

# The impact of economic and demographic events in the biography of Russians on the level of their life satisfaction

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## Abstract

The article examines anticipation and adaptation effects in relation to life satisfaction in case of economic (related to labour market) and demographic events in people's lives. The author estimates how individuals feel in the vicinity of significant life events and tracks the asymmetry of results for women and men. The calculations are based on panel data from the Russian Longitudinal Monitoring Survey for the period 2004–2019. Using pooled regression and the difference-in-differences approach, the author tests the hypothesis that men are more sensitive to economic events while women are more sensitive to demographic ones. The results indicate that there is no consistent asymmetry of effects for men and women. On average, citizens of Russia tend to anticipate events that will happen to them in the next three years. Generally, Russians do not adapt to new conditions after economic events, however, this does not apply to individual demographic shocks.

## Keywords

life satisfaction, demographic events, labour market, adaptation effect, anticipation effect, COVID-19

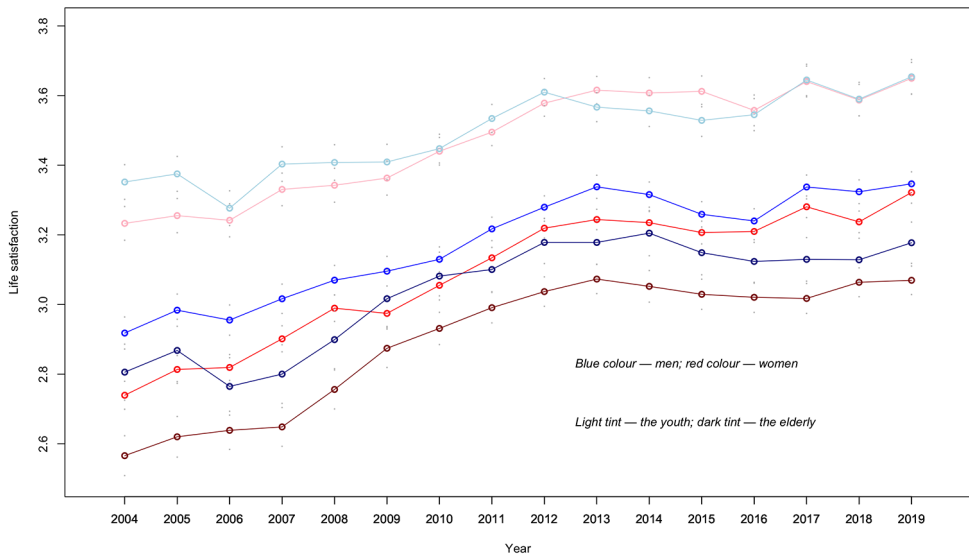
**JEL codes:** J1, I3

## Introduction

One of the main statistical indicators of the economic development of countries is the gross domestic product which does not take into account many aspects of life of the population. In particular, it does not reflect people's self-awareness, subjective well-being, and life satisfaction which are important indicators of the quality of life. Exclusion of such indicators from consideration can produce serious errors when measuring the effectiveness of economic and social policies.

According to the research project *Our World in Data*, the highest levels of life satisfaction in 2018 were observed in the USA, Australia, and northern regions of Europe; the lowest — in the African region. The level of life satisfaction in Russia was estimated between fifth and sixth steps of the «ladder of happiness» out of ten<sup>1</sup>.

Over the last fifteen years, there has been a differentiation in the subjective estimates of Russians' life satisfaction across age and gender groups (Fig. 1). For example, elder women show the lowest satisfaction scores throughout the entire observation period. Could this be related to the relatively high prevalence of such a demographic event in this group as becoming a widow? And in general, do individual events in people's lives that are not directly related to global macroeconomic shocks contribute to change in life satisfaction?



**Fig. 1.** Average life satisfaction in Russian men and women, 2004–2019. *Source:* author's estimates on the RLMS-HSE data

The issue of subjective well-being is especially relevant in current conditions, since the coronavirus pandemic provoked obvious changes in the level of life satisfaction of the Russian population (Psychologists found out... 2021). Thus, according to the VTsIOM polls, 50% of Russians were dissatisfied with the quality of their life in 2020 (Interfax 2020). At the same time, the number of «negative» individual events, such as loss of work or loss of the loved ones, increased.

