly, scientific literature review about the elements of country logotype is provided and research hypotheses are formulated; the theoretical background for the research is formed. Further, the methodology of the research is elaborated and explained. Afterwards, the research results are provided and main implications presented. Conclusions are summarized in the country logotype attractiveness model and provided in the final section of the paper.

Theoretical insights and hypotheses

D. B. Klenosky and R. E. Gitelson (1997) emphasize that each year, huge amounts of state tourism departments' expenditures go to advertising and promotion of their regions to potential tourists. Place branding is becoming a domain attracting growing scholars' attention (Konecnik Ruzzier and de Chernatony, 2013). Scholars agree that achieving to transmit clear and consistent messages to the different groups of customers, the place must differentiate from other destinations by creating a brand that would emphasize the characteristics of its identity (Konecnik Ruzzier and de Chernatony, 2013).

Literature analysis shows that in order to brand a place, the same methods and tools as used for branding consumer goods and services can be used (Caldwell and Freire, 2004). According to S. Same (2014), in the tourism market competition is tough and differentiation is crucial; therefore, place marketing and branding are measures used to create a positive image of the place. However, even being associated with many benefits, it is still difficult to provide place branding successfully (Florek and Conejo, 2007). M. Konecnik Ruzzier and L. de Chernatony (2013) emphasize that place branding studies should investigate place brands in a framework of commerce, public policy, culture, and regarding historical perspective. However, the premise can be made that places are different; therefore, different marketing measures have to be used based on their category. E. Jermolajeva and I. Petrova (2007) classify places into few categories: a group of countries in the world, a country, a region in a country or a separate city. While analyzing place branding, G. Szondi (2007) separates the concepts of 'destination branding' and 'country branding'. As the aim of 'destination branding' is attracting visitors and reinforce tourism, the 'country branding' stands for promotion economic, commercial, and political interests of the country in its domestic and foreign markets. J. Nadeau et al. (2008) proposes that developments in product-country image can contribute significantly to the tourism destination image. Therefore, the country brand reflecting the country image can be considered as a component of branding the destination. We hypothesize:

H₁: Country's touristic image is directly affected by its commercial, economic, and political images.

M. Kavartzis (2009) emphasizes that place branding is mainly based on the visual branding elements: a logotype is created, the slogan is adjusted, and the advertising campaign encompassing visual elements is created. Q. Li et al. (2016) emphasize the existence of a wide body of studies regarding visual processing behavior of consumers, because visuals are important in research for their influence on tourists' decision making and behavior (Nadeau et al., 2008). In this regard, the visual attractiveness of country logotype might be considered as an important aspect in country branding. If considering country branding from corporate marketing perspective, corporate visual identity encompasses a name, logotype, typography, color, slogan, and additional graphic design elements (Bolhuis et al., 2015).

M. Tero (2012) considers the name as the most important element of a brand. Here emerges one of the greatest differences between country branding and product branding. In case of product failure in the market, company can rename it to become successful. However, in the case of country branding, a brand name is constant – it cannot be changed to be more attractive. L. A. Cai (2002) emphasizes the absence of the name in the studies of destination image, explaining the latter lack by inability of changing it (i.e., country name). M. Florek and F. Conejo (2007) add that developing countries have more challenges in building and developing their brands due to being poorly known by tourists, and the awareness of the country may have an

impact on visual attention. Considering the latter result, we hypothesize:

H₂: More visual attention will be attracted by the logotypes of developed and larger developing countries if compared to small developing countries.

J. Nadeau et al. (2008) propose that images are simplifications of more complex ideas: they are formed by consumer beliefs, attitudes, and impressions about an object. R. van der Lans et al. (2009) propose that “design is a language that communicates to consumers and others, independent of verbal information”. B. J. Phillips et al. (2014) approach brand visual identity as the brand's face; and in order to create clear brand identity emphasizing its richness, it is necessary to define a unique set of associations (Ghodeswar, 2008). M. Konecnik Ruzzier and L. de Chernatony (2013) emphasize that historically, functional attributes (i.e., the environmental beauty, infrastructural advancements, etc.) of a place were considered in marketing strategies; however, contemporary place marketing strategies have been addressing emotional and experiential appeals of a place. J. Datzira-Masip and A. Poluzzi (2014) argue that brand identification with only its name, logo and slogan is not enough; therefore, functional elements might stay evident in case of combination with invisible (but even more important) features like values and benefits that characterize the brand personality. Thus, latter elements have to be reflected in the image – logotype. R. Herstein and R. Berger (2013) add: “country branding by its very nature should be based on non-tangible (representational) aspects, whereas regions and cities should be based on tangible aspects”. Considering the latter

mentioned, it is recommended emphasizing emotional elements for country branding, on the other hand when branding regions and cities, functional elements must be defined (Caldwell and Freire, 2004). Emotional attributes representing a place are related to the feature self-expression sought by tourists, and functional attributes encompass the utilitarian aspects related to a place. Assuming that images are viewed as an antecedent of tourist behavior forming perception of a place (Nadeau et al., 2008), the third hypothesis is formed:

H₃: Less visual attention will be attracted by the logotypes having a visual association with a country if compared to logotypes without a visual association with it.

Slogan is the third of the main elements encompassed in a country logotype. D. B. Klenosky and R. E. Gitelson (1997) consider the choice of slogan to be of high importance, because of its representational nature. According to R. Kuvykaitė and I. Kerbelytė (2008) the slogan is used to emphasize some exclusive activities of the country, the national peculiarities, or exceptional geographical location. In order to attract several target groups, more than one slogan can be created. On the other hand, having a slogan is only a recommendation. We hypothesize:

H₄: Slogans encompassing logotypes attract more visual attention than the slogan-free logotypes.

W. Bolhuis et al. (2015) as an important aspect of the logotype name color. Colors affect and evoke consumer's emotions (Patil, 2012). Properly selected colors and their combinations help attracting consumer attention, improve

the level of impulsive buying behavior, while inappropriately selected colors can decline impulsive buying behavior, and damage the image of the brand (Pilelienė, Grigaliūnaitė, Stakauskaitė, 2016). Moreover, certain objects might be associated with some particular color; therefore, the recall is encouraged (Kimura et al., 2013). For example, the colors appearing on a flag of some country can evoke an association with the country. According to D. Patil (2012), color temperature is important: warm colors stimulate action, on the opposite – cool colors emphasize passiveness, and achromatic colors (black and white) are neutral. M. Tero (2012) argues that logotypes formed of achromatic contrast on a colored background are well-noticed. Moreover, written text is perceived in the left hemisphere of the brain, and the color is processed by the right one; therefore, combining words and colors will result in higher attention, recall, and recognition of the logotype (Patil, 2012). This leads to rising the hypotheses:

H₅₁: More visual attention will be attracted by the logotypes using warm color spectrum if compared to those using cool colors.

H₅₂: More visual attention will be attracted by logotypes using colors if compared to the achromatic logotypes.

The next important aspect of the logotype is typography used in it (Zaichkowsky, 2010). According to M. Tero (2012), shaped and sophisticated typeface used in logotype makes it more memorable. This enables hypothesizing:

H₆: More visual attention will attract logotypes with shaped and sophisticated typefaces if compared to logotypes with conventional typefaces.

Graphic elements used in logotypes enable distinguishing the brand from others (Tero, 2012). Consumers pay attention to content distributed by brands (Israfilzade and Baghirova, 2022). Different arrangements of elements and variations in their amount create complexity of the logotype, emphasizing heterogenous nature of elements and design ornateness (van der Lans et al., 2009). We hypothesize:

H₇: More visual attention will be attracted by the complex logotypes (encompassing many different graphic elements) if compared to the simple logotypes.

Theoretical discussion emphasizes the importance of each element of the logotype; moreover, each element brings its own contribution to the logotype. However, the compositions of latter elements in logotypes are often varying. In a framework of current research, the logotypes were decomposed into the elements, and then the logotypes encompassing necessary elements were chosen to measure the impact of every single element of logotype visual attention.

Research methodology

In order to support the hypothesis H₁, the questionnaire considering different images of the European countries in terms of their economic, commercial, political, and touristic situations was composed and given for evaluation of participants. Respondents were asked to evaluate the touristic image (endogenous variable) and the political, commercial, economic images (exogenous variables) of each European country. The Likert scale using

5-point evaluation (where '1' reflected a completely negative opinion, and '5' reflected a completely positive opinion) was chosen to use in the questionnaire. The type of sample was simple random; and the sample size was 179. The survey took part in Lithuania. 114 females and 65 males participated in the survey; 128 participants were at the age group of 20-29 years; 51 participants indicated the group of 30-35 years. The statistical analysis of data gathered during the survey was provided using SPSS Statistics v.20, SmartPLS V.3 (Ringle et al., 2014) and Matlab R2012b software packages.

A. H. Alsharif et al. (2021) emphasize that many scientists' choice of providing consumer behavior research applying self-report-based methods has recently shifted to neurophysiological and physiological tools. As the best tool to measure consumer visual attention, eye-tracking was chosen for the research. Physiological tools such as eye-tracking allow tracking such physiological reactions of consumers as visual fixation, eye movements and saccades at the moment of purchase (Pilelienė, Alsharif, Alharbi, 2022). According to F. Guo et al. (2018), eye movements reflect cognitive and emotional processing; therefore, it is a suitable measure for detecting one's attention. The eye-tracking system was used for experiment in this study. R. Pieters et al. (2002) emphasize that eye fixations at the area of interest (AOI) indicate the visual attention evoked by the information. Based on the fact that people have clear vision during eye fixations (but not during the saccades) and on the object of this research, the accumulated duration of participants' eye fixations on chosen country logotypes was measured.

The logotypes were aggregated into the groups based on the presence / absence of selected attributes.

Eye-tracking is widely used in marketing for assessing the visual attention attracted by different objects. However, the method is still rarely used in tourism research. For example, Q. Li et al. (2016) applied this tool to assess the visual attention toward photographs accompanied with text used in tourism industry; J. Hernández-Méndez and F. Muñoz-Leiva (2015) investigated the most effective type of online advertising for tourism. However, no study regarding country logotype visual attractiveness was found.

During the experiment, different European countries' logotypes were combined into groups, and the groups were demonstrated for participants. Every participant has viewed all the same logotypes, only the order of them differed (in order to minimize as much as possible the influence of reading patterns). According to R. B. Bausell and Y. F. Li (2002), A. Bojko (2013), Q. Li et al. (2016), the minimum sample size for this kind of experiments to obtain reliable results may not be less than 30 participants. Thus, the sample size for the experiment was 30 (24 female and 6 males; 26 participants indicated the age group of 20–29 and four – at 30–35 years). Participants were chosen to be right-handed, their vision was normal or normal-to-corrected, and their participation in the experiment was voluntary (no payment or other reward was offered).

For the experiment, according to the attributes tested by the hypotheses H2-H7, selected logotype groups were presented on screen of computer with a resolution of 1366x768 pixels. Each group

of logotypes represented a particular attribute, (i.e., if the attribute is logotype complexity, then 5 complex and 5 simple country logotypes are presented on the screen at the same time in the random order; and such design is applied for each of the analyzed attributes). Matlab R2012b software package was used to demonstrate computer-generated groups of logotypes (random order for each participant) on screen. Each picture containing 10 logotypes was presented for the participants for 2 seconds in order to capture the visual attention dependent on the visual attributes before the recognition of familiar logotypes (when the less time is allowed to see the pictures, then the more physical attributes of the pictures drive visual attention). To avoid the possible effect of the last presented picture on the trajectory of gaze, the interstimulus (black screen) was shown between the pictures for two seconds.

A mobile video-based eye-tracking system (Tobii Eye-Tracking Glasses) recording monocular gaze data from the right eye at a sampling rate of 30 Hz and the accuracy of 0.5° were used for the research. The system camera's recording resolution is 640x480 pixels; and the recording angles are horizontal maximum 56° and vertical maximum 40°. A standard nine-point calibration procedure was performed with each participant to ensure the accuracy of results. To analyze the recorded data, software by Tobii Studio 3.2.3 was used. The duration of participants' fixations within an AOI was determined by calculating mean and standard deviations. The AOIs in this case were the areas of logotypes emphasizing the same attribute, e.g., all the complex logotypes composed one AOI and all the

simple logotypes composed the second AOI; thus, all the analyzed attributes had two AOIs each. In order to support the research hypotheses, comparison of mean durations of fixations on different AOIs (for each attribute characterizing country logotype AOI was different) was provided.

Research results and hypotheses testing

In order to test the hypothesis H_1 , stating that 'Country's touristic image is directly affected by its commercial, economic, and political images', we conducted a linear regression analysis (Table 1). As it can be seen, consumer valuations of commercial and political images of a country can be characterized by a positive, statistically significant ($p < 0.05$) direct impact of an average strength on country's touristic image. The coefficient of determination (R^2) equals to 32.4 percent. Such

value of R^2 is considered as sufficient in this case, because touristic image is influenced by many factors that are not the object of this research; moreover, J. F. Hair, C. M. Ringle, and M. Sarstedt (2011) stated that R^2 close to 0.25 can be regarded as high in consumer behavior studies. Despite this, an economic image of a country was found to have no statistically significant ($p > 0.05$) direct impact on the touristic image of a country. Consequently, **hypothesis H_1 is partially supported**, because only two (political and commercial) of three hypothesized image components had a direct impact on the touristic image of a country.

Moreover, the research result analysis (Wilcoxon signed-rank test is used as the Post Hoc test, see Table 2) revealed the statistically significant differences in evaluation positiveness of touristic images of developed countries ($Z = 5.798$; $p < 0.05$) if compared to the larger developing countries and small developing countries ($Z = 5.886$; $p < 0.05$); also,

Table 1. Linear regression coefficients (dependent variable: touristic image)

Model	Unstandardized Coefficients		Standardized Coefficients	T Statistics	p-value
	B	Std. Error	Beta		
Constant	1.019	0.327	-	3.119	0.002
Economic	-0.051	0.096	-0.039	-0.529	0.597
Political	0.414	0.091	0.334	4.523	0.000
Commercial	0.412	0.076	0.377	5.428	0.000

Table 2. Wilcoxon signed-rank test

Statistics	Large developing – Developed	Small developing – Developed	Small developing – Large developing
Z	-5.798	-5.886	-4.098
p-value	0.000	0.000	0.000

considering small developing countries, their touristic images were statistically significantly better ($Z = 4.098$; $p < 0.05$) if compared to larger developing countries.

The analysis of all fixations duration within an AOI regarding logotypes of small developing, larger developing and developed countries revealed that logotypes of small developing countries attracted 44.5 percent of participants' total viewing time to the screen presenting all three kinds of logotypes in a random order at the same time (logotypes of small developing, larger developing and developed countries), while logotypes of larger developing countries attracted 10.9 percent of participants' total viewing time. Finally, developed countries' logotypes attracted 19.1 percent of the total participants' viewing time.

In order to test the hypothesis H_2 , stating that *'More visual attention will be attracted by the logotypes of developed and larger developing countries if compared to small developing countries'*, Friedman test was applied (data distribution: non-normal; samples: three dependent). As latter test revealed the existence statistically significant ($p < 0.05$) differences between logotypes' viewing time, Wilcoxon signed-rank test was used as the Post Hoc test (see Table 3). The analysis of the results of this test allows **rejecting**

the hypothesis H_2 , because logotypes of small developing countries attracted statistically significantly higher visual attention if compared to the logotypes of developed countries and larger developing countries. Moreover, developed countries' logotypes attracted statistically significantly more visual attention if compared to larger developing countries' logotypes. Thus, it could be stated that logotypes of small developing countries get most visual attention, and larger developing countries' logotypes get least visual attention. Consequently, small developing countries' logotypes attracted more visual attention if compared to the developed countries' logotypes, but the developed countries' touristic images were evaluated higher than the touristic images of small developing countries. Furthermore, larger developing countries' logotypes attracted lowest visual attention and their tourist image was evaluated worst. An assumption could be made that logotypes of small developing countries are less known than those of developed countries; hence they attract more visual attention, as novel objects tend to attract visual attention more than familiar objects.

In the rest of the hypotheses visual attributes of logotypes (slogan, font, complexity, association, color spectrum,

Table 3. Friedman and Wilcoxon signed-rank tests

Friedman Test		Chi-Square	df	p-value
		37.077	2	0.000
Wilcoxon signed-rank test	Statistics	Large developing – Developed	Small developing – Developed	Small developing – Large developing
	Z	-2.526	-3.984	-4.787
	p-value	0.012	0.000	0.000

color) are analyzed. Average total fixation duration time (s) to the logotypes emphasizing a specific attribute is depicted in Table 4 below. As provided in the table, higher average total fixation duration corresponds to the logotypes with written slogans, using shaped fonts, complex, without visual association to the country, cool color spectrum and colorful.

In order to analyze whether statistically significant differences in the viewing time of the logotypes emphasizing different attributes existed, we applied Wilcoxon signed-rank test (samples:

two dependents; data distribution: non-normal). Table 5 presents the results of the test: **hypothesis H_3** , stating that ‘*Less visual attention will be attracted by the logotypes having a visual association with a country if compared to logotypes without a visual association with it*’, **is supported**: statistically significantly less visual attention was attracted by logotypes having visual association with a country ($Z = -2.069$; $p < 0.05$) if compared to logotypes without a visual association with it. Countries’ logotypes without a visual association resulted in 51.5 percent of total viewing time to the screen

Table 4. Average total fixation duration time(s) to the logotypes emphasizing specific attribute

Attribute of logotype	Specification	Average total fixation duration (s)	Standard deviation
Slogan	With slogan	0.94	0.45
	Without slogan	0.81	0.52
Font	Using letters with shapes	1.21	0.34
	Simple fonts	0.64	0.5
Complexity	Complex	1.09	0.53
	Simple	0.58	0.46
Association	With association	0.7	0.41
	Without association	1.03	0.58
Color spectrum	Hot	0.76	0.45
	Cold	0.99	0.41
Color	Colorful	1.04	0.46
	Black and white	0.51	0.34

Table 5. Wilcoxon signed-rank test

Statistics	With slogan – Without one	Using letters with shapes – Simple font	Simple – Complex	No association - With association	Cold spectrum – Hot spectrum	Black and white – Colorful
Z	-1.019	-3.799	-2.565	-2.069	-1.513	-4.186
p-value	0.308	0.000	0.010	0.039	0.130	0.000

presenting both kinds of logotypes in a random order at the same time, while countries' logotypes having visual association with them attracted 35.1 percent of participants' total viewing time.

Hypothesis H₄, stating that '*Slogans encompassing logotypes attract more visual attention than the slogan-free logotypes*', **was rejected**. The research result analysis revealed that logotypes with written slogans attracted 46.7 percent of participants' total viewing time to both kinds of logotypes, while logotypes without slogans attracted 40.5 percent of participants' total viewing time. However, the difference in participants' viewing time to the logotypes with and without written slogans was not statistically significant ($Z = -1.019$; $p > 0.05$), thus it could be stated that when seeking to attract visual attention, slogan of the logotype is not considered in this context; hence each country can decide whether to use the slogan in the logotype or not without taking risk to minimize the tourists' visual attention.

Hypothesis H₅₁, stating that '*More visual attention will be attracted by the logotypes using warm color spectrum if compared to those using cool colors*', **was rejected**. Even though the warm color spectrum logotypes attracted 38.2 percent of participants' total viewing time; the logotypes with a cool color spectrum attracted 49.5 percent of participants' total viewing time to the screen presenting both kinds of these logotypes at the same time, the difference was not statistically significant ($Z = -1.513$; $p > 0.05$), thus country's selected color spectrum in the logotype does not influence tourists' visual attention toward it.

Hypothesis H₅₂, stating that '*More visual attention will be attracted by logotypes using colors if compared to the achromatic logotypes*', **was supported**. Colorful logotypes attracted 51.9 percent of participants' total viewing time, while those in black and white attracted 25.5 percent of participants' total viewing time. The difference was statistically significant ($Z = -4.186$; $p < 0.05$); hence there is a higher possibility to attract tourists' visual attention to the country's logotype, when its logotype is colorful.

Hypothesis H₆, stating that '*More visual attention will attract logotypes with shaped and sophisticated typefaces if compared to logotypes with conventional typefaces*', **was supported**. The analysis of the research results revealed that simple fonts attract statistically significantly less visual attention if compared to those using shaped and sophisticated typefaces ($Z = -3.799$; $p < 0.05$). Logotypes using shaped and sophisticated typefaces attracted 60.3 percent of participants' total viewing time; logotypes using simple fonts attracted 32.1 percent of participants' total viewing time.

Hypothesis H₇, stating that '*More visual attention will be attracted by the complex logotypes if compared to the simple logotypes*', **was supported**, because the difference in participants' viewing time toward these two kinds of logotypes is statistically significant ($Z = -2.565$; $p < 0.05$). Complex logotypes attracted 54.5 percent of total viewing time of participants, while simple logotypes attracted 29.1 percent of participants' total viewing time.

The hypothesis testing results are generalized in Table 6 below.

Consequently, the analysis the elements of country logotypes and their combinations attracting most visual attention, enables providing guidelines for country logotype creators. In order to attract consumer visual attention, a country logotype must follow four main conditions:

- A visual association with a country must be avoided;
- Colors (of any color temperature) must be used;
- Complexity must be achieved by encompassing many different graphic elements;
- Shaped and sophisticated typefaces must be used.

Additional considerations regarding the category of a country are as follows:

- **Developed country.** The touristic image of countries attached to this category is good, however, less visual attention is attracted by their logotypes. The recommendation might be provided to reconsider the logotype in accordance with the guidelines provided. Countries already having a good image might invest more into its representation in the logotype. Therefore, a good image and visually attractive logotype would evoke a synergy effect in tourism attraction.
- **Larger developing country.** The touristic image of countries belonging to

Table 6. Results of hypothesis testing (statistically significant results)

No.	Result	Substantiation
H ₁	Partially supported	- Commercial image and political image influence touristic image (R ² = 0.324). - Economic image does not affect touristic image.
H ₂	Rejected	- Small developing countries' logotypes attracted most visual attention (44.5% of total viewing time) - Larger developing countries' logotypes attracted least visual attention (10.9% of total viewing time). - Developed countries' logotypes attracted average visual attention (19.1% of total viewing time)
H ₃	Supported	- Logotypes visually not associated to a country attract more visual attention (51.5% of total viewing time) - Logotypes visually associated to a country attract less visual attention (35.1% of total viewing time).
H ₄	Rejected	- No statistically significant difference in visual attention was found.
H ₅₁	Rejected	- No statistically significant difference in visual attention was found.
H ₅₂	Supported	- Colorful logotypes attract more visual attention (51.9% of total viewing time) - Black and white logotypes attract less visual attention (25.5% of total viewing time).
H ₆	Supported	- Logotypes with shaped and sophisticated typefaces attract more visual attention (60.3% of total viewing time) - Logotypes with conventional typefaces attract less visual attention (32.1% of total viewing time).
H ₇	Supported	- Complex logotypes encompassing many different graphic elements attract more visual attention (54.5% of total viewing time) - Simple logotypes attract less visual attention (29.1% of total viewing time).

this category poor (worst of all the three categories analyzed), and their logotypes attract least visual attention. Being big and having a poor image puts the latter category of countries in the worst situation. It might be assumed that there is a correlation between the size of the country and tourist awareness about it (requires empiric substantiation by further research). For this category of countries, it is recommended redesigning their logotypes strictly following the guidelines provided to their highest extent. Also, before introducing the newly created logotype, its visual attractiveness must be tested to achieve the best results.

- **Small developing country.** The touristic image of latter countries is poor;

however, their logotypes attract most visual attention. For the latter category of countries, it is recommended reconsider the investments into their touristic image; thus, they will not only be visibly, but also mentally attractive.

The model and conclusions

The model of country logotype visual attractiveness is composed based on the hypotheses testing results (Figure 1). The model encompasses four visual elements found crucial to reach country logotype’s visual attractiveness, i.e.: associations, complexity, colors, and fonts. All the distinguished elements must be managed together, to reach the best possible result.

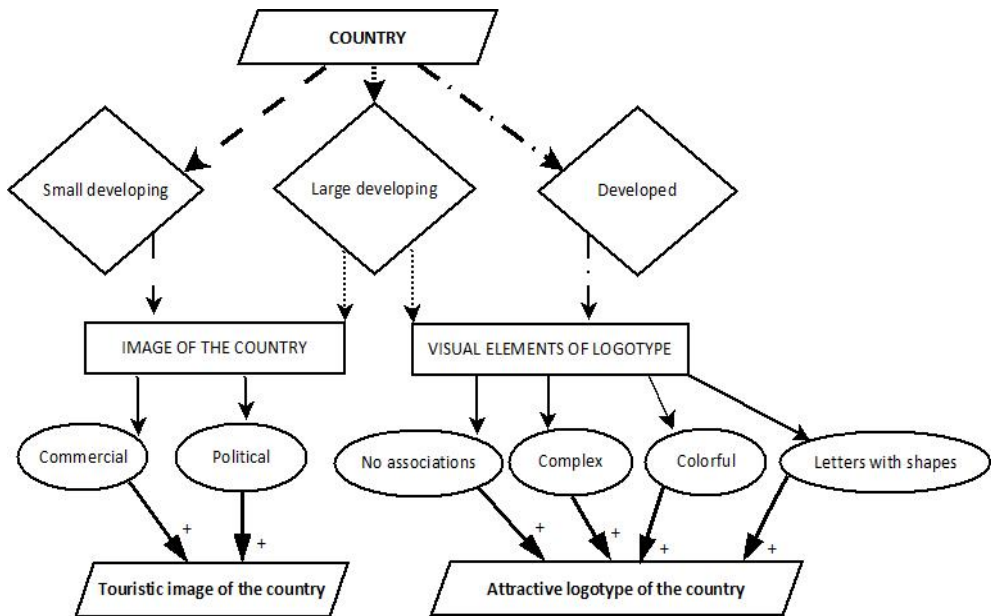


Fig. 1. Country logotype visual attractiveness model

Based on the results, for the small developing countries it is worth allocating their budgets regarding the improvement of image (commercial and /or political). The developed countries can be characterized by a better touristic image; therefore, attention must be paid to logotype improvements. Large developing countries must reconsider the touristic image being created and visual their logotype attractiveness.

The research is limited to a general model of country logotype visual attractiveness. The aim of this study was to assess the effect of different combinations of country logotype elements on visual attention thus forming the model. During the research, the possible impact of

personal, demographic, social, cultural characteristics on consumer perception of visual elements and visual attention was not assessed. Also, the familiarity with the countries and logotypes was not evaluated and considered as having no impact the research results. The impact of latter dimensions on visual attention could be the object of further research and general model's developments.

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ŠALIES LOGOTIPO VIZUALINIS PATRAUKLUMAS: ŽVILGSNIO SEKIMU PAGRĮSTAS MODELIS

S a n t r a u k a

Turizmas yra laikomas viena sparčiausiai besivystančių paslaugų sektoriaus sričių visame pasaulyje, taip pat viena pagrindinių socialinės ir ekonominės pažangos varomųjų jėgų. Šiuolaikinė turizmo rinka pasižymi sparčiai augančia konkurencija tarp valstybių, kuri yra neatsiejama nuo marketingo veiklų. Siekdamas pritraukti lankytojų ir turistų, daugelis šalių, miestų ir regionų kuria vietovės marketingo ir prekių ženklų strategijas. Vietovės marketingas dažnai vykdomas grindžiant tradicinius marketingo metodus ir įrankius. Siekdamas užimti savo pozicijas turizmo industrijoje, šalys taiko tarptautinio marketingo strategijas, siekdamos sukurti poziciją vartotojų sąmonėje ir tapti matomos bei patrauklios pasauliniu mastu. Taigi šalies prekių ženklų kūrimo veiklą skatina diferencijavimo poreikis. Vietovės sąmoningai naudoja kūrybinius prekių ženklų kūrimo metodus, kad sustiprintų savo konkurencinius pranašumus turistams. Šalys kuria, plėtoja ir perkuria savo prekių

ženklus, siekdamos užimti matomas ir išskirtines pozicijas turistų sąmonėje.

