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Evaluating Cognitive Factors of Attitude Formation: The Impact of the Consumer's Level of Education on the Formation of Attitudes Towards Health Behaviour

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Abstract: The article reviews the impact of cognitive factors on the formation of consumer attitudes towards health behaviour. Following a short overview of the cognitive component (level) of attitude formation and its factors, as well as a theoretical model of the formation of attitudes towards health behaviour, the results of the empirical study are presented to measure the impact of the consumer's level of education on the formation of consumer attitudes towards health behaviour. The evaluation of the results provides some insights, conclusions and directions for future research.

Keywords: attitude formation; cognitive attitude formation; consumer attitudes; formation of attitudes towards health behaviour; health behaviour.

JEL classification: M31; I12.

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1. INTRODUCTION

Attitudes and attitude formation have always been an area of interest for scholars in various fields. As mentioned in the previous publications (Walther *et al.*, 2011; Pratkanis *et al.*, 2014; Crano and Gardikiotis, 2015; Eagly and Chaiken, 2019; Bakanauskas *et al.*, 2022; etc.), attitude formation is a multilevel process that integrates affective, cognitive and behavioural components, and consumer behaviour is the result of this process. When it comes to the formation of attitudes towards health, health behaviours should always be considered. Health behaviour is presented in the scientific literature from different perspectives: risk and fear of disease, lifestyle links with habits and harmful behaviours, past experiences and health behaviour. The analysis of the links between attitudes and health behaviours (de Vries *et al.*, 2018; Hilz *et al.*, 2019; etc.) shows that consumer health behaviours are affected by a wide range of factors (legal, fiscal, demographic, political, etc.). There is a consensus that it is difficult for individuals to affect and change these legal, demographic and economic factors. Such changes and decisions require the intervention of national governments or global institutions (e.g. taxes on tobacco and alcohol, reimbursement for vaccines, health policies, reimbursement under certain preventive health programmes, etc.). Consumer attitudes, as a socio-cognitive factor, can be fully or at least partially controlled by an individual. Attitudes, unlike short-term opinions, are tacit and focused on long-term individual perspectives. Since attitudes can be controlled by an individual, research is needed on how to use attitude formation and its factors to understand the causal motives of consumer behaviours. The analysis of scientific literature (Braveman and Gottlieb, 2014; Kelli *et al.*, 2019; Rosengren *et al.*, 2019; Green *et al.*, 2022; etc.) suggests that social inequalities in health behaviour exist, with social status (income, education) being a key factor affecting attitudes towards health behaviour. The same study concludes that the socio-economic status reflects differences in income, educational attainment, health knowledge and attitudes, and lifestyle choices. Less educated consumers are thought to be in poorer health because they use their money on priorities other than those related to promoting or maintaining their health (e.g. bad habits). It is also discussed that the perception of income distribution and priorities may be influenced by limited education and medical literacy of these consumers. The importance of cognitive factors in shaping attitudes towards health behaviour is also suggested by the European Health Literacy Survey (Sørensen *et al.*, 2015; etc.), confirming that one in two respondents lacks health literacy. This highlights the need to improve health literacy among the European population. At the same time, the study overlooks the causal aspects of these results, indicating the need for such studies in Lithuania. The Lifestyle Survey of the Lithuanian Population (Javtokas and Žagminas, 2018; etc.) assesses the overall level of health literacy (index) of the Lithuanian population in three areas (healthcare, disease prevention and health promotion). The results of the survey suggest that the health literacy of the Lithuanian population is insufficient. To improve it, more attention should be paid to health education and disease prevention for the older, less educated rural population. For example, the study highlights the influence of cognitive factors (education, training) on health behaviours. However, most studies lack a cause-and-effect assessment. For instance, how accurate would it be to assume that, at the national level, Lithuanian citizens (hereinafter referred to as consumers) with a higher level of education are more likely to have positive attitudes towards health? Similarly, the more educated consumers are, the more likely they are to have positive health behaviours. From a

cause-and-effect perspective, the consumer's education and health knowledge could be an important factor influencing the consumer's attitude towards health, which significantly affects the consumer's perception of health-promoting behaviours (e.g. physical fitness, nutrition, weight control, psycho-emotional fitness, etc.), health- strengthening behaviours (e.g. exercise, diet, dietary changes, etc.) and health-related behaviours (e.g. smoking, alcohol consumption, etc.), health-protective behaviours (e.g. preventive measures, diagnostic tests, dietary supplements, etc.) and avoidance of harmful behaviours (e.g. restriction of unhealthy products, avoidance of alcohol, tobacco, avoidance of harmful environments, etc.), while health behaviour is the result of formed attitudes towards health.