This article explores how people feel in periods close to individual economic and demographic events. The author questions whether people are adapting to a new level of life satisfaction, how long the effect of an external shock lasts, and whether there are differences in perception and adaptation by gender. To answer these questions, the first part of the article provides a review of the relevant literature based on empirical analysis of data from different countries. It also discusses the phenomena of anticipation and adaptation of the level of sub-

<sup>1</sup> Life satisfaction is measured by responses to the question: «Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?» Data source: <https://ourworldindata.org/happiness-and-life-satisfaction>

jective well-being. The second part contains an empirical analysis for the Russian population. The author describes the available data and the methodology of the study, and then presents the main empirical results. The final part of the article discusses the results of the study.

## Basic concepts and review of relevant literature

In foreign literature the concepts of happiness, life satisfaction, and subjective well-being intersect and overlap. They are often used as synonyms to each other since these indicators are highly correlated and set similar concepts.

Life satisfaction is interpreted as follows: «...is the degree to which a person positively evaluates the overall quality of his/her life as-a-whole. In other words, how much the person likes the life he/she leads» (Veenhoven 1996: 17). There are several ways to measure it. In most cases, studies of individual well-being base on self-reported estimates coming from population surveys data. They are used to approximate the well-being of an individual and the uniqueness of the indicator is justified by the presence of a subjective component. In academic analysis it is used to estimate the effects associated with the quality of life of the population.

When estimating their level of well-being, people tend to compare their current situation with past situations based on personal experience. The set-point becomes an important criterion: for example, consumer preferences can depend on it and therefore it must be taken into account when analyzing behavioral concepts (Kahneman and Tversky 1979). In the context of subjective well-being the presence of a set-point was studied by Robert Cummins et al. (Cummins et al. 2014). If an external shock occurs in the life of an individual (an event happens) their level of life satisfaction changes dramatically. After a while a person can still experience that event, but the level of satisfaction «adapts» to new conditions and the exogenous shock that has occurred no longer has a negative impact on the individual well-being. In this case they talk about the *adaptation effect*: after a while people stop worrying about events that occurred in the previous periods of their life.

The *anticipation effect* implies that people anticipate and foresight events that will happen in the near future. For example, in a year an individual expects to find a job: this event, which will happen soon, has an effect on their life satisfaction now. They have a presentiment of this and an event, that has not yet occurred, is already contributing to their current well-being.

Changes in income are considered by scientists as external shocks after which occurs adaptation. Richard Easterlin (Easterlin 1974) studied the correlation of material well-being and happiness levels within and across countries. The famous *Easterlin's paradox* indicates that when income rises, people tend to adapt to a new level of happiness. An increase in real income does not always lead to an increase in the individual level of happiness, especially in the long run.

Life events can also be viewed as external shocks associated with life satisfaction. In the literature, this process of adaptation is often referred to as «hedonic treadmill». It means a relatively stable level of happiness of individuals and a quick return to this level after certain changes in their lives (Brickman and Campbell 1971).

As a rule, the literature considers the following life situations that are potentially associated with life satisfaction: unemployment, dismissal from the current job, wedding, divorce, becoming a widow(er), childbirth (Clark et al. 2008; Clark and Georgellis 2013; Qari 2014). Empirical assessment of their impact requires specific data. First, it should have a panel structure, since the spatial sampling does not allow observing the reaction of the level of life satisfaction to the shocks

that occur. Apart from that the databases should contain a wide range of individual socio-demographic characteristics, the inclusion of which in the model is necessary to ensure unbiased results. Finally, panel data should cover a wide time interval, including not only the events in the life track of each respondent but also the time window around each of them (Clark et al. 2008).

The topic of adaptation of the level of subjective well-being was raised in academic works back in the XX century. For example, the analysis of data for Australia in the 1980-s showed instantaneous changes in life satisfaction in response to individual events (both positive and negative) (Headey and Wearing 1989). However, these spikes in the level of life satisfaction tend to normalise: researchers observe a return to the old level that people showed before the events.