Šiandieninė aplinka vis labiau orientuota į vizualumą. Logotipai laikomi pagrindiniu įmonės vizualinio identiteto komponentu, todėl naudojami teigiamoms emocijoms sužadinti, prasmės perteikimui ar įmonės bei prekių ženklo pripažinimui sustiprinti. Šalys siekia ieškoti su vietovė susijusių simbolių ir juos taikyti, kad pasauliniam vartotojui perteiktų kai kurias išskirtines ir unikalias vietovės savybes, o šis procesas labai panašus į įmonių vykdomą marketingo komunikaciją. Prekių ženklo kūrimo sistemoje svarbiausi yra trys specifiniai elementai: prekių pavadinimas, jo grafinis elementas ir šūkis. Grindžiant idėją, kad vietovė gali būti laikoma produktu, juos turėtų apimti ir vietovės logotipas. Šalies atveju prekių ženklo pavadinimas būtų šalies pavadinimas, o vizualiniam patrauklumui sužadinti galima daryti variacijas su grafiniais elementais ir šūkiu. Šalies

marketingo ir prekių ženklo kūrimo sistemoje logotipo poveikis gali būti kitoks, palyginti su bendruoju prekių ir paslaugų marketingu. Todėl naudojami logotipo elementai ir skirtingi jų deriniai gali sukelti skirtingas vartotojų reakcijas, skirtingai patraukdami vizualinį dėmesį. Vizualinis dėmesys plačiai analizuojamas turizmo srityje, pabrėžiant būtinybę giliau tirti vartotojų elgseną, susijusią su vaizdine medžiaga. Straipsnyje nagrinėjama aktuali mokslinė ir vadybinė problema: kaip pritraukti vartotojų dėmesį į šalies logotipą, naudojant skirtingus jo elementų derinius. Tyrimo tikslas – atskleisti šalies logotipo vizualinio patrauklumo aspektus, įvertinant skirtingų šalies logotipo elementų kombinacijų įtaką vizualiniam dėmesiui. Sprendžiant mokslinę problemą ir pasiekus tikslą, straipsnio indėlis – sudarytas šalies logotipo vizualinio patrauklumo modelis, paremtas kombinuotais metodais: žvilgsnio sekimu ir apklausa.

Atliekant tyrimą, keltos septynios hipotezės, kurių pavirtinimas / atmetimas lėmė kuriamo modelio sandarą. Tyrimo metu šalys buvo suskirstytos į tris kategorijas: mažos besivystančios, didelės besivystančios ir išsivysčiusios, darant prielaidą, kad šalies dydis ir išsivystymo lygis gali turėti įtakos jos įvaizdžiui bei logotipo vizualiniam

patrauklumui. Siūlomas modelis apima keturis vaizdinius elementus, kurie yra labai svarbūs norint pasiekti šalies logotipo vizualinį patrauklumą: asociacijas, sudėtingumą, spalvas ir šriftus. Visi nustatyti elementai turi būti valdomi kartu, kad būtų pasiektas geriausias rezultatas. Remiantis tyrimo rezultatais, mažoms besivystančioms šalims rekomenduojama skirti biudžeto dalį įvaizdžiui (komerciniam ir / arba politiniam) gerinti. Išsivysčiusios šalys pasižymi geresniu turistiniu įvaizdžiu, todėl reikia skirti dėmesį logotipo tobulinimui. Didelėms besivystančioms šalims siūloma persvarstyti kuriamą turistinį įvaizdį ir vizualinį logotipo patrauklumą.

Tyrimo pagrindu sudarytas bendrasis šalies logotipo vizualinio patrauklumo modelis, įvertinantis skirtingų šalies logotipo elementų kombinacijų poveikį vizualiniam dėmesiui. Tyrimo metu nebuvo įvertinta galima asmeninių, demografinių, socialinių, kultūrinių savybių įtaka vartotojo vizualinių elementų suvokimui ir vizualiniam dėmesiui. Šalių ir logotipų pažinimas nebuvo vertinamas, bet laikomas neturinčiu įtakos tyrimo rezultatams. Pastarųjų dimensijų įtaka vizualiniam dėmesiui galėtų būti tolesnių tyrimų ir siūlomo modelio tobulinimo objektas.

The Challenges and Possibilities for Digital Inclusion Increase in Lithuanian Public Libraries

The aim of this paper is to examine the current state of digital inclusion activities in Lithuanian public libraries, to identify the major challenges that libraries face, and to forecast opportunities for digital inclusion growth. Theoretical conception of digital inclusion activities provided by public libraries is presented based on scientific literature findings. The empirical research findings - content analysis of public libraries textual and statistical activity reports - are also presented, revealing the situation of the implementation of digital inclusion activities in Lithuanian public libraries over the last five years and allowing to identify the main arising challenges and opportunities for digital inclusion increase.

Keywords: public libraries, digital inclusion increase, digital exclusion.

Šio straipsnio tikslas – išanalizuoti skaitmeninės įtraukties didinimo veiklų įgyvendinimo situaciją Lietuvos viešosiose bibliotekose, atskleisti pagrindinius bibliotekų patiriamus iššūkius ir numatyti galimybes skaitmeninės įtraukties didinimui. Remiantis mokslinės literatūros analizės rezultatais pristatoma teorinė bibliotekų veiklų skaitmeninės įtraukties didinimo srityje koncepcija. Taip pat straipsnyje pristatomi empirinio tyrimo – viešųjų bibliotekų tekstinių ir statistinių veiklos ataskaitų analizės rezultatai, kurie atskleidžia skaitmeninės įtraukties didinimo veiklų įgyvendinimo situaciją Lietuvos viešosiose bibliotekose per pastaruosius 5 metus ir leidžia identifikuoti esminius bibliotekų patiriamus sunkumus bei numatyti galimybes skaitmeninės įtraukties didinimui.

Raktiniai žodžiai: viešosios bibliotekos, skaitmeninės įtraukties didinimas, skaitmeninė atskirtis.

Introduction

In today's world the issues related to the possibilities for digital inclusion increase are of particular importance, as digital technologies, and the Internet affect almost every aspect of public, professional, and private life. The usage of information and communication technologies (further ICT) and the Internet has become a necessity and is closely linked to the

engagement in civic, economic, cultural, and social life. The researchers, working in the digital inclusion field (Treviranus et al., 2014; Williams, Philip, Fairhurst, 2016; Gann, 2019; Ragnedda, Ruiu, Addeo, 2020; Gallardo, Beaulieu, Geideman, 2020; Corteza, Johnston, 2020; Horrigan, 2020, et al.) note that these trends define changed lifestyles, include new types of services, new forms of work, learning and social interaction that

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highlight the necessity to have access to ICT and the Internet, to have sufficient digital competences and to be able to use digital services and products efficiently.

The goals of digital inclusion are related to such aspects as lifelong learning, participation in the labor market, social and economic inclusion, improved health, and better quality of life in general, with the orientation towards empowerment of the most vulnerable groups of society, lacking digital inclusion the most (Gann, 2019; Gallardo, Beaulieu, Geideman, 2020; Corteza, Johnston 2020, Flynn, 2022). Such diverse goals indicate that there are a lot of stakeholders interested in its increase, among whom, public libraries play a significant role. During the last decades, in many countries, including Lithuania, governments have allocated funds for computerization and modernization of public libraries to contribute to the reduction of the digital divide and to provide access to the Internet and digital competences trainings for those who do not have such possibilities elsewhere (Manžuch, Macevičiūtė, 2020). However, today public library services in the field of digital inclusion go far beyond providing access to ICT, the Internet, and improving the digital competencies of society members. The latest research (Gann, 2019; Gallardo, Beaulieu, Geideman, 2020; Strover et al, 2020; Corteza, Johnston 2020; Real, 2021; Baluk et al., 2021, Flynn, 2022, Wahler et al., 2022 etc.) shows, that nowadays public libraries provide digital services (access to e-books, e-catalogues, various databases and digital resources), train society members on how to use digital services of other institutions (e-Health, e-Government portals, e-banking, etc.),

offer trainings and events that are available in the digital forms, create various digital services and products, many public libraries have digital literacy labs and creative spaces where people can try out the latest technologies: 3D printers, pencils, virtual reality equipment.

Nevertheless, researchers analyzing the challenges and possibilities related to the digital inclusion increase in public libraries (Noh, 2019; Gann, 2019; Strover et. al, 2020; Gallardo, Beaulieu, Geideman, 2020; Corteza, Johnston 2020; Real, 2021; Flynn, 2022) highlight the need for deeper analysis of public libraries services that are implemented in the digital inclusion field. According to the authors, public libraries face challenges such as ensuring the sustainability and continuity of digital inclusion initiatives, reaching and engaging target audiences who lack digital inclusion the most, and adapting to changing needs of service users and the external environment, particularly during critical situations that necessitate quick reaction, adjusting existing services, and developing new digital products and services. If not addressed properly, these challenges may have a negative impact not only on the digital inclusion initiatives implemented by public libraries, but also on the wealth of society and its members.

The COVID-19 pandemic that struck the world in 2019 has highlighted these challenges even more, as the need to effectively use digital technologies in both personal and professional spheres of life has grown, widening the gap between those who can and those who cannot. The COVID-19 pandemic has raised questions about the public libraries'

functions and services during crisis and encouraged researchers, working in this field (Ma, 2020; Ali, Gatiti, 2020; Garner, et al., 2021; Wang, Lund, 2020; Smith, 2020; Panattoni, 2021; Kou, Chen, Pan, 2021 et al., Kulikauskienė, Šaparnienė, 2021) to redefine the functions that are performed by public libraries during critical situations, highlighting the need for digital inclusion increase. The necessity for the digital inclusion increase in public libraries is further actualized by the current crisis in Ukraine, when the need to be able to find trustful information sources and critically evaluate the information, available in the virtual space, e. g. to have sufficient digital, media and information literacy competences, is growing. Also, the questions of the availability of digital technologies, the Internet, and various digital services for refugees from Ukraine are becoming more important as their numbers are rising not only in Lithuania, but in the neighbor countries (Poland, Lithuania, Latvia, etc.) as well.

These insights allow to define a **scientific problem** that research in the field of digital inclusion in public libraries still lacks a deeper analysis of the situation, definition of the main challenges, and insights into possible solutions to arising digital inclusion problems. To fill this gap, this paper focuses on the evaluation of digital inclusion activities implemented by public libraries, with the goal of identifying the main challenges and opportunities for digital inclusion increase by analyzing the case of Lithuanian public libraries. **The object of this paper** is public libraries activities in the digital inclusion field.

The aim of this paper is to analyze the current situation of the implementation of digital inclusion activities in Lithuanian public libraries, to identify the main challenges and opportunities for digital inclusion increase.

To achieve this aim, **the following objectives** are foreseen: 1) to analyze the scientific literature related to the digital inclusion issues and to define public libraries activities in the digital inclusion field; 2) to conduct a content analysis of Lithuanian public libraries documents (textual and statistical annual activity reports) in order assess the current situation of the implementation of digital inclusion activities in public libraries; 3) to identify the key challenges, encountered by libraries and propose opportunities for digital inclusion increase.

To achieve the aim of this paper, **the methods** of the overview, analysis, and synthesis of scientific literature (for the theoretical part) and qualitative content analysis of public libraries documents (for the empirical research) are applied. These methods allow to define the theoretical concept of digital inclusion activities, carried out by public libraries and to empirically investigate the situation of the implementation these activities in public libraries.

Theoretical conceptualization of public library activities in the field of digital inclusion

This section presents the main activities that are implemented by public libraries in the field of digital inclusion from the theoretical point of view. In general, digital inclusion can be understood as

the ability to use ICT and the Internet purposefully, encompassing access to ICT, the Internet, and digital competences (Real, Bertot, Jaeger 2014; Ragnedda, Ruiu, Addeo, 2020; Rutherford et. al, 2018; Beyne, 2018; Strover, 2019; Strover et al. 2020; Gallardo, Beaulieu, Geideman, 2020). In its essence, digital inclusion refers to the notion that certain groups (or segments) of society are excluded because of disability, age, economic status or cultural differences. According to E. J. Helsper (2012), E. J. Helsper, B. C. Reisdorf (2017), B. Gann (2019), individuals who experience difficulties in the economic, social, cultural, and personal spheres of life often face problems, related to insufficient digital inclusion. The authors note that groups lacking digital inclusion the most are: people with disabilities, seniors, the unemployed people, children and youth, people with lower levels of education, people living in rural areas, immigrants, refugees, etc.

In general, the goals of digital inclusion are related to lifelong learning, participation in the labor market, social and economic inclusion, improved health, and better quality of life (Gann, 2019; Corteza, Johnston 2020, Flynn, 2022). Such variety of goals means, that there are a lot of stakeholders, interested in digital inclusion increase: public and private sector organizations, higher education institutions, NGO's, community-based organizations, society, and its individual members (Kaletka, Pelka, 2015; Strover et al., 2020; Gallardo et al., 2020). Among them, public libraries are one the main organizations that directly contribute to the digital inclusion increase as they provide free access to ICT and the Internet, improve digital competences

of society members, primarily targeting such audiences as seniors, people with disabilities, children and youth, unemployed people, immigrants, etc. that lack digital inclusion the most (Real et al., 2015, Real, 2021; Flynn, 2022). Therefore, it can be argued that the concept of digital inclusion is embedded in the context of public libraries activities, as public libraries, in collaboration with other organizations from the public, private and non-governmental sectors, are acting as mediators and promoters of digital inclusion (Beyne, 2018).

In general, public libraries activities are geared towards the inclusion and the empowerment of society members by enabling them to benefit from the information, cultural and lifelong learning services offered by libraries, both physically and digitally. The provision of inclusive information services in public libraries started with Braille books, and as digital technologies evolved and become more prevalent, the need for digital inclusion initiatives has become apparent (Beyne, 2018). P. D. Moxley and J. M. Abbas (2016) point out that in the field of digital inclusion, public libraries can serve as gateways to digital services, as spaces for access to digital technologies and as organizers of digital competences training activities. According to B. Real et al. (2015), P. D. Moxley, J. M. Abbas (2016), S. Strover et al. (2020), in the field of digital inclusion, public libraries provide free access to ICT and the Internet, help society members improve their digital competencies, create and offer digital services and products, and host key digital inclusion initiatives such as projects and events, etc. (Figure 1).

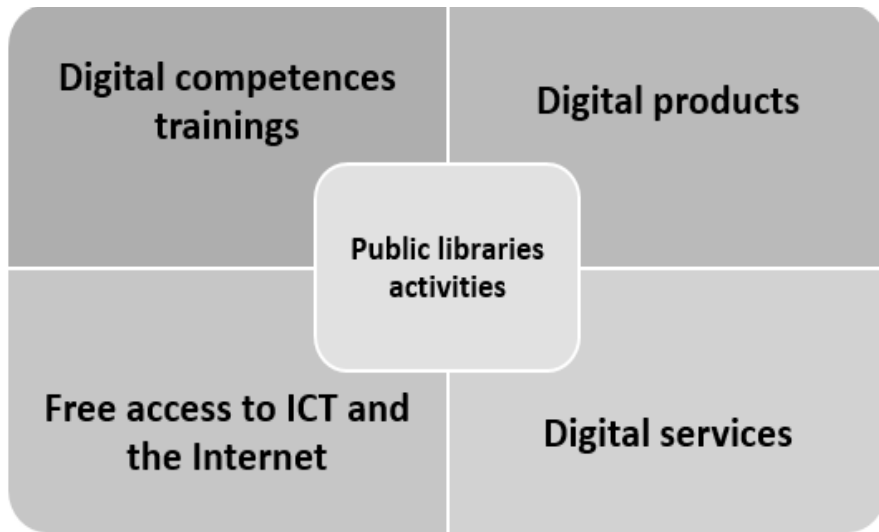


Fig. 1. Public libraries activities in the digital inclusion field

Source: the authors' own compilation based on B. Real et al. (2015), P. D. Moxley and J. M. Abbas (2016), S. Strover et al. (2020).

IFLA (2019) and ALA (2018) state that public libraries can contribute to the digital inclusion not only by providing free access to digital technologies, the Internet and information resources, but also by giving digital literacy advice, implementing digital competences trainings, providing access to, and encouraging the usage of digital services and products. The wide network of libraries, the orientation towards the needs of the communities in which they operate distinguish public libraries from other public sector organizations and put them in the unique position to contribute to digital inclusion.

These aspects are particularly relevant for libraries operating in the regions, because they often become one of the most important sources of access to the latest technologies and information for the

local habitants (Manžuch, Macevičiūtė, 2020; Strover et al., 2020; Whiteside et al., 2022).

The COVID-19 pandemic, which started at the end of 2019, had effect on public libraries activities, oriented towards digital inclusion as well. The strict activity restrictions, imposed by the governments in all over the world, led to the changes in the way libraries operate. They had to adapt to constantly changing conditions, limit contact services and move most of activities to the digital space (Gann, 2020; Smith, 2020; Wang, Lund, 2020). By limiting physical access to the premises, public libraries started to provide digital services, created digital products, updated digital book collections, developed on-line learning platforms, increased access to the digital databases, started organizing on-line events, such

as meetings with the book authors, educational activities for children (Smith, 2020; Ma, 2020). During the pandemic, people have used ICT and the Internet to work and learn remotely, to manage their financial affairs, and to communicate with their friends and relatives, seeking to overcome loneliness and social isolation. Meanwhile, those who did not have access to or were unable to use ICTs and the Internet were severely limited and encountered the danger to face the total exclusion (Gann, 2019; Aslam, Naveed, Shabbir, 2020; Horrigan, 2020; Flynn, 2022; Guernsey, Prescott, Park, 2022). Also, during the pandemic, the need for the digital inclusion increase, related to the improvement of digital, media and information literacy competences became crucial, together with the necessity for librarians, as information specialists, to fight the rising infodemic, fake news and misinformation spread.

However, in the field of digital inclusion, public libraries frequently face challenges, such as difficulties in maintaining the sustainability of digital inclusion initiatives, reaching target audiences, adapting services to changing service user needs and external environment requirements, particularly during unexpected, critical situations (Noh, 2019; Gann, 2019; Gallardo, Beaulieu, Geideman, 2020; Real, 2021). These challenges highlight the importance of identifying potential solutions to these problems. This can be done by evaluating the current state of the implementation of digital inclusion activities offered by public libraries, such as digital competences trainings, provision of free access to ICT and the Internet, digital products, and digital services, defining

the main challenges that libraries face while implementing these activities, and offering opportunities for digital inclusion increase.

Research methodology

The qualitative content analysis method was chosen for this study, which included a qualitative content analysis of the textual and statistical activity reports of Lithuanian public libraries from 2017 to 2021. The libraries selected for this analysis are public libraries that fall under the Lithuanian Ministry of Culture and implement digital inclusion activities: the National Library of Lithuania, 5 county and 60 municipal public libraries. The National Library of Lithuania and 5 county public libraries are methodological centers for municipal public libraries, providing advice, competence development and other support to municipal public libraries. The National Library of Lithuania and five county public libraries report their activities to the Ministry of Culture, whereas municipal public libraries report their activities to the administrations of the municipalities where their libraries are located. Every year all Lithuanian public libraries prepare statistical and textual activity reports in which they provide the main information about the implemented activities, provided services, organized events, trainings, etc., including information about public libraries' digital inclusion activities.

The textual activity reports of the National Library of Lithuania, county and municipal public libraries are published on the libraries' websites. Statistical

activity reports of all Lithuanian public libraries are available in the statistics module of the National Library of Lithuania: http://statistika.libis.lt:7878/pls/apex/f?p=106_

Taking into account the total number of public libraries operating in Lithuania (5 county public libraries, 60 municipal public libraries and 1 National Library of Lithuania) and the analysis period (2017–2021 years), using a sample size calculator and following the criteria of stratified sampling, which ensures that the number of reports from each type of library is representative (Cohen, Manion, Morrison, 2007), the sample size for the study was calculated: 169 textual and 169 statistical activity reports.

During this study, the 175 textual reports of municipality (148 reports), county (22 reports) public libraries, and the National Library of Lithuania (5 reports) for 2017–2021 years were analyzed, together with 190 statistical reports of municipality (160 reports), county (25 reports) public libraries, and the National Library of Lithuania (5 reports). This sample ensured the necessary representativeness and validity of the study.

Following the principles of the qualitative content analysis approach (Cohen, Manion, Morrison, 2007), the key categories were identified, which represented the main activities implemented by public libraries in the digital inclusion field: the access to ICT and the Internet provided by public libraries, digital services, digital competences trainings for adults, educational activities for children and young people, digital products, on-line digital competences trainings, and on-line events. Additional categories representing the orientation of digital

inclusion activities towards groups lacking digital inclusion, such as seniors, people with disabilities, adults, children, and youth, were identified during the data analysis.

The data was compiled by integrating quantitative statistical methods into the qualitative analysis, which allowed to reveal trends in digital inclusion activities provided by Lithuanian public libraries over a five-year period, and it was organized by relevant categories and the number of reporting public libraries (data represented in percentages) (Cohen, Manion, Morrison, 2007). To illustrate the statements in each category, quotations from library activity reports are provided in brackets in italics in the data analysis.

Representation of digital inclusion activities in Lithuanian public libraries' textual and statistical reports

According to the scientific literature (Real, Bertot, Jaeger, 2014; Real et al., 2015; Beyne, 2018; Strover et al., 2020; Real, 2021), the key activities of public libraries in the field of digital inclusion include providing access to ICT and the Internet, implementing digital competency trainings for various target audiences (seniors, people with disabilities, children and youth, unemployed people, etc.), and providing access to and the use of computers (digital products and services). Based on these insights, the key categories that reflect the activities carried out by libraries in the field of digital inclusion were identified while analyzing

the data presented in the textual activity reports of Lithuanian public libraries for the years 2017–2021 (Figure 2).

According to the data presented in this graph, all Lithuanian public libraries have engaged in the following activities aimed at increasing digital inclusion over the last five years: provided free access to ICT and the Internet (<...> *in public libraries* <...> 127 computerized workstations for users <...> 11216 internet users registered during the year <...> 35784 internet sessions <...> printing, copying, scanning of documents <...> support for those using computers and the internet <...> Utena MPL*¹, 2019), offered digital services, such as access to electronic catalogues, e-books, databases (<...> users were periodically provided with subscription databases <...> free remote access to the digital library <...> Kaunas MPL, 2017; <...> library visitors had the opportunity to use library services electronically <...> Klaipėda MPL, 2018) and carried out activities aimed at improving the digital competencies of members of the communities in which they operate

¹ MPL - abbreviation for municipal public library

(<...> *in 2019, more than 500 people in the district were trained at digital competences training programs for the beginners' and advanced learners* <...> Šiauliai MPL, 2019).

The biggest part (about 90%) of Lithuanian public libraries in their activity reports indicated that they organized educational activities for children and youth, which were focused on the improvement of information and digital literacy competences (<...> *the Public Library's Young Engineers' Laboratory toured the libraries of the district, organized workshops for children and presented the possibilities of 3D printers* <...> Tauragė MPL, 2017).

About a half of the Lithuanian public libraries created and offered digital products (<...> *created an interactive guide to educational activities* <...> Šiauliai MPL, 2020), organized on-line digital competences trainings (<...> *only remote trainings for residents have been held* <...> Kaunas MPL, 2020; <...> *the public library has created 80 different virtual educations, which have been shared on the YouTube channel* <...> Kaunas MPL, 2020).

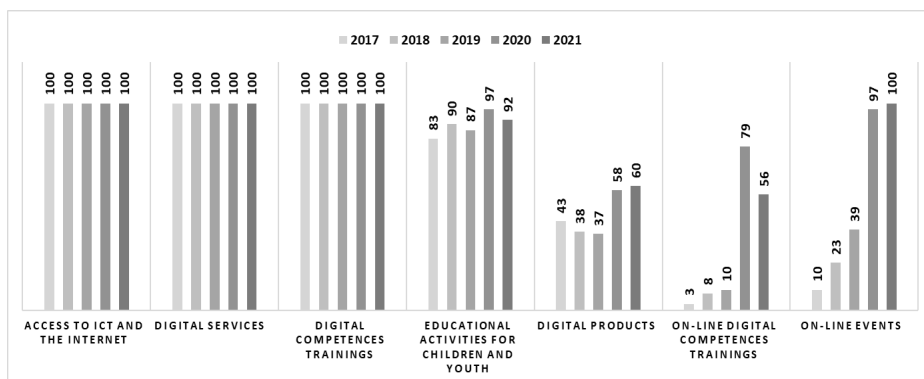


Fig. 2. Activities of Lithuanian public libraries in the field of digital inclusion (%)

It is evident, that the number of public libraries, offering on-line trainings and events (<...> 1 515 events took place in 2020 – 80% of which were virtual <...> Vilnius m. MPL, 2020), had grown in 2020 and 2021 years, which is due to the COVID-19 pandemic and the restrictions imposed on the provision of contact services. The analysis showed that 79 percent of public libraries in 2020 and 56 percent of public libraries in 2021 at some point of time, due to contact service restrictions, held only online digital competence trainings. This could limit the improvement of digital competencies of those people who do not have computers, internet access, or at least basic digital competencies to connect to those online trainings (<...> 8 on-line digital competences trainings were organized on the Microsoft Teams platform in <...> Anykščiai MPL, 2020; <...> people living in rural areas don't have sufficient digital competences <...> are less proficient in modern information technologies and do not connect to online trainings

<...> Pagėgiai MPL, 2020). Those were mostly seniors, people with disabilities, people living in rural areas, who might face complete digital exclusion during the pandemic.

This information can be supplemented with the data gathered from analysis of statistical activity reports of Lithuanian public libraries for the years 2017–2021, in which they also record some data about digital inclusion activities (see Figures 3–5).

Figure 3 shows that free Internet access in Lithuanian public libraries has been actively used over the last five years, increasing from 1304251 sessions in 2017 to 1588523 sessions in 2021. The highest number of the Internet sessions – 1704444 was reached in 2020 despite the fact that in 2020, due to the contact services restrictions imposed by the COVID-19 pandemic, this service was not available at some months. This shows that the pandemic has particularly increased the need to have access to ICT and the Internet, as a large part of

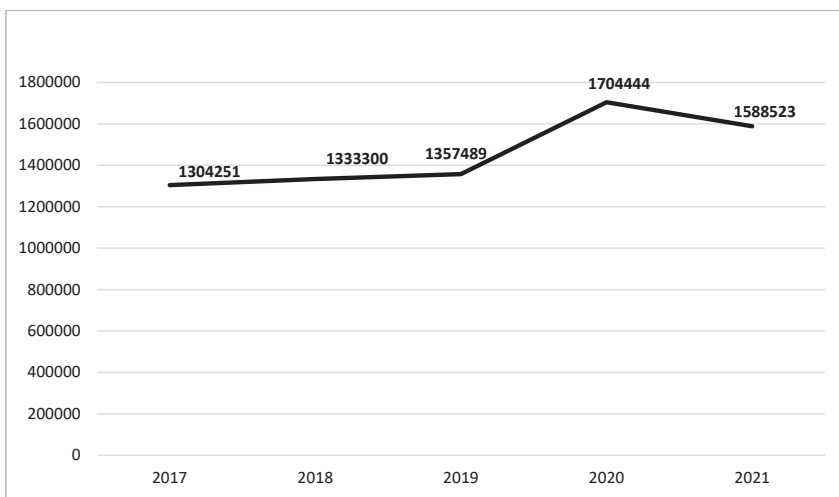


Fig. 3. The Internet usage sessions in Lithuanian public libraries (pcs.)