Therefore, the research question is as follows: *How does the consumer's level of education affect their attitude towards health behaviour?*

The research target is the impact of the consumer's level of education, as one of the cognitive factors of attitude formation, on their attitudes towards health behaviour.

The object of this publication is to assess the impact of the consumer's level of education on the formation of consumer attitudes towards health behaviour, based on the theoretical model of attitude formation towards health behaviour and the results of the empirical study.

A quantitative research design was chosen to examine the means of different variables, make predictions, test causal relationships between factors of attitude formation and health behaviours and generalise results to a wider population. The quantitative research design allows for a relatively broad sample of respondents. It focuses on the breadth of the sample rather than the depth, which was necessary for this study to reflect the experiences and attitudes of the entire population of Lithuania about health, based on individual empirical experiences and individual observations (Creswell and Poth, 2017; Creswell and Creswell, 2018; etc.). Quantitative research does not require the modelling of situations, the use of paradigms or the involvement of the interviewer, but rather the neutrality of the interviewer, who is not collecting facts but the individual experiences of respondents. Therefore, the quantitative research was chosen for assessing the impact of attitude formation factors on health behaviours, i.e. establishing the relationship between two independent variables – attitudes and behaviours – in a given population. A questionnaire survey of the Lithuanian population aged 18-65 was conducted to reflect the health attitudes of the entire Lithuanian population. The sample size was 1,000 respondents. The interview was based on the CAWI (computer-assisted web interviewing) method. The target respondents were selected using the Norstatpanel. The survey ran from 1 September to 31 October 2021. The results were analysed by the SPSS software. The relationship between different attitudes and behaviour variables was analysed using non-parametric statistical methods cross-tabulation and the Kruscal-Wallis test.

2. CONSUMER'S LEVEL OF EDUCATION AS ONE OF THE COGNITIVE COMPONENTS OF ATTITUDE FORMATION

As stated in the previous publication by the authors of this article, as well as in the analysis of scientific literature (Arendt, 2005; Walther *et al.*, 2011; Pratkanis *et al.*, 2014; Voinea, 2016; Eagly and Chaiken, 2019; etc.), an attitude is a personal and subjective evaluation of a certain attitude object, causing either a positive or negative reaction, while attitude formation involves the integration of affective, cognitive and behavioural components and their factors. For example, the affective component of attitude formation can be defined as individual emotional characteristics such as feeling and emotions (e.g. fear

of disease, fear of disability). The behavioural (cognitive) component involves observing, evaluating and even copying or not copying the behaviour of others. In the cognitive component, the evaluation of objects is not based on emotions (as in the case of affective attitude formation) but on facts.

As mentioned in the other publications by the authors of this article, as well as in the analysis of scientific literature (Conner and Norman, 2021; etc.), the cognitive component of attitude formation is based on personal preferences, experiences and knowledge – factors directly related to the consumer's level of consumer. The process of attitude formation is affected by the following cognitive factors:

- information stored in a person's memory: personal experiences, knowledge and preferences that are directly related to the level of education;
- external information a person gets from external stimuli, such as media, advertising, social groups (family, friends) and their impact.

Factual information is information stored in the consumer's memory (personal knowledge, experiences and preferences) or new external information from external environment stimuli (advertising and media, friends, family, other social groups) – see Figure no. 1.

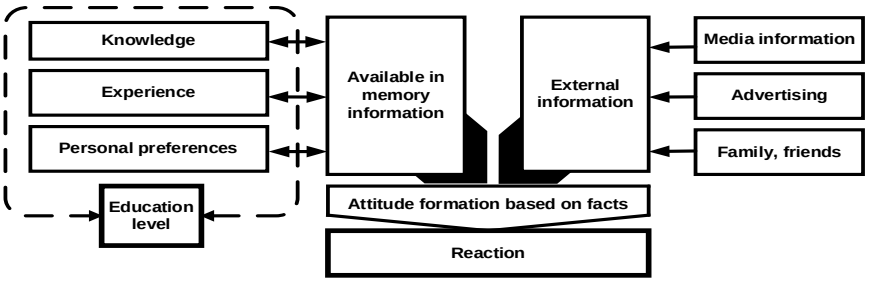

Figure no. 1 – Cognitive component of attitude formation
Source: composed by the authors

Overall, the consumer makes evaluations about an attitude object on the basis of the factual information the consumer gets from external stimuli (media, friends, family, advertising) and the information the consumer stores in their memory (personal knowledge, experiences and preferences). So, information stored in the consumer's memory (knowledge) is inextricably linked to the consumer's education and level of education. All this affects the formation of the consumer's attitude based on facts and leads to a certain (positive or negative) reaction to an attitude object and expression of this attitude with action (behaviour).

