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Consumption of addictive goods in Russian regions and its impact on the quality of human capital

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ABSTRACT
Research relevance. Consumption of addictive goods and its impact on the human capital is widely discussed in contemporary research literature, not only on the micro- and macro- but also on the meso-level. At the present stage of the ongoing transformations we are prompted to reassess current approaches to this problem and to re-evaluate its public significance; moreover, practical application of available research outcomes should also be reconsidered. In Russia, consumption of addictive goods is subject to significant regional variations determined by socio-economic and other factors. **Research aim.** The study is aimed at investigating the impact of consumption of addictive goods (alcohol) on the quality of Russian consumers' human capital and at building a system of indicators to estimate this impact. **Data and methods.** The study uses the methods of comparative analysis, expert estimation, ranking, and economic-statistical analysis, it also proposes a spatial approach to problems associated with regional variations in human capital of consumers of addictive goods. The study relies on the Russian and international research evidence; the data of the Federal State Statistics Service and its regional offices; expert estimates and the authors' own calculations. **Results.** The study demonstrates the connection between consumption of addictive goods and consumers' human capital. It also describes a system of statistical indicators that can be used for estimating the impact of alcohol consumption on human capital and the criteria such indicators should meet. Based on the proposed indicator set, the study analyzes and compares the trends in human capital deterioration on the regional and national levels. As a result of cross-regional analysis, regions with the highest and lowest figures of human capital deterioration are identified. **Conclusions.** As their addiction progresses, alcohol consumers face an increasing devaluation of their human capital. This parameter varies significantly across Russian regions due to a range of climatic, regional, and socio-economic factors, which should be taken into account when devising and implementing regional alcohol policies. The existing system of statistical observations uses a limited set of indicators that needs to be expanded to allow for a more comprehensive cross-regional analysis.

KEYWORDS
addictive goods, consumer behaviour, theory of consumer demand, government regulation, human capital, regional variation, regional policy

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Влияние аддиктивных товаров на качество человеческого капитала потребителей: региональный аспект

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АННОТАЦИЯ
Актуальность. Разработка научной проблемы формирования человеческого капитала потребителей аддиктивных товаров приобретает все большую актуальность не только на микро- и макроуровне, но и на мезоуровне. Современный этап трансформационных процессов заставляет переосмысливать представления об указанной проблеме, ее общественной значимости, использовании прикладных результатов исследований. В российских условиях актуальность изучения территориальных аспектов дифференциации потребления аддиктивных товаров связана с высокой поляризацией соци-

КЛЮЧЕВЫЕ СЛОВА
аддиктивные товары, потребительское поведение, теория потребительского спроса, государственное регулирование, человеческий капитал, региональные различия, региональная политика

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ально-экономического положения регионов и многообразием факторов ее определяющих. **Цель исследования.** Выявить результаты влияния аддиктивных товаров на качество человеческого капитала потребителей в регионах России (на примере потребления алкогольной продукции) и сформировать систему показателей, определяющих тенденции указанного процесса. **Данные и методы.** В исследовании были использованы методы сравнительного анализа, экспертных оценок, ранжирования, методы экономико-статистического анализа. Предложен пространственный подход к исследованию проблем региональной дифференциации показателей человеческого капитала потребителей аддиктивных товаров. Информационную базу исследования составили результаты исследований отечественных и зарубежных экономистов потребления аддиктивных товаров; официальные данные Федеральной службы государственной статистики и ее территориальных органов, а также экспертные оценки и авторские расчеты. **Результаты.** Раскрыта связь между потреблением аддиктивных товаров и человеческим капиталом потребителя; обоснованы требования к показателям, которые целесообразно использовать для оценки влияния на человеческий капитал потребления алкоголя; с учетом данных требований предложена совокупность статистических показателей; проведена оценка динамики показателей деградации человеческого капитала на общероссийском уровне и межрегиональные сравнения. В ходе межрегиональных сравнений выделены регионы с наиболее высокими и наиболее низкими показателями деградации человеческого капитала. **Выводы.** Злоупотребление аддиктивными товарами сопровождается деградацией человеческого капитала индивида по мере роста зависимости. Уровень «деградации» человеческого капитала от потребления аддиктивных товаров в российских регионах значительно варьируется в силу многообразия климатических, религиозных, социально-экономических особенностей, которые необходимо учитывать при разработке и реализации дифференцированной антиалкогольной политики. Существующая система статистических наблюдений позволяет провести межрегиональные сравнения по ограниченному числу показателей и нуждается в совершенствовании.