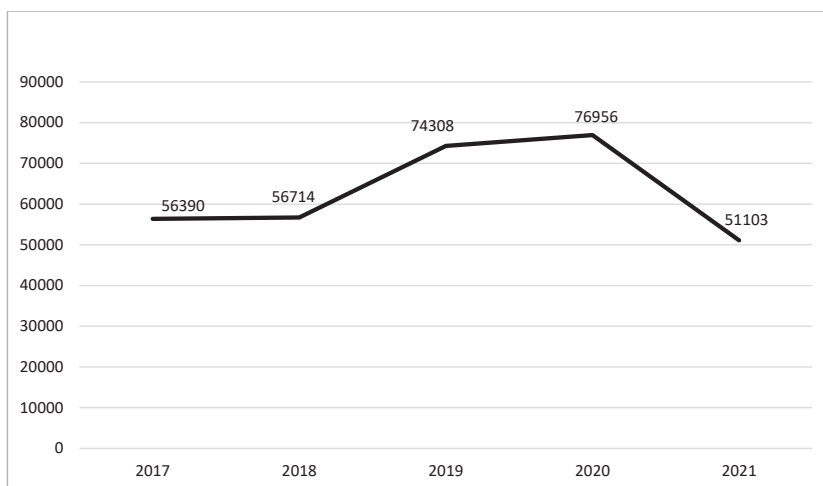


Fig. 4. Hours of digital competences trainings and consultations provided by Lithuanian public libraries to their service users (hrs.)

various activities and services have been moved into digital space.

The information presented in Figure 4 reflects the amount of time that public libraries spend on digital competences trainings and consultations to

their service users. It can be seen that the largest number of hours spent on improving users' digital competences (digital competences trainings and consultations on digital literacy topics) was in 2019 and 2020 (74308 and 76956

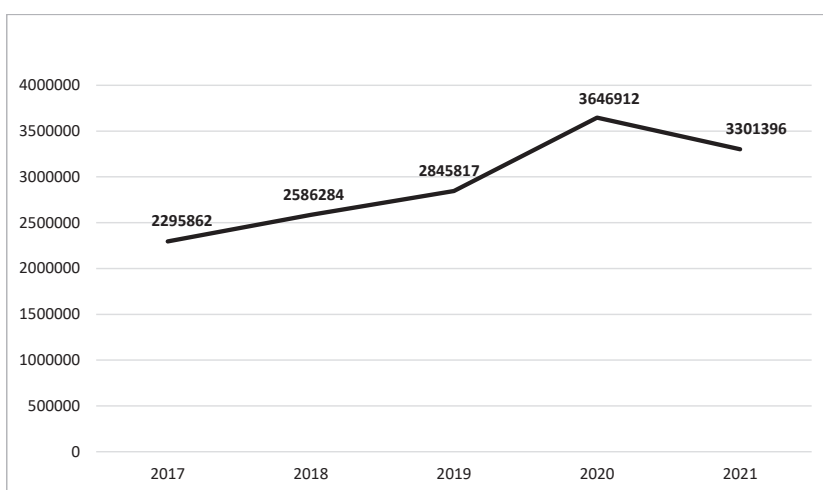


Fig. 5. Number of virtual visits to Lithuanian public library websites, events and trainings (pcs.)

hours respectively). In 2021, this figure dropped by 34% to 51103 hours. The increased number of hours spent on user training in 2019 and 2020 can be attributed to the intensive implementation of the national project “Connected Lithuania”, which was primarily aimed at improving the digital competences of society members and involved almost all Lithuanian public libraries (the project ended in the middle of 2021).

Analysis of the dynamics of the number of virtual visits to public library websites, virtual events, and trainings can be used to assess the situation of the usage of digital services provided by Lithuanian public libraries (Figure 5).

While analyzing the data presented in Figure 5, it is important to note that between 2017 and 2019, Lithuanian public libraries in their statistical activity reports only gave the numbers of virtual visits to their websites, while from 2020, in response to the pandemic situation, they started to provide information about the usage of their digital activities (events, trainings, etc.).

According to the data presented in this graph, the highest number of virtual visits to Lithuanian public libraries (3646912) can be recorded in 2020, when the stringent restrictions on contact and physical services were implemented. With the relaxation of activity restrictions and the emergence of more contact services (for example, contact digital literacy trainings and physical events were renewed in public libraries in 2021), the number of virtual visits decreased slightly but remained relatively high in comparison to the pre-pandemic period.

The above presented information, gathered through the analysis of textual

and statistical activity reports of Lithuanian public libraries, allows to identify one of the arising challenges, that libraries encounter in the digital inclusion field – it is the maintenance of the sustainability and continuity of digital inclusion activities. Very often various digital inclusion initiatives in public libraries start as large scope, national level projects (e.g., the national project “Connected Lithuania”) that have additional funding for the creation of new digital services, products, digital competences trainings, technological equipment, etc. However, once the projects are completed, the funding is exhausted, and the continuation of these initiatives, which frequently necessitate additional human, time, and financial resources, is left to libraries, which are frequently unable to maintain the same pace of implementation of these initiatives (e.g., organize the same amount of digital competences trainings, renew the technological equipment, buy the newest versions of software, etc.). These issues could be addressed by seeking additional funding for digital inclusion activities from other resources, by initiating institutional level, smaller scope project activities by libraries themselves, by developing collaboration, aimed at combining resources, reaching more target groups, etc. with other organizations, interested in digital inclusion increase.

Another challenge, defined by the researchers, working in the field of digital inclusion (Treviranus et al. 2014; Newman et al. 2019; Johansson, Gulliksen, Gustavsson 2020; Harris, Johns, 2020, and others) is that certain groups, such as seniors, people with disabilities, the unemployed, children, and youth, frequently

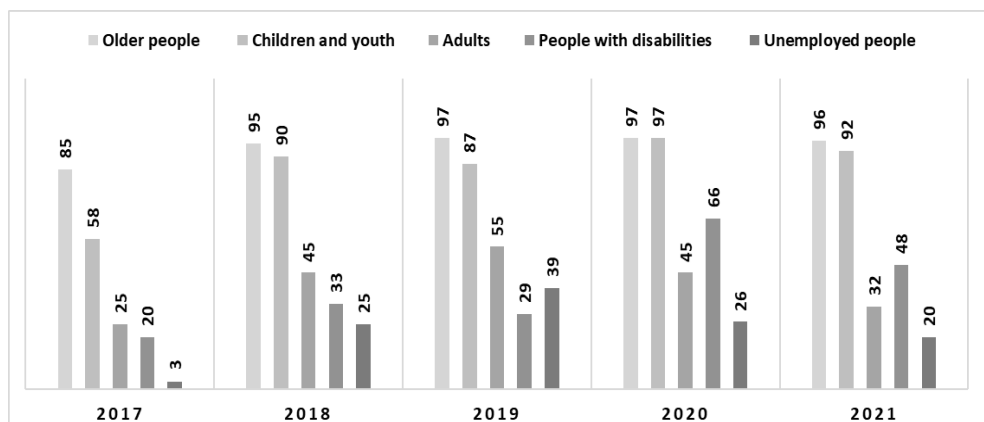


Fig. 6. The focus of Lithuanian public libraries' digital inclusion activities on digitally excluded groups (%)

face digital exclusion. In order to evaluate the situation in Lithuanian public libraries, the categories representing the orientation of digital inclusion activities towards groups lacking digital inclusion (seniors, children and youth, adults, people with disabilities, unemployed people) were identified while conducting the analysis of the information, presented in textual activity reports (Figure 6).

Considering the data in Figure 6, it is clear that more than 90% of Lithuanian public libraries prioritize digital competence trainings for seniors when implementing digital inclusion activities (<... > participated in the thematic campaign “Senior Citizens’ Days Online”, aimed at encouraging older people to feel confident in the digital space <...> to improve their digital skills, the National Library of Lithuania, 2018; <...> the increase in the number of hours spent on user training is attributed to the activities of the ongoing “Connected Lithuania” project: campaigns and trainings for the population through digital literacy training <...

<...> Panevėžys MPL, 2019; <...> the aim is to implement new models of digital literacy education for the elderly by sharing international experience <...> Utena MPL, 2020). Another prioritized group is children and youth, for whom libraries organize educational activities oriented towards improving digital, media and information literacy competences (<... > using the hardware and software of the special creative package, children tried out a 360-degree camera in workshops, filmed with a drone, created posters using the Canva software, learned the basics of graphic design, took and processed photos <...> Kaunas MPL, 2019). The focus on these target groups has particularly increased since 2018, with the involvement of almost all Lithuanian public libraries in the implementation of the national digital inclusion projects, initiated by the National Library of Lithuania: “Connected Lithuania: an efficient, safe and responsible digital community in Lithuania” and “Encouraging citizens

to use the internet smartly in a renewed infrastructure”.

Figure 6 shows that during the last five years much smaller proportion of Lithuanian public libraries focused on adults (reported by around 40% of libraries), the disabled (reported by around 50% of libraries), and unemployed people (reported by around 30% of libraries) while organizing digital inclusion activities. It can be seen that the focus on disabled people grown in 2020 (as reported by 66% of libraries), with the launch of the national project “Library for All”, which was aimed at people with Autism spectrum disorders and the comprehensive adaptation of public library services to this target group. However, this project focused only on one specific target group – people with Autism spectrum disorder (<...> “Library for All”. *The aim of this project is to increase the accessibility of library services for visitors with Autism spectrum disorder and other speech, communication and behavior disorders* <...> Tauragė MPL, 2020). However, this initiative requires constant maintenance, creation of new services, adaptation of existing services and activities. It is evident, that in 2021 when the initial initiative was over, only 22% of public libraries offered digital inclusion services, oriented towards disabled people.

Insufficient orientation towards people with disabilities, unemployed people and adults while implementing digital inclusion activities might be identified as another challenge, faced by Lithuanian public libraries. Public libraries, according to E. J. Helsper (2012), E. J. Helsper and B. C. Reisdorf (2017), should focus more on these target groups by engaging

people with disabilities and unemployed people in digital inclusion activities, digital competences, media and information literacy trainings. Media and information literacy skills were of particular importance during the COVID-19 pandemic, and are important now, when the crisis in Ukraine is still going on. During critical situations, librarians as information specialists are needed to combat the rising infodemic, as well as the rapid spread of misinformation and fake news. According to Bonnet, Sellers (2020), T. Wang and B. Lund (2020), M. Fraser-Arnott (2020), M. Y. Ali and P. Gatiti (2020), A. P. Winata, R. Fadelina and S. Basuki (2020), during crisis, public libraries can assist their service users in finding and evaluating reliable information sources, improving their media and information literacy skills, and developing critical thinking skills by organizing trainings, events, and publishing useful links to reliable information sources on their websites.

Conclusions

The analysis of the scientific literature about public libraries activities in the digital inclusion field (Real, Bertot, Jaeger, 2014; Real et al., 2015; Beyne, 2018; Strover et al., 2020; Real, 2021) revealed, that public libraries are among the most important organizations, contributing to the digital inclusion increase as they provide free access to ICT and the Internet, organize digital competences trainings for society members, create and offer access to digital services, products, implement various digital inclusion initiatives, such as projects, events, etc., primarily

targeting those groups, that lack digital inclusion the most.

However, the implementation of digital inclusion activities is challenging and public libraries might face difficulties related to maintaining the sustainability of digital inclusion initiatives, reaching target audiences, and adapting services to changing service user needs and external environment requirements, particularly during unexpected, critical situations. So, it is important to anticipate potential solutions to these challenges, which was accomplished in this article, by evaluating the situation of digital inclusion activities implemented by public libraries through the analysis of the textual and statistical reports of Lithuanian public libraries for the years 2017–2021.

The content analysis of Lithuanian public libraries' textual and statistical activity reports revealed that libraries implemented the following activities aimed at increasing digital inclusion over the last five years: provided free access to ICT and the Internet, offered digital services, digital products and carried out digital competence's trainings.

The detailed analysis of each activity showed that free access to ICT and the Internet was provided by all Lithuanian public libraries during the last five years. Also, all Lithuanian public libraries offered digital services, such as access to electronic catalogues, e-books, databases, and carried out activities aimed at improving the digital competencies of members of the communities in which they operate. The biggest part of Lithuanian public libraries (about 90%) organized digital competences trainings for seniors and educational activities for children and youth, which were focused

on the improvement of information and digital literacy competences. And only less than half of Lithuanian public libraries focused on the adult population, the disabled and the unemployed people.

It was indicated, that during the last five years about a half of Lithuanian public libraries created and offered digital products, organized on-line trainings and events. The number of libraries offering online trainings and events especially increased in 2020 and 2021 years, due to the COVID-19 pandemic and the restrictions imposed on the provision of contact services.

This analysis allowed not only to evaluate the current situation of the implementation of digital inclusion activities but also to identify the main challenges, faced by Lithuanian public libraries in the digital inclusion field. The first one is related to the maintenance of the sustainability and continuity of digital inclusion activities. It was noted, that when large national projects aimed at increasing digital inclusion are completed, funding is exhausted, and the continuation of these initiatives, which frequently require extra human, time, and financial resources, is left to libraries, they are frequently unable to maintain the same pace of implementation of these initiatives. This could be solved by seeking additional funding from other resources, by initiating institutional level, smaller scope project activities by libraries themselves, by developing collaboration, aimed at combining resources, reaching more target groups with other organizations (e.g., NGO's, educational institutions, other cultural organizations, private sector enterprises, etc.), interested in digital inclusion increase.

Insufficient orientation towards people with disabilities, unemployed people and adults while implementing digital inclusion activities was identified as another challenge, faced by Lithuanian public libraries. It might be stated that public libraries should focus more on these target groups by engaging people

with disabilities and unemployed people in digital inclusion activities, digital competences, media, and information literacy trainings, which were of particular importance during the COVID-19 pandemic, and are important now, when the crisis in Ukraine is still going on.

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SKAITMENINĖS ĮTRAUKTIES DIDINIMO IŠŠŪKIAI IR GALIMYBĖS LIETUVOS VIEŠOSIOSE BIBLIOTEKOSE

Santrauka

Šio straipsnio tikslas – išanalizuoti skaitmeninės įtraukties didinimo veiklų įgyvendinimo situaciją Lietuvos viešosiose bibliotekose, atskleisti pagrindinius bibliotekų patiriamus iššūkius ir numatyti galimybes skaitmeninės įtraukties didinimui. Atlikus mokslinės literatūros analizę, straipsnyje pristatyta teorinė bibliotekų veiklų skaitmeninės

įtraukties didinimo srityje koncepcija. Mokslininkai, nagrinėjantys viešųjų bibliotekų veiklas skaitmeninės įtraukties didinimo srityje (Real, Bertot, Jaeger, 2014; Real ir kt., 2015; Beyne, 2018; Strover ir kt., 2020; Real, 2021), pažymi, kad viešosios bibliotekos yra vienos svarbiausių organizacijų, prisidedančių prie skaitmeninės įtraukties didinimo,

teikiančių nemokamą prieigą prie IKT ir interneto, organizuojančių skaitmeninių kompetencijų tobulinimo veiklas visuomenės nariams, kuriančių ir siūlančių prieigą prie skaitmeninių paslaugų, produktų, įgyvendinančių kitas skaitmeninės įtraukties iniciatyvas, pavyzdžiui, projektus, renginius, pirmiausia orientuojantis į skaitmeninės įtraukties stokojančias tikslines grupes. Tačiau šioje veikloje viešosios bibliotekos gali susidurti su sunkumais: kaip išlaikyti skaitmeninės įtraukties iniciatyvų tvarumą, pasiekti tikslines auditorijas ir pritaikyti paslaugas prie besikeičiančių vartotojų poreikių bei išorinės aplinkos reikalavimų, ypač netikėtose, krizinėse situacijose. Todėl svarbu numatyti galimus šių iššūkių sprendimo būdus. Tai ir buvo atlikta šiame straipsnyje, analizuojant Lietuvos viešųjų bibliotekų 2017–2021 m. tekstines ir statistines veiklos ataskaitas.

Analizė atskleidė, kad visos Lietuvos viešosios bibliotekos per pastaruosius 5 metus vykdė šias skaitmeninės įtraukties didinimo veiklas: teikė nemokamą prieigą prie IKT ir interneto, siūlė skaitmenines paslaugas, pavyzdžiui, prieigą prie elektroninių katalogų, elektroninių knygų ir duomenų bazių, vykdė veiklas (organizavo renginius, edukacines veiklas), skirtas bendruomenių, kuriose veikia, narių skaitmeninėms kompetencijoms tobulinti. Daugiau nei pusė viešųjų bibliotekų kūrė ir vartotojams siūlė skaitmeninius produktus bei organizavo virtualius skaitmeninių kompetencijų tobulinimo mokymus. Bibliotekų, siūlančių virtualius mokymus bei renginius, skaičius ypač padidėjo 2020 m. ir 2021 m. dėl COVID-19 pandemijos ir jos metu taikytų kontaktinių paslaugų ribojimų. Atlikta analizė parodė, kad daugiau nei 90 % Lietuvos viešųjų bibliotekų, vykdydamos skaitmeninės įtraukties veiklas, daugiausia dėmesio skyrė tokioms grupėms kaip senjorai, vaikai ir jaunimas, bei organizavo joms skaitmeninių kompetencijų

mokymo veiklas ir edukacinius užsiėmimus. Ir tik mažiau nei pusė Lietuvos viešųjų bibliotekų, organizuodamos skaitmeninės įtraukties veiklas, orientavosi į suaugusius gyventojus, negalią turinčius bei darbo neturinčius asmenis.

Ši analizė leido įvertinti ne tik esamą skaitmeninės įtraukties didinimo situaciją, bet ir nustatyti pagrindinius iššūkius, su kuriais šioje srityje susiduria Lietuvos viešosios bibliotekos. Pirmasis iššūkis susijęs su skaitmeninės įtraukties veiklų tvarumo ir tęstinumo užtikrinimu. Pastebėta, kad pasibaigus dideliems nacionalinės apimties skaitmeninės įtraukties didinimo projektams ir jų laikotarpiu gautam finansavimui bei veiklų įgyvendinimo tęstinumą palikus viešosioms bibliotekoms, jos dažnai stokoja materialinių, žmogiškųjų ir kitų išteklių bei nepajėgia išlaikyti tokio paties šių iniciatyvų įgyvendinimo tempo. Šią problemą būtų galima spręsti ieškant papildomo finansavimo iš kitų šaltinių, pačioms bibliotekoms inicijuojant institucinio lygmens, mažesnės apimties projektines veiklas, plėtojant bendradarbiavimą su kitomis organizacijomis (pavyzdžiui, NVO, švietimo įstaigomis, kitomis kultūros organizacijomis, privataus sektoriaus įmonėmis ir pan.), suinteresuotomis didinti skaitmeninę įtrauktį. Dar vienas iššūkis, su kuriuo susiduria Lietuvos viešosios bibliotekos – nepakankama skaitmeninės įtraukties didinimo veiklų orientacija į negalią turinčius, darbo neturinčius asmenis bei suaugusiuosius. Pažymėtina, kad viešosios bibliotekos turėtų labiau rūpintis šiomis tikslinėmis grupėmis, įtraukti negalią turinčius, darbo neturinčius asmenis į savo siūlomą skaitmeninės įtraukties veiklas, skaitmeninių kompetencijų, medijų ir informacinio raštingumo mokymus, kurie buvo ypač aktualūs COVID-19 pandemijos metu, ir liko aktualūs dabar, tęsiantis krizinei situacijai Ukrainoje.

Does Transition to IFRS 16 Affect Companies Financial Performance: The Case of Baltic Listed Companies

The paper assesses the effect of transitioning to IFRS 16 on Baltic listed companies' financial performance. The results revealed that 74.63% of sample companies were affected with an average 8.68% increase in total assets and 13.03% increase in total liabilities. Return on assets and assets turnover ratios of the affected companies decreased by an average of 8.33%, the quick ratio and current ratio decreased by 7.84%, while the debt-to-equity ratio increased by 28.63%. The sectors most heavily impacted by transitioning to IFRS 16 were communication services and basic materials sectors.

Keywords: IFRS 16, lease accounting, right-of-use assets, lease liability, financial performance.

Straipsnyje vertinamas 16-ojo TFAS taikymo pradžios poveikis Baltijos šalių listinguojamų įmonių finansiniams rezultatams. Rezultatai atskleidė, kad buvo paveikta 74,63 % analizuotų įmonių, bendras jų turtas padidėjo vidutiniškai 8,68 %, o įsipareigojimai – 13,03 %. Nukentėjusių įmonių turto grąžos ir turto apyvartumo rodikliai sumažėjo vidutiniškai 8,33 %, bendrojo ir kritinio likvidumo rodikliai sumažėjo 7,84 %, o skolos ir nuosavybės santykis padidėjo 28,63 %. Perėjimas prie 16-ojo TFAS labiausiai paveikė ryšių paslaugų ir pagrindinių medžiagų sektorių finansinius rezultatus.

Raktiniai žodžiai: 16-asis TFAS, nuomos apskaita, naudojimo teise valdomas turtas, nuomos įsipareigojimai, finansiniai rezultatai.

Introduction

Leasing is one of highly popular and cost-effective financing options for businesses, offering multiple advantages such as improved cash flow management, potential collateral avoidance, and preserved funds for company development. However, pre-IFRS 16 lease accounting model was seen as restrictive since it classified leases as either operating or finance leases, with operating leases not

required to be capitalized and therefore not disclosed in by the lessee in its balance sheet. This inherent limitation raised concerns regarding the transparency and comprehensiveness of financial statements, as it resulted in the omission of valuable resources and significant debt from the accounting records (Duke et al., 2009; Giner et al., 2019; Maglio et al., 2018).

To address information imbalances and ensure accurate representation of

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lease transactions, the implementation of International Financial Reporting Standard (IFRS) 16 “Leases” took effect on January 1, 2019. A crucial modification introduced by this standard was the replacement of recognizing lease payments in as operating items with the requirement to treat all leases as finance leases and therefore recognize lease related assets and liabilities (IFRS, 2016). This transition from is expected to have a substantial influence on the financial statements of lessee companies as well as their financial performance measures. IFRS 16 holds significant relevance across various industries, impacting their financial reporting practices and lease management approaches. Industries heavily reliant on leasing, such as retail, transportation, and real estate, experience significant effects from the implementation of IFRS 16. These sectors often engage in extensive lease agreements for assets like storefronts, vehicles, and properties, making the standard’s requirements and changes particularly pertinent to their financial statements and decision-making processes. Furthermore, financial statement-based indicators and ratios are also affected. Review of empirical research revealed that transition to IFRS 16 have a significant influence on financial performance of companies, mainly due to increased assets and liabilities (Giner et al., 2019; Magli et al., 2018; Maglio et al., 2018; Morales-Díaz and Zamora-Ramírez, 2018; Xu et al., 2017). The effect of IFRS 16 on companies’ financial performance and key financial ratios such as leverage, liquidity ratios, EBITDA, ROA, and ROE been had examined in scientific research.

Research in the area of lease accounting and the impact of IFRS 16 in the Baltic states is relatively limited. There is a notable gap in scholarly studies examining the specific implications and challenges faced by companies in this region regarding the adoption and implementation of IFRS 16. Therefore research is needed to explore the effects of IFRS 16 on the financial reporting practices and financial performance of Baltic companies, providing valuable insights for both academia and practitioners in the region. **The research problem** addressed in this paper is if and how transition to the new accounting requirements, namely to IFRS 16, affect financial performance of companies and what are sector-specific differences arising from such transition.

The aim of this research is to explore how the transition to IFRS 16 affected financial performance of companies listed in Nasdaq OMX Baltic, including examining any sector-specific differences that may arise as a result of the transition.

Research methods. In this paper we firstly employed comparative literature analysis to gather relevant insights on the main IFRS 16 requirements and their effect on companies’ financial performance. Content analysis was utilized to examine the scope and financial implications of implementing IFRS 16 among Baltic listed companies. Calculation of ratios and their changes as well as comparative analysis were employed to summarize the research findings, followed by a critical comparative analysis during the discussion of the results.

The paper is structured in five main sections. The first sections represent literature analysis including an overview the new lease accounting requirements,

the reflection of IFRS 16 requirements on different sectors and the influence of changes in lease accounting on companies' financial performance. The second section of the paper focuses on the development of the research methodology. The third section presents the results including the number of unaffected companies, descriptive analysis of the changes in total assets and liabilities as well as assessment of their changes across the entire sample and different sectors. This section also presents analysis of the changes in companies financial performance indicators and their differences across the sectors. The discussion of the results is presented in the fourth section of the paper, where the findings of the study are interpreted and compared to the existing literature. Following the discussion of the results, the paper concludes in the final section of the paper.

Literature review

An overview of changes in lease accounting requirements. At the beginning of 2016, the International Accounting Standards Board issued a new standard for lease accounting: International Financial Reporting Standard (IFRS) 16, which came into force on January 1, 2019. It replaced the former lease accounting standard, IAS 17, which was seen as inadequate in meeting market requirements. IAS 17 classified leases as either operating or finance leases in both lessor and lessee accounts. However, in lessee accounts, operating leases did not require the recognition of lease assets or lease liabilities on the balance sheet. This lack of transparency drew significant

controversy in the financial markets, as it was argued that valuable resources and extensive debt were being hidden from stakeholders.

The newly developed IFRS 16 brought relevant and important updates to the market aiming to ensure that both lessees and lessors present material and comparable lease related information to the users of financial statements in a way that economic substance of the agreement is reflected in their financial statements (IFRS 16, 2017). The definition of a lease term itself did not fundamentally change. A lease is still defined as a contract or part of a contract that grants, in exchange for consideration, the right to use an asset for a specified period. In general, the accounting requirements for lessors under IFRS 16 did not differ significantly from those in IAS 17. In IFRS 16 lessors still classify leases as finance or operating leases based on similar principles to IAS 17. However, the implemented changes to lease accounting imposed significant changes in lessee accounting, as since 2019, all previously off-balance material agreements were transferred to financial assets (Radzevičienė, 2020; Silvana et al., 2020; Barone et al., 2014). As a result, all previous operating leases from 2019 are referred to as finance leases. In their balance sheets companies have to recognize and present right of use assets separately from the other assets and lease liabilities - separately from the other liabilities. Companies are also allowed to present lease related assets and liabilities together with other assets and liabilities if it is clearly indicated in which lines they are included. As for expenses, depreciation of right of use assets and interest expenses for lease liabilities

have to be calculated (and disclosed separately) instead of previously recognized lease expenses. Such changes have an immediate effect on lessees EBITDA and operating profit with a potential effect on the value of profit before taxes (IFRS, 2016). Moreover, transition to IFRS 16 also has an impact on companies' cash flow statements.

The accounting effect of this standard was expected to change the financial results and position of companies, affect various financial indicators such as EBITDA, solvency ratio and increase the assets as well as liabilities of all companies in the balance sheet accordingly (Radzevičienė, 2020).

Impact of IFRS 16 on different sectors.

The effect of the amendments to lease accounting on the companies' financial performance may also depend on the extent to which the assets are leased and the types of agreements in place. This is very much sector dependant. The impact of IFRS 16 requirements on specific sectors is to some extent discussed in previous literature. One of the most frequently distinguished sectors as the most sensitive to changes in leasing accounting is the retail industry (Altamuro et al. 2012; Durocher, 2008; Fitó, et al, 2013; Magli, et al, 2018; Morales-Díaz and Zamora-Ramírez, 2018; Mulford and Gram, 2007). This industry includes food retail, clothes retail, household goods stores, etc. Leasing plays an important role as most this kind of stores and business locations are leased. Other sectors, also frequently singled out by the authors, as more affected by changes in leasing, are hotels and transportation sectors (Fitó et al., 2013; Morales-Díaz and Zamora-Ramírez, 2018). Short-term home rentals are an

increasingly popular phenomenon. Especially such a leasing way was encouraged by the emerging platforms "Booking.com" and "Airbnb". The Airlines sector is singled out as the most sensitive to accounting changes of IFRS 16 in some research (IFRS, 2016; Veverková, 2019) as well. Many aircrafts are leased to avoid the need for large amounts of cash or to save. Another sector affected by the new requirement of IFRS 16 is the telecommunication sector (Magli et al., 2018). This sector leases not only land, buildings, equipment and vehicles. There are more agreements that are subject to leasing requirements. These include capacity contracts, wayleaves and access rights, satellite broadcasting contracts and IT outsourcing agreements.