In medicine and health psychology, the term 'health behaviour' is used to refer to the protection of consumer health. It encompasses the consumer's activities, initiatives, habits and actions to strengthen and protect their health (Sanders and Suls, 2013; Conner and Norman, 2021; etc.), as well to facilitate the diagnosis and prevention of health diseases in early stages. As stated in the previous publication by the authors of this article, health behaviours can be grouped into three dimensions: **health strengthening behaviours, health protecting (preventive) behaviours and avoidance of health-harmful behaviours. They are all presented in the *attitude formation towards health behaviour model*** (Figure no. 2).

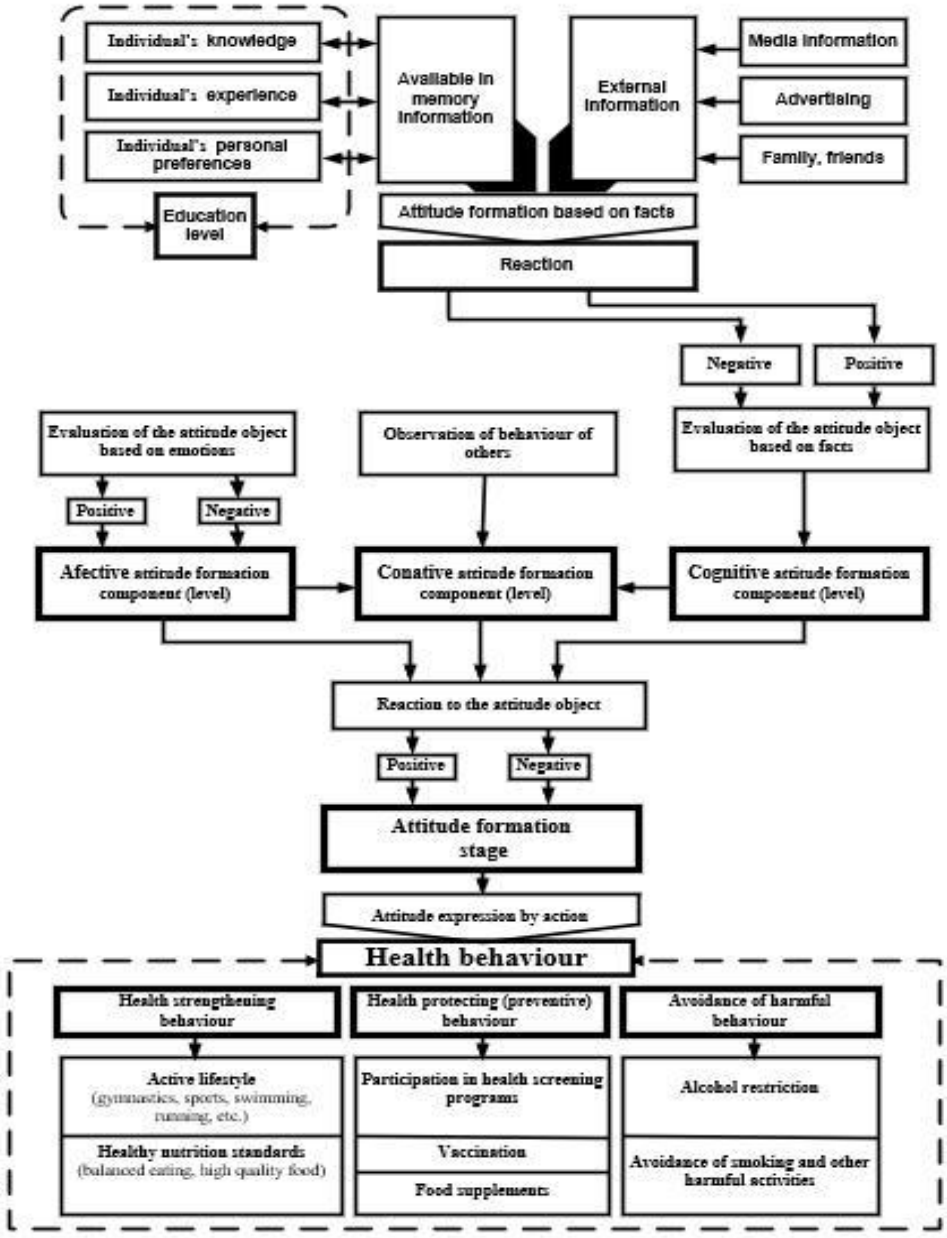

Figure no. 2 – Attitude formation towards health behaviour model
Source: composed by the authors

