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LIFE INSURANCE PENETRATION DRIVERS IN BULGARIA[2]

The need for security and protection of human life and health is the very cornerstone behind life insurance demand which has become larger with the current COVID-19 atmosphere. Life insurance penetration is significantly lower in Bulgaria compared to the EU average, while studies on the subject of how this development came about are almost absent. In that regard, this article is focused on the influence of major macroeconomic, demographic and competitive factors over life insurance penetration in Bulgaria. When it comes to the methodological aspect, the study is based on the theory of demand and industrial organisation by applying the descriptive and correlation analysis methods. The results underline that despite the positive trends in life gross premiums, written for the period of 2009-2020, Bulgarians prefer to allocate their excess funds towards alternative investment opportunities. To a large extent, this is attributed to the low amount of income and the low productivity of the economy as well as because of the lack of effective competition between the small number of insurance companies. From the customers' point of view, this leads to a lack of awareness of the benefits of insurance, distrust and the absence of insurance interest, all of which are intensified during COVID-19. Responding to the market in relation to new business, supplying flexible, personalised and hybrid varieties of products, omni-channelling and development of positive attitudes among the population are all regarded as basic guidelines, used to improve insurance penetration. This article, therefore, serves as a foundation for a more in-depth study of the Bulgarian life insurance market, a stimulus for increasing the financial literacy of the Bulgarian populace and a subject of interest for insurance companies themselves in their fight to promote activity and to unleash market potential.
Keywords: life insurance; penetration; determinants; life insurance market
JEL: G22; L10; M21

1. Introduction

The sense of security is one of the basic human needs, which stimulates the need for protection from the risks of life and encourages the development of the life insurance market. The relevance of life insurance has never been higher for a large part of the world's

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population during the COVID-19 pandemic despite the presence of inconsistencies in its effects as a result of the increase in income uncertainty and the prerequisites for inflation.

The necessity for a developed life insurance market is supported by its significance as an engine of propensity to save, a transfer of risks, their effective management and profitable implementation, peace of mind for people in their professional and private life and a source of stimulation for the overall economic growth. In developed countries, these advantages have been successfully introduced and life insurance takes up a stable and significant part of the financial sector. In developing economies such as Bulgaria, despite or as a result of the economy, healthcare and societal norms turbulences, business related to health and life insurance of the population increases its significance, but at the same it substantially falls behind by preference. Life insurance penetration in Bulgaria is 9 times weaker than the average for the EU for both 2019 and 2020 and the prominence of life insurance is measured by its density which is 2.7% of the EU's mean. Studies on the reasons behind this trend are almost non-existent, while insurance companies that are in competition with each other take individual decisions to perfect their operations, as a result of which the quality and distribution of life insurance services are affected throughout the entire market. However, this is not enough to generate sufficient consumer confidence. The question as to what the drivers of development of life insurance activity are is a relatively common one among researchers and it focuses on economic, political and demographic factors of the macro-environment that are reviewed for a limited amount of time and within a select number of countries. A paper on the influence of these determinants, along with the factors that govern the competition in the Bulgarian market, sheds light on the approach to create stability in sales and generate an insurance interest among the Bulgarian populace.

In this context, the aim of the current study is to determine the reasons behind the weak life insurance penetration in Bulgaria by evaluating the force and direction of influence of a range of economic, demographic and competitive factors for the period 2009-2020, and as a result, a few recommendations are proposed to perfect insurance activity.

To accomplish its goal, the paper aims to execute the following main tasks:

- To theoretically describe the essence and primary determinants of life insurance activity.
- To develop a methodology to study the impact of factors on life insurance interest and penetration.
- To track the development of the Bulgarian life insurance market in comparison to the EU's, the competitive intensity and its overall impact on the life insurance market.
- To assess the direction and the amount of influence of 32 macroeconomic, demographic and competitive factors that impact life insurance penetration in Bulgaria, and on that basis, to provide a few guidelines for improvement of life insurance activity.

The study has several limitations. First, it is related to the 12-year time period (from 2009 to 2020) and the economic changes that have occurred during it. Second, the studied processes of the Bulgarian insurance market have been covered in relation to its territorial scope, without affecting the paper on the factors in other countries, however, a comparison was made of the gross premiums written, insurance penetration and density in the EU. Third, only

the life insurance segment has been studied. Fourth, only a part of the macroeconomic, demographic and competitive factors that have influenced life insurance penetration, have been subjected to evaluation.

The Fundamental hypotheses of this paper consist of:

H_1: The Bulgarian life insurance market is significantly less developed compared to Europe's in terms of insurance penetration and density.

H_2: Despite its conditionally insignificant value, the contribution of life insurance to the Bulgarian GDP has been increasing throughout the years and has the potential for development.

H_3: COVID-19 has an ambiguous impact on life insurance in Bulgaria.

H_4: The life insurance market is determined to be less competitive with high concentration, a decreasing number of participants, an uneven market distribution between them, good management of revenue and expenditures but with poor profitability. The high market concentration, the gross premiums were written and the unevenness in its distribution have a positive impact on the interest in life insurance, while the decreasing number of competitors and their expenditures have a negative effect.

H5: The macroeconomic and demographic environment factors have an ambiguous meaning which doesn't always match the conclusions in the study of other countries. The most significant factors from this group are considered to be: insurance density, GDP per capita, average income per capita, gross savings, real interest rate, Gini index, social contribution, inflation, urban population, deposits, substitutes products, dependency ratio, education, life expectancy at birth.

2. Theoretical Aspects of Life Insurance and Its Drivers

Insurance constitutes an activity focusing on the allocation of resources in the present moment with the purpose of future risk aversion. Life insurance expresses a transaction between two parties – the insurance company and the insured person, according to which the insured person fulfils a price (an insurance premium) in the present moment to be provided protection from the occurrence of an insurable future event, which has been achieved via compensation from the insurer. Good developments of the life insurance market provide advantages to individuals, businesses and society as a whole in the following areas (Carmichael, Pomerleano, 2002; Cristea, Marcu, Cârstina, 2014; Skipper, 2001; Peleckienė at al., 2019):

- the transfer of risks towards insurance companies and the establishment of security and protection for firms and households;
- the long term accumulation of resources for the elderly persons, which increases the tendency towards long term savings;
- the generation of value, liquidity, uniting and managing the risk via redistribution of incomes between economic agents;

- alleviating the pressure on the national budget by substituting the state insurance pensions;
- the stimulation of entrepreneurial and innovative activities, effective market competition and the profitability of the industries, via raising the risk tolerance of the economic agents and optimising the risk insurance companies take.