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Introduction

Consumption of harmful addictive goods presents an interesting problem for researchers. G. Becker [1], G. Edwards [2], J. Gruber [3], J.V. Koch, and S. Group [4] devote considerable attention to consequences of addictive consumer behaviour, in particular the development of bad habits. The scale of the negative consequences of consumption of goods posing health risks and the rapid deterioration of consumers' human capital determine the practical relevance of research in this area. Consumption of addictive goods and its negative consequences are determined by a range of economic, social, psychological and other factors, which vary considerably across regions and countries. That being said, significant regional variations are observed in consumption patterns as well. In Russia, the level of consumption of addictive goods is quite high, although there has been a long-term downward trend. For example, in the commodity market, the retail turnover of alcoholic beverages and tobacco products fell from 19 % in 1970 to 9% in 2015 [5; 6]. However, there are multifold regional differences in the consumption of these goods and in its negative effects.

In the light of the above, the purpose of this study is to describe the changes in the human capital of consumers of addictive goods in Russian regions by focusing on alcohol consumption.

The following research objectives would facilitate the achievement of this aim. First, we are going to characterize the existing approaches in Russian and international research to the choice of indicators for analysis of the deterioration of human capital due to consumption of addictive goods. Second, we are going to develop a system of indicators to estimate the impact of alcohol consumption on consumers' human capital and apply these indicators for cross-regional comparative analysis (our findings can be used for devising national and regional alcohol policies). Finally, we will rank Russian regions depending on the levels of deterioration of the human capital caused by alcohol consumption.

Literature review

Economic analysis of addictive consumer behaviour relies on a range of methodological and theoretical frameworks, such as neoclassical economics, institutionalism and neoinstitutiona-

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lism. G. Becker and K. Murphy's model of 'rational addiction' [7] laid the foundation for a large number of theoretical and practical studies, such as A.Maynard and A.Wagstaf's study of government intervention into the illicit drug markets in the UK [8]; F.Chaloupka and K.Warner's study of the myopic behaviour of consumers underestimating the risks of smoking [9]; D. Gieringer's study of cannabis legalization [10]; mathematical analysis justifying controlled partial legalization of currently illicit drugs and the analysis of the data on cocaine and marijuana demand among the youth by F. Chaloupka, M. Grossman and J. Tauras [11]; liquor consumption analysis by B. Baltagi and J. Griffin [12]; K. Wangen's discussion of the problems arising in the course of econometric implementation of rational addiction theory [13]; models of alcohol consumer behaviour in different stages – 'periodic bingers', 'in recovery', and 'detox' [14]; B.Gordon and B.Sun's dynamic model of rational addiction [15]; and D. Evans's study of the socio-economic impacts of marijuana legalization [16]. In Russia, there are comparatively few studies that use economic models of addictive behaviour with the exception of the research published by M. Levin [17], K. Filippov [18], M. Ponomareva [19] and L. Timofeev [20].

Although, according to the classical rational addiction theory, consumers of addictive goods are expected to behave as rational utility maximizers, in reality their behaviour tends to be more complex and inconsistent as they may lose sight of their budget constraints and ignore the future consequences ('conscious' lifetime utility maximization leading to the lethal outcome), which requires further analysis.