As illustrated above, the *attitude formation towards health behaviour model* shows the causes and consequences related to the formation of consumer attitudes and health

behaviours. For example, external stimuli and external information (e.g. received from the media, advertising, family and friends), one of the cognitive components of attitude formation, can affect the formation of certain consumer attitudes, and the expression of those attitudes with reactions and actions can affect certain consumer behaviours. While internal information (such as personal characteristics, experiences, preferences and knowledge), hence the consumer's level of education, can be defined as a causal cognitive factor that forms attitudes (attitudes towards health behaviour). These insights have served as a basis for the research hypotheses and some of the conclusions of the empirical study.

3. IMPACT OF THE CONSUMER'S LEVEL OF EDUCATION ON THE FORMATION OF ATTITUDES TOWARDS HEALTH BEHAVIOUR. RESEARCH HYPOTHESES

Scientists (Goldman and Smith, 2002; Arendt, 2005; Cutler and Lleras-Muney, 2006; Hilz *et al.*, 2019; etc.) agree that socio-economic groups vary considerably in terms of health status and behaviour and that it is not only health status that is different but also health-related behaviour between different consumers (individuals, consumers or consumer groups). They discuss the potential causes of this and what trends may emerge. The assumption is that perhaps more educated, higher-income consumers take a more active role in disease prevention and control, leading to differences in health status and health behaviours (Goldman and Smith, 2002; etc.). It is argued that lower-income consumers are in poorer health not only because they lack finances, but also because they spend their money on other priorities than healthcare or diagnostics (Marmot, 2002; Hilz *et al.*, 2019; etc.). This could probably be explained by a lack of education and knowledge. Consumers' knowledge and level of education may also affect their health behaviours and even increase their access to resources to improve health.

The links between socioeconomic aspects and health behaviours show that health behaviours may vary depending on the economic level of each country and should therefore be assessed at the national level of each country. The effects of social inequality manifest in health behaviours, in particular smoking, alcohol consumption, diet and physical activity, suggesting that the social inequality factor (level of education, income, etc.) may affect consumer attitudes towards health and health behaviours. Thus, it can be assumed that the socio-demographic profile of consumers, which may include not only the above-mentioned socioeconomic status, but also socio-demographic characteristics such as the level of education, knowledge and awareness, has a significant impact on the formation of attitudes towards health. Some aspects of the consumer's personal demographic profile (e.g. level of education) are classified as cognitive factors that shape consumer attitudes. In the *attitude formation towards health behaviour model* (Figure no. 2) this is referred to as stored information. This raises the question about the causal-and-effect relationship between this factor of attitude formation (level of education) and health behaviours. For example, how valid would it be to assume on a national scale that Lithuanian consumers with higher education have a strongly expressed cognitive component of attitude formation, leading to more positive attitudes towards health and better awareness of health protecting behaviours, health enhancing behaviours and avoidance of harmful behaviour? From the cause-and-effect perspective, the consumer's level of education and health knowledge (cognitive factors of attitude formation) could be the cause of the consumer's health behaviours, and

certain health behaviours could be the consequence of formed attitudes. In summary, the cognitive factor of consumer attitude formation (see Figure no. 2, level of education) could be a causal factor that forms the consumer's attitude towards health behaviour. These insights have served as a basis for the research hypotheses and the empirical study of the impact of the cognitive component (the level of education) on the formation of consumer attitudes towards health behaviour.

4. RESEARCH HYPOTHESES

Taking into account the insights from the scientific literature review and the *attitude formation towards health behaviour model* (Figure 2), the following research hypotheses have been formulated:

- **Null hypothesis:** Lithuanian consumers' attitudes towards health do not differ depending on the level of education.
- **Alternative hypothesis1 (A1):** Lithuanian consumers with a university degree are more likely to have positive attitudes towards health.
- **Alternative hypothesis1 (A2):** Lithuanian consumers with non-university education are less likely to have positive attitudes towards health.

5. RESEARCH METHODOLOGY

A quantitative study was conducted to explore the relationship between different variables and to compare different variables and data - e.g. factors of attitude formation and health behaviours) (Creswell and Poth, 2017; Creswell and Creswell, 2018; Bougie and Sekaran, 2019; etc.). The empirical study was performed among Lithuanian residents aged 18-65 to reflect the attitudes of the Lithuanian population towards health behaviour. The sample size of the survey was determined using an online sample size calculator. With 1,000 respondents, the survey's results could be analysed with 99% confidence and a ±4% margin of error.

