
330.122

: , 2017, 3 (95), . 254–276

• • , • • , • • , • •

-

-

-

-

-

-

«

»

ordered probit

-

(*RLMS-HSE*).

-

-

-

-

-

-

-

-

(),

1, , 2013 .

, :

(, , [1])

,

,

(, 150 !),

420 . ,

. « » ,

,

100 ,

,

,

,

,

,

,

[9].

¹ URL: <http://www.ipcc.ch/report/ar5/index.shtml> .

« ».

« »

« »

« DICE »

2.

« »

5%

(cost-benefit analysis).

² URL: <http://www.econ.yale.edu/~nordhaus/homepage/DICEmodels09302016.htm> .

« »

» [19], « -

2006 .

: 1) -

; 2) -

; 3) -

(0,1%).

cost-benefit analysis

[7].

« » (

« »), . . . -

« ».

« [2].

« » « » -

« ».

« » -

, ,

, -

-

.

, « » -

, , -

« », -

« » -

,

.

« »

, « [13], « -

» (Government House Utilitarianism)

,

10% 2200 . , -

0,1%, . .

130 129,87 . . , -

« » -

, 1,3%. :

-

-

2006 ., 10 . .?

« », -

4 . , -

, , -

.

-

,

.

... , ... , ... , ...

[8],

(,)

(« »

) ,

« »

1-2 °C,

3-4 . 2000-2020 .

[6],

1993 1994 .

3.

3 « » , « »

« »

	[3].	-
	,	
	,	
	,	
	,	
	[14]	-
	,	
	.	
	U-	
	30-40	
	.	
	,	
	[22; 23],	-
	,	
	,	
	,	
	.	
	,	
	-	
	[16],	
	.	
2004	.,	
	,	
	-	
	1994, 1999	
	,	
	.	
	[10],	
	.	
	[18],	-
	,	
	,	
	,	
	.	
	[4],	
	,	
	.	
	,	
	.	

67, [15], 6, 79, « - », 18,3° . [11] [12] 6

[21],

2000–2011 .,

[17],

«

» «

».

()

(ordered probit):

$$LS_{i,k} = \beta_0 + \beta_1 x_{i,k} + \beta_2 a_{i,k} + \beta_3 \epsilon_{i,k} \quad (1)$$

[5].

$a_{i,k}$, $x_{i,k}$, U , $($, $)$, $,$

$($, $)$

$($, $,$ [4; 6; 11; 14]).

[3], [4], $($, $,$ [4; 15])

. . . , . . . , . . . , . . .

 - , -
 (. . . , -
 , -
). , , -
 (, -
 «1», «2», , -
 2) , -
 , . -
 , -
 . [5], , . -
 , -
 . -
 : -
 -
 (RLMS-HSE), -
 « » « -
 » () 7. RLMS-HSE -
 , -
 . -
 : -
 , , -
 , , -
 , , -

⁷ URL: <http://www.cpc.unc.edu/projects/rlms> ; <http://www.hse.ru/rlms> .

$LS_{i,k}$ – RLMS-HSE: « ?», –
 1 (« »)
 5 (« »).

,
 RLMS-HSE –

RLMS-HSE –
 , ,

,
 ,

30 ,
 RLMS-HSE

, 5 – 1 RLMS-HSE –
 (/ ; ,

),
 , , .
 , ,
 , -
 , -
 « » , , -
 , (-
 RLMS-HSE). , 2014 . 8.
 6,8% . 90,8% (-
) -
 « » -
 , -
 « » -
 , - « »
 » « »

RLMS-HSE,
« » .
(1).
1994–2015 . (

)

.