International research of the alcohol market, which is a typical addictive market, distinguishes between two types of consumption: the northern type characterized by heavy drinking of strong liquors while the southern type, by the prevalence of wine and beer consumed in relatively small doses[1] [2; 15; 16]. There are also different forms of state regulation of addictive markets such as state monopolies over retailing alcoholic beverages or monopolies on manufacturing and distribution of alcohol; the use of state licensing to control the competition on the alcohol market [21–23]. In both cases, state plays a key role in this market. Despite the diversity of consumption types and market regulation models as well as considerable regional disparities in socio-economic development, Russia continues to implement a unified federal alcohol policy.

Indicators to measure the alcohol-related deterioration of consumers' human capital

Personal consumption is crucial for the formation of human capital. Consumption of vital goods ensures simple reproduction of human capital while consumption of such commodities as education, science, and medicine provides expanded reproduction of human capital. The human capital of an employee who has begun to consume addictive products in abnormal doses will decline. For a woman, it takes on average about 3–5 years to develop an addiction; for men, 8–9 years of regular consumption of alcoholic beverages [24]. According to the Labour Code of Russia, an employment contract can be terminated by the employer if an employee shows up to work in the state of alcohol, drug or toxic intoxication [25].

Top executives of enterprises consider alcohol abuse as the third most important health issue facing their employees (after smoking and cardiovascular diseases). Most top executives (74%) believe that alcohol abuse has a negative impact on their companies' performance [26]. Alcohol addicts are likely to lose a stable source of income and engage in low-paid menial work. The share of unskilled labor in GDP of developed and developing countries, including Russia, is shrinking, and in technologically advanced countries it is already vanishingly small [26], so the human capital of unskilled workers will increase together with the growth rate of the real gross domestic product of the world economy or may remain unchanged.

C. Loveland-Cherry brought to light the inverse relationship between academic performance and alcohol consumption among students [27]. They also showed a positive relationship between increasing alcohol consumption, on the one hand, and low academic performance and school absenteeism, on the other. P. Cook and M. Moore found that heavy drinking in high school (consumption of alcohol twice a week) reduces the average number of years of schooling completed after high school by 2–3 years [28]. V. Kim and S. Roschin demonstrated that alcohol abuse among males has a significant negative effect on employment op-

[1] Economic forecast «The World in 2050» (2015). Joint Stock Company «PricewaterhouseCoopers Audit». (In Russ.) Retrieved from: http://www.pwc.ru/ru/press-releases/2015/economic_forecast_2050.html

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portunities, wage level and the number of hours worked [6].

The WHO[2], G. Edwards [2], E. Andreev and I. Zbarskaya [29] show that consumption of addictive goods has a negative impact on people's physical and mental health and increases their vulnerability to various illnesses. V. Grigoryev and Y. Zeitlin explain the increase in new HIV diagnoses since 1996 in Russia by the spreading substance use and abuse [30]. Alcohol plays an important role in Russian 'supermortality' – deaths from such causes as homicide, suicide, road accidents, injuries, fatalities and so on [31]. In Russia, 61% of deaths from external causes are alcohol-related[3]. According to D. English, in developed countries, 34% of deaths from drowning, falls and road injuries as well as 47% of homicides, 41% of suicides and 44% fire deaths were attributable to alcohol consumption[4].

The influence of addictive goods on life expectancy was discussed by K. Danishevsky [32], A. Korotaev and D. Khalturina [33], A. Nemtsov and A. Podlazov [26; 34–35]. It is shown that an increase in effective consumption of 1 litre per person a year lowers the average life expectancy for men by 0,84 ± 0,04 years and for women, by 0,32 ± 0,03 years [34].

There is a broad range of indicators reflecting different aspects of alcohol-related human capital deterioration, which makes systematization of these indicators a problem in its own right [36; 37]. In the context of our study, however, the main challenge is to select the indicators suitable for estimating the influence of alcohol consumption on human capital and for making cross-regional comparisons. In our view, these indicators should meet the following criteria:

– they should be among the indicators used for regular monitoring by the official statistical and other state agencies or by expert organizations;

– they should include regional and federal-level data;

– they should reflect direct rather than indirect influence of alcohol consumption on the quality of human capital.