The interview was based on the CAWI (computer-assisted web interview) method, and the target respondents were selected using the Norstatpanel. The survey ran from 1 September to 31 October 2021.

The results were analysed by the SPSS software. The data from the empirical study were analysed using statistical non-parametric methods of cross-tabulation and the Kruskal-Wallis test.

The SPSS software used the cross-tabulation (cross tables) method to compare the distribution of responses among respondent groups and determine whether group differences are statistically significant (Scott *et al.*, 2013; etc.).

The non-parametric Kruskal-Wallis test was used to look for any link between demographic variables (Islam, 2018; etc.). Differences are considered statistically significant when a p-value is 0.05 or lower. The Kruskal-Wallis research data analysis methods provide insight into the relationship between statements (i.e. attitudes towards health behaviour) and demographic blocks (e.g. consumer age, gender, education, etc.). They show the differences that emerge in certain demographic segments. As mentioned earlier, the demographic block of the consumer has been crucial not only in assessing attitudes, but also in their formation (e.g. through the cognitive component).

The hypotheses have been built on the insights from scientific literature and then tested using the results of the empirical study. For this purpose, the significance testing method (significance testing) was used to confirm the hypotheses with statistically significant research results or reject them with statistically insignificant research results (Poletiek, 2013; etc.).

6. RESEARCH RESULTS

Impact of the level of education on the formation of consumer attitudes towards health behaviour

When consumer groups with varying educational backgrounds are compared, it becomes clear that Lithuanian consumers with different levels of education have distinct attitudes towards health behaviour: Lithuanian consumers with higher education (non-university education (a college/bachelor's or master's degree) and university education (a bachelor's, master's or doctoral degree) tend to have more positive attitudes towards health behaviour compared to consumers with lower education (vocational training, school education and incomplete school education) (see Table no. 1).

Table no. 1 – Comparison of attitudes towards health behaviour among groups of Lithuanian consumers with different level of education

less comon			
more common	**Education**		
% from yes/ more yes	**professional school, shool, unfinished shool**	**non university (college, master degree, bachelor degree)**	**university (master degree , bachelor degree, phd)**
Attitudes			
1. In order to prevent diseases, it is necessary to move and exercise	79.0%	89.2%	88.9%
2. A balanced, wholesome diet is extremely important for human health	80.1%	89.7%	88.7%
3. In order to avoid diseases, you need to learn relax and not to stress	82.6%	88.7%	85.3%
4. Preventive researches can help to diagnose the disease in early stage	82.9%	86.7%	88.5%
5. In order to prevent diseases, it is important to take food supplements	30.2%	31.8%	31.3%
6. In order to avoid diseases, it is necessary to avoid harmful habits	75.8%	77.9%	82.4%

To sum up, better educated Lithuanian consumers are more likely to have positive health attitudes. No significant differences are observed only with the attitude 'it is important to use food supplements to avoid diseases.

To determine statistical significance, the Kruskal-Wallis test was employed to compare the distribution of responses between groups of respondents at all levels of education, and some significant differences ($p < 0.05$) were found (see Table no. 2).

Table no. 2 – Significant differences in some attitudes by level of education

	K3r1: In order to avoid diseases, it is necessary to move and exercise	K3r2: Balanced complete nutrition is extremely important for human health	K3r3: In order to avoid diseases, you need to learn relax and not to stress	K3r4: Preventive examinations help to timely diagnose and start treatment of the disease in an early phase	K3r5: In order to avoid diseases, it is important to take food supplements	K3r6: In order to avoid diseases, it is necessary to avoid bad habits
Chi-Square=x2	34,392	22,042	17,515	8,994	6,335	15,205
df	7	7	7	7	7	7
Asymp. Sig.	,000	,002	,014	,253	,501	,033

Note: a. Kruskal-Wallis Test; b. Grouping variable: D10: level of education

The evaluation of the attitudes of Lithuanian consumers towards health behaviour has revealed statistically significant differences ($p < 0.05$; attitudes K3r1, K3r2, K3r3, K3r6) among different levels of education.

The attitude K3r1 'Physical activity and exercise help to prevent disease' ($\chi2=34.392$, df=7; p= 0.000, Table no. 3) is most common among consumers with a doctoral degree or a non-university (college) master's degree, and least common among Lithuanian consumers with vocational training (see Table no. 3).