The influence of changes in lease accounting on companies' financial performance. The majority of the previous research which questioned the impact of IFRS 16 on financial performance of companies concentrated on the assessment of the expected outcomes prior to IFRS 16 actually came in force in 2019 (see Table 1).

As presented in Table 1, several research studies have analysed the impact of IFRS 16 on key financial indicators. J. Morales-Díaz and C. Zamora-Ramírez (2018) examined 646 European companies and found that the application of IFRS 16 significantly increased assets and liabilities, as well as the leverage measure. However, profitability changes were identified as insignificant. F. Magli et al. (2018) focused on Italy and reported significant increases in the EBITDA/revenues ratio, EBITDA, debts, and the debt/equity ratio. They highlighted the potential impact of IFRS 16 on valuation models. W. Xu et al. (2017) analysed

Table 1. Previous research on the IFRS 16' influence on companies' financial performance

Authors	Variables	Method	Sample	Results
B. Giner, P. Merello and F. Pardo (2019)	Leverage, liability maturity, liquidity, ROA, ROE	Monte Carlo method	100 largest companies from STOXX All Europe 100 index	Leverage (+4,1%); liability maturity (-5,3%); liquidity (-12,3%); ROA (-6,2%); ROE (+4,2%). Shortened lease periods reduce the impact of leasing capitalization.
F. Magli, A. Nobolo and M. Ogliari (2018)	Future committed payments, debt/equity, EBITDA/revenues, financial indebtedness, total assets, annual operating lease payments, equity	Quantitative and qualitative analysis	384 entities listed in Italy	Retail and telecommunications sectors had significant use of operating leases. EBITDA/revenues (+1%), EBITDA (+14%), debts (+23%) debt/equity (+6%).
R. Maglio, V. Rapone, and A. Rey (2018)	ROA, ROE, EBITDA/TE, EBITDA/TA, leverage, debt/equity	Refined constructive capitalisation method and comparative analysis	40 non-financial Italian firms	Debt/equity (+38,89%), D/E in the consumer services (+179,34%), in the technology (+39,44%), leverage (+14,4%), EBITDA/TE (+7,05%), ROA (-7,2%), ROE (-1,3%), EBITDA/TA (-6,02%).
J. Morales-Díaz and C. Zamora-Ramírez (2018)	Assets, liabilities, leverage, lease intensity, ROA, coverage, interest expenses	Adjusted capitalisation method	646 quoted European companies	Assets (+9,96%), liabilities (+21,4%), leverage (+9,28%), ROA (+3,07%), coverage (-13,6%). The most affected sectors: retail, hotels, transportation sectors.
W. Xu, R. A. Davidson and C. S. Cheong (2017)	Assets, liabilities, interest-bearing debts, profit margin, ROE, ROA, ROC, assets turnover, interest cover, gearing	Improved constructive method based on Imhoff et al.	165 S&P/ASX200 companies	Assets (+4,2%), liabilities (+8,82%), interest-bearing debts (+22,22%), gearing (+41,87%), asset turnover (-8,85%), ROE (+0,62%), ROA (+8,42%), ROC (+9,74%), interest cover (-23,14%), profit margin (+11,53%).

Source: L. Žilaitytė (2021).

companies from different sectors and observed increases in total assets, liabilities, interest-bearing debts, and the gearing ratio. They also found increases in profitability measures such as ROE, ROA, and ROC. B. Giner et al. (2019) used a Monte Carlo method and found that IFRS 16 would result in an increase in the leverage ratio, while liability maturity and liquidity would decrease. They also observed changes in profitability ratios, with ROA decreasing and ROE increasing. R. Maglio et al. (2018)

examined Italian firms and reported significant increases in the debt/equity ratio, particularly in the consumer services sector. The leverage ratio also increased, while profitability ratios, such as ROA and ROE, decreased.

Comparatively, the studies consistently show that the application of IFRS 16 has a significant impact on the balance sheet, leverage ratios, and profitability measures. Increases in assets and liabilities are also observed across studies. The impact on profitability measures varies,

with some studies reporting insignificant changes and others showing both increases and decreases. The magnitude of the effect differs among sectors, with retail, telecommunication, and consumer services sectors experiencing significant changes. These findings suggest that IFRS 16 has notable implications for financial reporting and analysis, potentially influencing valuation models and financial decision-making.

Research methodology

Literature analysis revealed that there is no consensus on the significance of the effect of IFRS 16 “Leases” on the financial performance of companies. IFRS 16 shall enlarge amount of assets, liabilities, result in accounting for the new interest and depreciation expenses (instead of operating lease expenses) and subsequently impact the majority of commonly used financial performance indicators.

In our research we focused on the situation of companies listed in Nasdaq OMX Baltic aiming to identify what (if any) new items were accounted for in their financial statements in 2019 when IFRS 16 came in force (if compared to 2018) and whether those changes had a significant effect on companies’ financial performance indicators. This researched focused on the scope of changes on the lessee side, as the new standard did not have a significant impact on the lessor accounting, yet the effect on the lessee financials was expected to be significant. Transition from one accounting standard to another restates and re-values the affected balance sheet and income statement items, therefore allows calculating the effect of the changes in

accounting regulation by evaluating the change in comparative numbers. Another issue is to decide whether the change is significant – i.e. how big the change shall be to assume that it reflects on the decision of the stakeholders. As no previous research revealed the numerical indicators of significance in similar situations, we adopted an approach used by auditors that a change of 1% and more in total value of the respective group (i.e. total assets or liabilities) shall be treated as being significant. Analysis was executed in two steps.

The first step assessed if and how much the values of assets and liabilities changed after the IFRS 16 adoption and whether these changes were significant. The key three questions addressed in this step were: Did the value of companies’ total assets and liabilities change and if yes, did it increase or decrease? Was this change significant? Was the scope of changes dependant on the sector? F. Magli et al. (2018), J. Morales-Díaz and C. Zamora-Ramírez (2018); W. Xu et al. (2017) also emphasized the importance to firstly assess the change of assets and liabilities values, as eventually it will reflect on the majority of the widely used financial indicators, such as ROA, current ratio, debt to equity and others. Although lease capitalization method was the most commonly applied research method in the reviewed previous research, it actually relies on extensive assumptions and complex formulas to calculate predicted values of companies’ financials. As this study was after IFRS 16 based financial statements were published for the year 2019 and the actual data was already available, we opted to use the content analysis and quantitative data analysis. Where available, the data was

collected from balance sheets and income statements of the sample companies. If unavailable, the data was taken from the notes to the financial statements. However, if IFRS 16 related data was not available either in financial statements, or in the notes, it was assumed that a particular company is not a lessee and therefore is not impacted by the IFRS 16.

Results obtained from quantitative data analysis were used to calculate the scope if IFRS 16 related changes, which was considered to be significant if the change was greater than 1 percent of the total assets or liabilities before IFRS 16 was applied. The scopes of the right-of-use asset and liabilities changes were calculated formulas (1) and (2). Calculated scopes enabled classification of the companies according to the strength of the IFRS 16 related impact. It also allowed to compare the results between different sectors.

$$\begin{aligned} \text{The scope of right of use asset change} &= \\ &= \frac{\text{Right of use asset}}{\text{Total Asset}} \times 100\% \end{aligned} \quad (1)$$

$$\begin{aligned} \text{The scope of lease liabilities change} &= \\ &= \frac{\text{Long term and short term lease liabilities}}{\text{Total Liabilities}} \times 100\% \end{aligned} \quad (2)$$

As the previous literature found that the sector to which the company belongs is an important factor explaining the impact of IFRS 16, the calculated scopes were further analysed by the sectors in which the Baltic listed companies operate. According to J. Altamuro et al. (2012), S. Durocher (2008), M. A. Fitó et al. (2013), F. Magli et al. (2018), J. Morales-Díaz and C. Zamora-Ramírez (2018), C. Mulford and M. Gram (2007), the retail, hotel, transport, airlines and telecommunication sectors should be the most affected by the changes in lease regulation.

The second step aimed to assess the financial performance of listed Baltic companies before and after transition to IFRS 16 and evaluate the scope of changes. In this step we used the data collected from companies' financial statements and based on the previous lease accounting related research (Giner et al., 2019; Magli et al., 2018; Maglio et al., 2018; Morales-Díaz and Zamora-Ramírez, 2018; Xu et al., 2017) selected profitability, turnover and solvency financial ratios (Table 2) to conduct comparative

Table 2. Financial performance indicators for which IFRS 16 effect was assessed

Indicator	Formula	Data used
Return on Assets (ROA)	$ROA = \frac{GP}{TA} \times 100\%$	GP – Gross Profit TA – Total Assets
Asset Turnover (AT)	$AT = \frac{NS}{TA}$	NS – Net Sales TA – Total Assets
Current Ratio (CR)	$CR = \frac{CA}{CL}$	CA – Current Assets CL – Current Liabilities
Quick Ratio (QR)	$QR = \frac{CA - I}{CL}$	CA – Current Assets I – Inventories CL – Current Liabilities
Debt to Equity (DE)	$DE = \frac{D}{E}$	D – Debt E – Equity

analysis and to evaluate the scope of changes. Similar to the assessment of changes in assets and liabilities values, with the ratios we took the same position that a more than 1 percent change in the assessed ratios (due to the transition to IFRS 16) is treated as being significant.

As the comparison of the indicators between the companies in their net size does not show the real impact, the changes in the indicators will be calculated using the formula 3 (Morales-Díaz and Zamora-Ramírez, 2018).

$$C = \frac{R'_1 - R_1}{R_1} \quad (3)$$

where:

R'_1 - is the financial ratio level after transition to IFRS 16 for a company 1.

R_1 - is the financial ratio level before transition to IFRS 16 for a company 1.

C - is the comparability index (change) of the impact of transition to IFRS 16 for a company 1.

Profitability ratio, namely ROA was selected based on B. Giner et al. (2019), R. Maglio et al. (2018), W. Xu et al. (2017). Previous literature shows that there is no consensus on whether the application of IFRS 16 has a negative or positive effect on profitability. The asset turnover ratio was expected to decrease as well. By using improved constructive method based on Imhoff et al. and checking for differences in financial reports, value relevance and key ratios, W. Xu et al. (2017) noticed that turnover ratio was decreased by nearly 9% because of transition to IFRS 16. However, few authors have studied the impact on turnover ratios, so the impact on them is not clear. Solvency indicators, namely current ratio, quick ratio and debt to equity ratio, were

selected based on the studies of the authors F. Magli et al. (2018), R. Maglio et al. (2018), J. Morales-Díaz and C. Zamora-Ramírez (2018). Previous literature shows that the application of IFRS 16 unequivocally increases the amount of assets and liabilities and also worsens solvency ratios. Therefore in our research the negative effect on the solvency ratios was expected.

Results of the analysis were further explored to identify if the effect of transition to IFRS 16 differs depending on the sector to which the company belongs. For the sector analysis to control the scope of presented results the aggregate average changes of the assessed ratios across the sectors will be presented.

Data sample. Similar to our previous research (Žilaitytė, 2021), the initial date sample included 89 companies listed in Nasdaq OVX Baltic. A total of 22 companies were eliminated from the sample at the initial stage – 18 companies which prepare their financial statements according to the local standards, and 4 companies which financial year ends on other dates than a calendar year-end (thus comparative analysis is not possible). The remaining 67 companies constituted the final research sample.

Previous research conducted by J. Altamuro et al. (2012), S. Durocher (2008), M. A. Fitó et al. (2013), F. Magli et al. (2018), T. W. Merrill (2020), J. Morales-Díaz and C. Zamora-Ramírez (2018), C. Mulford and M. Gram (2007), and A. Veverková (2019) have identified several factors that influence the extent of the impact of transitioning to IFRS 16. These factors include company size, sector of operation, and demand for leased assets. Notably, the consumer cyclical, transportation,

Table 3. Sectoral distribution among sample companies

Sector	Number of companies (N-67)	Percentage of the total sample
Energy	4	5.97%
Consumer Cyclical	11	16.42%
Real Estate	10	14.93%
Consumer Defensive	6	8.96%
Financial Services	15	22.39%
Communication Services	2	2.99%
Basic Materials	2	2.99%
Utilities	6	8.96%
Industrials	8	11.94%
Healthcare	2	2.99%
Technology	1	1.49%
TOTAL	67	100%

airlines, and telecommunications sectors were expected to experience the most significant effects of the transition. In line with this understanding, the present study aims to evaluate the impact of IFRS 16 on the Baltic listed companies, focusing on the sectors classified according to the Morningstar Stock Sector Structure (Morningstar, 2011). Refer to Table 3 for further details on the sectors included in the analysis.

Limitations. Due to the small data sample, the available data sample too small for constructing an econometric model for the research. Therefore, the study relied on an assumption that deemed a significance level of 1% both for assets and liabilities.

Upon analyzing the Nasdaq Baltic listed companies, it was found that all companies adopted the modified retrospective method when transitioning from IAS 17 to IFRS 16. Under this method, the changes were not retrospectively applied, i.e. the cumulative effect of the IFRS 16 was accounted in retained

earnings at the date of transition, while the comparative information remained unchanged. However, this method restricted us from calculation of certain profitability ratios (such as EBITDA, GPM, and ROE).

Results

Identification of the affected companies. The initial step of the analysis involved analysis of sample companies' financial statements and collection of the research data as described in the methodology to identify whether a company had recognised any lease related assets or liabilities – i.e., whether it was affected by IFRS 16 at all. The results of analysis indicated that 17 (or 25.37%) of 67 sample companies in their financial statements did not disclose any new or specifically IFRS 16 related lease information. Such companies were considered as being unaffected by the changes of leases standard. As presented in Figure 1, most of the unaffected companies (52.9%) belong to

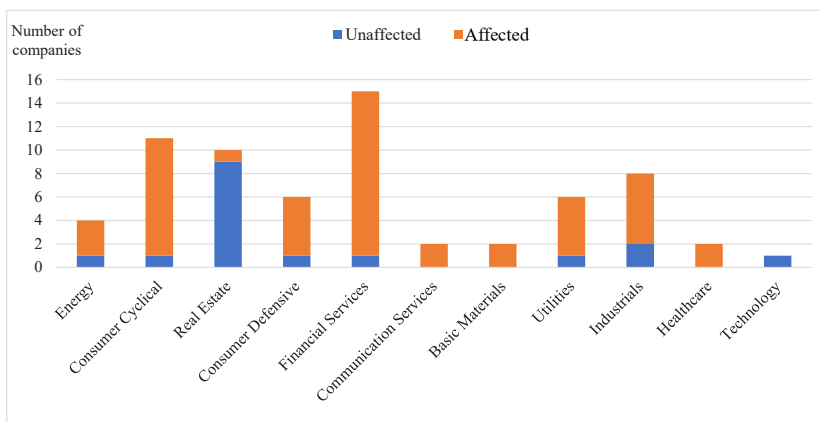


Fig. 1. Distribution of companies, affected or unaffected by IFRS 16 across the sectors (N=67)

real estate sector. Such companies usually do not have significant assets being rented out (a company rather acts as a lessor). Further in the study only the affected companies making the sample of 50 companies will be analysed.

Overview of the values recognized in 2019 in relationship to IFRS 16. Table 4 presents the minimum, maximum, median and average recognized initial values of right-of-use assets, lease liabilities, depreciation of assets under right-of-use and interests of lease liabilities.

As shown in Table 4, although the amounts are presented in thousands of euros, the difference between the

minimum and maximum recognized assets under right-of-use and lease liabilities is large (648 772 and 632 260 thousand euros respectively). There is also a large difference between the highest and lowest values in the context of depreciation and interest (94 242 and 397 thousand euros respectively). The turnover and capital of companies have a significant impact on this, therefore further calculations are made not in net terms, but by applying formulas describing relative sizes. In addition, it can be argued that when comparing the recognized amounts of assets under right-of-use with the amounts of lease liabilities, they

Table 4. Values of IFRS 16 related items recognized in 2019 financial statements of Baltic listed companies

(in thousands euros)	Min. value (N-50)	Max. value (N-50)	Median (N-50)	Average (N-50)
Initial recognition of asset under right-of-use	13	648 785	2 411	30 119
Initial recognition of lease liabilities	13	632 273	2 209	29 129
Depreciation of right-of-use assets 2019	7	94 249	620	5 498
Interest of lease liabilities of 2019	2	2 337	74	399

differ since lease liabilities are recognized as smaller. This is shown by the lower liabilities maximum value and average value (lower by 16 512 and 990 thousand euros, respectively). Moreover, it can be stated that the largest values of the sample increase the averages of the results quite significantly, because the median, which shows the average value of the numbers row when the numbers are arranged in ascending / descending order, the average of assets under right-of-use decreases by 92% and lease liabilities by 92.4%.

The scope of changes in total assets and liabilities. In this stage of the research the scopes of the changes in total assets and liabilities were calculated using formulas (1) and (2). The scope calculations for the assets are presented in the Table 5. Our calculations revealed that after implementation of IFRS 16 requirements and recognition of right-of-use assets, total assets of Baltic listed companies on average increased by 8.68%. Looking into individual companies, top three increases in the total value

of assets included 79.10% increase for *Storent*, 67.92% – for *Baltica* and 42.22% for *Klaipėdos nafta*.

For the better interpretation of the obtained results, the effect of IFRS 16 is ranged in to 4 groups according to the scope of the effect. The first group, “Insignificant change”, includes companies that have not been significantly affected by the change in lease requirements. The second group, “Change below average”, includes significantly affected companies whose initial assets under right-of-use accounted for between 1% and 8.68% of total assets. The third group, “Change above average”, includes companies that were significantly affected by the change in IFRS 16 requirements, and its rank ranges from average value to 40%. The of assets under right-of-use is equal 8.68%. The median value is equal 1.62% and is 7.06 percentage points lower than average what shows that the highest values raised the average of the sample. And the last, the fourth group, named “Extremely high change,” shows companies that were significantly affected by changes in IFRS

Table 5. The scope of changes in total assets of Baltic listed companies after transition to IFRS 16

The assessed effect	The scope	Number of companies (N-50)	Percentage of companies
Average increase in the total value of assets	8.68%		
Median value	1.62%		
Companies with an insignificant change in total assets value	< 1%	19	38%
Companies with a significant change in total assets value, of those with:	> 1%	39	62%
<i>Extremely high change</i>	> 40%	4	8%
<i>Above average change</i>	8.68% – 40%	5	10%
<i>Below average change</i>	1% – 8.68%	22	44%

Table 6. The scope of changes in total liabilities of Baltic listed companies after transition to IFRS 16

The assessed effect	The scope	Number of companies (N-50)	Percentage of companies
Average increase in the total value of liabilities	13.03%	-	-
Median value	2.75%	-	-
Companies with an insignificant change in total liabilities value	< 1%	19	38%
Companies with a significant change in total liabilities value, of those with:	> 1%	39	62%
<i>Extremely high change</i>	> 40%	8	16%
<i>Change above average</i>	13.03% – 40%	5	10%
<i>Change below average</i>	1% – 13.03%	18	36%

16 requirements and recognized assets under right-of-use of even more than 40% of total assets. This is an extremely sensitive companies to transition to the lease standard.

Analysing the effect of the transition to IFRS 16 on lease liabilities, the results are slightly different if compared to those of assets. The significance of the

impact of the transition to IFRS 16 for companies' liabilities is presented in Table 6. In regard to individual companies, top three increases in the total value of liabilities included 76.94% increase for *Baltica*, 64.77% increase for *Apranga* and 59.25% – for *Klaipėdos nafta*.

Firstly, can be seen that the median change in liabilities is greater by

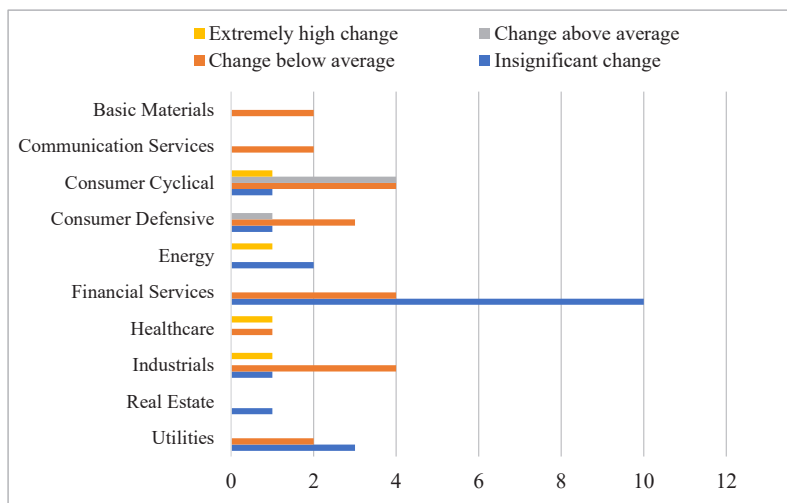


Fig. 2. The effect of changes in total assets across the sectors

1.13 percentage points than the median change in assets. This is because from a liability perspective, there are more companies with a larger change in lease liabilities than in assets. From the perspective of lease liabilities, the number of completely insignificantly affected companies were the same compared to the results of companies unaffected from the perspective of assets (19/50). The number of companies whose liabilities were significantly affected by the transition to IFRS 16 requirements was 62% of all companies or 31 out of 50. However, due to the recognition of lease liabilities, a total of 8 companies (16% of the total sample) had to report sharply higher (more than 40%) total liabilities.

Further analysis according to area of operations allowed identifying the most affected sectors. Figure 2 shows that the companies which assets were the most affected (more than 40%) belong to the industrials, consumer cyclical, healthcare and energy sectors. In contrary, the majority (10 out of 14 or 71.43%) of companies

working in the financial services sector were not subject to lease requirements changes.

Looking into the change of the total accounted liabilities, the results are rather similar (Figure 3). The most affected industries were consumer cyclical, industrials, healthcare.

In general, the analysis by the sectors proved that the area of operations is relevant while assessing the IFRS 16 effect. Both from total assets and total liabilities perspective the most affected were basic materials (100%), communication services (100%), consumer cyclical (90% from assets and 80% from liabilities perspective), industrials (85.7% from asset and 83.3% from liability perspective) and consumer defensive (80%) sectors.

The effect of IFRS 16 on companies' financial ratios. In this step of the research chosen financial ratios were calculated and analysed according to its average values, medians and the amount of significantly / insignificantly affected companies. In order to assess effect of

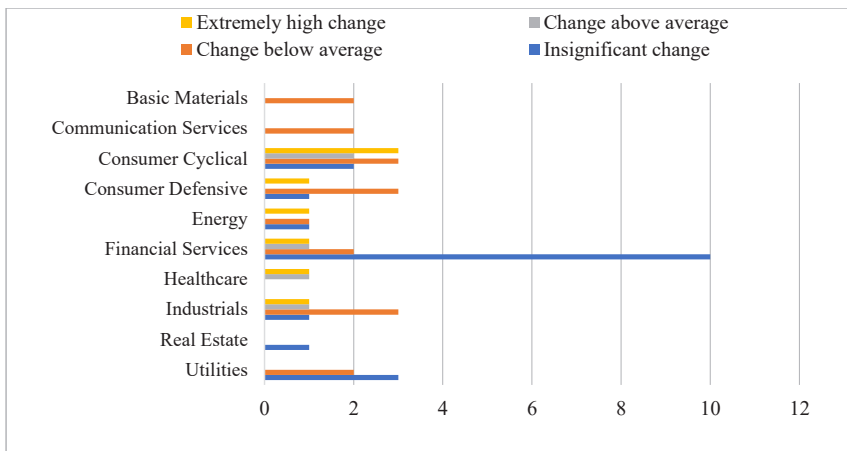


Fig. 3. The effect of changes in total liabilities across the sectors

IFRS 16 on the changes in financial indicators of Baltic listed companies, firstly ratios for 2019 excluding IFRS 16 effect and ten for 2019 including IFRS 16 requirements were calculated. As described in the methodology, in order to be able to compare the results, their change was calculated using formula (3). For better comparison, to present the results we maintained the same data ranking structure (grouping

into insignificant changes, changes less than the average of the sample, changes greater than the average and extremely high changes) as presented in Table 7.

The average change of ROA and asset turnover ratios was -8.33% while median equalled to -1.89%. It is important to note changes of those two indicators were negative (in all sampled companies, which shows that the transition to IFRS

Table 7. Changes in financial ratios across Baltic listed companies after transitioning to IFRS 16

The range of the change	Percentage of range	Number of companies (N=50)	Percentage of companies
ROA and Asset Turnover ratios*			
Average value	-8.33%	-	-
Median value	-1.89%	-	-
Insignificant change	< 1%	19	38%
Significant change, of those:	> 1%	39	62%
<i>Below average change</i>	1% – 8.33%	22	44%
<i>Above average change</i>	8.33% – 40%	4	8%
<i>Extremely high change</i>	> 40%	5	10%
Current ratio and Quick ratio*			
Average value	-7.84%	-	-
Median value	-1.20%	-	-
Insignificant change	< 1%	24	48%
Significant change, of those:	> 1%	26	52%
<i>Change below average</i>	1% – 7.84%	14	28%
<i>Change above average</i>	7.84% – 40%	10	20%
<i>Extremely high change</i>	> 40%	2	4%
Debt to Equity ratio			
Average value	28.63%	-	-
Median value	2.7%	-	-
Insignificant change	< 1%	18	36%
Significant change, of those:	> 1%	32	64%
<i>Change below average</i>	1% – 28.63%	21	42%
<i>Change above average</i>	28.63% – 40%	0	0%
<i>Extremely high change</i>	> 40%	11	22%

* The results were grouped for the purpose of presentation as their numerical values were exactly the same.

16 reduce profitability and asset turnover of Baltic listed companies. Moreover for 62% of sample companies, the decrease in ROA and asset turnover ratios were significant and 10% of analysed companies had a particularly strong (greater than 40%) decrease in both indicators. In regards to solvency ratios, the average changes in quick, current ratios and debt to equity ratio differ, however the first two indicators demonstrate on average 7.84% decrease, while debt to equity ratio – in contrary, 28.63% increase after implementation of IFRS 16 requirements. Also, 52% of the companies in terms of current and quick ratios and 64% of companies from the debt-to-equity ratio outlook were significantly affected by the transition to IFRS 16. As many as 22% of analysed companies were extremely significantly affected by the changes in IFRS 16 requirements from debt-to-equity perspective. The data of Baltic Listed companies proves that the new lease accounting requirements had a

significant effect on the capital structure of companies.

The effect on companies' financial ratios across the sectors. The aggregated sector level data on the changes in financial ratios is presented in the Table 8, whereas column 2 shows financial ratios of how many companies in the sector were significantly affected by IFRS 16 requirements and the remaining three columns indicate average change of the assessed financial ratios.

The results indicate that the most affected sectors were communication services (with 100% of significantly affected companies), healthcare (100%) and basic materials (83%) sectors.