It is necessary to have access to long-term statistical observations in order to detect random variations, make forecasts, and use methods of economic-statistical analysis and modelling to formulate evidence-based guidelines and recommendations. Availability of the regional-level data, in its turn, enables us to draw cross-regional comparisons and bring to light the role of different factors in specific regions in shaping alcohol consumption patterns. As for the third requirement, it helps us eliminate ambiguity in the interpretations of the results. Table 1 summarizes the indicators we are going to use in our analysis.

Table 1

Indicators of alcohol-related deterioration of human capital in Russian regions

Indicator	Notation
Number of deaths from alcohol poisoning per 100,000 people, ths people	HC_1
Number of alcohol-related crimes per 100,000 people, units per year	HC_2
Household consumption expenditures on alcoholic beverages, % of aggregate consumer expenditures	HC_3
Number of newly diagnosed cases of alcoholism and alcohol-induced psychosis per 100,000 people	HC_4
Number of cases of recurrent alcoholism and alcohol-induced psychosis per 100,000 people	HC_5
Percentage of adult non-drinkers, %	HC_6

Indicator HC_1 is calculated by the Federal State Statistics Service (Rosstat) as a ratio of the number of alcohol-related deaths to mid-year population.

Indicator HC_2 is calculated as a ratio of the number of alcohol-related crimes (from the number of investigated crimes) to mid-year population. For this indicator we used the data from Form '3-EGS' of the Federal Statistical Monitoring 'Data on Registered, Solved and Unsolved Crimes', based on the reports of the information centres of regional law enforcement agencies.

Indicator HC_3 relies on the data of the household sample surveys conducted by Rosstat.

Indicator HC_4 is computed by Rosstat as an integer of the number of newly diagnosed cases of alcoholism and alcohol-induced psychosis and

[2] WHO. Global Status Report on Alcohol. (2004). Country profile. Retrieved from: http://whqlibdoc.who.int/publications /2004/9241562722_(425KB).pdf

[3] Report of the Public Chamber of the Russian Federation of May 13, 2009 'Alcohol abuse in the Russian Federation: socio-economic consequences and countermeasures'. Public Chamber of the Russian Federation. (In Russ.) Retrieved from: http://www.oprf.ru/files/dokladalko.pdf

[4] The average monthly nominal wages of employees of organizations of the Russian Federation in 1991–2016. Federal State Statistics Service. (In Russ.) Retrieved from: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/wages/

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the end of year population by using the following formula:

$$HC_4 = a/b \cdot 100\,000,$$

where a is the number of newly diagnosed cases of alcohol and alcohol-induced psychosis and b is the end of year population;

Indicator HC_5 is the number of cases of recurrent alcoholism and alcohol-induced psychosis per 100,000 people calculated by Rosstat the same way as indicator HC_4.

Indicator HC_6 is based on the data provided by the Russian Public Opinion Research Center (VTsIOM). Their telephone survey covered 1,600 respondents aged 18 or older. The survey was conducted by using stratified dual-frame random sample based on a complete list of landline and mobile phone numbers operating in Russia. So far VTsIOM has provided no geographic breakouts of their survey data for Russian regions.

Analysis of the impact of alcohol consumption on human capital (national and regional aspects)

The above-described indicators were tested and found suitable for analyzing the impact of alcohol consumption on human capital in Russia on the regional and national levels. Table 2 illustrates the level of deterioration of human capital associated with alcohol consumption in Russia.

Overall, we can observe downward trends in the indicators characterizing the alcohol-relatead deterioration of human capital in Russia. The most remarkable trend is an almost 30% decrease in the number of deaths from alcohol poisoning. Interestingly, the share of alcohol in consumer expenditures of households has remained virtually unchanged. There is a gradual decrease in the number of alcohol-related crimes as well as in the number of people suffering from alcoholism and related psychiatric disorders. Nevertheless, these figures are still quite high in Russia.