Table no. 3 – Attitudes of Lithuanian consumers towards health behavior (K3r1) by level of education

	D10: Eeducation level	**N**	**Rank**	**χ2**	**df**	**Asymp. Sig.**
K3r1: In order to avoid diseases, it is necessary to move and exercise	Not finished scool or lower	13	444,96	34,392	7,000	0,000
	Scool	116	432,35			
	Professional	152	423,25			
	Non university bachelor (college)	159	500,78			
	Non university master (college)	36	560,36			
	University bachelor	263	549,53			
	University master	250	518,22			
	Phd	11	577,23			
	TOTAL	**1000**				

As Table no. 3 shows, the attitude K3r1 'Physical activity and exercise help to prevent disease' depends on the consumer's level of education (Asymp. Sig. is p =0.000, p<0.05). It has been found that better educated consumers are more likely to have positive health attitudes than those with vocational training and lower education.

The attitude K3r2 'A balanced and complete nutrition is extremely important for human health' ($\chi2=22.042$, df=7; p= 0.002, Table no. 4) is most typical for Lithuanian consumers with a non-university (college) master's degree and least typical for Lithuanian consumers with vocational training (see Table no. 4).

Table no. 4 – Attitudes of Lithuanian consumers towards health behaviour (attitude K3r2) by level of education

	D10: Eeducation level	N	Rank	χ2	df	Asymp. Sig.
K3r2: Balanced complete nutrition is extremely important for human health	Not finished scool or lower	13	454,69	22,042	7,000	0,002
	Scool	116	475,78			
	Professional	152	421,14			
	Non university bachelor (college)	159	512,50			
	Non university master (college)	36	556,92			
	University bachelor	263	534,19			
	University master	250	509,93			
	Phd	11	533,86			
	TOTAL	**1000**				

As illustrated in Table no. 4, the level of education has a significant influence on the attitude 'A balanced complete nutrition is extremely important for human health' (K3r2, Asymp. Sig. is p=0.002, p<0.05). Again, a similar trend as with the first attitude (K3r1) emerges, showing that consumers with higher education have more positive health attitudes than Lithuanian consumers with vocational training and lower education.

The attitude K3r3 'You need to learn to relax and manage stress to prevent disease' (χ2=17.515, df=7; p= 0.014, Table no. 5) is most common among Lithuanian consumers with a non-university (college) master's degree and least common among Lithuanian consumers with school education (see Table no. 5).

Table no. 5 – Attitudes of Lithuanian consumers towards health behaviour (attitude K3r3) by level of education

	D10: Eeducation level	N	Rank	χ2	df	Asymp. Sig.
K3r3: In order to avoid diseases, you need to learn relax and not to stress	Not finished scool or lower	13	443,42	17,515	7,000	0,014
	Scool	116	425,10			
	Professional	152	476,19			
	Non university bachelor (college)	159	518,63			
	Non university master (college)	36	581,86			
	University bachelor	263	523,37			
	University master	250	504,74			
	Phd	11	527,50			
	TOTAL	**1000**				

As shown in Table no. 5, the level of education has a significant impact on the formation of positive attitudes towards health behaviour (attitude K3r3 'Physical activity and exercise help to prevent disease'). The same pattern of results can be seen again when evaluating Lithuanian customers' health attitudes as with the previous attitudes (K3r1 and K3r2).

The attitude K3r6 'You need to avoid bad habits to prevent disease' (χ2=15.205, df=7; p= 0.033, Table no. 6) is most common among Lithuanian consumers with a non-university (college) master's degree and least common among Lithuanian consumers with incomplete school or lower education (Table no. 6).

Table no. 6 – Attitudes of Lithuanian consumers towards health behaviour (attitude K3r6) by level of education

	D10: Eeducation level	N	Rank	χ2	df	Asymp. Sig.
K3r6: In order to avoid diseases, it is necessary to avoid bad habits	Not finished scool or lower	13	334,04	17,515	7,000	0,014
	Scool	116	460,31			
	Professional	152	480,37			
	Non university bachelor (college)	159	493,34			
	Non university master (college)	36	600,63			
	University bachelor	263	518,79			
	University master	250	511,34			
	Phd	11	491,36			
	TOTAL	**1000**				

Table no. 6 shows that the level of education has a significant effect on the formation of positive attitudes towards health behaviour (attitude K3r6 'You need to avoid bad habits to prevent disease'). Yet, compared to other Lithuanian consumers with higher education, Lithuanians with a doctoral degree tend to have a less positive health attitude. That being said, they represent a small proportion of respondents and therefore their data will not be further analysed.