The significance of the insurance activity raises the question of what its actual influence on the nations' economic growth is, which is a subject of studies with a different scale and toolbox. Although insurance is regarded as a relatively stable part of the financial sector, its contribution to the economic growth is not unequivocal and depends on the conditions fostered by the specific states (Ward, Zurbruegg, 2000). The basis of the studies is built on two indicators: insurance penetration which represents the share the insurance premiums have in GDP, and insurance density which serves to measure the monetary worth of an insurance premium that a single person is able to pay (Podoabă, 2015; Peleckienė at al. 2019). Cross-country studies attest that in less developed economies, insurance activity has no significant effect on economic growth in contrast to the better-developed ones (Kjosevski, 2012; Carmichael, Pomerleano, 2002; Cristea, Marcu, Cârstina, 2014; Pradhan, Bahmani, Kiran, 2014). In Bulgaria, which has one of the weakest economies in the EU's composition, insurance activity has no deciding role in determining the economic well-being; however, life insurance is considered a potential good investment. In that regard, the stimulation of the insurance activity should become a priority of every government while the research on the drivers of its growth provides a necessary condition to guarantee insurance penetration and density.

Deducing what the factors that result in a developed life insurance market are, is a question of analysis amongst a number of studies. Macroeconomic, demographic and political determinants are at the forefront when seeking for insurance products (Table 1). A country with a smaller population size but with a high GDP, personal income and household savings, high levels of real interest rates, financial and political stability, low inflation and unemployment, an educated population predominantly of working age, normative regulation of insurance and good healthcare is a benchmark for favourable terms needed for the purchase of life insurance by both business and consumers. All of these factors are intrinsic to the high development of technologically advanced countries, which logically speaking have higher rates of insurance density and penetration. Developing states are further away from the set standard, which leads to a more ambiguous relevance of insurance over the economic growth (Carmichael, Pomerleano, 2002). The influence of some determinants such as the savings norm, interest rate, income inequality, population count, dependency ratio and social security is regarded by some researchers as unclear. The bigger amount of savings, as well as the advantages of the higher interest rate on deposits, can be allocated to a life insurance product. Nevertheless, this is an individual decision that every person makes that can be directed towards a different asset with a shorter-term return. The bigger income inequality of the populace leads to the rich not needing life insurance while the poorer have no funds. Nevertheless, even the relatively stable presence of the middle class in the community does not guarantee demand and the amount of income which is put aside for life insurance. Increasing the size of the population provides a bigger pool of potential clients for life

insurance companies, though if that is not accompanied by an increase in the well-being of the economy, the demand for life insurances will decline alongside with insurance density.

Table 1

Influence of the Macroeconomic, demographic and political drivers over insurance penetration

Driver		Influence over insurance penetration
Macroeconomic drivers:	GDP per capita	Positive (Carmichael, Pomerleano 2002; Kjosevski, 2012; Peleckienė at al., 2019;Li at al., 2007; Browne, Kim, 1993)
	Income per capita	Positive, with high elasticity (Carmichael, Pomerleano, 2002; Cristea, Marcu, Cârstina, 2014; Ward, Zurbruegg, 2000; Li at al., 2007; Beck, Webb, 2003) Hwang, Gao, 2003; Frees, Sun, 2010; Enz, 2000; Luciano, Rossi, Sansone, 2015; Browne, Kim, 1993)
	Annual savings rate	Ambiguous (Beck, Webb, 2003) Positive (Lim, Haberman, 2004; Sulaiman, Migiro, Yeshihareg, 2015)
	Inflation	Negative (Li at al., 2007; Hwang, Gao, 2003; Luciano, Rossi, Sansone, 2015; Mapharing, Otuteye, Radikoko, 2016; Sulaiman, Migiro, Yeshihareg, 2015)
	Unemployment	Negative
	Healthcare expenditures	Positive (Kjosevski, 2012)
	Interest rate	Positive (Beck, Webb, 2003; Lim, Haberman, 2004) Ambiguous (Li at al., 2007; Mapharing, Otuteye, Radikoko, 2016)
	Gini index	Ambiguous (Beck, Webb, 2003)
	Assets, debt	Positive (Frees, Sun, 2010; Luciano, Rossi, Sansone, 2015)
	Insurance premium	Negative (Hwang, Gao, 2003; Lim, Haberman, 2004; Browne, Kim, 1993)
	Financial stability	Positive (Lim, Haberman, 2004; Li at al., 2007)
Demographic drivers:	Population	Ambiguous
	Age	Positive (Luciano, Rossi, Sansone, 2015; Lin, Grace, 2007)
	Urbanisation	Positive (Carmichael, Pomerleano, 2002; Luciano, Rossi, Sansone, 2015; Beck, Webb, 2003)
	Dependency ratio	Positive (Sulaiman, Migiro, Yeshihareg, 2015; Li at al., 2007; Browne, Kim, 1993; Mapharing, Otuteye, Radikoko, 2016) Ambiguous (Beck, Webb, 2003; Luciano, Rossi, Sansone, 2015)
	Education	Positive (Li at al., 2007; Browne, Kim, 1993; Mapharing, Otuteye, Radikoko, 2016; Lin, Grace, 2007; Beck, Webb, 2003; Carmichael, Pomerleano, 2002)
Political drivers:	Tax reductions	Positive (Carmichael, Pomerleano, 2002)
	Political stability	Positive (Carmichael, Pomerleano, 2002)
	Pension insurance expenditures	Negative (Li at al., 2007) Ambiguous (Browne , Kim, 1993; Mapharing, Otuteye, Radikoko, 2016)
	Normative regulation of the market	Positive (Carmichael, Pomerleano, 2002)

Source: composed by the author.

Although economists are unanimous as a whole on the positive influence of the share of persons under 15 and over 64 in the working-age population, several studies (Beck, Webb, 2003; Luciano, Rossi, Sansone, 2015; Browne, Kim, 1993; Li at al. 2007) establish a stronger positive influence of the old dependency ratio. Social insurance may be viewed as a substitute for life insurance which gives birth to a negative relationship between the measurements. At the same time (Browne, Kim, 1993) it is speculated that social pension insurance might not

decrease the demand for life insurance products due to the fact that other than having a savings element, it also offers protection, i.e. life insurances can add to the retirement system.

Throughout the past two years, the COVID-19 pandemic has had a substantial influence on all economic activities, including life insurance. On the one hand, the rise in mortality rates due to the virus, and government restrictions that are meant to delay its spread lead to a surge in life and health risks which prompts a necessity for life insurance. On the other hand, the pandemic leads to a high level of income insecurity, unemployment probability, and an increase in life insurance product prices as a defence mechanism from companies, all of which are factors that decrease its demand. Studies on the impact of the pandemic on life insurance activity foresee a short term outflow of revenue in the market and a differentiated uptick in pricing for the highest-risk groups of the population (Harris, Yelowitz, Courtemanche, 2021). That way, the influence of the pandemic on life insurance penetration is ambiguous.