At the next stage of our analysis, we compared these figures in different Russian regions by using the ranking method. First, each region was ranked for each of the indicators H_1–H_5. Then, the total score for each region was calculated by summing its positions in each of the indicators. The regions were ranked (R) from the most successful (top of the ranking) to those lagging behind (bottom of the ranking). The less the region scored, the more successful it was and the higher was its position in the ranking. Since the information for some regions was incomplete, we used the data for 2015, which proved to be sufficient for our calculations and we could systematize the data for all the chosen indicators. Indicators HC_3 and HC_6 were excluded due to the lack of the necessary regional data [37]. Table 3 summarizes the results of our analysis.

The top of the ranking is occupied by such regions as Ingushetia, Chechnya, Dagestan, St. Petersburg and Moscow cities, North Ossetia, Krasnodar region, Karachay-Cherkessia, Belgorod and Stavropol regions. Religion is an important factor shaping consumer behavior in Muslim-majority regions: Ingushetia has the lowest rates of deaths caused by alcohol poisoning, alcoholism and alcohol-induced psychic disorders; Chechnya has the lowest level of alcohol-related crimes; Tatarstan ranks 12th, after Kabardino-Balkaria. Surprisingly, however, religion appears to be less significant in Bashkortostan, which has the 30th position in our ranking.

Table 2

Deterioration of human capital in Russia caused by alcohol consumption

Indicator	2014	2015	2016	2017	2018
Number of deaths from alcohol poisoning per 100,000 people, ths people	10.71	10.41	9.56	8.36	7.5
Number of alcohol-related crimes per 100,000 people, units per year	241.86	273.92	300.09	257.43	239.46
Household consumption expenditures on alcoholic beverages, % of aggregate consumer expenditures	1.7	1.8	1.7	1.6	1.6
Number of newly diagnosed cases of alcoholism and alcohol-induced psychosis per 100,000 people	74.6	70.9	64.9	n/a	n/a
Number of cases of recurrent alcoholism and alcohol-induced psychosis per 100,000 people	1155.4	1076.2	984	n/a	n/a
Percentage of adult non-drinkers, %	n/a	n/a	n/a	39	40

Compiled by the authors by using the data of the Unified Interdepartmental Statistical Information System. Retrieved from: https://gks.ru/emiss (Accessed: 11.04.2020).

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Table 3

Ranking of Russian regions in terms of alcohol-related deterioration of human capital

Regions	RHC_1	RHC_2	RCH_4	RCH_5	∑RCH	R ∑RCH
Central Federal District						
Belgorod region	9	15	18	18	60	9
Bryansk region	47	47	64	81	239	61
Vladimir region	79	52	42	74	247	65
Voronezh region	67	18	70	58	213	49
Ivanovo region	85	37	68	86	276	72
Kaluga region	57	33	41	38	169	35
Kostroma region	48	46	43	78	215	51
Kursk region	24	45	62	52	183	41
Lipetsk region	80	22	48	75	225	56
Moscow region	49	11	19	40	119	21
Orel region	50	32	60	67	209	47
Ryazan region	33	19	32	66	150	28
Smolensk region	54	41	50	65	210	48
Tambov region	62	26	24	80	192	44
Tver region	72	43	28	71	214	50
Tula region	83	17	47	72	219	53
Yaroslavl region	82	27	49	43	201	45
City of Moscow	12	6	8	6	32	5
North-Western Federal District						
Republic of Karelia	61	72	81	77	291	74
Republic of Komi	84	86	55	44	269	69
Arkhangelsk region	73	67	46	57	243	63
Nenets Autonomous District	53	70	82	68	273	70
Arkhangelsk region without autonomous districts	75	66	46	56	243	63
Vologda region	37	76	30	32	175	38
Kaliningrad region	76	35	44	33	188	42
Leningrad region	70	16	10	17	113	19
Murmansk region	56	42	59	15	172	36
Novgorod region	86	54	54	79	273	70
Pskov region	51	40	61	64	216	52
City of St. Petersburg	18	4	4	4	30	4
Southern Federal District						
Republic of Adygea	46	21	25	73	165	33
Republic of Kalmykia	22	20	13	31	86	14
Republic of Crimea	38	12	67	36	153	29
Krasnodar region	11	14	9	8	42	7
Astrakhan region	23	30	15	30	98	16
Volgograd region	28	31	27	19	105	17
Rostov region	5	9	12	34	60	9
City of Sevastopol	19	10	75	16	120	22
North Caucasian Federal District						
Republic of Dagestan	3	3	3	3	12	3
Republic of Ingushetia	1	2	1	1	5	1
Kabardino-Balkarian Republic	16	7	29	12	64	11
Karachay-Cherkess Republic	7	8	7	29	51	8
Republic of North Ossetia	4	5	17	7	33	6
Chechen Republic	2	1	2	2	7	2
Stavropol region	21	13	6	23	63	10