From the individual ratios perspective, due to application of IFRS 16 requirements on lease accounting, on average, the biggest change in ratios was identified in healthcare (ROA, AT affected by 30.4%, CR, QR by 18.84%, DE – 105.36%), energy (ROA, AT affected by 16.63%, CR, QR by 21.52%, DE – 96.38%) and consumer cyclical (ROA, AT affected

Table 8. Average strength of the impact of the transition to IFRS 16 on different sectors and ratios

Sector (N-50)	Average number of companies with > 1% effect	ROA, AT	CR, QR	DE
Basic Materials	83%	-4.36 %	-4.6%	8.15%
Communication Services	100%	-4.54%	-6.68%	12.61%
Consumer Cyclical	80%	-17.28%	-12.92%	57.32%
Consumer Defensive	73%	-4.98%	-2.33%	14.83%
Energy	44%	-16.63%	-21.52%	96.38%
Financial Services	31%	-1.6%	-4.91%	10.9%
Healthcare	100%	-30.4%	-18.84%	105.36%
Industrials	78%	-10.45%	-8.96%	13.68%
Real Estate	0%	-0.27%	-0.46%	0.47%
Utilities	40%	-0.99%	-0.67%	1.54%

by 17.28%, CR, QR by 12.92%, DE – 57.32%) sectors. The smallest change can be seen in real estate (ROA, AT affected by 0.27%, CR, QR by 0.46%, DE – 0.47%) and utilities sectors (ROA, AT affected by 0.99%, CR, QR by 0.67%, DE – 1.54%). The fact that the effect of transition to lease standard affects all analysed sectors proportionately similar, could be seen as evidence that the magnitude of the impact of the changes in the new standard depends on the sector in which the company operates.

Discussion

The results of the analysis reveal that the implementation of IFRS 16 had a significant impact on Baltic listed companies. More than half of the analysed companies' assets and liabilities (62%) were affected by 8.68% and 13.03% respectively, with the most significant impact seen in the basic materials, communication services, consumer cyclical, and industrials sectors. This suggests that the effect of IFRS 16 varied depending on the sector in which a company operates. Such findings align with previous research conducted by J. Morales-Díaz and C. Zamora-Ramírez (2018) and W. Xu et al. (2017) who reported an expected increase in asset ranging from 4.2% to 9.96% and in liabilities, ranging from +8,82% to +21,4%) after the adoption of IFRS 16.

In terms of financial ratios, the analysis reveals a decrease in the average return on assets and asset turnover ratios by 8.33%. This indicates that the transition to IFRS 16 had a negative effect on the efficiency of asset utilization and

overall profitability of the companies in the sample. Furthermore, the current and quick solvency ratios decreased by an average of 7.84%, indicating a decrease in short-term liquidity and the ability to meet immediate financial obligations. Additionally, the debt-to-equity ratio increased by 28.63%, suggesting an increase in the level of debt relative to equity for the companies analysed. These findings regarding the changes in financial ratios align with previous research conducted by other scholars (Giner et al., 2019; Magli et al., 2018; Maglio et al., 2018; Morales-Díaz and Zamora-Ramírez, 2018; Xu et al., 2017) which have reported similar changes in financial ratios following the adoption of IFRS 16. Specifically, the changes in ROA, debt-to-equity, and asset turnover ratios observed in this analysis are in line with the results reported by previous researchers, who found average changes in ROA ranging from -7.2% to +8.42%, asset turnover ratio changes of -8.85%, and debt-to-equity ratio ranging from +4.1% to +38.89%.

When examining the impact across sectors, it is evident that the communication services and healthcare sectors were the most significantly affected, with all companies in these sectors experiencing a statistically significant impact from the transition to IFRS 16. The consumer cyclical sector closely followed, with 80% of companies significantly affected. The basic materials sector also exhibited a high level of impact, with 83% of companies experiencing significant changes. In comparison, previous studies, conducted by F. Magli et al. (2018); R. Maglio et al. (2018); J. Morales-Díaz and C. Zamora-Ramírez (2018) also identified the

consumer cyclical and telecommunications sectors as being significantly affected by the transition to IFRS 16. However, our research did not provide with the evidence in regards to real estate sector which was indicated as significantly affected in previous research.

The differences between the results obtained in this research and those of previous studies could be attributed to various factors, including the different methods employed and the composition of the samples. While this research utilized factual data, which is expected to provide more accurate and reliable results, it is important to acknowledge that the sample size used in this study might have been smaller compared to the research conducted by previous authors. Furthermore, regional or country-specific variations in lease practices, accounting practices, or industry dynamics might also contribute to the disparities in results. The real estate sector, for instance, could exhibit unique lease arrangements and structures that differ from other sectors, leading to differing impacts of the accounting change.

Overall, the findings highlight the sector-dependent nature of the effect of IFRS 16 on Baltic listed companies. The analysis demonstrates that the implementation of the standard had significant implications for both assets and liabilities across the entire sample, with the basic materials and communication services sectors being particularly affected. Furthermore, the financial ratios of return on assets, asset turnover, current and quick solvency, and debt to equity underwent notable changes, further emphasizing the impact of IFRS 16 on the financial performance and stability of Baltic listed companies.

Based on results received, sector, to which companies belong, had an effect to analysed financial ratios. Most companies which indicators were significantly affected operated in communication services, healthcare and basic materials sectors (respectively 100%, 100% and 83% of companies being affected).

Conclusions

Leasing is a significant financing source used by many companies. The changes introduced by IFRS 16 potentially increase the value of right-of-use assets, lease liabilities, and EBITDA, while also influencing financial performance indicators such as return on assets, asset turnover, quick and current ratios, as well as the debt-to-equity ratio. Notably, while previous research has explored the impact of IFRS 16 in various European and other countries, there is a lack of analysis available on the Baltic States.

The study employed content analysis and comparative analysis methods to examine the impact of IFRS 16 on the financial performance of the Baltic listed companies. The sample consisted of 64 companies listed on the Nasdaq OMX Baltic exchange. It examined changes in the values of right-of-use assets and lease liabilities, calculation of financial ratios and their changes following the adoption of IFRS 16 and assessed the data for the entire sample and sectors to which the sampled companies belonged.

The results revealed that 25.37% of the sample companies were unaffected by the transition to IFRS 16 and therefore were excluded from further analysis. As for the 50 affected companies – the impact of the transition to IFRS 16 varied

among companies and sectors. Across the entire sample, the value of total assets on average increased by 8.68% and value of total liabilities – increased by 13.03%. Moreover, 8% of the affected companies experienced extreme increase in total assets and 16% of them - in total liabilities (i.e., had an increase exceeding 40%) When considering the impact by sector, the transition was the most widespread in communication services and healthcare sectors whereas all companies were significantly affected.

Significant changes were also observed in companies' financial ratios. On average, the return on assets and asset turnover ratios decreased by 8.33%, the quick ratio and current ratio decreased by 7.84%, while the debt-to-equity ratio increased by 28.63%. The sectors most heavily impacted in terms of their ratios were communication services (100% of the companies were affected), healthcare (100%), and basic materials (83%). As much as 22% of sample companies experienced an increase in debt-to-equity ratio of over 40%, which could have significant implications for their capital structure and ability to secure additional funding.

Our findings are in alignment with the previous research but also has some limitations to consider. our sample size consisted of 64 companies listed in Nasdaq OMX Baltic (50 of which were affected), which may not fully represent the entire population of Baltic companies. Additionally, our analysis focused on the immediate effects of the transition to IFRS 16, and a longitudinal study could provide a more comprehensive understanding of the long-term implications. Furthermore, we primarily examined the financial performance of companies without delving into the qualitative aspects of the transition.

In the future, investigating the potential differences in the effects of IFRS 16 across different Baltic countries could provide valuable insights into the regional variations and unique challenges faced by companies operating within different legal and economic frameworks. Also, while our research identified the sectors most affected by the transition to IFRS 16, further research could delve deeper into understanding the specific mechanisms and dynamics behind these effects.

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AR 16-OJO TFAS PRITAIKYMAS PAVEIKĖ ĮMONIŲ FINANSINIUS REZULTATUS: BALTIJOS ŠALIŲ LISTINGUOJAMŲ ĮMONIŲ ATVEJIS

S a n t r a u k a

Straipsnyje vertinamas 16-ojo TFAS pritaikymo poveikis Baltijos šalių listinguojamų įmonių finansiniams rezultatams. Nuoma – svarbus finansavimo šaltinis, kada turto savininkas suteikia kitai šaliai teisę naudoti tą turtą mainais už reguliarius mokėjimus. Nuo 2019 m. sausio 1 d. įsigaliojęs naujas nuomos apskaitos standartas, 16-asis TFAS, nuomininkui reikšmingai pakeitė nuomos apskaitą. Įsigaliojusių pakeitimų poveikis skiriasi pagal sektorius, kuriame įmonė veikia, ir lemia naudojimo teise valdomo turto bei nuomos įsipareigojimų pripažinimą bei EBITDA padidėjimą. Standarto reikalavimai taip pat turi poveikį įmonių finansiniams rodikliams, tokiems kaip turto grąža, turto apyvartumas, bendrasis ir kritinis likvidumas, skolos ir nuosavybės santykis.

Tyrime taikyti turinio analizės ir lyginamosios analizės metodai, siekiant iširti 16-ojo TFAS įtaką Baltijos šalių finansiniams rezultatams. Imtį sudarė 64 Nasdaq OMX Baltijos biržoje kotiruojamos bendrovės. Tyrimas buvo atliktas dviem etapais. Pirmajame etape buvo vertinamas perėjimo prie 16-ojo TFAS poveikis identifikuojant naudojimo teise valdomą turtą ir nuomos įsipareigojimus bei jų santykinį svorį bendroje turto ir įsipareigojimų struktūroje. Antrajame etape apskaičiuoti finansiniai rodikliai ir išanalizuoti jų pokyčiai, priėmus 16-ąjį TFAS. Abiejuose tyrimo etapuose buvo vertinami visos imties ir sektorių, kuriems priklausė analizuojamos įmonės, duomenys.

Rezultatai atskleidė, kad perėjimas prie 16-ojo TFAS turėjo poveikį 74,63 % tyrimo imties įmonių, kurios buvo įtrauktos į tolesnę analizę. Susistemintus tolesnėje analizėje naudotus 50 paveiktų įmonių duomenis paaiškėjo, kad perėjimo prie 16-ojo TFAS poveikis įvairiose įmonėse ir sektoriuose skiriasi. Dėl naujojo standarto įmonių bendras turtas vidutiniškai padidėjo 8,68 %, o bendri įsipareigojimai išaugo vidutiniškai 13,03 %. Be

to, 8 % šių įmonių (4 įmonės) bendras turtas labai reikšmingai (daugiau kaip 40 %) padidėjo, o 16 % (8 įmonės) – padidėjo bendri įsipareigojimai. Vertinant poveikį pagal sektorius, labiausiai buvo paveikti pagrindinių medžiagų, ryšių paslaugų, plataus vartojimo ir pramonės sektoriai.

Visose įmonėse, kurios buvo paveiktos 16-ojo TFAS reikalavimų, pastebėti reikšmingi pelningumo, mokumo ir apyvartumo rodiklių pokyčiai. Vidutiniškai turto grąžos ir turto apyvartumo rodikliai sumažėjo 8,33 %, bendrojo ir kritinio likvidumo rodikliai sumažėjo 7,84 %, o skolos ir nuosavybės santykis padidėjo 28,63 %. Šiuo aspektu labiausiai paveikti ryšių paslaugų (pokyčiai stebėti 100 % sektoriaus įmonių), sveikatos priežiūros (100 %) ir pagrindinių medžiagų (83 %) sektoriai.

Atlikto tyrimo rezultatai patvirtina ankstesnių tyrimų rezultatus ir rodo panašias 16-ojo TFAS poveikio tendencijas Baltijos šalių biržose listinguojamoms bendrovėms. Mūsų tyrimas suteikia vertingų įžvalgų apie 16-ojo TFAS poveikį Baltijos šalių biržose listinguojamoms įtrauktoms bendrovėms, bet reikia atsižvelgti į kai kuriuos jo apribojimus. Pirma, mūsų imties dydį sudarė 64 Nasdaq OMX Baltic listinguojamos biržinės bendrovės (iš kurių 50 buvo paveikta), kurios gali neatspindėti visų Baltijos šalių įmonių. Mūsų analizė sutelkė dėmesį į tiesioginius 16-ojo TFAS pritaikymo padarinius, tad tolesni tyrimai galėtų padėti išsamiau suprasti ilgalaikes pasekmes. Ateityje galimų 16-ojo TFAS poveikio skirtumų įvairiose Baltijos šalyse tyrimas galėtų suteikti vertingų įžvalgų apie regioninius skirtumus ir unikalius iššūkius, su kuriais susiduria įmonės, veikiančios skirtingose teisinėse ir ekonominėse sistemose. Be to, mūsų tyrime buvo nustatyti sektoriai, kuriuos labiausiai paveikė perėjimas prie 16-ojo TFAS, o tolesni tyrimai galėtų gilintis į konkrečių šio poveikio mechanizmų ir dinamikos supratimą.

Management Theories' Potential for Better Digital Service Customer Experience

Digital service provision has undergone a period of considerable change because of the COVID-19 pandemic, and the challenges of delivering a positive customer experience through digital services are still relevant to this day. The bibliometric analysis carried out in the study showed that this has accelerated research on the modeling of customer experience in digital services, in which researchers are looking for new ways to overcome the challenges encountered. The analysis of the main research themes and seminal publications revealed through the bibliometric analysis concludes that contemporary management theories have the potential to contribute to addressing the emerging challenges in customer experience modeling in digital services.

Keywords: customer experience, digital services, contemporary management theories.

Skaitmeninių paslaugų teikimas išgyveno didelių pokyčių laikotarpį dėl COVID-19 pandemijos, o iššūkiai, susiję su teigiamos klientų patirties užtikrinimu teikiant skaitmenines paslaugas, tebėra aktualūs iki šiol. Tyrime atlikta bibliometrinė analizė parodė, kad tai paspartino klientų patirties naudojantis skaitmeninėmis paslaugomis modeliavimo mokslinius tyrimus, kuriais tyrėjai ieško naujų būdų, kaip įveikti iškilusius iššūkius. Analizuojant pagrindines mokslinių tyrimų temas ir pagrindines publikacijas, atskleistas atlikus bibliometrinę analizę, daroma išvada, kad šiuolaikinės vadybos teorijos turi potencialo padėti spręsti kylančius iššūkius, susijusius su klientų patirties modeliavimu skaitmeninėse paslaugose.

Raktiniai žodžiai: klientų patirtis, skaitmeninės paslaugos, naujosios vadybos teorijos.

Introduction

Research shows that knowledge about digital services shifted after the pandemic (Nilashi et al., 2021; Yu et al., 2022). The COVID-19 pandemic has accelerated the growth of digital platforms and a significant part of the activities of organizations have moved to the digital setting. Companies started to contact both with other businesses (business-to-business,

B2B) and with customers (business-to-customer, B2C) by information and communication technology. Entire sectors have begun to provide services remotely, such as healthcare (Nataliia et al., 2021; Taylor et al., 2020), retail (Galhotra & Dewan, 2020), etc., also teleworking and virtual meetings have taken hold in organizations (e.g., Arunprasad et al., 2022). The accelerated adoption of digital platforms propelled the relevance of

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digital service quality (Agostino et al., 2021; Yahaya et al., 2023) and introduced new challenges to organization management (Gečienė, 2021; Khor & Tan, 2023). The changes that took place during the pandemic constraints suddenly made previous knowledge obsolete. Thus, this article addresses **the research problem** in the form of a question – how can management theories help organizations to cope with current affairs? So far, scientific publications have not yet paid attention to such aspects. To fill this gap, **this paper aims** to explore how contemporary management theories can help to better understand the challenges of managing digital services in the new era. Digital service customer experience being **the research object of the paper**, the aim of the paper is realized through a bibliometric analysis, exploring the publications' annual productivity and citation metrics, key topics, and foundational publications of articles on digital customer experience modelling. These techniques help reveal the prominence of contemporary management theories in scientific articles on digital customer experience. This article explores how researchers are addressing the new challenges based on contemporary management theories.

The research is based on bibliometric analysis of digital service customer experience in publications within 2000–2022. Further, in the discussion section of the paper, seminal publications are examined to identify the connected contemporary management theories. The paper also presents an overview of changes to contemporary management theories following the accelerated move to the digital environment during the pandemic.

Literature overview

There is plenty of research done regarding the various aspects of customer experience both in product and service areas. However, the transaction type in which the customer experience is analyzed remains mainly bound to B2C. According to the database of high-quality journals Web of Science Core Collection, the search results of keywords “Customer experience modeling” return nearly 8000 scientific articles. However, only 96 articles are returned after adding the keyword “B2B” to the topic. This emphasizes the scarcity of research on the B2B context in the business field, compared to same topics covering B2C perspective (Hasler et al., 2022; Raišys & Baranauskas, 2022; Shankar et al., 2022). Hence in this paper, research articles on customer experience modeling in digital services are analyzed using bibliometric analysis without separating them into B2B or B2C contexts to get a wider overview of the scientific scape on the topic.

Bibliometric analysis is a method used by scholars to reveal current trends, directions, and leading topics of the research field (Wang et al., 2014). It is a useful method analyzing large collections of scientific publications (Donthu et al., 2021; van Nunen et al., 2018). This paper presents a bibliometric analysis using two main techniques – performance analysis and science mapping – and utilizes measures such as total publications, total citations, bibliographic coupling (of publications), and co-citation analysis (of publications).

Digital services are those that are provided and obtained through digital channels, more specifically, over the

World Wide Web (or the Internet). Thus, it defines the medium in which the transaction between the collaborating parties occurs. Compared to traditional service definition, which emphasizes intangibility and the lack of ownership of the benefits obtained by the customer (Williams et al., 2008), the two may seem not to differ drastically from each other. However, the difference between the two is better outlined in the specifics of provisioning and receiving the service. The differences of the two forms of services lie in the properties of services themselves, the process of benefit exchange between the parties (Williams et al., 2008), and the service provision's scale limits (Hsu, 2007), to name a few. Therefore, since digital services are based on World Wide Web, research on digital services is only as recent as the World Wide Web, which emerged in the 1990's, after it became accessible to the public (Glowniak, 1998).

Customer experience is defined and used by various researchers slightly differently, which results in non-uniformity of the definition of customer experience (Becker & Jaakkola, 2020). Researchers define customer experience as a customers' subjective (emotional, behavioral, sensory and social) reaction to a company's services or goods (Barbu et al., 2021; Bueno et al., 2019; Lemon & Verhoef, 2016). According to M. Godovykh & A. D. A. Tasci (2020), the experience can include educational, esthetic, entertainment, emotional, informative, practice, involvement, knowledge and many other components. S. Bagdare & R. Jain (2013) suggest that the source of experience can include people, objects, and processes involved in the interaction of a customer and a company. The outcomes of positive

customer experience include customer satisfaction and loyalty (Srivastava & Kaul, 2016), which in turn drive the business towards its goals. Therefore, if the decisions taken regarding the company's service delivery processes, technologies and methods result in increased service quality, it contributes to a positive customer experience. To guide the business in such a complex task, management theories offer guidelines that companies could adapt in their decision-making process regarding the improvement of service delivery. For the adoption of such guidelines, companies select guidelines based on appropriate approaches to the desired goal and choose the means that would be effective in achieving the result.

Research methodology

To analyze the papers on customer experience modeling in digital services, Clarivate Web of Science Core Collection database was investigated. At first, the scope of research available between the B2B and B2C domains was investigated. The search in database was conducted based on the keywords "customer experience modeling", "digital services" and "B2B" in the Topic field, while also refining the search to only return scientific articles written in English. The search returned only 15 scientific papers published in high-quality journals. This result implies that research on customer experience modeling in B2B digital services is scarce. To obtain a better overview and analyze the scientific scope of customer experience modeling in digital services without narrowing down to specific relationship model between service-provisioning and receiving

parties, a successive search was conducted, using the keywords “customer experience modeling” and “digital services” in the *Topic* field, refining the search to return scientific articles written in English, published in 2000–2022. The query returned 221 articles linked to customer experience modeling in digital services, written in English and published in high-quality journals in 2000–2022. According to G. Rogers et al. (2020), the sample over $n = 200$ is sufficient to effectively use bibliometric analysis.

The bibliometric analysis is conducted by combining different performance analysis and science mapping techniques to get an overview and insight into the analyzed field or topic (Donthu et al., 2021). Performance analysis is used to reveal the contribution and performance metrics of the research constituents to the scientific field (Gaviria-Marin et al., 2019). The constituents analyzed can be publications, authors, countries, journals, etc. In this paper, to analyze the publications regarding customer experience modeling in the context of digital services, the applied measures are: 1) total number of publications per year; and 2) total articles' citations per year. Respectively, the results of these measures provide an overview of the publications' trends in productivity and impact over time. Based on these trends, the future direction of the topic is discussed.

Furthermore, to gain a deeper insight and analyze the past and the present state of scientific publications on the topic, science mapping techniques applied in this paper are: 1) co-citation analysis; and 2) bibliographic coupling. Co-citation analysis allows insight into the foundations of the topic, revealing

the seminal publications on the topic by identifying the publications that are often cited together in the papers of the analyzed sample. Meanwhile, bibliographic coupling shows the similarity of publication content among the analyzed papers on the topic by comparing the references they share, revealing the clusters of topic's leading themes. To visualize the links between the publications, visual science-mapping software VOSviewer was used.

Based on performance analysis and scientific mapping, the leading foundational articles on the topic are selected, their theoretical approaches are identified and linked to contemporary management theories. Finally, an overview of post-pandemic changes to the identified contemporary management theories are discussed and conclusions are drawn.

Results

The results of bibliometric analysis (using performance analysis and scientific mapping methods) are presented below. In this section, publication trends in terms of total publications per year and total citations of publications of a given year are observed. Also, the most influential authors of the topic are revealed and most cited, foundational articles regarding customer experience in digital services are analyzed to find out what management theories the authors use.

Performance analysis

One of the applied measures of performance analysis is the total publication count per year, which shows the productivity trend over the years (Figure 1).

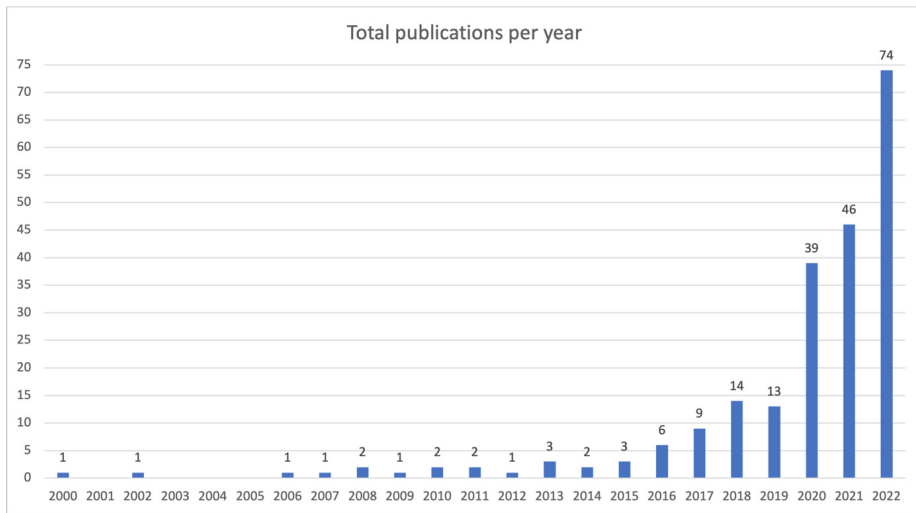


Fig. 1. Total number of articles on customer experience modeling in digital services per year

As seen in Figure 1, the number of published articles remained very low in the first decade from the year 2000, with only a couple of years resulting in more than one article, and a few years with no published articles on the topic. From 2010 to 2015, there were no gap years without articles, but the publication count was still under three articles per year. From 2015, the topic gained more momentum in terms of productivity. Starting with three publications in 2015, an increasing number of articles have been published each year, except for 2019, which had one less published article than the 2018. The most productive year was 2022, having 70 published articles on the topic. Such sudden increase of publications regarding digital services and customer experience was due to an accelerated digital transformation of businesses because of the COVID-19 pandemic (Agostino et al., 2021; Kudyba, 2020; Stalmachova

et al., 2022), since most of the businesses had to relocate their services online.

The second measure of performance analysis applied was the total articles' citations per year. This measure shows how many articles published in a certain year have been cited. It reveals the years in which the articles that had the greatest impact were published (Figure 2).

As observed in Figure 2, the number of citations fluctuates over the years. Out of the nineteen years that had some publications on the topic, ten non-consecutive years had more than a hundred citations of the articles published during the particular year (2007, 2010 and each year from 2015 to 2022). The year that had the most cited publications was 2020. Even though the most articles were written in 2020, 2021 and 2022, the second most cited year was 2018. Two years later, a significant increase in publications was observed (Figure 1). This called for a deeper analysis to find the foundational

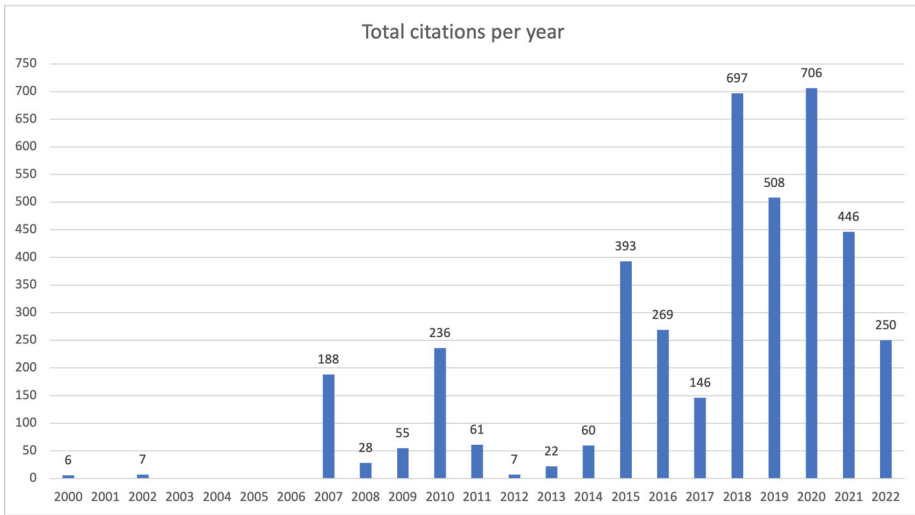


Fig. 2. Total number of citations of each year's articles regarding customer experience modeling in digital services

papers that had such an impact of propelled productivity on the topic in the following years.

Scientific mapping

To extend the insights gained from performance analysis, the second part of the bibliometric analysis includes two scientific mapping methods – co-citation analysis and bibliographic coupling. Co-citation analysis shows the publications that are often cited together in one publication, uncovering the foundational publications. Bibliographic coupling reveals thematic clusters that are formed by publications, by identifying the links between the publications based on the references they share.

Five predominating clusters were identified by defining a threshold of $n = 23$ citations, depicted in Figure 3. The blue color cluster is predominated by C. I. Mbama & P. O. Ezepue (2018),

the purple cluster is predominated by L. Blasco-Arcas et al. (2016), the green cluster is predominated by S.-H. Chang et al. (2016), the yellow cluster is predominated by K. Owusu Kwateng et al. (2018), and the red cluster is predominated by E. Hickman et al. (2020).