Macroeconomic, demographic and political factors have an undeniable impact on the development and spread of the insurance business, however, the final choice to be made for life protection and the allocation of funds is taken by the consumers. Insurance interest is particularly important for life insurance that has more of a voluntary rather than compulsory nature, and is independent of factors related to human behaviour, financial literacy and satisfaction. In Bulgaria, as well as in other developing countries (Omar, 2007; Ahmed, 2013), there are causes such as a lack of trust and a low level of awareness of the benefits of life insurance products which could be viewed as reasons for the low insurance penetration of the market (Hristova, Peeva, 2018). Even though life insurance is meant to respond to one of the primary needs – the one of security, in practice, that same need is not considered an essential service by society. For consumers residing in countries with low income, the choice of insurance often significantly increases opportunity costs meant for the distribution of disposable income and that is a determinant of rejection. Unlike non-life insurance, which offers protection against a taken risk, life insurance also has a savings purpose that makes it a variant for money investment, along with bank deposits, collective investment schemes and alternative funds, and investment in real estate and in stock markets. The individuals have the choice of allocating funds dependent on the size of their income. They choose to save, spend or invest money. In the case of investment decision, they decide whether they can afford to choose from a portfolio of investments or if every separate investment may be regarded as a trade-off with the rest.

The root causes behind the consumer's unwillingness for insurance can also be found in the characteristics of life insurance as a service. Considering the fact that it serves as an exchange of utility, one side providing it to the other and it does not lead to the acquisition of a material product (Kotler, 2009; Lovelock, Wirtz, 2011), life insurance possesses the attributes of immateriality, indivisibility and heterogeneity of all services which makes its benefits difficult to perceive and assess. The generation of consumer confidence with these features aims to create "awareness" and "visibility" of the results of the proposed offer, its personalisation to the customers' requirements (Frei, 2006), the quality, price and various options to choose from, the flexibility of production (Lovelock, Wirtz, 2011). The process of a sale has the purpose of offering a method of resolving a specific problem that is not incurred at the moment; however, it might surface in the near or distant future, and as a result, this

concrete feature unlocks negative attitudes and mutual mistrust between counterparties (Poth, 2014; Gidhagen, 2002). The consumption of traditional services is accompanied by a particular psychological and financial risk since the production of services coincides with their use, while the result from said services is different for every consumer because of the heterogeneity in the offering. In life insurance, the consumer risks can be considered as even higher.

The customer uses the life insurance service preventively, without knowing if and when its realisation will occur. The issue is further exacerbated by the emergence of two circumstances: (i) compensation when an insurance event takes place, such as the death of the person, is disbursed to the relatives of the deceased, i.e. there is a lack of real benefit for the insured from the paid out compensation; (ii) an unwillingness between both sides of the deal to reach an actual "delivery" of the service (the client doesn't want an insurance event to happen which would disrupt the normal progress of life or for a threat to occur, while the insurer doesn't want to cover any incurred insurance events which would prompt a compensation payment) (Poth, 2014; Gidhagen, 2002). The preliminary use of the life insurance service carries an element of uncertainty for the customer, on whether it's worth it to pay for something that might not happen. In this sense, convincing the client of the necessity of insurance is a challenge for the sales agent, while the advantages of the insurance contract are hard to evaluate not only before and during but also after making the purchase.

The insurance interest of the population is a major factor for life insurance product demand. In order to find motivation for purchase, the potential consumer should have a positive attitude towards this kind of activity, social and reference groups to which he or she belongs to. For the purpose of having actual or potential users of the product, the customer is to be risk aversive, financially liberated and prone to saving, to be able to distribute and invest wealth throughout the passage of time (Nomi, Sabbir, 2020). Such type of consumer motivation is a prerequisite for confidence-building, awareness of the benefits of life insurance and the formation of their demand. Consumer expectations towards life expectancy are regarded as an important purchase deciding factor (Browne, Kim, 1993). A person whose prospects indicate a short life would be more willing to apply insurance (Browne, Kim, 1993; Li at al., 20070, however, if the foreseeable future suggests a longer life expectancy, said insurance would be applied as an investment for the elderly years (Beck, Webb, 2003; Lim, Haberman, 2004). As a result of the increase of average life expectancy, the goal of the products would be more likely related to health protection rather than after the fact compensation (McKinsey, Company, 2020). The response to consumer expectations before (by using adequate media and awareness), during (by proposing the right offer in regards to product and price), and after the signing of the contract (via transparent information, feedback, proper payout of compensations) is marked as the cornerstone of customer satisfaction and therefore insurance penetration rises.

The attraction of clients to life insurance, especially in countries with an unfavourable economic and demographic development, is a constant struggle between existing competitors while satisfying their wants – the main objective. According to the structural approach to the competition, a well-developed market has built up protective mechanisms from the negative influence of market forces such as suppliers, new competitors, substitutes and customers, which in consequence, reduces competitive aggression and increases profitability (Porter,

1979). The more effective and dynamic a rivalry is in the life insurance market, the more attractive and diverse the proposed offers are, and the bigger the audience for the companies when presenting their goods. The competitive determinant of insurance penetration requires a multitude of firms with a good image and reputation (Eccles, Vollbracht, 2006), with a stable and successful market position (Eling, Kiesenbauer, 2012), that offer quality service in a flexible way via creative management of the business, meeting consumer expectations in conditions of digitalisation (Selimović, Martinović, Hurko, 2020; Brown, Goolsbee, 2002). The high market concentration and force of the insurance companies drive the average level of market profitability and guarantee its stability (Shim, 2017). Effective market competition is an incentive for improvement of the trade offers from the perspective of their quality, varieties and price attractiveness (Mburu, Maina, 2016) which are a factor for the increase in demand (Selimović, Martinović, Hurko, 2020). Accomplishing a parallel balance between the competitors' propositions and user satisfaction with the service and the experience of it, is an essential factor for a better life insurance penetration.

The determinants of the insurance penetration are rooted not only in the factors of the economic, demographic and political macro-environment but also in the personal preferences of the clients and the competitive factors of the industry. The importance of the life insurance activity on the development of the national wealth and prosperity is what makes it necessary to study the effect of these factors and to solve any possible problems related to life insurance penetration and density.

3. The Methodology Used to Evaluate the Influence of the Life Insurance Penetration Drivers

The current research aims to determine the influence of economic, demographic and competitive determinants on the level of penetration of life insurances in the Bulgarian market. Life insurance penetration (form 1) besides life insurance density (form 2), is a criterion for the significance of this type of financial service that adds value to the economy and is an indicator of its development and entry, which allows a comparison between other states and time periods.

$$Life\ insurance\ penetration = \frac{life\ gross\ premiums\ written}{GDP} \times 100 \quad (1)$$

$$Life\ insurance\ density = \frac{life\ gross\ premiums\ written}{population} \quad (2)$$

The study is based on descriptive and correlation analysis. To determine the force and direction of influence of the factors over insurance penetration, the Spearman's Rho correlation coefficient is utilised. Its preference over the standard Pearson's correlation coefficient is established on the limitation of the time series in the paper, the multitude of factors and the lack of sensitivity towards extreme variables, unusual and abnormal measurements.

The period of research spans the period of 2009 to 2020 (12 years), on the one hand, aiming to indicate the impact of the economic crisis that took place from 2009-2010 and the beginning of the Covid-19 pandemic in 2020, and on the other having the goal to signify the long term character of the investment of the life insurance product.