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End of Table 3

Regions	RHC_1	RHC_2	RCH_4	RCH_5	∑RCH	R ∑RCH
Volga Federal District						
Republic of Bashkortostan	26	56	38	35	155	30
Mari El Republic	65	49	56	70	240	62
Republic of Mordovia	42	24	45	46	157	31
Republic of Tatarstan	20	23	22	14	79	12
Udmurt Republic	78	78	66	53	275	71
Chuvash Republic	52	51	69	76	248	66
Perm region	68	73	74	63	278	73
Kirov region	43	79	31	60	213	49
Nizhny Novgorod region	71	29	33	82	215	51
Orenburg region	39	53	76	22	190	43
Penza region	41	34	77	54	206	46
Samara region	6	28	23	24	81	13
Saratov region	29	25	35	50	139	24
Ulyanovsk region	58	44	72	55	229	57
Ural Federal District						
Kurgan region	77	85	63	42	267	68
Sverdlovsk region	60	58	40	9	167	34
Tyumen region	15	62	34	27	138	23
Khanty-Mansiysk Autonomous District (Yugra)	10	50	36	20	116	20
Yamalo-Nenetsk Autonomous District	27	65	79	62	233	59
Tyumen region without autonomous districts	14	71	34	26	145	27
Chelyabinsk region	74	68	51	39	232	58
Siberian Federal District						
Republic of Altai	44	87	26	25	182	40
Republic of Buryatia	69	84	16	11	180	39
Republic of Tyva	32	81	5	45	163	32
Republic of Khakassia	36	83	53	48	220	54
Altai region	13	77	73	47	210	48
Zabaikalye region	63	82	57	41	243	63
Krasnoyarsk region	30	64	65	21	180	39
Irkutsk region	31	59	71	49	210	48
Kemerovo region	59	80	21	13	173	37
Novosibirsk region	34	36	11	10	91	15
Omsk region	64	38	14	28	144	26
Tomsk region	25	55	20	5	105	18
Far Eastern Federal District						
Republic of Sakha (Yakutia)	35	60	84	59	238	60
Kamchatka region	45	39	52	85	221	55
Primorye region	8	57	39	37	141	25
Khabarovsk region	17	61	80	61	219	53
Amur region	66	69	58	51	244	64
Magadan region	81	75	85	84	325	75
Sakhalin region	40	63	83	83	269	69
Jewish Autonomous District	55	48	78	69	250	67
Chukotka Autonomous District	87	74	86	87	334	76

Successful regions Lagging regions

Compiled by the authors by using the data of the Unified Interdepartmental Statistical Information System. Retrieved from: https://gks.ru/emiss (Accessed:12.02 2020).