Andrew Clark et al. studied the effects of hedonistic anticipation and adaptation basing on data from twenty waves of surveys in East Germany (Clark et al. 2008). The authors found a difference in the effects for men and women. Men are more affected by economic events in their lives, while demographic events (wedding, divorce, childbirth) are more influential on women's life satisfaction. The authors found perfect adaptations for marriage, divorce, becoming a widow(er), childbirth, and dismissal. An exception was the job loss event (which is consistent with the results of (Lucas et al. 2004; Von Scheve, Esche and Schupp 2017)).

A number of works focus on effects in connection with one single event. Research considering job loss does not reveal an adaptation effect: all else being equal people do not return to their previous level of satisfaction in such a situation (Lucas et al. 2004). If an individual finds him- or herself out of work not of his or her own free will, then from the point of view of subjective well-being, such periods «start» badly and «last» badly as well. The results are similar for people who find a job again after a while. Moreover, there is no anticipation effect for job loss (Von Scheve, Esche and Schupp 2017).

A study of marriage on German data showed that having one's own family and a life partner entails a higher level of subjective well-being both at the time of the event and after five years. Thereby, there is no adaptation to this shock (Qari 2014). Individuals tend to anticipate events in the next two (for women) or three years (for men). Data for the UK showed a statistically significant effect of adaptation to a new level of satisfaction upon marriage and becoming a widow(er) only for men, and upon childbirth and divorce — for both genders (Clark and Georgellis 2013). Residents of Great Britain anticipate divorce and becoming a widow(er), and the female part of the sample anticipates marriage as well.

A study of hedonic adaptation based on Russian data (RLMS-HSE for 1995–2013) did not reveal the effects of full adaptation to life events but showed the existence of a statistically significant effect of anticipating future events (Bauer et al. 2015). The purpose of this work is to study in more detail the effects of hedonic anticipation and adaptation on Russian data as well as to compare the effects observed in Russian context with the results of the foreign studies.

## Empirical analysis

### Construction of variables and descriptive characteristics of the data

The empirical part of the present work is based on the data of the Russian Longitudinal Monitoring Survey of the Higher School of Economics (RLMS-HSE) for the period 2004–2019<sup>1</sup>.

<sup>1</sup> Russian Longitudinal Monitoring Survey of the Higher School of Economics (RLMS-HSE), conducted by the National Research University Higher School of Economics and Demoscope LLC with participation of the Carolina Population Center of the University of North Carolina at Chapel Hill and the Institute of Sociology of the Russian Academy of Sciences. RLMS-HSE survey websites: <https://rlms-hse.cpc.unc.edu> and <http://www.hse.ru/rlms> (date of access: 01.02.2021).

These data represent an unbalanced panel: an individual can disappear from the sample any time before 2019 or appear in it any year after 2004. The data contain detailed information about the individual characteristics of respondents. The array contains the identifier for each individual which makes it possible to observe the respondents over several years. Moreover, the data contain household identifier which makes it possible to combine individuals into family groups and account for the household characteristics.

The following individual and household characteristics were selected for analysis (descriptive statistics are presented in table 1):

1. *Age*. To ensure representativity, the sample is truncated by age: only respondents aged 14–72 are included. The upper bound is not used for the analysis of the event of becoming a widow(er) since most events of this type occur in older ages. For childbirth the upper bound is set at 50 years (corresponding to the reproductive age of women, 15–49 years old). To capture the parabolic relationship between life satisfaction and age, the variable age squared is also used in the models.
2. *Gender*.
3. *Education*.
4. *Employment status*.
5. *Family status*.
6. *Number of children*.
7. *Household per capita income*.
8. *Health status*.
9. *Life satisfaction*. To approximate the key indicator for the study the following question was used: «How satisfied are you with your life in general at the moment?» The respondents answered it on the basis of the proposed options on a five-point scale: 1 — completely satisfied; 2 — rather satisfied; 3 — both satisfied and dissatisfied; 4 — not really satisfied; 5 — not satisfied at all. The coding of answers was reverted: the larger the value of the variable the more satisfied the person is with his or her life, and vice versa.