,

,

	(1)	(2)
	-0,064 (0,008)	-0,058** (0,027)
	-0,037** (0,014)	-0,016 (0,011)
	0,019** (0,006)	0,006*** (0,001)
	0,036*** (0,006)	-0,006** (0,003)
	-0,005 (0,016)	-0,008 (0,006)
	0,083 (0,063)	-
	-0,364*** (0,054)	-
	-	0,064*** (0,035)
	-	0,100*** (0,033)
	0,346*** (0,009)	0,361*** (0,031)
/ 10	-0,559*** (0,036)	-0,441*** (0,058)
/ 100	0,056*** (0,004)	0,046*** (0,004)
	-0,558*** (0,027)	-0,360*** (0,035)
	0,036*** (0,005)	0,015*** (0,004)
	0,130*** (0,015)	0,101*** (0,016)
-	0,051*** (0,013)	0,058*** (0,018)
	0,314*** (0,014)	0,156*** (0,035)
	-0,189 (0,055)	0,031 (0,053)
<i>N</i>	136104	26151
<i>Pseudo-R</i> ³	0,061	0,044

1%- ; : * 10%- ; ** 5%- ; ***

1994–1998 .. (26151 -
RLMS-HSE).

, -
-
:
-
, -
-
« » ,
(« -
»).
, -
()
, -
[6] , -
, -
(1)

() . 1% -
 « » .
 (U-)
 [14; 15],
 red probit) (random effects orde-
 (.).
 , ,
 ,

-
1. http://ru.iszf.irk.ru/images/2/2e/Kotlyakov_17_21.pdf (05.05.2017).
 2. *Carney M.* Breaking the tragedy of the horizon – climate change and financial stability: Speech given at Lloyd's of London 29 September 2015. – URL: <http://www.bankofengland.co.uk/publications/Documents/speeches/2015/speech844.pdf> (17.05.2017).
 3. *Easterlin R.A.* Income and happiness: towards a unified theory // *Economic Journal*. – 2001. – No. 111 (473). – P. 465–484.
 4. *Ferreira S., Akay A., Brereton F. et al.* Life satisfaction and air quality in Europe // *Ecological Economics*. – 2013. – No. 88. – P. 1–10.
 5. *Frey B.S., Stutzer A.* What can economists learn from happiness research? // *Journal of Economic Literature*. – 2002. – Vol. 40, No. 2. – P. 402–435.
 6. *Frijters P., Van Praag B.M.S.* The effects of climate on welfare and wellbeing in Russia // *Climatic Change*. – 1998. – No. 39. – P. 61–81.
 7. *How to value a grandchild* // *The Economist*. – 2006. – Dec. 4 – URL: <http://www.economist.com/node/8374354> (19.05.2017).
 8. *Leppänen S., Solanko L., Kosonen R.* The impact of climate change on regional government expenditures: evidence from Russia // *Environmental and Resource Economics*. – 2017. – Vol. 67, Iss. 1. – P. 67–92.
 9. *Lüthi D., Le Floch M., Bereiter B. et al.* High-resolution carbon dioxide concentration record 650.000–800.000 years before present // *Nature*. – 2008. – Vol. 453. – P. 379–382.
 10. *MacKerron G., Mourato S.* Life satisfaction and air quality in London // *Ecological Economics*. – 2009. – No. 68. – P. 1441–1453.
 11. *Maddison D., Rehdanz K.* The impact of climate on life-satisfaction // *Ecological Economics*. – 2011. – Vol. 70, Iss. 12. – P. 2437–2445.

-
12. *Murray T., Maddison D., Rehdanz K.* Do geographical variations in climate influence life satisfaction? / Kiel Working Paper. 2011. No. 1694. – 42 p.
 13. *Nordhaus W.D.* A Review of the Stern Review on the economics of climate // *Journal of Economic Literature.* – 2007. – No. 45 (3). – P. 686–702.
 14. *Oswald A.J.* Happiness and economic performance // *The Economic Journal.* – 1997. – Vol. 107, No. 445. – P. 1815–1831.
 15. *Rehdanz K., Maddison D.* Climate and happiness // *Ecological Economics.* – 2005. – No. 52. – P. 111–125.
 16. *Rehdanz K., Maddison D.* Local environmental quality and life-satisfaction in Germany // *Ecological Economics.* – 2008. – No. 64. – P. 787–797.
 17. *Sekulova F., Bergh J.C.J.M., van den.* Floods and happiness: Empirical evidence from Bulgaria // *Ecological Economics.* – 2016. – No. 126. – P. 51–57.
 18. *Smyth R., Mishra V., Qian X.* The environment and well-being in urban China // *Ecological Economics.* – 2008. – No. 68. – P. 547–555.
 19. *Stern N.* *The Economics of Climate Change: The Stern Review.* – Cambridge University Press, 2007. – 712 p.
 20. *Stiglitz J.E., Sen A., Fitoussi J.P.* Commission on the Measurement of Economic Performance and Social Progress. 2009. – URL: <http://ec.europa.eu/eurostat/documents/118025/118123/Fitoussi+Commission+report> (06.05.2017).
 21. *Von Möllendorff C., Hirschfeld J.* Measuring impacts of extreme weather events using the life satisfaction approach // *Ecological Economics.* – 2016. – No. 121. – P. 108–116.
 22. *Welsch H.* Environment and happiness: Valuation of air pollution using life satisfaction data // *Ecological Economics.* – 2006. – No. 58. – P. 801–813.
 23. *Welsch H.* Preferences over prosperity and pollution: environmental valuation based on happiness surveys // *Kyklos.* – 2002. – No. 55 (4). – P. 473–494.