The choice of the scope and composition of the studied factors is based on previous research of the problem in question, the specifics of life insurance in Bulgaria and the necessity to cover the bigger number, different in nature, with quantifiable indicators. The necessary data for evaluating the influence of the different factors have been extracted from secondary sources such as the Bulgarian Financial Supervision Commission (FSC), the National Statistical Institute (NSI), the Bulgarian National Bank (BNB), The World Bank (WB).

The macro drivers whose influence over insurance penetration is studied, are shown in fig.1. Since these are determinants with a significant yet unchangeable by any economic subject impact, their directions and force are determined as a circumstance that the business has to take into account.

The factors of the competitive environment are directly dependent on the activity and strategies of the insurance companies that change the image of the life insurance market. The larger amount of competitors, the higher the concentration on the market, the effectiveness of their activity and the aim to attract incomes more successfully than the other sources of resource allocation are the competitive drivers of life insurance activity. The higher income of all of the insurance companies on the market (life gross premiums written) attests to their collective success in client attraction which is directly associated with the growth in insurance penetration and density. The number and, to a bigger degree, the size of the enterprises are of importance to measure their ability to distribute their services on a bigger scale, invest in innovations, change consumer perception and popularise their activity. This study focuses on two main indicators of concentration as a factor of investment penetration:

- The concentration Ratio of 4 biggest firms (CR4) in % is the sum of the market shares of the four largest companies in the industry.

$$CR_4 = \sum_{i=1}^{4} MS_i \tag{3}$$

Where: MSi – market share of rival 'i', (i=1, 2, 3, 4). When CR4<50, the market concentration is low and the market is normally competitive; CR4 is between 50% and 85%, the concentration is in the middle and the market is relatively competitive; CR4>85, the concentration is high and the market is lowly competitive.

- Herfindal-Hirshman index of concentration (HHI) in % is the sum of the squares of the market shares of all market companies.

$$HHI = \sum_{i=1}^{n} MS_i^2 \tag{4}$$

Where: MSi – market share of rival 'i', (i=1, 2, ….n). When HHI<1000, the market concentration is low and the market is normally competitive; HHI between 1000 and 2000,

the concentration is average and the market is relatively competitive; HHI>2000, the concentration is high and the market is lowly competitive.

Figure 1

Macrodrivers of insurance penetration – definition and source of data

GDP per capita, BGN

Gross domestic product divided by midyear population. GDP measures the value of total final output of goods and services produced by an economy within a certain period of time.
Source: WB

Average income per capita, BGN

The total income (monetary and valued income in kind) of the household and its members divided by midyear population.
Source: NSI

Gross savings, BGN

The amount remaining after deducting total consumption from the sum of gross national income and net transfers.
Source: WB

Real interest rate, %

The lending interest rate adjusted for inflation as measured by the GDP deflator. It is a reflection of the change in purchasing power derived from an investment or given up by the borrower.
Source: WB

Gini index, %

Measures the extent to which the distribution of income among individuals or households deviates from a perfectly equal distribution. A value closer to 100 % indicates a higher inequality.
Source: WB

Social contributions, BGN

Compulsory payments to the government that entitle to (conditional) future social benefits, which can be financial protection against major risks to life, accidents at work and their consequences.
Source: WB

Inflation, consumer prices (annual %)

The annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly.
Source: WB

Urban population, % of total population

Refers to people living in urban areas divided by total population. Urbanization is associated with the processes of industrialization 4.0 and increased risk to human health.
Source: WB

Dependency ratio, %

The sum of ratio of people younger than 15 to the working-age population (those ages 15-64) (young dependency ratio) and ratio older than 64 to the working-age population (old dependency ratio).
Source: WB

Education graduate, % of inhabitants

The share of graduates (secondary and tertiary) education in the total population. A bigger share means that users are more informed and sciential.
Source: NSI

School enrollment, % gross

the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. The level of education can be secondary or tertiary.

Educational attainment, total (%)

The percentage of population ages 25 and over that attained or completed a Bachelor's degree or its equivalent.
Source: WB

Life expectancy at birth, years

Indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.
Source: WB

Source: Composed by the author from sources cited in the figure.

Other than the concentration levels, the relative and absolute changes in the distribution of the market shares between competitors in the time spent and the evenness of the division of the market itself plays a role in insurance activity. The higher value of ICSCMD (Gatev, 2007, p. 44) (see form 5) affirms the higher level of instability and insecurity in the market positions and that results in a loss in customers, disinterest and distrust in the firms' activity. The larger unevenness of the division of the industry's profits, measured by the ICIMD (Gatev, 2007, p. 124) (see form 6), presents consumer preference towards the type of firms that are more popular and better instead of the others. This preference is evidence of low concern for the client in regards to the smaller enterprises, while in the entire market, there is a decline in insurance customer interest, which are being served by ineffective rivals; unhappy with their service and from potential clients that have been overlooked due to the lack of capacity.

Table 2

Formula of calculation of part of the competitive factors of Bulgaria's insurance penetration

Indicator	Formula	
The Integrated Coefficient of Structural Changes in market distribution (ICSCMD)	$$ICSCMD = \sqrt{1 - \frac{2\sum_{i=1}^{k} MS_{it-1} \times MS_{it}}{\sum_{i=1}^{k} MS_{it-1}^2 + \sum_{i=1}^{k} MS_{it}^2}}$$ where: MS_{it} – the market share of rival 'i' in moment 't'; MS_{it-1}– the market share of rival 'i' in the 't-1' moment; k – the number of rivals. Source: author's calculation by data from FSC	(5)
Integrated Coefficient of Inequality in market distribution (ICIMD)	$$ICSMD = \sqrt{1 - \frac{20000}{10000 + \sum_{i=1}^{k} MS_{it}^2}}$$ Source: author's calculation by data from FSC	(6)
Return on Equity (ROE), %	$$ROE = \frac{\sum_{i=1}^{n} Net\ Income_{it}}{\frac{\sum_{i=1}^{n} Equity_{it-1} + \sum_{i=1}^{n} Equity_{it}}{2}} \times 100$$ Source: author's calculation by data from FSC	(7)
Return on Assets (ROA), %	$$ROA = \frac{\sum_{i=1}^{n} Net\ Income_{it}}{\frac{\sum_{i=1}^{n} Assets_{it-1} + \sum_{i=1}^{n} Assets_{it}}{2}} \times 100$$ Source: author's calculation by data from FSC	(8)
Return on gross premiums written (RGPW), %	$$RGPW = \frac{\sum_{i=1}^{n} Net\ Income_{it}}{\sum_{i=1}^{n} Gross\ Premiums\ Written_{it}} \times 100$$ Source: author's calculation by data from FSC	(9)
Return on net premiums earned (RNPE), %	$$RNPE = \frac{\sum_{i=1}^{n} Net\ Income_{it}}{\sum_{i=1}^{n} Net\ Premiums\ Earned_{it}} \times 100$$ Source: author's calculation by data from FSC	(10)
Combined Ratio (CR), %	$$CR = \frac{\sum_{i=1}^{n} Losses_{it} + \sum_{i=1}^{n} Operating\ Expenses_{it}}{\sum_{i=1}^{n} Net\ Premiums\ Earned_{it}} \times 100$$ Source: author's calculation by data from FSC	(11)

Source: Composed by the author from sources cited in the figure. The acting formulas are standardised by international accountant standards and widely used to evaluate the achieved results of the enterprise in comparison to past periods and compared to competitors (Revsine, Collins, Mittelstaedt, 2012).