**Table 1.** Descriptive statistics of selected variables

	<b>Mean</b>	<b>St. dev.</b>	<b>Min.</b>	<b>Max.</b>
Age	41.028	15.938	14	72
Number of children (if any)	1.735	0.835	1	13
Household per capita income, in rubles	10,175	11,143	0	188,000
Life satisfaction	3.225	1.090	1	5

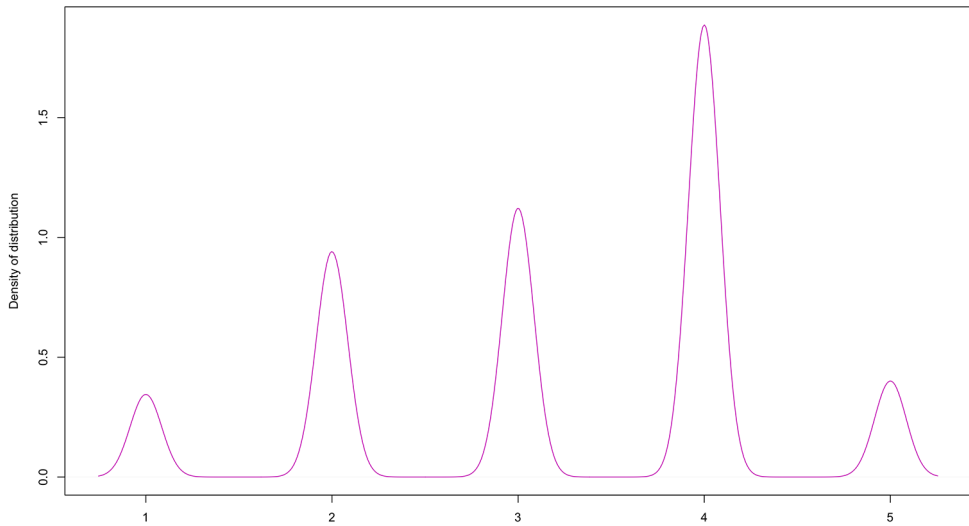
*Notes:* The number of observations — 206,400; for the number of children — 147,682.

*Source:* author's estimates on RLMS NRU HSE data

Typically, the distribution of responses to a question about subjective well-being is biased towards the 80% percentile (Clark et al. 2008). The data used in this work do not contradict this fact: the obtained distribution of answers is biased towards options 4 out of 5 (Fig. 2).

In accordance with the specifics of the data the empirical analysis was focused on six individual events which can be divided into two groups. The first group consists of economic events and includes obtaining unemployed status and finding a job (labor market shocks). The second group contains demographic events: marriage, divorce, childbirth, becoming a widow(er). These shocks are denoted as follows: the variable is set to be 1 if in the current

year the individual has received a new status (for example, became unemployed). Childbirth is determined by comparing the number of children the respondent has over consequent years of observation. A number of restrictions is imposed on the definition of events. First, the analysis does not take into account observations censored from the left: for instance, if a person at the time of entering the survey has been already unemployed and we cannot track the beginning of an unemployment spell in the data then observations corresponding to this respondent are excluded. The other events are determined in the same way. Second, only the first shocks are taken into account. If an event occurs for the second time for the same individual it is not considered in the analysis.



**Fig. 2.** Density of the distribution of answers (life satisfaction). *Note:* In the study, this variable remained categorical. The disadvantage of this analysis is that the coding for life satisfaction requires a more detailed definition. However, the specifics of the available data do not allow improving the quality of the analysis. *Source:* author's estimates on the RLMS-HSE data

**Table 2.** Number of individual events

	<b>Men</b>	<b>Women</b>
Job loss	2,162	1,503
Finding a job	2,470	1,675
Marriage	1,687	2,055
Divorce	638	1,505
Child birth	2,266	2,368
Becoming a widow(er)	319	1,664

*Source:* author's estimates on the RLMS-HSE data

Table 2 shows the number of all considered events for men and women, respectively. As this data shows, events are balanced by gender, except for divorce and becoming a widow(er) due to the fact that in Russia the life expectancy of women is significantly higher than that of men.

## Econometric model

The author of the study formulated the following hypotheses concerning individual events and the level of life satisfaction:

1. Russians expect events that will happen to them in the near future, and this affects their current life satisfaction (the effect of anticipation);
2. Demographic events have stronger effect on women and their level of life satisfaction (lack of adaptation to a new level of life satisfaction);
3. Economic events have stronger effect on men and their level of life satisfaction.