(,) – -
 , , , -
 . -
 (630090, , . -
 , 2, e-mail: gagik@ieie.nsc.ru).
 (,) – -
 , . -
 (630090, , . -
 , 2, e-mail: inna@ieie.nsc.ru).

() – -
(630090, , . , 2,
e-mail: kovalev.3009@yahoo.com).

() – -
(630090, , . , 2,
e-mail: yula.ts@gmail.com).

DOI: 10.15372/REG20170313

Region: Economics & Sociology, 2017, No. 3 (95), p. 254–276

G.M. Mkrtchyan, I.Yu. Blam, S.Yu. Kovalev, Yu.O. Tselodub

CLIMATE AND REPORTED SUBJECTIVE WELL-BEING OF RUSSIA'S HOUSEHOLDS

The article analyzes the impact of climate change on the overall well-being of households. It provides quantitative estimates of the dependence of subjective well-being valuations on regional climate parameters. As a hypothesis, it is assumed that subjective happiness estimates recovered via panel surveys reflect rational individual preferences that may be represented by a utility function while its parameters can be assessed with an econometric model. We conduct an econometric estimation of the parameter values of a happiness function using an ordered probit regression model. The model is built on the data provided by the Rosstat statistical agency and the primary data of the Russian Longitude Monitoring Survey (RLMS-HSE). We show that the climate factor has a highly significant effect on a respondents' self-reported life quality valuation; as significant as the impact of other, more common factors such as money income, employment status, health condition, the quality of drinking water and air, etc. The findings may be used in the economic valuation of climate change consequences, as well as the development of policies aimed at preventing climate change.

Keywords: climate; climate change; happiness; subjective well-being valuations; Russia; econometric analysis