The articles were clustered into common themes. The blue cluster covers commerce and technology, including digital platforms, sales strategies, and user experience, which all have direct influence on customer experience in digital services. The purple and yellow clusters cover broader themes, which have some relevance to customer experience in digital services. The purple cluster focuses on the impact and value of digital tools and platforms for customer engagement, brand experience, and behavior. The yellow cluster covers the adoption of digital technologies in various aspects of human life, such as healthcare, finance, retail, tourism, and education. The green cluster focuses more on organizational

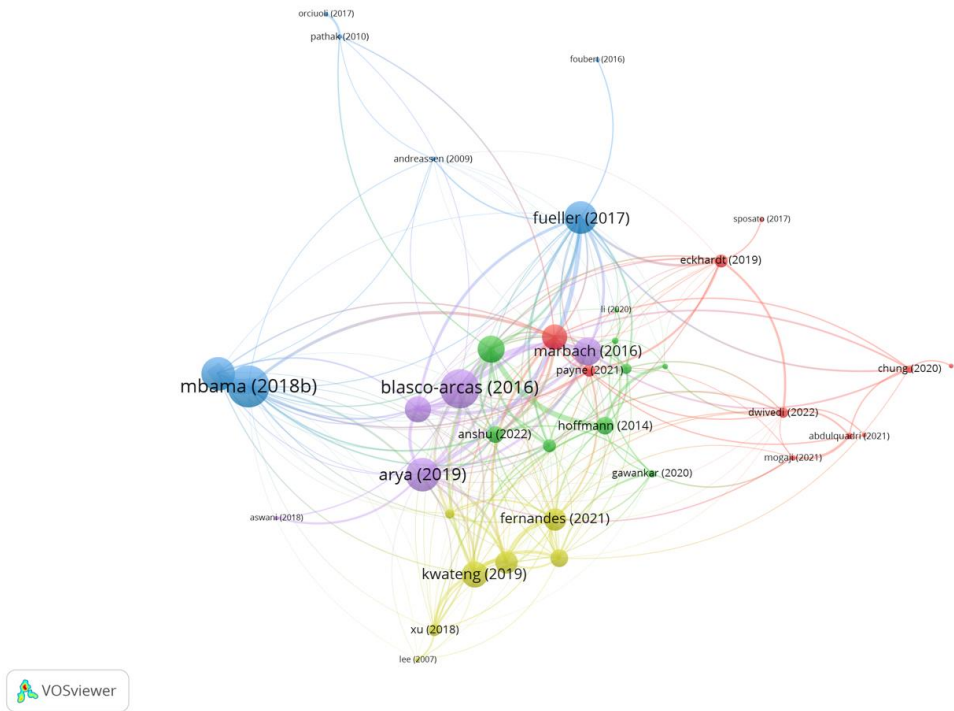


Fig. 3. Bibliographic coupling of customer experience modeling in digital services publications indexed in 2000–2022

themes, such as marketing, supply chain management, and organization performance. The red cluster is specifically focused on customer experience in digital services, examining the leverage of digital technologies and innovation in enhancing the customer experience and creating value for customers.

Overall, the shared theme between the clusters is the influence of digital technologies and platforms on customer experience in digital services, although the level of focus on this theme differs among the clusters.

Co-citation analysis

To find seminal publications on the topic, co-citation analysis was performed

to identify the publications that are often cited together in other papers covering customer experience in digital services. The citation threshold of $n = 4$ citations was set to identify the articles which were cited by at least 4 articles of the analyzed sample of 221 articles. The co-citation analysis in VOSviewer returned 291 cited articles, combined into 8 clusters (Figure 4).

Following the colored clusters depicted in Figure 4, each cluster has two dominant publications except for the brown cluster, which is the smallest cluster and has only one dominant publication. The red cluster is predominated by F.D. Davis (1989) and C. Fornell & D.-F. Larcker (1981), the green cluster is predominated

Discussion

The COVID-19 pandemic presented a reason for a sudden digital transformation for most of the organizations. The rise in number of publications on customer experience in digital services after 2020, as depicted in Figure 1, supports the assertion made in scientific literature regarding the increasing significance of digital service quality. As discussed earlier in the paper, the unexpected digital transformation introduced new challenges to organization management.

The bibliometric analysis revealed that most of the articles published in 2000–2022, which focused on digital service customer experience, either broadly or in specific areas, have roots in the same 15 publications, spanning 1980–2016. In these publications, links to contemporary management theories are observed. The publications discuss brand differentiation through unique value and customer experience (Lemke et al., 2011; Lemon & Verhoef, 2016; Pine & Gilmore, 1998; Verhoef et al., 2009), brand experience (Brakus et al., 2009), understanding customer behavior (Oliver, 1980), alignment of service quality by customer expectations (Parasuraman et al., 1988), and consideration of factors that influence information technology adoption (Davis, 1989), which all relate to positioning school's perspective of competitive advantage through differentiation (Porter, 1985). Contemporary change management approaches are found in publications discussing service-dominant logic and value co-creation (Vargo et al., 2008; Vargo & Lusch, 2004, 2008). From the perspective of complexity theory, other publications study complex relationships and interactions among

variables using structural equation modeling (Fornell & Larcker, 1981) and multivariate data analysis (Hair, 2009), the complexity of interplay between human behavior and environment (Ajzen, 1991), and causes of systematic measurement errors in behavioral research (Podsakoff et al., 2003).

For organization and business management, the COVID-19 pandemic introduced challenges many of which are still relevant to this day. In terms of differentiation, businesses face shifted customer expectations (Meena & Kumar, 2022; Mehta et al., 2023; Planinc & Kukanja, 2022; Pratap et al., 2023), and the need to adapt to changing customer behavior (Eger et al., 2021; Nariswari et al., 2023; Yeoman, 2022). The increased reliance on digital technology has also altered the market conditions (Antonyuk et al., 2021; Kudyba, 2020; Tiwari, 2022). To overcome these and other new challenges, a successful use of change management methods in the post-pandemic market has become a key measure to remain competitive (Alichleh AL-Ali et al., 2022; Kasana et al., 2023). The complexity theory's presumption that change is constant and dynamic (McMullen & Schultz, 2021) has become highly relevant – as the pandemic challenges have shown, the established linear models of change management may require revision to avoid being obsolete. Based on the results of bibliometric analysis, the management research is addressing the discussed post-pandemic challenges since recent articles root from the publications that are related to business differentiation, change management, and organizational complexity approaches.

As can be seen, management theories such as strategic positioning, contemporary change management, and complexity theory can play a role in overcoming the latest challenges. Strategic positioning is concerned with cost leadership and differentiation for a superior company's position in the market. Literature examples show that strategic positioning theory is elaborated by researchers from various fields who are trying to find solutions to the practical management problems (e.g., Fumasoli et al., 2020; Kim et al., 2021; Visscher et al., 2021).

Contemporary theories of change management seek the most effective and efficient ways of implementing change that are appropriate for today's context. Contemporary change management theories are gaining attention in recent service management and customer service publications. For example, D. Sittrop & C. Crosthwaite (2021) discuss the use of Kotter's change management model in the process of implementing customer relationship management system, R. Harrison et al. (2021) examines Kotter's and Lewin's models' application in healthcare services, S. Bambauer-Sachse & T. Helbling (2021) found that the use of agile methods lead to increased customer satisfaction with IT services, etc.

Finally, complexity theory is based on the notion that organizations are dynamic, adaptive systems with emergent qualities that cannot be completely understood by examining their elements in isolation. It has the potential to address the challenges of improving digital services by revealing insights into their adoption behavior (Zhang et al., 2021), digital service innovation (Chae, 2014),

developing digital business strategy (Park & Mithas, 2020), etc.

In summary, although management theories are not directly employed in the studies of developing customer experience in digital service platforms, an understanding of these theories can help in finding solutions to the problems.

Conclusions

As a result of the pandemic, research on the newly emerging challenges of digital service management, such as increased customer expectations and shifted behavior, has grown rapidly in scientific literature. The number of scientific publications on digital customer experience has more than doubled since 2020, compared to the period of 2000–2019. Academics agree on positive customer experience being the driver of customer satisfaction and loyalty, which drives the business toward its goals. Scholars look for ways to address the newly emerged managerial challenges through various applications of digital technologies, as the influence of digital technologies and platforms on customer experience was identified as a shared theme between the publications. Based on the results of bibliometric analysis, articles published in 2000–2022 regarding customer experience modeling in digital services examine the aspects of digital service challenges from the perspectives of strategic positioning, change management, and complexity theories. Although these theories are not directly applied in research that models customer experience in digital services, an understanding of the theories has a potential to contribute to overcoming the emerging challenges.

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VADYBOS TEORIJŲ GALIMYBĖS GERESNEI SKAITMENINIŲ PASLAUGŲ KLIENTŲ PATIRČIAI UŽTIKRINTI

S a n t r a u k a

COVID-19 pandemija paspartino skaitmeninių platformų augimą ir paskatino paslaugas teikiančių įmonių veiklos persikėlimą į skaitmeninę aplinką. Kartu su įmonių veiklos persikėlimu į skaitmeninę aplinką pakilo klientų lūkesčių skaitmeninių paslaugų atžvilgiu kartelė bei pakito elgsena. Dėl to skaitmeninių paslaugų kokybė tapo dar svarbesnė, o organizacijoms iškilo naujų iššūkių.

Siekiant užpildyti šią spragą, straipsnyje bibliometrinės analizės pagrindu tirama, kaip šiuolaikinės vadybos teorijos gali padėti geriau suprasti naujausius skaitmeninių paslaugų valdymo iššūkius. Daugiausia dėmesio skiriama skaitmeninių paslaugų klientų patirčiai.

Bibliometrinė analizė apima 2000–2022 m. laikotarpiu publikuotus mokslinius straipsnius skaitmeninių paslaugų klientų patirties modeliavimo tema. Tyrimo imtį sudaro 221 mokslinis straipsnis. Į tyrimo imtį įtraukti moksliniai straipsniai, pasiekiami mokslinių publikacijų duomenų bazėje *Clarivate Web of Science Core Collection*. Tyrimas įgyvendintas publikacijų našumo rezultatų analizės ir mokslinio žemėlapio sudarymo metodais ištyrus metinių publikacijų ir jų cituojamumo skaičių, publikacijų bibliografines sąsajas ir bendracitavimo analizę.

Teorinė analizė atskleidė, kad tyrimų apie klientų patirties modeliavimą verslas–verslui transakcijų tipo kontekste, palyginti su verslas–klientui perspektyva, yra nedaug. Taip pat pabrėžiama, kad labai svarbu priimti sprendimus dėl paslaugų teikimo procesų, technologijų ir metodų, kurie lemia aukštesnę paslaugų kokybę ir prisideda prie teigiamos klientų patirties. Nes teigiama klientų patirtis lemia jų pasitenkinimą ir lojalumą, o tai savo ruožtu skatina įmonę siekti savo tikslų. Siekiant padėti

įmonėms atlikti šią užduotį, vadybos teorijos siūlo gaires, kurias įmonės galėtų pritaikyti priimdamos sprendimus dėl paslaugų teikimo tobulinimo.

Tyrimas parodė, kad mokslinių straipsnių skaičius sparčiai išaugo po COVID-19 pandemijos pradžios bei išvelgiama šio skaičiaus didėjimo tendencija. Bibliografinių sąsajų analizės pagrindu atskleistos pagrindinės skaitmeninių paslaugų klientų patirties publikacijų temos, susijusios su skaitmeninių technologijų poveikiu klientams, klientų įsitraukimu ir patirtimi, inovacijų ir vertės kūrimu, organizacinėmis strategijomis ir skaitmeninių technologijų įsisavinimu tarp klientų. Bendracitavimo analizė parodė, kad imtyje tirti moksliniai straipsniai remiasi mokslinėmis publikacijomis, kurių teorinė prieiga siejama su strateginio pozicionavimo ir vadybos kompleksiskumo teorijomis bei šiuolaikiniais pokyčių valdymo metodais. Šie metodai padeda įmonėms geriau suprasti pakitusią skaitmeninių paslaugų klientų elgseną, pasirinkti efektyvią kaštų ir diferencijavimo strategijas bei įgyvendinti veiksmingesnius pokyčius ir diegti inovacijas.

Atsižvelgiant į tyrimo ribojimus, šių teorių supratimas gali padėti spręsti skaitmeninių paslaugų srityje kylančius iššūkius, nors skaitmeninių paslaugų klientų patirties modeliavimo aspektus aptariančiuose moksliniuose straipsniuose šiuolaikinės vadybos teorijos nebuvo tiesiogiai taikomos. Todėl tolesni tyrimai, kuriuose šiuolaikinių vadybos teorių prieigos būtų tiesiogiai taikomos modeliuojant klientų patirtį skaitmeninių paslaugų srityje, galėtų būti vertingi sprendžiant naujai kilusius iššūkius dėl pandemijos paskatinto spartaus paslaugų perėjimo į skaitmeninę erdvę.

The Motivational Factors of Necessity Entrepreneurship in Algeria

This paper centres on the phenomenon of entrepreneurship emerging from necessity. Through the adoption of a dual methodological approach, the objective is to identify the motivating factors that determine the establishment of businesses driven by necessity in Algeria. The quantitative approach utilizes principal component analysis on a sample of 194 entrepreneurs, while the qualitative approach involves conducting semi-directive interviews with seven entrepreneurs from disadvantaged backgrounds. By employing these methods, the study aims to uncover the primary variables that influence the occurrence of necessity entrepreneurship in Algeria. The findings of this research shed light on the crucial internal and external factors that contribute to necessity entrepreneurship. Remarkably, these results challenge the prevailing dichotomous framework often utilized to differentiate between necessity entrepreneurship and opportunity entrepreneurship in research studies.

Keywords: necessity entrepreneurship, motivational factors, internal factors, external factors, Algeria.

Šiame straipsnyje nagrinėjamas verslumo, kylančio iš būtinybės, fenomenas. Taikant dvejopą metodologiją, siekiama nustatyti motyvacinius veiksmus, lemiančius verslo, kylančio iš būtinybės, steigimą Alžyre. Taikant kiekybinį metodą, atlikta pagrindinių komponentų analizė apklausus 194 verslininkus. Kokybiniu metodu pusiau struktūruotu interviu apklausti septyni verslininkai, plėtojantys verslą nepalankioje aplinkoje. Taikant šiuos metodus išryškėja tyrimo tikslas – atskleisti pagrindinius veiksmus, dėl kurių Alžyre atsiranda verslumas iš būtinybės. Šio tyrimo rezultatai atskleidžia esminius vidinius ir išorinius veiksmus, prisidedančius prie verslumo būtinybės. Pažymėtina, kad šie rezultatai meta iššūkį vyraujantią dichotominę sistemą, moksliniuose tyrimuose dažnai naudojamai atskirti būtinybės verslumą ir galimybių verslumą.

Raktiniai žodžiai: būtinybės verslumas, motyvaciniai veiksniai, vidiniai veiksniai, išoriniai veiksniai, Alžyras.

Introduction

Given its significance and increasing influence on economic growth, particularly in terms of job creation, business revitalization, and innovation, the concept of entrepreneurship has garnered renewed

attention from researchers across various disciplines such as economics, management, and sociology (Arhab, 2020; Harada, 2022). An important literature has thus developed at the intersection between economics and management sciences, notably concerning the role of

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the entrepreneur in economic growth. These works agree on the fact that without entrepreneurs, there will be little or even no economic growth (Facchini, 2007).

Many studies have also demonstrated the significant role of entrepreneurship in reducing extreme poverty, which has become endemic due to high unemployment, and this, particularly in developing countries (Aziz et al., 2020). Consequently, the promotion of entrepreneurship appears to be a key objective and an essential strategy for the socio-economic development of many developing countries (Abdellah, 2021).

The academic literature distinguishes between two forms of entrepreneurship: opportunity entrepreneurship and necessity entrepreneurship. The former encompasses entrepreneurs who actively seek out business opportunities and embark on ventures driven by their desire to be their own boss and pursue the advantages associated with entrepreneurship. Their decision to start a business is not compelled by external factors or as a last resort for survival but rather stems from genuine aspiration. Conversely, the latter category comprises entrepreneurs who are “pushed” into entrepreneurship due to a lack of viable alternatives. This group demands particular attention, especially considering the significance it holds for marginalized populations seeking pathways out of poverty (Neymotin, 2021; O’Donnell et al., 2021).

The literature that focuses on necessity-based entrepreneurship is characterized by a lack of consensus regarding its impact on economic growth. Indeed, while some works show the absence of a significant impact of this type

of entrepreneurship on economic growth (Thurik & Wennekers, 2004), other studies show, on the contrary, the existence of a negative effect on economic growth (Urbano et al., 2020). This is due to the fact that companies created by entrepreneurs driven by necessity are generally small in size, have a short life expectancy, operate in areas that are relatively non-complex and require little investment (Dencker et al., 2021).

In many developing countries, including Algeria, it is widely acknowledged that necessity entrepreneurship is prevalent across various regions and social groups (Global Entrepreneurship Monitor, 2001; Himrane, 2020). However, despite its increasing prevalence, there is a noticeable scarcity and inadequacy of dedicated research studies on this topic.

The object of this paper is to examine the phenomenon of necessity entrepreneurship. Specifically, **its aim** is to contribute to the ongoing debate surrounding the factors conducive to the rise of necessity entrepreneurship in developing countries. As such, the primary inquiry we seek to address is as follows: What are the factors that drive the establishment of businesses born out of necessity in Algeria?

The choice of this research question is driven by the limited number of academic investigations focusing on this matter, especially within the context of Algeria. Additionally, studying necessity entrepreneurship, particularly in developing countries, carries substantial significance due to its potential to alleviate poverty, create job opportunities, foster innovation, diminish social disparities, and encourage economic diversification. Furthermore, our research explicitly

concentrates on necessity entrepreneurs, who frequently receive less acknowledgment in comparison to the more prominent innovation entrepreneurs (opportunity entrepreneurs).

From a **methodological standpoint**, to address the posed question, we employ a dual approach. Firstly, a quantitative approach utilizing Principal Component Analysis (PCA) is employed on a sample of 194 individuals. This initial step aims to identify the primary variables that influence the occurrence of necessity entrepreneurship in Algeria. Secondly, a qualitative approach, through semi-directive interviews with seven entrepreneurs from disadvantaged backgrounds, allows us to complete the quantitative approach by highlighting other variables of a more subjective nature.

The academic literature differentiates between two types of motivating factors: external necessity factors and internal necessity factors (Kimmitt et al., 2020; Dencker et al., 2021). Building upon this existing literature, the main objectives of this article are as follows: (i) to identify the internal factors associated with the entrepreneur's social capital that contribute to the establishment of necessity-driven businesses, and (ii) to determine the external factors linked to the institutional environment that drive the creation of necessity-based businesses.

The subsequent section entails an extensive examination of the existing literature concerning the phenomenon of necessity entrepreneurship. Subsequently, the outcomes of the conducted quantitative and qualitative analyses will be elucidated. Following this, an in-depth discussion of the obtained results will ensue. Ultimately, the article

concludes by offering final remarks and conclusions.

Literature review

In the literature, a distinction is made between two overarching categories of entrepreneurship, namely opportunity entrepreneurship and necessity entrepreneurship. However, there is no consensus in the literature on operational definitions of "necessity" and "opportunity" entrepreneurship (Fairlie & Fossen, 2020). Furthermore, there is growing recognition that not all entrepreneurs are equal in terms of their economic contributions, with certain types of entrepreneurs having a more substantial impact than others (Baumol, 1990; Urbano et al., 2020).

According to D. B. Audretsch et al. (2021), it is essential to pay attention to the different types of entrepreneurial activities, because the quality of entrepreneurship determines technological change, structural transformation and economic development.

The theory of "push" and "pull" motivators offers a valuable framework for examining the motivation behind entrepreneurial endeavors from various perspectives (Baum & Locke, 2004; Martiarena, 2020; Sedaghat & Lei, 2020). It is argued that individuals engage in entrepreneurship either out of necessity, often driven by factors such as long-term unemployment, or out of a perceived opportunity to achieve profitability. These two circumstances have led to the development of the push theory, associated with necessity entrepreneurship, and the pull theory, associated with

opportunity entrepreneurship. The concept of Push/Pull is addressed in the literature through two distinct approaches: the economic approach and the psychosociological approach (Arhab, 2020).

The economic approach is the first to distinguish between push and pull in entrepreneurship. It is based on Knight Frank's (1921) theories of entrepreneurial and professional choice. Entrepreneurship is perceived as the result of an economic calculation aimed at maximizing the factors available to the potential entrepreneur (Knight Frank, 1921). A. R. Oxenfeldt (1943) concludes that economic cycles of prosperity or full employment do not necessarily generate a dynamic of business creation. Economic depressions can also explain business creation. He continues that at the micro level, the existence and attraction of jobs and the high wage rate during times of economic prosperity would destroy the incentives of potential entrepreneurs.

Regarding the psycho-sociological approach, A. Shapero & L. Sokol (1982) explore entrepreneurial motivations in the light of the push-pull classification: as far as the profile of the entrepreneur is concerned, it may depend, at least in part, on the circumstances that gave rise to the creation of his or her enterprise. These circumstances can be negative or positive elements. According to these authors, the creation of a business is not the act of an individual as in the economic approach. It results from a set of interacting factors: individual, society, family, etc. Via the concept of displacement, the authors employ the notions of push and pull. They view displacement as a social, situational and exogenous factor that is

most often imposed on the individual (Shapero & Sokol, 1982).

How can an entrepreneur be defined as operating out of necessity?

Academic interest in necessity entrepreneurship, which refers to entrepreneurial activities arising from a lack of viable employment alternatives, has witnessed a notable increase over the past four decades. This heightened interest can be attributed to the stark contrast it presents in comparison to the commonly portrayed image of entrepreneurs as ambitious individuals driven by opportunities to create substantial wealth. Entrepreneurs by necessity are compelled to engage in entrepreneurial activities, establishing businesses that often possess limited growth prospects and tend to replicate existing offerings within the marketplace (Dencker et al., 2021). Consequently, person with higher incomes are less likely to be pushed into entrepreneurship as a way to meet their basic needs (Dencker et al., 2021; Sendra-Pons et al., 2021).

In a recent study conducted by A. M. Androniceanu et al. (2022) across 16 countries in Europe, Latin America, Taiwan, and Iran, spanning the period from 2011 to 2019, intriguing findings emerged. It was observed that the fear of failure, often considered a deterrent to entrepreneurial initiation, exhibited positive effects on the Total early-stage Entrepreneurial Activity (TEA) index. This suggests a paradoxical relationship wherein the fear of failure coexists with the inclination to embark on new entrepreneurial ventures.

A. M. Androniceanu et al. (2022) examine recent articles published between 2019 and 2020, shedding light on various factors that exert influence on entrepreneurship. These factors encompass legislative and normative actors, social elements, financial considerations, technological aspects, political influences, and macroeconomic conditions.

C. Tessier-Dargent (2015) provides a summary of the literature's findings pertaining to the characteristics of necessity

entrepreneurs and the associated categories, as outlined below:

Initially, necessity entrepreneurship described small businesses created, especially by women, in developing countries as a way to escape poverty and survive (Thurik & Wennekers, 2001; 2004), as women face higher barriers to entering the formal labour market and must resort to entrepreneurship to escape unemployment and often poverty (Sultan & Sultan, 2020).

Table 1. Characteristics of the necessity entrepreneurs

The traits	<ul style="list-style-type: none"> - Risk aversion compared to opportunity entrepreneurs. - The need for independence and self-actualization is less important than for opportunity entrepreneurs.
Motivations	<ul style="list-style-type: none"> - Unemployment. - Regardless of whether their perception is justified or not, necessity entrepreneurs often hold a negative outlook regarding their prospects of securing employment in the labor market. - Necessity entrepreneurs may experience feelings of frustration towards their employers. - Lack of stimulation and interest in work. - The motivations for necessity entrepreneurship encompass cultural, situational, and psychological factors.
Demographic, social and human capital characteristics	<ul style="list-style-type: none"> - A significant proportion (45%) of necessity entrepreneurs are older than 45 years and have lower levels of education. - Women constitute the majority of necessity entrepreneurs, particularly in developing countries. - Necessity entrepreneurs tend to have less work experience. - They may have limited ability to identify and capitalize on entrepreneurial opportunities. - Many necessity entrepreneurs have limited or no access to entrepreneurial networks. - Factors such as poverty, poor health, marginalization, and discrimination drive certain populations to engage in survival entrepreneurship.
Environment	<ul style="list-style-type: none"> - A higher level of social protection and a more comprehensive pension system are associated with a lower prevalence of necessity entrepreneurship. - There is a negative correlation between GDP per capita and the incidence of necessity entrepreneurship. - Entrepreneurs driven by necessity place greater importance on institutional support compared to entrepreneurs driven by opportunity.

Source: C. Tessier-Dargent (2015).

The concept widely adopted by the research community proposed by the Global Entrepreneurship Monitor (GEM), as part of the value creation paradigm, means that the poor in low-income and developing countries are forced into entrepreneurship, while entrepreneurs in developed countries seek profitable and innovative market opportunities.

M. H. Morris et al. (2022) introduces the concept of “poverty responsibility” in enterprise development by people at a disadvantage. The concept focuses on literacy gaps, scarcity mindset, intense non-market pressures, and lack of a safety net. They investigate the implications of this fragility for business dynamics and how particular poor entrepreneurs work through this condition. Such survivalist entrepreneurs spring up in a climate of low levels of welfare and high rates of corruption. A major key to the spread of necessity entrepreneurship is linked to microcredit, the granting of micro-loans to the impoverished to allow them to develop a range of relatively simple income-generating activities. (Bhuiyan & Ivlevs, 2019; Robert et al., 2021).

What is the specific entrepreneurial context in Algeria?

To investigate entrepreneurial activity in Algeria, we initially draw upon the 2011 Global Entrepreneurship Monitor (GEM) study, which focuses on individuals rather than companies. The study encompasses a sample of 3,500 individuals aged between 18 and 64 in Algeria. The sample is stratified by region, with the Algerian territory divided into four

major regions or strata: West, Center, East, and South.

According to the survey results, Algeria falls into the category of factor-driven countries, wherein economic growth primarily relies on the utilization of raw materials, such as energy resources and hydrocarbons. The entrepreneurial activity rate (EAR) is determined by two indicators: the rate of emerging entrepreneurs and the rate of new entrepreneurs.

The study reveals that in Algeria in 2011, 46% of entrepreneurs stated that they established their businesses to seize opportunities, while 37% did so out of necessity. Upon examining the data in detail, it becomes evident that the creation of businesses due to necessity is significant in more than 50% of the surveyed wilayas. For instance, wilayas like Blida, Sétif, Bejaia, Tlemcen, and others demonstrate a relatively higher proportion of businesses established out of necessity compared to those established to exploit business opportunities. Conversely, wilayas such as Tizi Ouzou, Biskra, Ouargla, and Mascara showcase a different trend.

Furthermore, the study highlights the noteworthy observation that entrepreneurship driven by necessity is relatively prevalent among individuals in the age groups of 24-34 and 35-44. In these age brackets, the likelihood of engaging in entrepreneurship due to opportunity is comparatively lower than that of starting a business out of necessity. This particular category primarily consists of young individuals who transition from the educational system to the entrepreneurial path as a means of entering the professional realm.

Methodology

To investigate the determinants of necessity entrepreneurship in Algeria, we have chosen to use a quantitative approach. Our primary method of data collection involved administering a questionnaire to a carefully selected sample of 308 entrepreneurs who had been previously identified. This sample comprises individuals from diverse categories who have successfully established their own businesses.

Based on the findings from the review of existing literature, a comprehensive questionnaire was developed to gain a holistic understanding of the various internal and external factors that can stimulate the formation of businesses due to necessity in the specific Algerian setting. This questionnaire was inspired by the studies carried out by C. B. Tunali & S. Sener (2019) and P. Arenius & M. Minniti (2005), which provided insights into demographic and economic variables (such as age, gender, education level, and family income), as well as other factors that capture individuals' attitudes and beliefs regarding business establishment in the Algerian context.

Thus, our questionnaire was structured into seven sections, each addressing specific aspects. These sections include: (i) the characteristics of the established enterprise, (ii) the educational background of the entrepreneur, (iii) the prior experience of the entrepreneur, (iv) the strategic considerations of the created enterprise, (v) the entrepreneurial institutional ecosystem, (vi) the contextual factors surrounding the enterprise creation project, and (vii) the influence

of the family and relatives on the entrepreneurial endeavor.

Additionally, we employed a qualitative methodology by conducting semi-structured interviews with seven entrepreneurs driven by necessity. The interview guide comprises five sections, each exploring specific areas. These sections encompass: (i) the characteristics of the established enterprise, (ii) the educational background of the entrepreneur, (iii) the strategic considerations of the created enterprise, (iv) the ambitions of the entrepreneur, and (v) the influence of the family and relatives on the entrepreneurial journey.