To test the hypotheses, the author estimates pooled regression. Taking into account the limitations of empirical data, the following specifications were formulated:

### To estimate the effect of adaptation

$$\begin{aligned} \text{Life Satisfaction}_{it} = & \sigma + \alpha_i + \theta_0 \text{Event}_{0it} + \theta_1 \text{Event}_{1it} + \theta_2 \text{Event}_{2it} + \\ & + \theta_3 \text{Event}_{3it} + \theta_4 \text{Event}_{4it} + \theta_5 \text{Event}_{5it} + \beta X_{it} + \mu_t + \varepsilon_{it} \end{aligned} \quad (1)$$

where  $\text{Life Satisfaction}_{it}$  is the level of life satisfaction of the respondent  $i$  at the moment  $t$ ;  $\text{Event}_{0it}$  is a binary variable equal to 1 if a specific event occurred in the current year;  $\text{Event}_{1it}$  equals 1 if an individual had an event last year and in the current period the respondent still maintains a new status (for example if they lost their job last year and this year they are still unemployed) and so on until the fifth year of observation;  $X_{it}$  — vector of control variables;  $\mu_t$  — fixed effects of the year;  $\alpha_i$  — individual fixed effects;  $\varepsilon_{it}$  — vector of random errors. The equation takes into account the fixed effects of the region where respondent  $i$  lives.

### To estimate the effect of anticipation

$$\begin{aligned} \text{Life Satisfaction}_{it} = & \sigma + \alpha_i + \theta_{-1} \text{Event}_{-1it} + \\ & + \theta_{-2} \text{Event}_{-2it} + \theta_{-3} \text{Event}_{-3it} + \beta X_{it} + \mu_t + \varepsilon_{it} \end{aligned} \quad (2)$$

where  $\text{Event}_{-1it}$  is a binary variable equal to 1 if a specific individual event occurs in the next year, and so on up to three years of anticipation.

The analysis uses the methodology from (Clark et al. 2008). In addition, the selected specifications are justified by preliminary data analysis and experience from previous studies.

The coefficient  $\theta_0$  is expected to be positive for favourable events (finding a job, getting married, having a child) and negative for unfavourable events (losing a job, divorce, becoming a widow(er)). With full adaptation to a new level of life satisfaction the coefficient  $\theta_j$  loses its significance in the equation for  $j > 0$ , meaning that after a while the individual no longer worries about the event that happened to them at the moment  $t = 0$ . In case of partial adaptation, the coefficient  $\theta_j$  for  $j > 0$  remains significant but is less in absolute value than  $\theta_0$ . Coefficients  $\theta_{-1}$ ,  $\theta_{-2}$ ,  $\theta_{-3}$  stand for the anticipation effect.

The childbirth event is assessed using the difference-in-differences approach. To do this it is necessary to determine the treatment group (a sample of respondents who have experienced the childbirth) and a control group with which the comparison will be made. Finding the control group presents a certain difficulty since we do not know with which moment in the life of the respondents from the control group to compare the treatment group. Here the

author relies on the methodology described in (Kleven, Landais and Sogaard 2019). First, a sample of individuals who have a child is determined and an eight-year-long gap around this event is considered (3 years before and 5 years after it). Then a probability of the individual from this sample to have a child at the time  $t$  is calculated. On the obtained sample (this will be the treatment group) an equation of the following form is estimated:

$$Child\ Birth_{it} = \alpha + \beta X_{it} + \mu_t + \varepsilon_{it} \quad (3)$$

where the variable  $Child\ Birth_{it}$  equals 1 in case the individual  $i$  had a child in the year  $t$ .

Based on the estimates obtained in equation (3) on a sample of respondents who do not have children (the upper age limit is 50 years) the probabilities of having a child for each individual at any given time are predicted. If the probability of having a child turns out to be more than 80% of the maximum value, observations are selected for the control group — it contains respondents without children who are the closest in their characteristics to the treatment group at the time of the childbirth. Then the moments when the signs indicating a high probability of having a child are most clearly manifested are determined for the control group. This period is recorded as a pseudo-birth of a child (placebo birth, a similar methodology was used in (Kleven, Landais and Sogaard 2019) when studying the effect of childbirth on future wages of men and women). An eight-year gap is then determined for further analysis.