The higher levels of the overall efficiency and profitability on average for the entire market indicate the success of all enterprises that function within it (see forms 7, 8, 9, 10, 11). The better resource utility, optimisation of the costs and stimulation of profits from all the firms on the market leads to its success and to the increase of its significance not only for direct competitors but also for their counterparties. The lack of success has the opposite effect, i.e. it redirects the consumer's income toward alternative opportunities for allocation of funds. The current study considers such bank deposits as investments in real estate presented via the sum of revenues from the operating activity and financial revenues in the sector "Real estate activities"[3] and collective investment schemes (CIS) and alternative investment funds (AIFs). Unlike life insurance, they do not have a protective element, but make it more flexible, profitable and timely to get a return on investment and other benefits for investors.

4. An evaluation of Life Insurance Penetration in Bulgaria and Its Drivers

The Bulgarian life insurance market has been one of the most well developing ones in the last decade (Table 3). With the progress of the pandemic in 2020, gross premiums written by life insurance companies in Bulgaria have decreased by 11.47%, in accordance with the Europe-wide trend. Despite that, compared to the first year of the period, in contrast to the EU's revenue reduction of 6%, the Bulgarian life insurance market has grown by 96.53 out of a hundred. There is a strictly positive trend that can be observed during the non-crisis years, while the penultimate 2019 marks a growth of 11.34% and is at complete odds with the common European decrease of 9.18 out of a hundred. This illustrates the potential for the development of this type of products in Bulgaria. The amount of life benefits paid increases for the period with the exclusion of 2009 and 2018, and takes up an average of 40% of the premium return. On the one hand, the high sum of compensations provides evidence for the presence of risks related to the life and health of the Bulgarian populace; on the other hand, it also verifies the proper realisation of the insurance service in accordance with the signed insurance policies. Contrary to expectations for an increasingly serious necessity for protection and security of the most important thing – human life and health, a few negative trends in life insurance can be observed in Bulgaria:

- a drop in life premiums written during the life-threatening COVID-19 pandemic in 2020;
- low life insurance density;
- low, with fluctuating trends, life insurance penetration;
- negative trends in the life insurance market competition.

[3] The sector encompasses a range of services relating to the provision of property, i.e. buying, selling and renting of commercial and residential properties or land. This division also includes the activities of real estate agents intermediating in buying, selling, letting or managing real estate.

Table 3

Life gross premiums written, and life insurance density in Bulgaria and EU in 2009-2020 period

	2009	2013	2014	2015	2016	2017	2018	2019	2020
Life gross premiums written in EU, BGNm									
	1362406	1305118	1417066	1484352	1422762	1479198	1560202	1416984	1280650
Growth rates, %	8.80	3.73	8.58	4.75	-4.15	3.97	5.48	-9.18	-9.62
Life gross premiums written in Bulgaria, BGNm									
	224.66	305.94	340.64	391.27	428.09	428.66	447.94	498.73	441.52
Growth rates, %	-19.30	14.12	11.34	14.86	9.41	0.14	4.50	11.34	-11.47
Life benefits paid in Bulgaria, BGNm									
	91.88	119.20	140.52	154.91	171.42	186.70	162.31	177.72	196.47
Growth rates, %	-2.25	11.49	17.89	10.24	10.66	8.91	-13.07	9.50	10.55
Share in life premiums, %	40.90	38.96	41.25	39.59	40.04	43.55	36.23	35.63	44.5
Density in EU, BGN per inhabitant									
	2498.0	2436.0	2596.0	2650.0	2622.0	2748.0	2898.0	2608.0	2356.0
Growth rates, %	5.4	4.4	6.6	2.1	-1.1	4.8	5.5	-10.0	-9.7
Density in Bulgaria, BGN per inhabitant									
	30.18	42.11	47.15	54.51	60.06	60.58	63.76	71.50	63.74
Growth rates, %	-18.85	14.76	11.98	15.60	10.18	0.87	5.25	12.13	-10.85

Source: Author's calculations based on data from Insurance Europe, FSC and NSI.

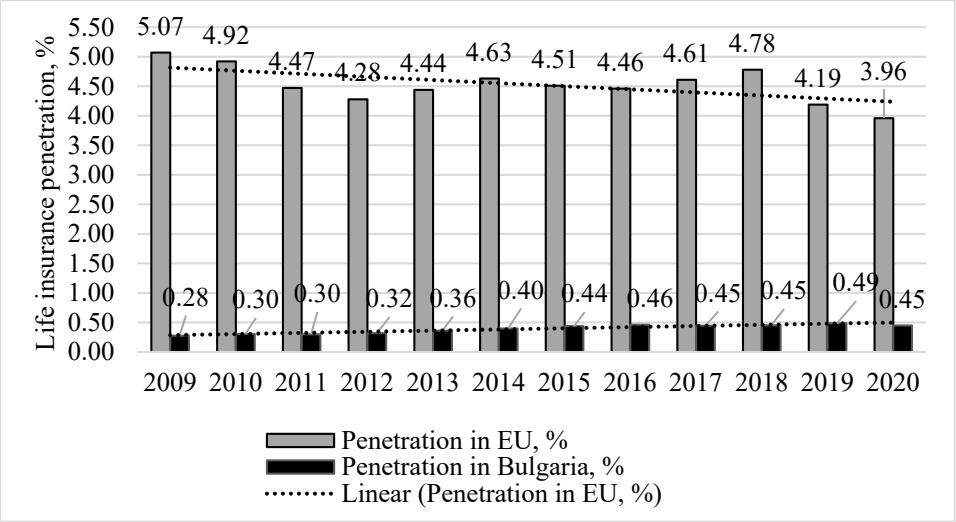
In 2020 when the COVID-19 pandemic began, there was an outflow of revenue of 11.47% compared to 2019. This decrease is unexpected considering the main goal of the service – purchase of protection of human life and health. The outflow of revenue of the market led to a reduction of the already low life insurance density, penetration and a limitation of effective market competition. The lack of interest Bulgarians display towards the offered products is so low that if a European has an average of 2608,0 BGN gross premiums written, then at the same time, during the most successful year of the life insurance market, a Bulgarian would have a value of 37 times lower (71.5 BGN), the ratio in question remaining unchanged during the last year as well. The economic importance of life insurance to the Bulgarian economy is increasing, but it's also less pronounced (Figure 2). Values between 0,28% at the beginning of the period to 0.49% in 2019, and 0.45% in 2020 are irrelevant for the generation of value added for society. These measurements are also several times lower than the average for the EU despite the trend of penetration reduction in European countries. Bulgaria cannot manage to impose insurance, life insurance in particular on a bigger scale, whose nature is voluntary, as a stable financial favour and to ensure the benefits of the developed life insurance activity for the economy, public and individual persons.