In light of the statistically significant data from the results of the empirical study, the following conclusions can be made:

- The level of education has a significant effect on the formation of attitudes towards health behaviour. Better educated Lithuanian consumers are more likely to have positive attitudes compared to people with a lower level of education. Lithuanian consumers with higher education have more positive attitudes toward health behaviour than consumers with vocational training and lower education.
- In terms of the level of education, the most positive attitudes towards health behaviour are typical for Lithuanian consumers with a non-university master's degree, while the least positive attitudes are common among Lithuanian consumers with vocational training, school or incomplete school education.

Summarising the results of the empirical study, Lithuanian consumers with higher education are more likely to have positive attitudes towards health behaviour because they are more likely to seek information, show interest in health and healthy lifestyles, and search for information. The empirical study reveals that people with higher education are more likely to search for information. This finding supports the cognitive component of consumer attitudes toward health behaviour and its importance in the formation of positive consumer attitudes towards health behaviour, as presented in *attitude formation towards health behaviour model* (Figure no. 2).

The null hypothesis 'Lithuanian consumers' attitudes towards health do not differ depending on the level of education' has been rejected after testing and evaluating the hypotheses on the basis of statistically significant or insignificant results. Also, the analysis of the results reveals that Lithuanian consumers with higher education have more positive attitudes towards health behaviour than those with non-university education (people with a doctoral or non-university master's degree lead in all response groups). Alternative Hypothesis 1 (A1) 'Lithuanian consumers with a university degree are more likely to have positive attitudes towards health' and Alternative Hypothesis (A2) 'Lithuanian consumers with non-university education are less likely to have positive attitudes towards health' have both been confirmed.

Thus, to sum it up, the level of education makes a significant impact on the formation of consumer attitudes towards health behaviour, and the formed attitudes (positive or negative) are likely to result in the presence or absence of health behaviour – attitudes expressed in action. The impact of the cognitive factor under study – the level of education – on consumer attitudes towards health behaviour can be illustrated as follows (Figure no. 3).

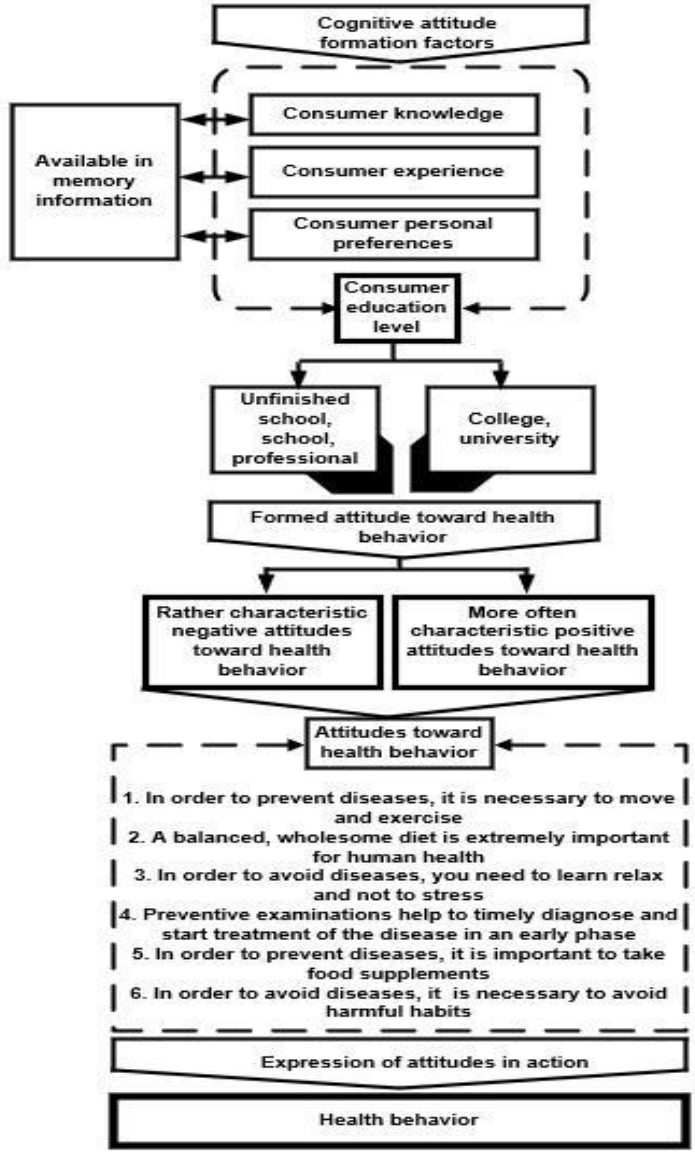

Figure no. 3 – Cognitive factors of attitude formation: the impact of the consumer's level of education on the formation of consumer attitudes towards health behaviour

Based on Figure no. 3, we confirm that the formation of consumer attitudes towards health behaviour is affected by certain cognitive factors, such as the level of education analysed in the empirical study and related to the information stored in the consumer's memory (knowledge, preferences, experience). The empirical study has revealed that the Lithuanian population with higher education (college, university) are more likely to have the following statistically significant positive attitudes towards health behaviour:

- physical activity and exercise help to prevent disease;
- a balanced, wholesome diet is extremely important for human health;
- you need to learn to relax and manage stress to prevent disease;
- you need to avoid bad habits to prevent disease.