References

1. *Kotlyakov, V.* (2012). O prichinakh i sledstviyakh sovremennykh izmeneniy klimata [On causes and effects of current climate changes] *Solnechno-zemnaya fizika* [Solar-Terrestrial Physics], 21, 110–114. Available at: http://ru.iszf.irk.ru/images/2/2e/Kotlyakov_17_21.pdf (date of access: 05.05.2017).
2. *Carney, M.* (2015). Breaking the tragedy of the horizon – climate change and financial stability. Speech given at Lloyd’s of London 29 September 2015. Available at: <http://www.bankofengland.co.uk/publications/Documents/speeches/2015/speech844.pdf> (date of access: 17.05.2017).
3. *Easterlin, R.A.* (2001). Income and Happiness: Towards a Unified Theory. *Economic Journal*, 111(473), 465–484.
4. *Ferreira, S., A. Akay, F. Brereton, J. Cuñado, P. Martinsson, M. Moro & T.F. Ningal.* (2013). Life satisfaction and air quality in Europe. *Ecological Economics*, 88, 1–10.
5. *Frey, B.S. & A. Stutzer.* (2002). What can economists learn from happiness research? *Journal of Economic Literature*, Vol. 40, No. 2, 402–435.
6. *Frijters, P. & B.M.S. Van Praag.* (1998). The effects of climate on welfare and wellbeing in Russia. *Climatic Change*, 39, 61–81.
7. *How to value a grandchild.* (2006). *The Economist*, 04.12.2006. Available at: <http://www.economist.com/node/8374354> (date of access: 19.05.2017).
8. *Leppänen, S., L. Solanko & R. Kosonen.* (2017). The impact of climate change on regional government expenditures: Evidence from Russia. *Environmental and Resource Economics*, Vol. 67, Iss. 1, 67–92.
9. *Lüthi, D., M. Le Floch, B. Bereiter et al.* (2008). High-resolution carbon dioxide concentration record 650.000–800.000 years before present. *Nature*, 453, 379–382.
10. *MacKerron, G. & S. Mourato.* (2009). Life satisfaction and air quality in London. *Ecological Economics*, 68, 1441–1453.
11. *Maddison, D. & K. Rehdanz.* (2011). The impact of climate on life-satisfaction. *Ecological Economics*, Vol. 70, Iss. 12, 2437–2445.
12. *Murray, T., D. Maddison & K. Rehdanz.* (2011). Do geographical variations in climate influence life satisfaction? Kiel Working Paper, 1694, 42.
13. *Nordhaus, W.D.* (2007). A review of the Stern Review on the Economics of Climate. *Journal of Economic Literature*, 45 (3), 686–702.
14. *Oswald, A.J.* (1997). Happiness and economic performance. *The Economic Journal*, Vol. 107, No. 445, 1815–1831.
15. *Rehdanz, K. & D. Maddison.* (2008). Local environmental quality and life-satisfaction in Germany. *Ecological Economics*, 64, 787–797.
16. *Rehdanz, K. & D. Maddison.* (2005). Climate and happiness. *Ecological Economics*, 52, 111–125.

-
17. *Sekulova, F. & J.C.J.M. van den Bergh.* (2016). Floods and happiness: Empirical evidence from Bulgaria. *Ecological Economics*, 126, 51–57.
 18. *Smyth, R., V. Mishra & X. Qian.* (2008). The environment and well-being in urban China. *Ecological Economics*, 68, 547–555.
 19. *Stern, N.* (2007). *The Economics of Climate Change: The Stern Review.* Cambridge University Press, 712.
 20. *Stiglitz, J.E., A. Sen & J.P. Fitoussi.* (2009). Commission on the Measurement of Economic Performance and Social Progress. Available at: <http://ec.europa.eu/eurostat/documents/118025/118123/Fitoussi+Commission+report> (date of access: 06.05.2017).
 21. *Von Möllendorff, C. & J. Hirschfeld.* (2016). Measuring impacts of extreme weather events using the life satisfaction approach. *Ecological Economics*, 121, 108–116.
 22. *Welsch, H.* (2006). Environment and happiness: Valuation of air pollution using life satisfaction data. *Ecological Economics*, 58, 801–813.
 23. *Welsch, H.* (2002). Preferences over prosperity and pollution: environmental valuation based on happiness surveys. *Kyklos*, 55 (4), 473–494.

Information about the authors

Mkrtchyan, Gagik Mkrtichevich (Novosibirsk, Russia) – Doctor of Sciences (Economics), Professor, Dean of the Faculty of Economics, Head of Chair at Novosibirsk National Research State University (2, Pirogova st., Novosibirsk, 630090, Russia, e-mail: gagik@ieie.nsc.ru).

Blam, Inna Yurievna (Novosibirsk, Russia) – Candidate of Sciences (Economics), Associate Professor at Novosibirsk National Research State University (2, Pirogova st., Novosibirsk, 630090, Russia, e-mail: inna@ieie.nsc.ru).

Kovalev, Sergey Yurievich (Novosibirsk, Russia) – Senior Lecturer at Novosibirsk National Research State University (2, Pirogova st., Novosibirsk, 630090, Russia, e-mail: kovalev.3009@yahoo.com).

Tselodub, Yuliya Olegovna (Novosibirsk, Russia) – Senior Lecturer at Novosibirsk National Research State University (2, Pirogova st., Novosibirsk, 630090, Russia, e-mail: yula.ts@gmail.com).

05.06.2017 .

© 2017