The reduction of life insurance activity of the population leads to a decrease in effective competition on the market and to an even bigger outflow of resources towards other financial services and sectors of the economy. The number of players in the life insurance market diminishes every year for the period, 2020 marking only 10 life insurance companies that offer and distribute products (Table 4). The instability in market development instigates the appearance of the permanent processes of horizontal integration (firm merging and injections) and the refusal of some of them to pursue activity. Market positions also change in the presence of competitors. Allianz Bulgaria Life ZAD played a leading role in 2017 in the top 4 companies; however, in 2018 it lost its position to Bulstrad Vienna Insurance Group

AD and DZI Life Insurance EAD, the latter accumulating a large turnover as a result of the merge of two competitors into its composition. In 2020 DZI Life Insurance EAD pushes out even Bulstrad Vienna Insurance Group AD from the top place, and with a market share of 25.8%, it takes the lead in the competition for the Bulgarian consumer.

Figure 2

Life insurance penetration in Bulgaria and EU in 2009-2020 period, %



Source: Author's calculations based on data from Insurance Europe, FSC and NSI.

The horizontal integration processes have a competitive advantage for the companies, firstly due to the number of direct competitors decreasing in the industry, and for a second time by uniting the clients of the merged firms. The reduction of direct rivals leads to an increase in market concentration while during that entire period, HHI is over a 1000 and growing, which defines the market as relatively competitive with an average level of concentration. In 2019 the indicator acquires a value of 2007% that signifies a reduction of competitive pressure, a presence of a small number of big players in the market who have opportunities to apply concerted practices in pricing behaviour. The declining intensity of rivalry is confirmed by an increase in shares of the first four companies from 58,46% in 2009 to 84,15% in 2020. There is practically no revenue for smaller firms, nor is there any room for new competitors. The market's status quo has remained the same during the entire 12-year period of study (geom.mean of ICSCMD =0.11), and the difference in position between first and last place is over 60 times. The asymmetry in market distribution is huge and the gap only gets bigger with time (geom.mean of ICIMD =0.58), while the number of rivals decreases, leaving the market development in the hands of the "big fish". On the one hand, the availability of big players on the market unreservedly points to a well built-up image and successful strategies. On the other hand, the lack of intensive rivalry implies the risk of the few being incompetent competitors despite being large, which might prompt them to circulate and popularise the life insurance product and have them market it as something that's necessary and significant for the life, health and savings of the Bulgarian consumers.

Table 4

Dynamics in market positions of Top 4 life insurance companies and indicators of competition intensity in 2009-2020 period

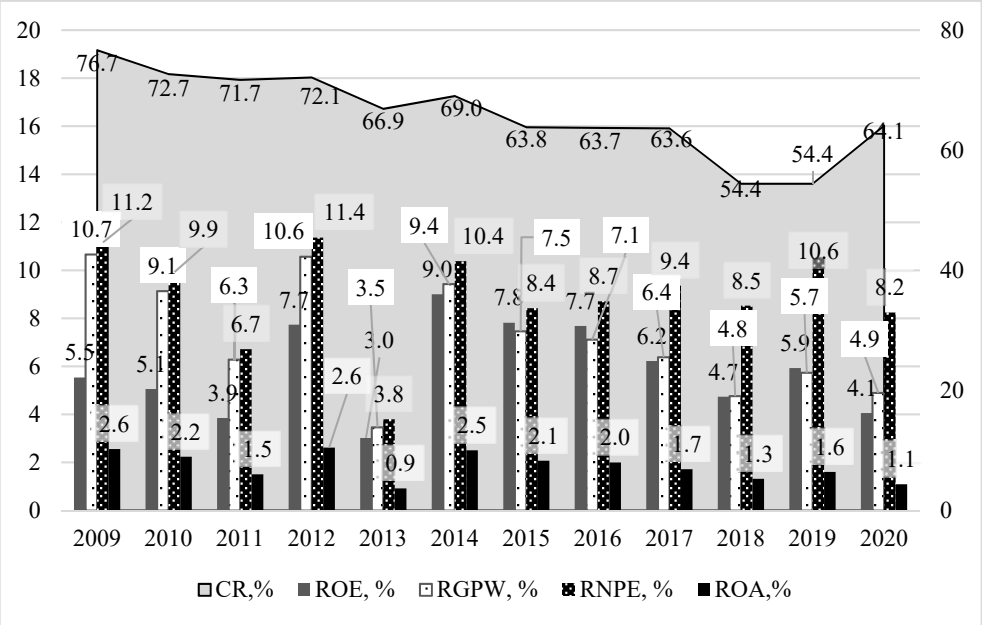
	2009	2013	2014	2015	2016	2017	2018	2019	2020
Dynamics in market position of biggest insurance companies in Bulgaria, Market share %									
Allianz Bulgaria Life ZAD	21.90	22.41	23.07	26.50	26.28	23.47	19.09	18.11	22.91
DZI Life Insurance EAD	15.44	9.95	9.77	12.09	11.26	12.04	22.12	22.06	25.8
Bulstrad Vienna Insurance Group AD	11.14	15.10	15.96	17.03	17.55	20.41	24.87	30.29	23.58
Uniqa Life Insurance AD	8.18	10.70	12.27	13.70	14.70	17.91	17.53	14.19	11.86
Indicators of competition intensity									
CR4, %	58.46	58.16	61.08	69.32	69.8	73.82	83.61	84.65	84.15
Competitors, number	17	16	16	15	13	13	11	11	10
HHI, %	1173.8	1198.5	1258.8	1499.0	1534.5	1633.9	1860.0	2006.8	1978.73
ICSCMD		0.12	0.08	0.15	0.05	0.09	0.28	0.11	0.15
ICIMD		0.56	0.58	0.62	0.58	0.60	0.59	0.61	0.57

Source: Author's calculations based on data from FSC.

Despite its significant market share of insurance companies, the average market profitability is hesitant (Figure 4).

Figure 2

Main profitability indicators in the life insurance market in 2009-2020 period, average %



Source: Author's calculations based on data from FSC.

The net income from net premiums earned has been the highest for all of the years for the period (between 11.4% in 2012 and 8.2% in 2020), which indicates effectiveness in revenue management and compensation payoff. This can also be observed in the management of expenses due to the measures of a combined ratio of under 100% with a tendency of shortening the period. On the other hand, ROE has been shifting between the margins of 3.9% and 9%, which in combination with the even lower levels of ROA (between 0.9% and 2.6%) allows for findings of dependency of competitors from predominant equity and infectivity of the management of their assets. The development of the average market profitability signifies its low effectiveness.