Results

Sample characteristics

194 people agreed to answer the questionnaire (a response rate of 63%), of whom 111 had the required characteristics.

Our sample is composed of almost 83% men (17% women). This distribution reflects the reality on the ground. Indeed, only 8% of businesses in Algeria were created by women (CNRC, 2021). As for the age distribution of respondents, nearly 75% are under 45 years old. Thus, as the CNRC statistics show, business creation is mainly done by young people.

As for the level of education, the majority of the individuals surveyed hold at least a bachelor's degree when they started their business. It should be noted, moreover, that 38.7% of the entrepreneurs exercise an activity in parallel to their entrepreneurial activity.

Regarding the legal status of the established companies, approximately 50%

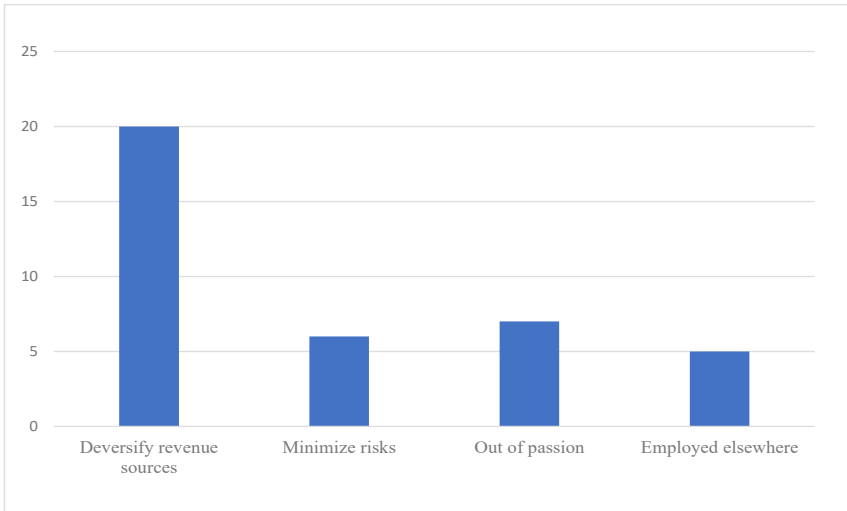


Fig. 1. Reasons why the interviewed entrepreneurs carry out parallel activities

of them are limited liability companies (Ltd) consisting of at least two partners, while 28% are one-person limited liability companies (EURLs). Additionally, 34% of these companies operate in the service sector, 18% in the trade sector, and 14% in the construction sector. In terms of company size, 76.5% of them are considered Very Small Enterprises (VSEs) with a workforce ranging from one to nine employees. This distribution aligns with the overall economic landscape of Algeria. Notably, available statistics on the Small and Medium Enterprises (SMEs) sector in Algeria indicate their significant presence within the national economic structure, accounting for nearly 95% of the overall business fabric.

What drives the creation of a business: Entrepreneurship of opportunity or entrepreneurship of necessity?

To distinguish the motivations of entrepreneurs, we utilize the research

conducted by V. Jafari-Sadeghi (2020). The respondents are categorized into two groups: opportunity entrepreneurs and necessity entrepreneurs. Additionally, there is a mixed category that includes respondents with a combination of both motivations. The table below provides a clear representation: those who choose 1 are identified as opportunity entrepreneurs, while those who choose 3 and/or 4 are categorized as necessity entrepreneurs. On the other hand, individuals who choose 2 exhibit mixed motivations.

It is observed that a mere 7.2% of the sample analysed comprises entrepreneurs whose motivations are exclusively driven by the pursuit of innovative ideas, while 36.9% exhibit motivations solely rooted in necessity.

The findings also indicate that a significant proportion of respondents, approximately 40%, embarked on entrepreneurship fuelled by a desire for autonomy and independence. Remarkably, only 2 out of 111 respondents expressed

Table 2. Motivations for starting a business

Type of motivation	Answer choice	Frequency (%)
Opportunity motivations	[1]. It is a project that is new in our country	8 (7.2%)
Mixed motivations	[2]. It is a project that provides solutions to market needs	62 (55.9%)
Necessity motivations	[3]. This is a project that allows me to earn an income	25 (22.5%)
	[4]. It is an idea inspired by what works well in the market	16 (14.4%)
Total		111 (100%)

Source: the authors' processing.

a preference for being employees rather than entrepreneurs. Moreover, it is noteworthy that 20% of the respondents explicitly stated that their companies were established out of a sense of passion.

In terms of the measures taken to establish their companies, it was found that 80% of the respondents did not avail themselves of support organizations. Moreover, 76.6% conducted a market analysis, while 55.8% developed a comprehensive business plan. Interestingly, 86.4% of the respondents seized opportunities as they emerged, without conducting any prior studies prior to initiating their ventures. Additionally, 68.4% formed partnerships with potential customers or suppliers.

Following a concise descriptive analysis of the survey data, we shall proceed to conduct a principal component analysis. This analytical approach will enable us to comprehend the underlying connections between various motivational factors and the decision-making process regarding the type of entrepreneurial activity chosen by individuals.

The categorization of activities is represented by the vector A4. To be more

specific, A4-1 corresponds to commercial activities, A4-2 denotes artisanal activities, A4-3 represents agricultural activities, and A4-4 signifies service activities.

The variable A3 pertains to the entrepreneurial experience of the respondents. Consequently, A3-1 denotes individuals who are undergoing their initial entrepreneurial experience, whereas A3-2 characterizes those who lack prior experience in entrepreneurship.

Analysis of the role of internal factors

The correlation analysis conducted highlights noteworthy associations between various variables. Specifically, the findings indicate that commercial activity displays a moderate correlation with risk perception. On the other hand, artisanal activity reveals a positive correlation with family support, perception of personal abilities, motivation to start a business, and degree of satisfaction. Furthermore, service activity demonstrates a positive correlation with the time spent on project completion and the degree of motivation. It is also worth noting that individuals involved in their first

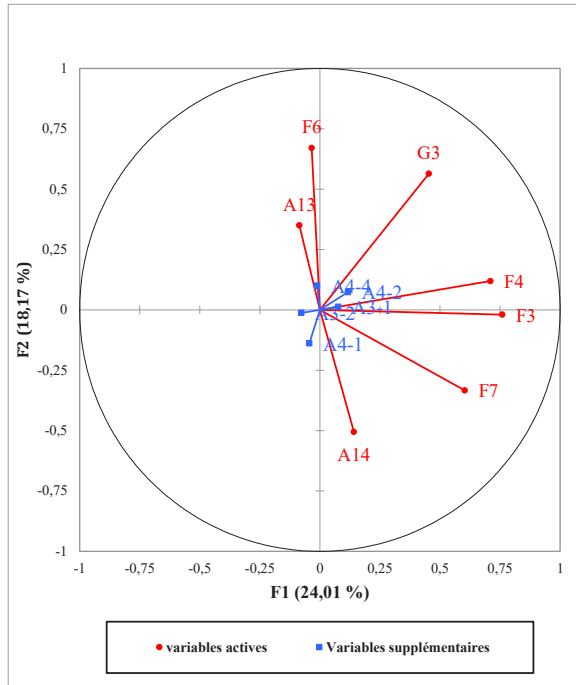


Fig. 2. Internal factors analysis

entrepreneurial experience exhibit positive correlations with family support, perception of personal abilities, motivation to start a business, and degree of satisfaction. However, engaging in multiple entrepreneurial experiences does not display a positive correlation with any of the internal factors under investigation.

Analysis of the role of external factors

The findings of the correlation analysis offer significant insights into the interrelationships among diverse factors within the entrepreneurial domain. Specifically, the outcomes reveal that commercial activity displays a moderate correlation with the selection of financing options,

Table 3. Internal variables of the PCA

Variable code	Significance
A13	Level of motivation
A14	Risk perception
F3	Motivations to create a company
F4	The perception of personal abilities
F6	The duration allocated for project realization
F7	Satisfaction level
G3	Family support

Source: the authors' processing.

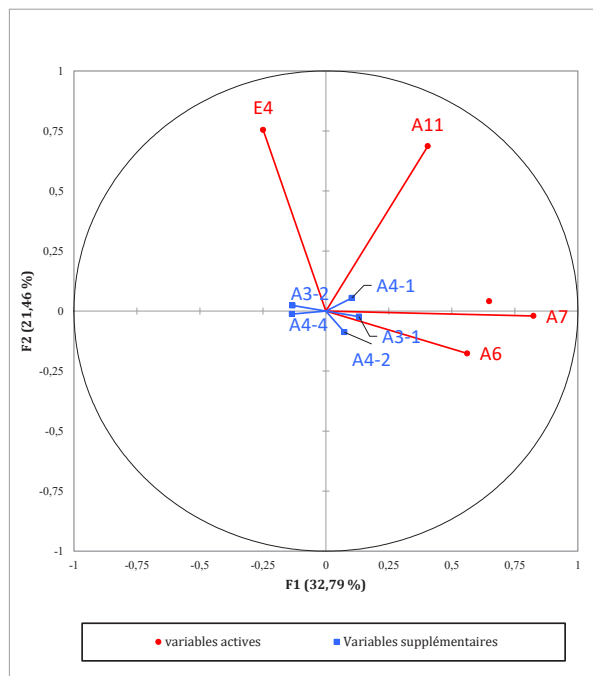


Fig. 3. External factors analysis

the choice of legal status, and the acquisition process for the enterprise's legal status. Similarly, in the case of artisanal activity, a positive correlation is evident with the choice of legal status and the formalization of the activity. Additionally, the service sector demonstrates a moderate correlation with the perception of the institutional environment in Algeria. Individuals embarking on their first entrepreneurial experience exhibit positive correlations with the choice of legal status

and the formalization of the activity. Conversely, engaging in multiple entrepreneurial experiences displays a moderate correlation with the perception of the Algerian institutional environment.

Qualitative analysis of the motivations for starting a business out of necessity

Subsequently, we will outline the outcomes derived from a qualitative analysis

Table 4. External variables of the PCA

Variable code	Significance
A6	Obtaining a legal status for the business
A7	Selection of the legal category
A11	Funding options
E4	The perception of the Algerian institutional environment

Source: the authors' processing.

Table 5. Reasons for engaging in business creation

Interview n°	Activity	Verbatim
1	Fish sale	«Advanced age, physical limitations, and the involvement of a family member in the same field»
2	Poultry sale	«I am committed to preserving the legacy of my parents' work.»
3	Sale of keys	«Following a training»
4	Fruit sale	«I had no other alternative options»
5	Sale of aromatic herbs	«Given the absence of alternative options, I resorted to a random selection for my current activity.»
6	Fruit sale	«I had no other alternative options»
7	Fish sale	«Due to the closure of the company I was employed at, I found myself without any viable alternative.»

Source: the authors' processing.

comprising semi-structured interviews conducted with a cohort of seven necessity entrepreneurs.

Through the interviews carried out with the group of seven entrepreneurs, key motivations behind their initiation of businesses due to necessity were unveiled. These include advanced age, prior engagement in craft training, upholding a family tradition, and limited alternative options.

Summary of the motivations expressed

The outcomes of the interviews emphasize the predominant attributes observed among the participants. These entrepreneurs have not undergone training that would equip them with the necessary entrepreneurial and managerial competencies. Consequently, they establish businesses as a result of the absence of viable

Table 6. Summary of the motivations expressed during the interviews

N°	Carrying on a family legacy	Absence of drive or ambition	Insufficiency in entrepreneurial competencies	Absence of alternative options	Resistance towards salaried employment	Insufficient assistance from the pertinent authorities	Family support
1	X	X	X	X	X	X	X
2	X	X	X	X	X	X	X
3		x	X	X	X	X	
4		X	X	X	X	X	
5		X	X	X	X	X	X
6		X	X	X	X	X	
7		X	X	X		X	X

Source: the authors' processing.

employment alternatives and a sense of neglect from the relevant authorities.

The principal characteristics of the established businesses

The interviewees, predominantly male, have been engaged in necessity entrepreneurship for over 20 years. Their educational attainment is limited to a high school level, and they express a high level of satisfaction. However, the businesses established by these individuals primarily operate in the informal sector. These businesses tend to be small-scale, often employing only a few individuals. The management of these enterprises seldom considers competition or explores opportunities for expansion. This can be attributed to their contentment with the current state of affairs and the uncertainty associated with the risks of business expansion, indicating a tendency towards risk aversion.

Discussion

Multiple academic studies demonstrate that small-scale artisanal and

commercial ventures are where entrepreneurship born of necessity is most prevalent (Vivarelli, 2013; Dencker et al., 2021). This is consistent with the findings of our survey. Therefore, through an examination of internal factors, we demonstrate a direct connection between the decision to participate in a business venture and a propensity for embracing risk. Conversely, when it comes to engaging in artisanal pursuits, we reveal a positive link between the amount of time dedicated to realizing the project and the level of motivation involved.

Through a thorough examination of external factors, we establish the presence of a positive relationship between opting for a business venture and various decisions such as the selection of financing methods primarily relying on personal funds, the choice of legal structure (e.g., Ltd or EURLs), and the decision to register with the CNRC (trade register). Similarly, in the context of artisanal activities, a similar positive correlation exists across these factors (excluding the choice of financing type).

Within our sample, there is a notable positive association observed among

Table 7. Characteristics of the companies created

Interview n°	Duration of the activity	Status	Education level	Training pertaining to the specific field	Customer and competition strategy
1	< 1 year	Formal	Primary Education	No	No
2	20 years	Formal	Secondary Education	Yes	No
3	20 years	Formal	High school	No	Yes
4	25 years	Informal	High school	No	Yes
5	30 years	Informal	Secondary Education	No	No
6	1 year	Informal	Secondary Education	No	Yes
7	24 years	Informal	High school	No	Yes

Source: the authors' processing.

entrepreneurs who embark on their initial entrepreneurial endeavor and several key variables, including their self-perceived abilities, the level of support received from family, the extent of satisfaction derived, and the motivations driving them to start a business out of necessity. Conversely, the inverse holds true for those who have experienced a second (or subsequent) entrepreneurial venture.

It is difficult to categorize entrepreneurs into a rigorous and clear-cut dichotomy, as 36.9% of the entrepreneurs in our sample express pure necessity motives, 7.2% express pure opportunity motivations, and 55.9% express mixed motivations. We have observed that even entrepreneurs introducing innovative and novel ideas to the market possess elements of necessity, such as the drive to avoid falling into poverty, and conversely, entrepreneurs classified as driven by necessity also encompass aspects of innovation and capitalizing on opportunities. In other words, entrepreneurs categorized as having motivations rooted in necessity also incorporate dimensions of innovation and opportunity exploitation. This finding is in line with that of E. L. Eijdenberg et al. (2015), who advocate the notion that entrepreneurial motivations are not always binary; an individual may start a business for both opportunity and necessity reasons.

The results of the interviews enable us to draw a number of conclusions, which are then reported in the parts that follow:

- **Age:** While there is no clear age range among the entrepreneurs we spoke with, all of them began their businesses when they were quite young, which is in contrast to the research

we mentioned in our literature review (Tessier-Dargent, 2015), which claim that older people tend to pursue this sort of entrepreneurship more frequently. In just 2 of the 7 cases, these claims are verified.

- **Selection of business category:** The literature (Vivarelli, 2013; Dencker et al., 2021) is consistent with the fact that the interviewees are and have only ever been asked about commercial and artisanal activities
- **Entrepreneurial motivations:** The interviews conducted reveal a consistent pattern where individuals with limited education and training face challenges in attaining high-paying employment opportunities. As a result, entrepreneurship emerges as their sole viable option for improving their socioeconomic status. This finding aligns with the existing literature discussed by Y. Robichaud et al. (2010), V. Jafari-Sadeghi (2020), and M. Sedaghat & P.W. Lei (2020).
- **Entrepreneurship as a pathway out of poverty:** Indeed, the interviewees assert that entrepreneurship serves as their sole avenue to support their families and prevent themselves from experiencing poverty. This observation aligns with the findings of the research examined by A. Muhammad Shafiu et al. (2020) and M. H. Morris et al. (2022).
- **The formal dimension of the activity:** Among the interviewees, four out of seven individuals are engaged in the informal sector, while the remaining work within the formal sector. However, they express discontent with their current reality and express

a preference for remaining in the informal sector for various reasons. Firstly, they perceive an unfairness in the competition dynamics, as their counterparts in the informal sector can easily manipulate the prices of their goods due to their lower expenses compared to formal competitors, such as rent, taxes, and health authority inspections. Secondly, they do not feel adequately supported by local authorities. These characteristics are particularly distinctive within the Algerian context, and they align with the findings of U. Uzo et al. (2021).

- **Financing:** Entrepreneurs primarily rely on self-funding or loans obtained from family members to finance their ventures. Interestingly, they express a notable lack of confidence in business support organizations, which corroborates the findings of C. Tessier-Dargent (2015).
- **Factors of ambition and satisfaction:** None of the interviewees exhibited any indications of ambition. For instance, interviewee number 5 has been engaged in the same informal activity for three decades and does not envision pursuing any other path, despite the limited income and absence of social protection. Surprisingly, they express a remarkably high level of satisfaction despite the unfavorable circumstances. These findings align with the “push” motivations of the widely recognized “push/pull” theory extensively discussed in the literature by O. Giacomini et al. (2006), Z. Gyori et al. (2019), A. Martiarena (2020), and S. Alam et al. (2021).

Conclusions

This article aims to examine the factors that drive necessity-based entrepreneurship in developing countries. Specifically, it seeks to comprehend how various internal and external factors contribute to the inclination of Algerian entrepreneurs to establish businesses out of necessity. To achieve this objective, a combined quantitative and qualitative methodology has been employed.

The companies investigated primarily fall into the small business category, with 76.5% of them employing a workforce ranging from one to nine individuals. These companies are engaged in three distinct types of activities: commercial, craft, and service-oriented.

Based on the quantitative analysis of the questionnaire results, it can be inferred that both internal and external factors exert a certain level of influence on the various types of activities, albeit in distinct ways.

The qualitative analysis allowed us to observe that entrepreneurship out of necessity is not necessarily age-dependent because the interviewees presented the same characteristics, regardless of their age category. These findings align with the assertions made by M. Cowling & W. D. Bygrave (2007), who define necessity entrepreneurs as individuals compelled to pursue entrepreneurship due to the absence of better employment alternatives. This positions our study within the framework of “push” motivations, emphasizing the driving factors behind their entrepreneurial endeavors.

Through our research, we are able to shed light on entrepreneurs who fall

into the category of necessity, often overshadowed by the success and popularity of innovation entrepreneurship, also known as opportunity entrepreneurship. We have gathered valuable information about these entrepreneurs, including their motivations, their perceptions of the surrounding environment, and how it impacts their endeavors.

Despite its limitations, this study provides a comprehensive and general understanding of the factors influencing necessity entrepreneurs in Algeria and their motivations. Future research can enhance the quantitative analysis by narrowing the focus on either the internal or external factors examined, enabling a more in-depth exploration of the concepts related to the subject matter.

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BŪTINYBĖS VERSLUMO MOTYVACINIAI VEIKSNIAI ALŽYRE

S a n t r a u k a

oksinėje literatūroje išskiriamos dvi verslumo rūšys: galimybių verslumas ir būtinybės verslumas. Pirmasis tipas apima asmenis, kurie aktyviai ieško verslo perspektyvų, yra motyvuojami nepriklausomybės ir finansinės naudos siekio. Jų sprendimą pradėti verslą lemia tikros ambicijos, o ne išorinis spaudimas ar paprasčiausias išgyvenimo poreikis. Būtinybės verslumas – priešingai – yra verslininkai, priversti užsiimti verslu dėl ribotų perspektyvių galimybių. Šią grupę pirmiausia sudaro marginalizuoti gyventojai, ieškantys būdų skurdui sumažinti. Labai svarbu šiai grupei skirti ypatingą dėmesį, ypač besivystančiose šalyse, kur būtinybės verslumas yra plačiai paplitęs.

Šio straipsnio tikslas – ištirti būtinybės verslumo reiškinį, ypač atsižvelgiant į jo paplitimą besivystančiose šalyse. Siekiama prisidėti prie vykstančių diskusijų apie veiksnius, skatinančius būtinybės verslumą. Tyrime taikoma kombinuota

kiekybinė ir kokybinė metodologija siekiant ištirti, kaip vidiniai ir išoriniai veiksniai prisideda prie verslininkų polinkio kurti verslą iš būtinybės. Dauguma tirtų bendrovių yra mažos įmonės, kuriose dirba daugiausia nuo vieno iki devynių darbuotojų. Šios įmonės užsiima komercine, amatų ir paslaugų veikla. Kiekybinė klausimyno rezultatų analizė atskleidžia, kad šiai veiklai įtaką daro tiek vidaus, tiek išorės veiksniai, nors ir skirtingai. Pastebėtina, kad rezultatai meta iššūkį moksliniuose tyrimuose vyraujančiai dichotominei sistemai, dažnai naudojamai būtinybės ir galimybių verslumui atskirti. Kokybinė analizė rodo, kad amžius neriboja verslumo iš būtinybės, nes įvairių amžiaus kategorijų apklaustieji pasižymi panašiomis savybėmis. Palyginti su inovacijų verslininkais, būtinybės verslininkams dažnai skiriama mažiau dėmesio, tad šis tyrimas suteikia vertingų įžvalgų apie jų motyvaciją ir aplinkos suvokimą.

Assessment of Health Care Professionals' Perspectives on Personalized Psychosocial Support Development in Routine Cancer Care

The article assesses health care professionals' perspectives on personalized psychosocial support (PPS) development in routine cancer care. Using the methodology of an explanatory longitudinal research design, the factors that condition the development of PPS in the organization are identified from a retrospective and prospective point of view. The results of the research support the evidence regarding the implementation of a person-centered approach in different cancer care settings around the globe and identifies the gaps in developing PPS in cancer care that may be applied to PPS development elsewhere in the country.

Keywords: personalization, psychosocial support development, cancer care.

Straipsnyje vertinamas onkologijos srities sveikatos priežiūros specialistų požiūris į personalizuotos psichosocialinės pagalbos (PPS) vystymą kasdienėje praktikoje. Naudojantis aiškinamojo tipo ilgalaikio tyrimo metodologija, retrospektyviniu ir perspektyviniu požiūriais identifikuojami veiksniai, sąlygojantys PPS vystymą organizacijoje. Atlikto empirinio tyrimo rezultatai patvirtina pasaulines į asmenį orientuoto požiūrio prieigos įgyvendinimo tendencijas ir nustato trukdžius, kurie gali būti svarbūs dėl PPS plėtojimo ir kitose srityse bei organizacijose, atsižvelgiant į integruojant PPS į rutininę įstaigų veiklą.

Raktiniai žodžiai: personalizacija, psichosocialinės pagalbos vystymas, onkologinių pacientų sveikatos priežiūra.

Introduction

Relevance of the topic. Modern health-care worldview has significantly moved from a traditional disease-based approach to person-centered care, that is based on Engel's biopsychosocial model (1977) theory which endorses a holistic approach and states that health consists of interacting biological, social and

psychological factors (Frazier, 2020; van Dulmen et al., 2015). The importance of such changes is prioritized for the people that have comorbidities, chronic conditions (Wagner et al., 2021) such as cancer patients. Up to date, the adoption of person-centered care is widely viewed as a vital step in creating high-quality care focused on treating patients as people (Moody et al., 2018).

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Conceptually, person-centered care is a model in which health-care providers are encouraged to partner with patients to co-design and deliver care that provides people with the high-quality care they need and improve health-care system efficiency and effectiveness (Santana et al., 2018, p. 430). One of the basic directions of change when creating a person-centered care model is the integration of psychosocial support that is targeted to complexity of physical, social, emotional, and spiritual needs of the patients and plays an important role in their care (Grassi et al., 2017, Scholl et al., 2014).

However, clinical health care services are not primed to meet psychosocial needs of the patient (Jacobsen, 2017; Patlak et al., 2011) even though the need to do so has been widely agreed. It is still usual practice when health care does 'to' or 'for' people rather than 'with' them, finds it difficult to include people in decisions, and views people's goals only in terms of particular clinical outcomes. Adopting person-centered care as a daily practice requires radical changes not only in service delivery but it also changes the roles of health care professionals and patients too making an important cultural shift in the first place (Coulter and Oldham, 2016; The Health Foundation, 2014). The search for ways how to implement all the changes in health and social care has been called as personalization which primarily started as an independent movement to achieve more choice and control over peoples with disabilities life and has been developed as a *wide-ranging public service reform* in social and health care in UK and many other countries (Carey et

al., 2018, Needham, Glasby, 2014; Pavolini and Ranci, 2008). In addition to this, personalization has been universally recognized as the best approach to meet the need for psychosocial support through a variety of practical tools and decisions (Person Centred Care/Coalition for Collaborative Care/Medical directorate, 2015; Spicker, 2012).

These fundamental changes are highlighted in the global strategy on integrated people-centred health services (World Health Organization, 2015) which is a call for every Western country to make radical changes in the way how health services are funded, managed and delivered. As a result, the search for an effective PPS model that fits the specific health care context is a priority. It should be noted that such transformation requires a radical mental shift as well as fundamental change in traditional healthcare service provision (EVEN et al., 2019, Berntsen et al., 2018). In the absence of a national framework, it is difficult to develop and establish this care as core to the clinical services that are now provided (Neamțiu et al., 2016). To support this development nationally, there is need for organizational level research which identifies the barriers and opportunities to integrate the clinical with psychosocial aspects of cancer care (Berntsen et al., 2018; Brummel et al., 2016).

The research problem: what are the HCP perspectives on PPS development in routine cancer care?

The research object is HCP' perspectives on PPS development.

The research aim is after providing theoretical background on PPS development in cancer care, to present the main

study results on HCP' perspectives on PPS development.

The research methods: scientific literature review, systematisation, generalisation, and comparison in the theoretical part, and explanatory longitudinal qualitative interviews analysis in the empirical part.

Personalization in cancer care

Cancer care is a great challenge for modern healthcare systems because of its complexity. After receiving a cancer diagnosis patient aside from physical health problems such as pain, disfigurement, long term treatment side effects also face with a variety of psychosocial issues including emotional stress, mental disorders, financial hardships and other that emerge throughout cancer journey and afterwards (Veeraiah, Kayser, Sudhakar, 2022; Lewandowska et al., 2020; Sender et al., 2020; Anuk et al., 2019). All the cancer related problems that occur in the patient's mental, physical, social, or spiritual nature is referred as psychosocial needs or psychosocial distress. According to the National Comprehensive Cancer Network (2023), distress may interfere with one's ability to cope effectively with cancer and disease related symptoms during treatment and afterwards. Distress in an individual extends along a continuum, ranging from common normal feelings of vulnerability, sadness, and fears to problems that can become disabling, such as depression, anxiety, panic, social isolation, and existential and spiritual crisis. As a result, high distress levels in cancer care associates with poorer health outcomes, poorer quality

of life, increased morbidity and mortality, increased health care costs, treatment noncompliance, and longer hospital stays (Cochrane et al., 2022; Carlson et al., 2020; Deshields et al., 2018). Thus, recognizing and reducing distress by developing personalized psychosocial support is an important component of cancer care (Ercolano et al., 2018; Schiel et al., 2014, Jacobsen et al., 2011).

N. E. Adler and A. Page (2008, p. 9) defines psychosocial support as a group of psychological and social services and interventions that aim to empower patients, their families and HCP to improve clinical outcomes and to address the psychosocial aspects of illness and its consequences to improve quality of patient life. The authors also have made a comprehensive overview of theoretical, practical and evidence-based psychosocial interventions and after integrating them, they determined common elements that point to a model for the effective psychosocial support service delivery which are:

- 1) identification of patients' psychosocial health needs and development of care plan;
- 2) linking patients to the services needed;
- 3) support in illness management;
- 4) coordination of psychosocial and biomedical care;
- 5) follow-up (Adler, Page, p. 153).