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Regions of the North-Caucasian Federal District – Dagestan, Ingushetia, Kabardino-Balkaria, Karachay-Cherkessya, North Ossetia, Chechnya and Stavropol region – are in the top of the regions that drink the least alcohol. It may seem surprising that the cities St.Petersburg and Moscow, Krasnodar and Belgorod regions are also at the top despite their relatively high alcohol consumption levels. Their results can be explained by greater efficiency of regional health care and law enforcement agencies. The cities Moscow and St. Petersburg and Krasnodar region have comparatively low alcohol-related crime rates and fewer cases of alcohol-induced disorders and alcoholism. Another driver of these regions' performance is the higher income level, which means that their inhabitants can afford to consume more expensive and, therefore, less toxic alcohol.

The heaviest drinking regions are Chukotka Autonomous District, Karelia, Perm, Magadan and Ivanovo regions, Udmurtia, Nenets Autonomous District, Novgorod region, the Komi Republic, Sakhalin and Kurgan regions, and Jewish Autonomous District. Chukotka Autonomous District and Magadan region have the highest rates of deaths due to alcohol poisoning, alcohol-related crime and the number of cases of alcoholism and alcohol-induced psychosis. Karelia has a high incidence of alcohol-related crime and high rates of alcoholism and alcohol-induced disorders. Perm region also has to struggle with high rates of alcohol-related crime and newly diagnosed cases of alcoholism and alcohol-induced psychosis. Ivanovo region has the highest rate of deaths caused by alcohol poisoning and also the largest number of cases of recurrent alcoholism and alcohol-induced psychosis. In Udmurtia and Kurgan region, there are high rates of deaths caused by alcohol poisoning and alcohol-related crimes. The level of the latter is also high in Nenets Autonomous District, which also suffers from a high incidence of alcoholism and alcohol-induced psychosis. In Novgorod region, the alcohol-related death rate is one of the highest in Russia (in this indicator, Novgorod region is preceded by Chukotka Autonomous District) and a high rate of alcoholism (number of cases of recurrent alcoholism and alcohol-induced psychosis). The Republic of Komi has an extremely high level of alcohol-related violence and rate of deaths caused by alcohol poisoning. Both Sakhalin region and Jewish Autonomous District have high rates of alcoholism (reflected by the two indicators – the number of newly diagnosed cases of alcoholism and alcohol-induced psychosis and the number of cases of recurrent alcoholism and alcohol-induced psychosis).

In this case, it is evident that the high level of deterioration of human capital is closely linked to the general state of economic depression in some regions and the low level of per capita income. Another important characteristic shared by the lagging regions is that they are located remotely from large economic centres.

Conclusion

The results of our study have lead us to the following conclusions:

1. As the addiction progresses, consumption of addictive goods entails more and more severe deterioration of human capital of consumers. There is an inverse relationship between the value of the human capital and the costs incurred by the alcohol consumer.

2. Consumption of addictive goods and its negative consequences is determined by a range of economic, social, psychological, cultural and other factors, which vary considerably across regions and countries. Such regional variation of factors shapes the regional consumption patterns.

3. There is a great variety of indicators that can be used for assessment of the degree of human capital deterioration resulting from alcohol consumption. Their choice depends on the research goals and availability of reliable statistical data. For our study we chose a set of indicators that are regularly monitored on the national and regional level in Russia and that reflect the direct influence of alcohol consumption on human capital.

4. Our analysis based on the proposed set of indicators has shown that there are considerable regional variations in terms of human capital deterioration. Regions with higher income levels and those where religion plays an important role tend to be in a more favorable position than others. What causes more serious concern is that the group of lagging regions is quite large and includes 12 regions. The highest concentration of such regions is found in the Far Eastern and North-Western federal districts. These are peripheral, economically disadvantaged areas.

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5. Our findings can be useful for devising and implementing regional policies aimed to curb consumption of goods with health risks. Such policies should focus on alcoholism prevention at the stages of family and community socialization and socialization in the schooling process. It should be noted, however, that, to achieve a long-term effect, such policies require stable macro-economic conditions and equalization of regional disparities.

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