The majority of the insurance penetration drivers (23 indicators) have a statistically significant but also a bigger than average (Spearman's rho≥ 0.7) [4] influence (Figure 5), which means that their selection is suitable. The papers of other authors, alongside the current one, point to a development in the state's wealth and productivity, income per capita, saving rate, life expectancy[5], level of urbanisation of the population, as well as the dependency ratio, school enrollment and educational attainment, all of which increase the Bulgarian's desire to apply for life insurance. It's considered irrefutable that a person with a higher income and a better (self-fulfilling) job, living in urban conditions with a higher risk to one's life and a lower than expected life expectancy, with a tendency to save money and a desire to protect themselves as well as their dependent relatives, would have a higher affinity to life insurance products. Tertiary, gross enrolment, unlike the secondary one, plays a strong positive role in the Bulgarians' insurance interest. The study suggests that the bigger percentage of people over 25 who have acquired a bachelor's degree of education or its equivalent, has a significant statistical impact on the desire for life insurance. This, in spite of the number of secondary and higher education graduates decreasing every year and its negative influence, supports the conclusion related to the greater awareness of the better-educated population in regards to the insurance service (Peeva, 2020). A problematic aspect for Bulgaria is more likely to be the size rather than the direction or power of influence of these factors.

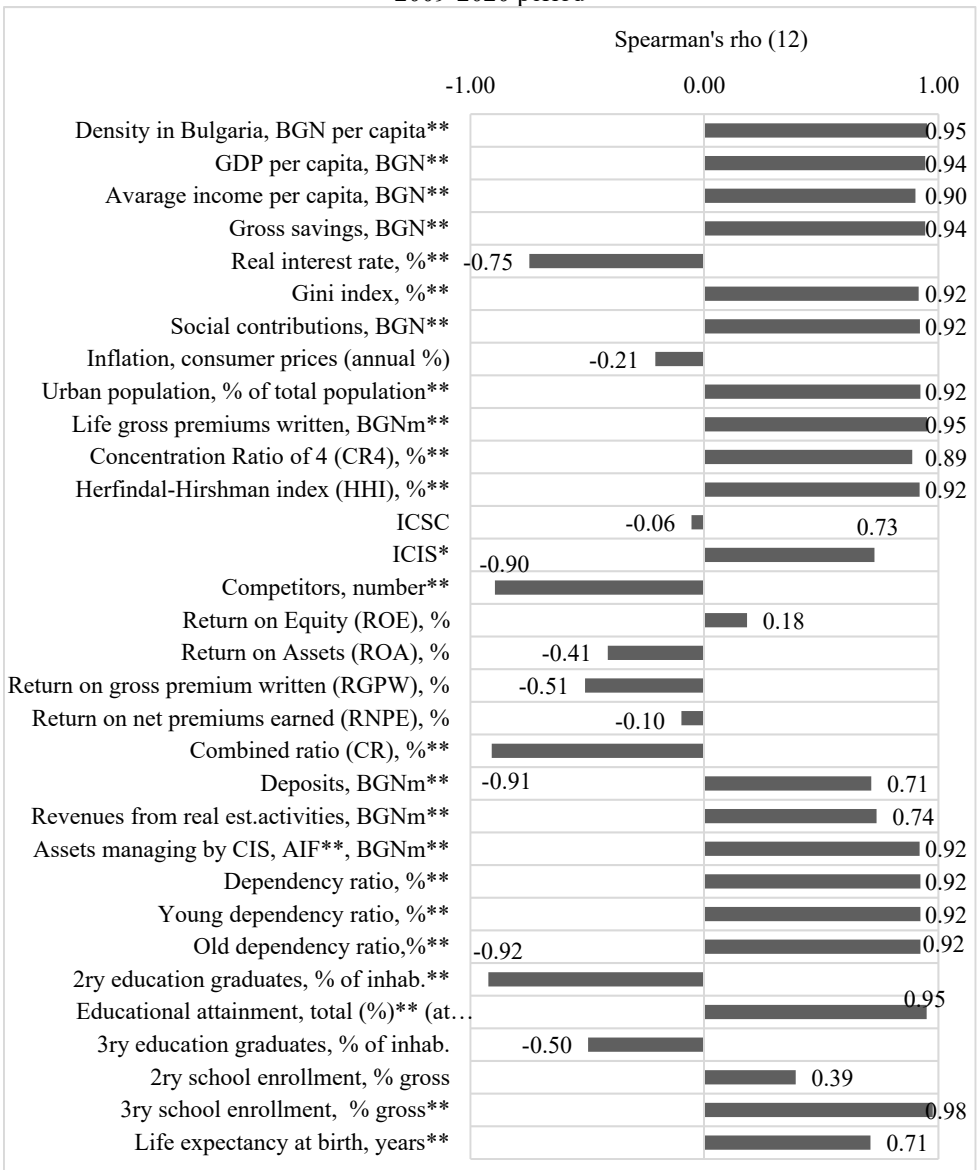
Even though the income per capita has grown by 88.46% in the last 12 years, and the wealth by 74.17%, both indicators remain significantly lower than the average European's. A single Bulgarian's productivity levels are over 3 times lower than the average European's while his/her income is about 6 times lesser. In practice, in spite of the positive significance of the increase of two of the most important economic indicators of insurance penetration in Bulgaria, their absolute size is insufficient to instigate a strong demand for insurances. This problem is made worse by the current pandemic due to the high risk of unemployment and income insecurity which will, in fact, cause an outflow of revenue on the market, despite the benefits of the protective element of life insurances.

[4] The force of influence is evaluated according to (Cohen, 1988).

[5] The life expectancy of a Bulgarian individual is 74 which ranks the country second to last on this indicator in the EU right before Romania. Even the small growth of life expectancy has a higher than typical statistically significant impact on life insurance penetration and hence attests to the value of the features of the protective mechanisms of insurances.

Figure 3

Spearman's rho correlation coefficients between life insurance penetration and its drivers in 2009-2020 period



** Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

Source: Author's calculations based on data from FSC, NSI, BNB, WB.

In conflict with the studies conducted in other states, Bulgarians are characterised by a different brand of logic than the norm in factors of demand such as: distribution of income, inflation, real interest rates and social insurances. The inequality of incomes in Bulgaria, unlike in other countries, has a statistically significant positive effect on life insurance product penetration. With the rise of the Gini index up to 40% in 2019, life insurance penetration increases, which could be explained by the insurance interest of the richer part of the population and vice versa, the negative attitudes of the middle class towards the offered services. As it is in other papers, inflation impacts demand negatively, however, the connection is not statistically significant due to the relatively healthy levels it has, during some years, it's even negative for the period. Real interest rates negatively affect insurance penetration since when they rise, consumers redirect their savings towards more favourable short term plan investments. At the same time, even if the advantages of the offered products are known, the lack of sufficient income (especially among school and university students) and the lack of trust in insurance companies prove to be more significant factors for demand.