It should be noted that this study had a huge significance in the field and been developed over years up to date both on theoretical and practical domains. Up to date, delivering psychosocial support requires not only health and social care service integration, but also person-centeredness that aims to provide

patients with choice and control over the way holistic care is planned and delivered and is based on what matters to patients and their individual strengths and needs (Brummel et al., 2016). To deliver personalized care means assessing holistic needs of the patient, making individual care plans and navigating the care and support patient need through health and wellbeing support networks (Macmillan Cancer Support, 2020) which means that external resources and care continuity are important predictors of success in support delivery effectiveness.

Personalized psychosocial support that is targeted to the holistic needs of the patient has been recognized as an integral part of gold standard cancer care (Loscalzo, 2016; Travado et al., 2015). This is endorsed internationally and is evidenced in the literature (Travado et al., 2016; Borrás and Prades, 2014). As part of non-governmental organization activities in the field, most of cancer organizations, societies and accreditation bodies have now formally endorsed screening, monitoring, and treating distress as a fundamental component to high-quality cancer care (Pirl et al., 2020, Fradgley et al., 2019). But it should be highlighted that distress screening itself does not ensure personalized psychosocial support provision and its effectiveness (Mitchell, 2013) as there is a whole package of personalization initiatives that need to be adapted and more research is needed both nationally and locally.

Research methodology

Study design. It is important to note that personalization has always been a bottom-up initiative and through its engagement at a local level its lessons can be shared nationally to inform the future framework (Needham, 2014). By applying longitudinal research design at an organizational level, we can evaluate the success of the measures implemented to enable PPS development. This can also form the basis for continuous quality improvement in cancer care. To identify the processes and analyze causal factors that condition the development of PPS in the organization explanatory qualitative longitudinal research was conducted with a time lag of approximately 1,5 year. Given the need for in-depth knowledge about PPS from the people working in the clinical practice, a qualitative approach was chosen by interviewing the participants.

Data collection and analysis. Data was collected in 12/2017 – 04/2018 and 2020 August by utilizing semi-structured individual interviews. Referring to common components of models for delivering psychosocial health services (Adler, Page, 2008, pp. 155-158) and World health organization framework on integrated, people-centered health services (World Health Organization, 2016) interview questionnaire guidelines have been developed, including 20 questions on psychosocial distress screening and support planning, referring to psychosocial services, patient education and information sharing, attention to patient individual attributes, effectiveness of existing psychosocial support system and future perspectives. Interviews were audio recorded,

transcribed, encrypted and analyzed by using content analysis method. General categories and subcategories were developed. A total of 19 HCP were interviewed, and the average duration of an interview was approximately 20 min.

Procedure and participants. The research was conducted in the Department of Oncology at Klaipeda University Hospital, Lithuania. A non-probability sampling method based on a targeted selection system was used to choose this organization for the research by following criteria:

1. Provision of psychosocial support for cancer patients;
2. Community support infrastructure;
3. Volunteer participation in the study.

We specifically sought individuals experienced in the comprehensive care of cancer patients as the quality of interviewee participating in qualitative research is crucial (Flick, 2008). Participants were selected by using a non-random sampling based on an external criterion. The head of the Cancer Department referred to HCP for the interviews by taking into account their positions, work experience and competencies. Sample size: 9 (in 2017/2018) and 10 (in 2020) participants. In both studies

the same interviewees participated, only 3 HCP were unavailable to participate in the second flow (Table 1).

The sample was made of experienced HCP that provides health care services to cancer patients on a daily basis. A variety of specializations was involved to represent a holistic viewpoint on the research object from the setting. The external and internal validity of the interviews was ensured by limiting the number of interviews per day (maximum 3), avoiding prejudices and evaluations, and encouraging critical thinking. Credibility was ensured by the selection of the experts that have different background.

Research results

Distress screening and support planning

a) Psychosocial distress screening

Table 2 and Figure 1 show the results of the question whether all cancer patients are being screened for psychosocial distress routinely and if there is any systemic distress tool used for it. Importantly, the answers of participants in 2018 and 2020 shared in two campaigns: one group said that HCP do distress

Table 1. Sample size specifications

Profile	2018	2020
Clinical psychologist	1	1
Psychiatrist	1	1
Cancer Nurse	2	2
Medical oncologist	2	3
Radiation oncologist	2	2
Surgical oncologist	1	1
Total (n =)	9	10

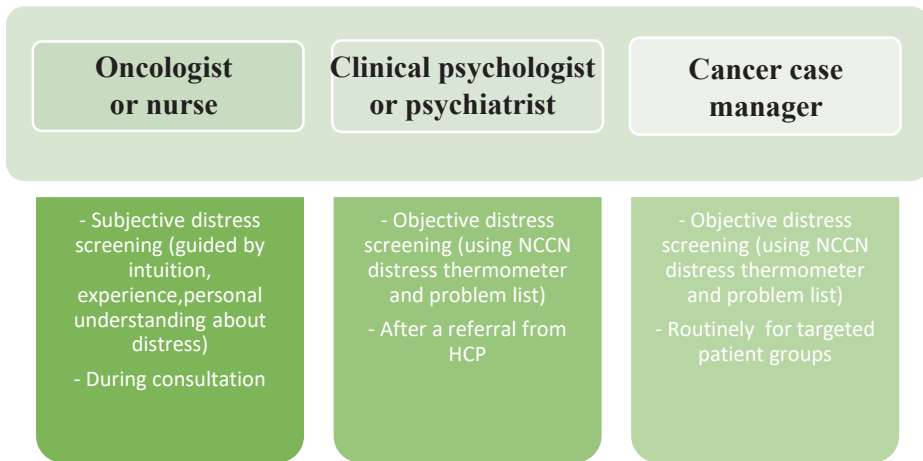


Fig. 1. Distress screening in cancer patients' characteristics

screening for all cancer patients on admission, meanwhile others said that distress is being discussed between the patient and the oncologist or nurse only when some kind of distress symptoms occur in the patient or the patient himself asks for support (Table 2).

When HCP described screening characteristics in routine cancer care, the results showed that in 2018 oncologist or nurse used subjectively assess distress in their patients based on intuition, experience and personal understanding of distress. Confusion, anxiety, listlessness, tearfulness in patients have been identified as major signs for HCP that patients most likely do experience high distress. When observing such symptoms,

patients were referred to clinical psychologist or psychiatrists, depending on patients' case. It should be noted that during the research in 2018, only clinical psychologist and psychiatrist used a distress assessment tool in their practice. Moreover, based on HCP answers, in the first study no standardized routine was established in distress screening, HCP only have expressed their need to have a dedicated professional who would be responsible for psychosocial distress screening in cancer patients routinely. Meanwhile after repeating the study in 2020, a radical shift in the area was recognized as all participants identified routine distress screening application for patients that are referred to Cancer Case

Table 2. Scope of distress screening

Category	Description
For all patients	During admission
For some patients	Patients with distress symptoms
	Patients visiting an oncologist for the first time
	Patients going through "Green corridor" registration system

manager (Figure 1). These patients are the ones who go through “Green corridor” registration system or patients who visit an oncologist for the first time and are referred to Cancer case manager afterwards, which shows that systematic distress screening is applied only for targeted patient groups.

In addition to this, the same as in 2018, oncologist and nurse took a gatekeeper’s role in distress screening and that was especially relevant for those patients that are not being coordinated by cancer case manager. Still, from the participants’ point of view it is important to meet those gaps and have more specialists (for example, nurse, clinical psychologist or oncologist) who would

be trained to objectively assess psychosocial distress in patients routinely.

b) Benefits of using a systematic distress tool

Participants in the study were also asked to express their subjective opinion on how the use of a systematic tool can benefit cancer care experiences (Table 3).

By comparing these results, we may conclude that after having a clinical practice when a standardized distress tool is being used on a wider scale among the patients, HCP are able to list much more benefits related to this tool and that shows their increased knowledge and positive experience in distress screening in organization.

Table 3. Benefits of having a standardized distress screening tool in routine cancer care according to HCP

	2018	2020
TO PATIENT	Targeted and timely support	Reduced sense of chaos
	Increased well-being	Targeted and timely support
		Increased well-being
		Increased knowledge in support available
TO HEALTH CARE PROCESS		Increased sense of security and trust in the organization
	Rational selection system for the support needed	Reduced number of untargeted patients’ visits
	Targeted referrals to psychosocial support services	Better adherence to treatment
	Increased productivity of oncologists’ consultations	Better cooperation with patient
	Scientific-based activities	Targeted referrals to psychosocial support services
		Valid reflection of patients’ issues
TO HCP	Increasing their job satisfaction	Increased productivity of oncologists’ consultations

c) Barriers of using a systematic distress tool

Distress assessment integration into routine cancer care usually face with a variety of barriers that more or less impacts the success of desired change. Regarding to this, HCP were asked to share their own insights around the challenges they see in their clinical practice. Based on the answers given in 2018 and 2020, it should be noted that when first the study was conducted in 2018, majority of HCP highlighted the absence of a competent professional responsible for the routine distress screening and the absence of a valid distress assessment tool as the main obstacles. HCP also noted that oncologist have very high workload, low competencies to use any toll and put an accent on that treatment is their priority and professional responsibility. Meanwhile in 2020 the tools integration issues were found to be different, related to the practical organization problems such as lack of professionals that perform screening, unavailability to re-assess distress among the pathway, patient selection and availability for screening as there is only one specialist at the clinic responsible for that. In addition to this, some HCP also mentioned the absence of registration software for distress screening and oncologists' workload which makes it difficult to do the screening routinely.

d) Psychosocial support planning

After distress screening, support planning is the second step to provide tailored care. In regard to this, participants were asked if there is an identified path of referral for patients who had high levels of distress. The results of the study

in 2018 have shown the practice when the oncologist directly used to refer a patient to psychosocial support professionals if needed. Generally clinical psychologist and psychiatrist were professionals to refer to on a first place, less frequently social worker, spiritual counsellor or non-governmental organizations. No individual psychosocial support plans were made initially at that time. In 2020, the results were surprisingly positive as the absolute majority of participants mentioned cancer case manager interventions when each patient's distress was assessed individually with an individual support plan provided to the patient. However, still the practice when oncologist refer patients directly to support services existed for those not having case manager or with high distress levels. One important note that the study showed the increase reference rates to clinical psychologist since cancer case manager recruitment.

e) Benefits of having an identified path of referral for patients with high level of distress

Planning psychosocial support from the participants point of view have many benefits both to the patient and the treatment pathway. In 2018, results stated that having an identified path of referral for patients with high level of distress increase patients' sense of security and awareness of support available, it also improves disease management skills and accessibility to holistic care. For the treatment pathway it is related to well-run processes, clear division of responsibilities, increased productivity of oncologists' consultation, emotional wellbeing and safety for the clinician. The results after repeating the research in 2020

showed only a slight change. Increased clarity and awareness of the support available for the patient, reduced sense of chaos, timely crisis assistance as well as well-run processes, increased quality of the care and productivity of oncologists' consultation were mentioned.

g) Barriers of having an identified path of referral for patients with high level of distress

When discussing the barriers of having an identified path for patients, the psychosocial support stigma was highlighted as well as the absence of professional who would be responsible for distress screening. The lack of favourable infrastructure, leadership and need for scientific research followed by in 2018. Meanwhile in 2020 the problems listed were basically related to the practical issues considering the lack of psychosocial support professionals, weak social worker's and spiritual counsellor's participation, poor support accessibility for remote patients and patients' closeness.

Promoting PPS development

a) Sources of information on psychosocial support

During the interviews, HCP were asked to share about where the patient can get the information on psychosocial support available. In 2018, an oncologist was mentioned as the main source for information whereas patient also can get the information from a nurse or a social worker. After repeating the question in 2020, the information provision was mentioned as a cancer case manager responsibility, meanwhile an oncologist and a nurse were mentioned again. Such

shift shows highly increased accessibility to the information needed for the patient support.

b) Information sharing among HCP

To understand better the depth of PPS development, HCP were asked in what kind of ways and how often do they share the information with their colleagues from a multidisciplinary team around psychosocial distress of an individual patient and the support provided to him. Responses from the research in 2018 showed that usually HCP communicate interpersonally if there is such a need, in some cases notes in medical records can be made or dialogue during team meetings. When the question was repeated in 2020 the same tendencies were identified, only the DT in medical records was excluded as a new way of seeing some personal data around psychosocial distress in 2020. However, the study revealed that discussions around psychosocial issues does not go on a regular basis and is usually initiated if there is something like "a red flag" that needs to pay attention to.

c) Benefits and problematic aspects of information sharing among HCP

In the studies HCP were also asked to share their perspectives on information sharing benefits and problems in promoting this. According to their answers in 2018, when sharing information it helps to improve patient-doctor relationships and increases knowledge among HCP about psychosocial support available, also it may increase effectiveness of the existing psychosocial support system, promote individualized approach. After comparing the results with

the data from 2020 research, the answers stayed the same.

Participants were also encouraged to share their ideas why the information about psychosocial distress, the needs of the patient and support available was not being shared so widely. Responses from the research in 2018 included confidentiality of information, medical treatment culture, lack of time, poor partnership with non-governmental organizations, absence of thematic team meetings as the major barriers. Meanwhile in 2020, HCP in addition to the problem of information confidentiality and the absence of thematic team meetings also mentioned lack of HCP motivation, health and social care fragmentation issue as important disturbances in improving the communication.

d) Patterns and drivers of PSS development

Finally, in the study it was aimed to find out how HCP see cancer pathway in their clinical practice from personalization point of view, what are the challenges and facilitators in terms of psychosocial support for cancer patients. Responses in 2018 and 2020 were different in terms of the progress that has been done in the area. In 2018, availability and timeliness of psychosocial support as well as the continuing development of cooperation in the area of psychosocial support were highlighted. Employees' initiative and shared vision around holistic care and the recruitment of clinical psychologist specifically for cancer patients seemed to be important things to be mentioned as well. In 2020, HCP expressed their strong satisfaction with establishment of cancer case manager

position as he works with the patient in a person-centered approach and takes all unofficial "responsibility" from the oncologists to assess the distress and refer to the support needed. In addition to this, mental shift among clinicians when more and more psychosocial support is taken into account when talking about cancer care was observed.

e) Future directions for improving the existing PPS system

The very last questions for HCP were around their vision how the existing psychosocial care could be improved. Data received in 2018 revealed that participants had a great wish for having a standardized psychosocial care system with such characteristics as: a) an application of a systematic distress assessment tool, b) having a specialist responsible for the distress assessment and coordination of the support, c) having a standardized referral system for the support services, d) having a routine practice to assess the distress in patients before their treatment. Additionally, responses included a wish for greater involvement of social worker, a need for scientific research in the area and specific training and education for the HCP. Meanwhile the insights shared during the research in 2020 were significantly different because of the progress made along the time. The participants mostly talked about improvement of the existing infrastructure by (a) hiring more case managers, (b) increasing the spectrum of support services available, (c) having more informational resources, (c) organizing trainings on distress assessment for nurses and oncologists, (d) developing more intense institutional partnership, (e) participating in

national project for cancer case management application in tertiary level. It can also be noted that more people than in 2018, again mentioned the need for greater involvement of social worker and scientific research conduction as well. When comparing the HCP views on the question it can be assumed that the PPS development tools previously described in the study can be considered successful and effective.

Conclusions

Assessing HCP perspectives and practical insights regarding PPS development has a high value as it opens the realistic view of the situation on organizational level and guide the PPS development path. From the retrospective view, the study shows that oncologist used to play gatekeepers role for psychosocial distress screening in patients when there is not any other responsible professional to refer to. As oncologists have very high clinical workload and are ill-equipped to assess the distress of patients in a person-centered way, being subjective when understanding patient distress and paying more attention for those with expressed distress symptoms used to be a usual clinical practice. In regard to this, from the perspective of HCP, to fill the gap and successfully develop PPS, the path would be first to establish a standardized psychosocial support system in organization. In such system the key element is a cancer case manager who is responsible for (a) assessing distress in patients by using a tool, (b) planning the support individually, (c) referring patients to the support needed. Recruiting cancer case

manager who coordinates the support highly reduce the risk to miss distress through lack of a systematic approach in identifying patient needs by HCP and therefore it increases the chances to do timely intervention and support management. In addition to this, the study shows the other important determinants of success in developing PPS on organizational level which are more related with organizational culture: strong leadership, employees initiative and shared vision around PPS, inter professional collaboration, routine HCP communication about patients psychosocial concerns, educational activities and scientific research that encourages mental shift in HCP awareness of the importance of distress and its management in clinical practice.

However, having a standardized psychosocial support system itself does not ensure comprehensive and effective PPS. HCP emphasised the need to also have adequate organizational capabilities to work in a personalized approach. The study suggested that in order to develop PPS that would be able to address the needs of all patients in need on a routine basis, it is essential to recruit adequate numbers of staff with professional expertise that take an active role in the support promotion and to have as wide spectrum of psychosocial services as possible. Moreover, to address a wide range of psychosocial needs of the patient, community level support inclusion with clear reference pathways should be developed as well. Prospectively, these are the improvements need to be done when developing PPS according to HCP.

The researchers recognize the limitations of the study as it only considered the views of HCP from one institution.

Therefore, it does not provide sufficient evidence for national application. Future research should be directed to a wider contingent working within different

cancer care settings. Also, it would be useful to include patients into the study as they are the best situated to identify the problems that we seek to resolve.

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SVEIKATOS PRIEŽIŪROS SPECIALIŲ POŽIŪRIO VERTINIMAS Į PERSONALIZUOTOS PSYCHOSOCIALINĖS PAGALBOS VYSTYMĄ KASDIENĖJE ONKOLOGINIŲ PACIENTŲ SVEIKATOS PRIEŽIŪROJE

Santrauka

Norint įveikti iššūkius, su kuriais susiduria sveikatos priežiūros sistemos, ir atliepti šiuolaikinius pacientų keliamus reikalavimus, tradicinį, tik į pavienės ligos gydymą orientuotą sveikatos priežiūros modelį keičia į asmenį orientuota prieiga, kurioje į sveikatą žiūrima sujungus psichologinius, socialinius ir biologinius paciento veiksnius. Tokios prieigos taikymas iš esmės reikalauja radikalių ne tik paslaugų teikimo, bet ir visos paslaugų teikimo kultūros pokyčių, nes reikšmingai keičiasi paciento kaip paslaugos vartotojo ir sveikatos priežiūros specialistų vaidmenys, prioritetas teikiamas paciento įgalinimui ir jo kompleksinių poreikių tenkinimui. Siekis holistiniu požiūriu organizuoti ir teikti sveikatos priežiūros paslaugas ypač aktualus pacientams, sergantiems lėtinėmis ir daugiabinėmis ligomis, turintiems ilgalaikių sveikatos ir socialinės priežiūros poreikių. Visa tai būdinga tokioms sritims kaip onkologija. Pabrėžtina, kad, norint teikti kompleksines, paciento poreikius efektyviai atliepiančias paslaugas, be gydymo paslaugų svarbu vystyti

ir personalizuotą psichosocialinę pagalbą (PPS), kuri padėtų mažinti individualų pacientų patiriamą ligos sukeltą psichosocialinį distresą. Vis dėlto, sveikatos priežiūros paslaugos skiria nepakankamai dėmesio pacientų psichosocialiniam distresui ir vis dar neretai vyrauja praktika, kai į pacientą žiūrima kaip į pasyvų paslaugos gavėją vien tik iš medicininės perspektyvos, arba psichosocialinės pagalbos organizavimo ir teikimo tvarka nėra personalizuota. Atkreiptinas dėmesys, kad šias nuostatas įtvirtinus tarptautiniu lygmeniu ir esant visuotiniam konsensui dėl aptartų pokyčių poreikio, pavienės valstybės stebimas tyrimų poreikis ieškant tokio PPS modelio, kuris būtų efektyvus specifiniame kontekste. Personalizacijos iniciatyvos kyla „iš apačios į viršų“ principu, todėl atitinkamai reikalingi organizacinio lygmens tyrimai, kurie prisidėtų prie nacionalinių gairių kūrimo, kaip vystyti PPS prižiūrint pacientų sveikatą. Šio straipsnio tikslas – pateikus trumpą teorinį rakursą, pristatyti atlikto empirinio tyrimo rezultatus, kuriais identifikuojami

reikšmingi organizacinio lygmens faktoriai, skatinantys PPS vystymą kasdien stebint onkologinių pacientų sveikatą.

Išanalizavus ir apibendrinus ilgalaikio tyrimo rezultatus nustatyta, kad, siekiant vystyti PPS organizacijoje, pirmiausia reikalingas psichosocialinės pagalbos standartizavimas, kuris apima: a) standartizuoto distreso vertinimo instrumento taikymą, b) distreso vertinimą reikšmingais ligos etapais, c) individualaus plano sudarymą nustatytoms problemoms spręsti, d) pagalbos infrastruktūros formalizavimą, e) už šią veiklą atsakingo

specialisto numatymą. Remiantis gautais duomenimis galima išskirti, kad dauguma reikšmingų organizacinio lygmens problemų, stabdančių PPS plėtojimą, gali būti išspręsta įdarbinus specialistą, atsakingą už psichosocialinio distreso vertinimą, nukreipimą pagalbai ir procesų koordinavimą. Taip pat, kad PPS organizacijoje būtų suteikta laiku ir prieinama visiems onkologiniams pacientams jų ligos laikotarpiu, būtina didinti žmogiškuosius išteklius bei plėtoti psichosocialinės pagalbos infrastruktūrą, vienijančią ne tik vidinius įstaigos resursus, bet ir išorinės pagalbos galimybes.

„ORGANIZACIJŲ VADYBA: SISTEMINIAI TYRIMAI“ REIKALAVIMAI AUTORIAMŠ

Leidinio „Organizacijų vadyba: sisteminiai tyrimai“ steigėjas yra 1989 m. atkurtas Vytauto Didžiojo universitetas. Žurnale skelbiami vadybos bei jam artimų mokslų naujausi sisteminiai tyrimai, recenzuojami reikšmingi mokslo veikalai, apžvelgiami svarbesni moksliniai renginiai, svarstomos vadybos pedagoginės ir praktinės problemos.

Leidinio „Organizacijų vadyba: sisteminiai tyrimai“ tematikos spektras yra gana platus: vadybos metodologija; organizacijų koncepcijos analizė; organizacijos ir makroekonominės aplinkos sąveika; verslininkystės teorija ir praktika; organizacinis projektavimas; personalo vadyba; vadovavimo metodologija; marketingo vadyba; strateginė vadyba; finansų vadyba; gamybos valdymas; operatyvinis valdymas; vadybos vystymo tendencijos; tarptautinio verslo teorijos ir organizavimas; verslo globalizacija.

Leidinyje spausdinami Lietuvos ir užsienio autorių straipsniai, todėl tai leidžia plačiai diskutuoti apie tarptautines vadybos mokslo problemas.

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Straipsnio struktūros reikalavimai. Straipsniai priimami parašyti anglų k. Straipsnyje turi būti aiškiai suformuluotas mokslinių tyrimų objektas ir tikslai, problema, aptartas nagrinėjamos problemos sprendimas, nurodyti tyrimo metodai, pateikti ir pagrįsti tyrimų rezultatai, padarytos išvados, nurodyta naudota literatūra. Rankraštis turi būti pateikiamas tokia tvarka:

Pirmas puslapis:

– Pavadinimas (ne daugiau kaip 10 žodžių), visų autorių autobiografiniai duomenys (visas autoriaus vardas ir pavardė, mokslinis laipsnis, pareigos, institucija, adresas, telefonas, faksas ir e. pašto adresas).

– Iki 250 spaudos ženklų ilgio anotacijos lietuvių bei anglų kalbomis, trumpai pristatančios straipsnio turinį.

– Iki 5 raktinių žodžių, atitinkančių straipsnio objektą, lietuvių bei anglų kalbomis.

Kiti puslapiai:

– Įvadas, kuriame būtina nurodyti straipsnyje analizuojamą problemą, straipsnio objektą, tikslą, uždavinius, tyrimo metodus, naudojamus šaltinius.

– Pagrindinis tekstas, logiškai suskirstytas į atskirus skyrelius. Skyreliai turi turėti atitinkančius turinį pavadinimus.

– Išvados bei pasiūlymai.

– Literatūros sąrašas (reikalavimai pateikti toliau).

Paskutinis puslapis:

– Ne trumpesnė nei 3000 spaudos ženklų ilgio straipsnio turinį bei tyrimo rezultatus apibendrinanti santrauka lietuvių k.

Literatūros sąrašo bei citavimo reikalavimai.

Tekste šaltiniai cituojami skliausteliuose nurodant autoriaus pavardę bei publikacijos metus (e. g., Johnson, 1996, 1998; Yang, 1997a, 1997b; OECD, 2001; Knowles, Garces-Ozanne, 2003). Jeigu cituojamo autoriaus pavardė yra sakinio dalis, tik data turėtų būti pateikiama skliausteliuose: „B. Liander ir V. Terpstra (1967) paskelbė statistine analize paremtą rinkų atrankos metodą, išskirdami tris rinkos vystymosi lygius: ...“

Visi straipsnio tekste cituojami autoriai bei šaltiniai turi būti įtraukti į literatūros sąrašą. Šaltiniai literatūros sąrašė turi būti surikiuoti abėcėlės tvarka. Įforminimo pavyzdžiai:

Žurnalai

Lynne, G. D. (1999). Divided Self-Models of the Socioeconomic Person: The Metaeconomics Approach // Journal of Socioeconomics. Vol. 28, No. 3, pp. 267–288. doi: 10.1016/S1053-5357(99)00017-7.

Knygos

Becker, G. S. (1991). A Treatise on the Family. 2nd ed. – Cambridge, MA: Harvard University Press.

Straipsnių rinkiniai

Cleland, J., Kaufmann, G. (1998). Education, Fertility, and Child Survival: Unravelling the Links / In the Methods and Uses of Anthropological Demography, ed. A. M. Basu and P. Aaby. – Oxford: Clarendon Press, pp. 128–152.

Darbo dokumentai

Johnson, D. G. (1999). Agricultural Adjustment in China: Problems and Prospects. – Working paper, University of Chicago, Department of Economics.

Konferencijų straipsniai

Bai, N. (2001). March Forward to the City or Return Back to the Country: A Study of the Returned Rural Laborers. – Paper presented at the 2001 Labor Flow Conference, Beijing, July 4–6.

Disertacijos

Meng, E. C. H. (1997). Land Allocation Decisions and In Situ Conservation of Crop Genetic Resources: The Case of Wheat Landraces in Turkey. – PhD diss., University of California, Davis.

Statistinės informacijos bei internetiniai šaltiniai

Statistical Office of Lithuania (1997). Statistical Yearbook of Lithuania – Vilnius: Lithuania.

Statistics South Africa (1996). South African Population Census. Prieiga per internetą: <<http://www.statssa.gov.za/census96/>> [žiūrėta 2012 04 16].

U.S. Department of Agriculture (1996). Agricultural Statistics of Former USSR Republics and Baltic States. Prieiga per internetą: <<http://www.ers.usda.gov/data/sdp/view.asp?f=international/93009/>> [žiūrėta 2012 05 16].

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Lynne, G. D. (1999). Divided Self-Models of the Socioeconomic Person: The Metaeconomics Approach // *Journal of Socioeconomics*. Vol. 28, No. 3, pp. 267–288. doi: 10.1016/S1053-5357(99)00017-7.

Books

Becker, G. S. (1991). *A Treatise on the Family*. 2nd ed. – Cambridge, MA: Harvard University Press.

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Statistical data sources and internet sources

Statistical Office of Lithuania (1997). *Statistical Yearbook of Lithuania*. – Vilnius: Lithuania.

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U.S. Department of Agriculture (1996). *Agricultural Statistics of Former USSR Republics and Baltic States*. Internet access: <<http://www.ers.usda.gov/data/sdp/view.asp?f=international/93009/>> [accessed May 16, 2001].

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