These statistically significant positive attitudes towards health behaviour are attributed to certain directions of health behaviour:

- physical activity and exercise help to prevent disease –> **health strengthening behaviour**;
- a balanced, wholesome diet is extremely important for human health –> **health strengthening behaviour**;
- you need to learn to relax and manage stress to prevent disease –> **avoidance of harmful behaviour**;
- you need to avoid bad habits to prevent disease –> **avoidance of harmful behaviour**.

Based on the research results and Figure no. 3, it can be argued that attitudes towards health behaviour are the cause of health behaviours, and that behaviours as such are the consequence of the formed attitudes (=expression of attitudes in action). It can therefore be assumed that these formed attitudes already presuppose certain future trends with the directions of consumer health behaviour. For instance, the statistically significant attitudes 'Physical activity and exercise help to prevent disease' and 'A balanced, wholesome diet is extremely important for human health' imply the health strengthening direction of health behaviour, while the statistically significant attitudes 'You need to learn to relax and manage stress to prevent disease' and 'You need to avoid bad habits to prevent disease' indicate the health behaviour direction of avoiding harmful behaviour (Figure no. 4).

***Figure no. 4* – Statistically significant positive attitudes towards health behaviour. Consumers with higher education**

As illustrated in Figure no. 4, consumers with higher education level have more statistically significant positive attitudes towards health behaviours that imply two health behaviour directions: health strengthening behaviour and avoidance of harmful behaviour. Since behaviour is the result of an attitude formation process (the expression of attitudes in action), the next question is whether those formed positive attitudes towards health behaviour (Figure no. 4) are reflected in the actual behaviour of consumers? Are people with lower levels of education less likely to engage in health strengthening behaviours and less likely to avoid harmful behaviours than people with higher levels of education? Therefore, future research should review the results of the study evaluating the impact of the consumer's level of education on consumer health behaviours. These are the guidelines for the next research paper.

7. CONCLUSIONS

The literature of the foreign authors analysed in this paper has raised the issue of inequalities in terms of the level of education, health literacy and health behaviours of consumers. The study results of the Lithuanian population show that positive health attitudes are more prevalent among Lithuanian consumers with higher education. This confirms that the level of education has a significant impact on the formation of attitudes towards health behaviour. Positive attitudes are more common among more educated Lithuanian consumers and less common among less educated. From a cause-and-effect perspective, the knowledge that a consumer acquires through learning can be the cause of consumer health behaviours, while actual health behaviours are the expression of formed attitudes in action. Whether this trend is reflected in actual consumer health behaviours is a focus for future research.

The study results show that consumers with higher education have more statistically significant positive attitudes towards health behaviours (physical activity and exercise help to prevent disease; a balanced, wholesome diet is extremely important for human health; you need to learn to relax and manage stress to prevent disease; you need to avoid bad habits to prevent disease). This relates to two health behaviour directions: health strengthening behaviour and avoidance of harmful behaviour. Whether the consumer's level of education has an equally significant effect on these behaviours is a subject for future research.

The literature reviewed in this paper also raises the possibility that consumers with lower income are in poorer health, perhaps because they prioritise other things over health. Using the results of consumers' education and health behaviours, this could be one of the avenues for further research.

It is clear that health behaviours are not only affected by social inequalities, where the impact manifests in health behaviours, in particular smoking, drinking, diet and physical activity (Bridger *et al.*, 2023; etc.), but also by differences in the health literacy of each country's population, which is thought to be strongly affected by the consumer's education, income, religion and other demographics (Vaillancourt *et al.*, 2021; etc.). Thus, there is a need not only for consumer research in general, examining the cause-and-effect relationship between consumer attitudes and health behaviours, but also for such research at a national level in each country. The socio-demographic profile of the consumer in that country becomes crucial in this type of research, which may include not only the socio-economic status of the consumer mentioned above, but also socio-demographic characteristics such as the consumer's education, knowledge, occupation and even the demographic profile of the parents. These are also areas for future research.

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