It is reasonable to suppose that the increase in social insurances will lead to a decrease in the need for life insurance as a savings instrument for the elderly. However, in Bulgaria, their impact is strong and statistically significant proportionately correlated. The rationale of this dependency is found in two points: a protective function of the insurance service that is absent during the pension and the setup of the pension system in Bulgaria. The latter is based on the principle of solidarity between the generations (the pay-as-you-go system), which practically means that the current workforce pays out the retirement funds of the pensioners via its social tax rate at the same moment of time. Even though adding the other two pillars – supplementary mandatory insurance and supplementary voluntary pension insurance, which make use of the opportunities of the capitalist market to accumulate pension capital, their payout is associated with significant difficulties. The size of pensions is inadequately juxtaposed to the necessity to maintain a normal living standard (Christoff, 2019)[6] and if they wish to preserve their financial independence, Bulgarians are to save and invest independently outside of mandatory pension insurance. This suggests that life insurances are a product that adds to the pension system and with the rise of social insurances, their demand grows too. Consumers are searching for the benefits from the investment of their meagre funds, as the surge in life insurances and inequality of income would prompt insurance interest to a higher degree than education and high-interest percentages.

A competitive environment has a contradictory impact on insurance penetration. The increase in the concentration of the market and the processes of merging and injecting firms have a strong, statistically favourable influence, however, the decrease in the number of competitors does the opposite, it slows down penetration. In practice, this results in the force, image and scale of strategies of the big insurers to be accompanied by the presence of many smaller players around them and creates an imbalance in market distribution to generate an interest and popularise the service. Logically speaking, the growth of the premium revenue of companies leads to a higher significance and preference of the business, yet the levels of profitability and, in this regard, the effectiveness of the market itself do not have a statistically significant impact over the generation of added value from insurance activity which is

[6] The pension is considered to be at least 75% of the gross monthly earnings of the person, prior to retirement. (Ellis, Munnell, Eschtruth, 2014).

probably because of their instability and their overall low levels. The low profitability of the market is owed to insufficiently effective strategic decisions of the enterprises and the small number of competitors who offer the service.

To become centres of security and a healthy way of life, which is done through digital applications and a constant contact and feedback from the population so that insurance interest can be provoked, insurance companies have to deploy large scale activity via propaganda of the benefits of life insurance and a change in consumer attitudes towards it can happen. Most firms should take responsibility for and financially guarantee the realisation of the market's potential. Their offers are to be: (i) personalised by having them focus on maintaining and stimulating a healthy way of life; (ii) transparency and access to information to every single insurance contract and its change in dependence to people's individual needs at any time and any place (omni-channelling of demand); (iii) a supply of life insurances as an addition to related and unrelated goods and services (hybrid products); (iiii) an increase in financial literacy and direct and indirect tax incentive.

Surveys of consumer attitudes regarding life insurance in Bulgaria demonstrate that the main reasons for rejection of life insurance are the lack of trust towards insurance companies, the current lack of interest, or the low income, such as the misunderstanding of the benefits of the service offered and the mentality of the consumers repeating the "nothing is going to happen to me" mantra, add to the scepticism of consumer demand and behaviour (Peeva, 2020; Hristova, Peeva, 2018). As a result of distrust, Bulgarians prioritise investments in: real estate, Collective Investment Schemes and Alternative investments funds or bank deposits. The last investment type is a long time priority for the allocation of excessive funds and their value is 66 times higher than the premiums written of the entire life insurance market. The future of this alternative is unsure due to the nil interest rates throughout the last two years and a rejection from 2 Bulgarian banks from offering such type of products. This will lead to a forceful allocation of resources into the capital and real estate markets, and most probably the life insurance one. In view of the current model of investment behaviour that Bulgarians have, life insurance is not a trade-off choice, rather, it's an eventual addition to a comprehensive investment portfolio. The Bulgarian consumers' mentality has still not shifted to new investment opportunities, which have become a long-time tradition in Western Europe. The Bulgarian individual has not enough financial literacy and, in some cases, lacks a sufficient income to diversify their financial portfolio and this problem is exacerbated due to the pandemic. The bigger the willingness of the Bulgarian towards saving and expanding investment horizon, the better they will be capable of acquainting themselves with the positives and negatives of every alternative and manage to acquire a mentality directed towards protecting one's life, health and senior years. Competition of life insurance companies via offering more attractive products and the kind that are tailored to deal with COVID-19 risks specifically, more flexible channels and their distribution, not only the key one – personal meetings (Sharma, Patterson, 1999; Hatzakis, Nair, Pinedo, 2010) and with a bigger focus on the individual needs of the Bulgarian consumer, becomes a key factor of penetration.

5. Conclusion

The study of life insurance penetration indicates that Bulgarians tend to increase their willingness to apply for life insurance, however, they still remain significantly below the indicators typical for other EU states (H_1 and H_2). The global pandemic is having a negative impact on life insurance premiums in Bulgaria, but it is also an opportunity to shape them as a product specifically structured to protect people's lives and health (H_3). Results are synchronised for a number of studies, the developing economy of Bulgaria not having been significantly affected by life insurance activity, while the benefits from the well-developed life insurance market remain invisible and unappreciated by consumers. Factors such as income, savings, urbanisation, dependency ratio, life expectancy and education, have a definite positive impact on the level of life insurance demand, while other interest rates, unevenness in income distribution, social contributions, have an ambiguous significance. This proves the H_5 hypothesis. Determinants of market competition whose influence is less well studied, signify that it stands out with a concentration and a traditionally small amount of relatively big and well-known competitors that is, however insufficient to deploy a large scale and effective activity by building up the image of life insurance as a good way to protect the health, transference of risk, investment in retirement and expanding on the benefits from life insurance to develop the country's economy (H_4).

Due to their culture and traditionally conservative views, a big part of Bulgarians prefers to allocate their relatively low excess income into more visible and established assets such as deposits or real estate, while life insurance as a financial service with its derivative features is assessed sceptically considering its preventative use and may be viewed as only an addition but not as a replacement of investment preferences. The future of life insurance companies can be seen in serving the interest of turning the customer purchase into an experience for the modern generations of consumers via offer personalisation, omni-channels and the digital connection of data and devices. All that will lead to a more complex and permanent communication with users and with efforts focused on customers' needs, transparent conditions, awareness and trust. On the other hand, Bulgaria, despite its attempts at stimulating the processes in an online environment in response to the pandemic, is in the last – 28 place in the take-up of digital technologies in the economy and society (DESI=36.4), which along with the insecurity of income during COVID-19 suppresses the attempts at improving insurance penetration. If the impact of the pandemic on the market in other countries sets up an expectation for a short-term outflow of funds (Harris, Yelowitz, Courtemanche, 2021), then in Bulgaria, the insurance interest is yet to be established on a sufficient level. To prove its worth on the Bulgarian market, life insurance would have to reimagine itself as a modern trend of prevention of a healthy way of life with a long-term savings component that, by applying the snowball method, is to cover a broader range of persons and with that to ensure an improvement of consumer attitudes and to increase insurance penetration.

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