Having identified the treatment group and the control group we can compare them. At this stage an equation of the following form is estimated:

$$Life\ Satisfaction_{it} = \sigma + \varphi Treatment_{it} + \lambda After_{it} + \rho Treatment_{it} \cdot After_{it} + \beta X_{it} + \mu_t + \varepsilon_{it} \quad (4)$$

where variable  $Treatment_{it}$  equals 1 for individuals from the treatment group;  $After_{it}$  equals 1 for the period after the actual birth of the child of the respondents from the treatment group and after the pseudo-birth of the child for the individuals from the control group. In this specification the cross effect that is captured by multiplying binary variables  $Treatment_{it} \cdot After_{it}$  is of interest.

## Modelling results

The results of the regressions are presented in tables 3–7. The first and third columns in the tables correspond to the estimates of the regression equation (1), and the second and fourth correspond to the estimates of the regression equation (2); results are shown separately for men and women. The signs of the coefficients for the variables of interest coincide with hypothetical assumptions: the signs are positive in case of analyzing good, favourable events, in other cases they are negative.

The left column of the table 3 presents the binary variables responsible for different durations of unemployment spells. To assess the effect of adaptation, in specifications 1 and 3 the author controls for the status of employment, and respondents who left the labor force are set as reference group. The results show that for men there we observe a complete adaptation to a new level of satisfaction four years after losing their job. At the same time, for women, there is no adaptation at all: all coefficients remain significant even after five or more years of being in the status of unemployed (and modulus of the coefficients have become even higher).



**Table 3.** Modelling results for the event *Job loss*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Unemployed up to a year	–0.306*** (0.023)		–0.339*** (0.027)	
Unemployed up to 2 years	–0.361*** (0.039)		–0.410*** (0.052)	
Unemployed up to 3 years	–0.238*** (0.054)		–0.315*** (0.085)	
Unemployed up to 4 years	–0.310*** (0.072)		–0.299*** (0.121)	
Unemployed up to 5 years	–0.046 (0.086)		–0.405** (0.172)	
Unemployed for 5 years or more	–0.028 (0.064)		–0.478*** (0.148)	
Unemployed in a year		–0.192*** (0.021)		–0.168*** (0.026)
Unemployed in 2 years		–0.151*** (0.028)		–0.155*** (0.033)
Unemployed in 3 years		–0.073** (0.033)		–0.144*** (0.039)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Employment status control	X		X	
Number of observations	118,507	73,615	152,921	78,967
Corr. R <sup>2</sup>	0.210	0.185	0.211	0.209

Note: \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

When assessing the effect of anticipation, the author limited the sample to working respondents. The reference group in this case is employed respondents who will not lose their jobs in the next three years. Binary variables of interest are equal to 1 if the respondent loses their job in one, two or three years. The anticipation effect in this model is confirmed for both men and women: all coefficients in specifications 2 and 4 are statistically significant and negative. Thus, people feel and expect they will lose their jobs in the coming years. The fact they will soon become unemployed makes a significant negative contribution to their life satisfaction.

**Table 4.** Modelling results for the event *Finding a job*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Employed up to a year	0.207*** (0.023)		0.152*** (0.027)	
Employed up to 2 years	0.273*** (0.028)		0.209*** (0.033)	
Employed up to 3 years	0.300*** (0.033)		0.196*** (0.040)	
Employed up to 4 years	0.337*** (0.038)		0.263*** (0.047)	
Employed up to 5 years	0.327*** (0.045)		0.212*** (0.055)	
Employed for 5 years or more	0.358*** (0.030)		0.218*** (0.036)	
Employed in a year		0.080*** (0.027)		-0.013 (0.032)
Employed in 2 years		0.010 (0.041)		-0.044 (0.057)
Employed in 3 years		-0.048 (0.058)		-0.171** (0.083)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Employment status control	X		X	
Number of observations	66,074	14,376	90,225	10,416
Corr. R <sup>2</sup>	0.212	0.172	0.220	0.183

Note: \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

Table 4 shows the regression estimates for the finding a job event. In columns 1 and 3 (assessment of the adaptation effect), all coefficients are significant at the 1% significance level and positive. As the time passes, the absolute value of the coefficients grows for both men and women. This does not contradict intuitive assumptions since stable employment is important for respondents and in this case their level of life satisfaction only increases. At the same time both genders show no sustainable effect of employment anticipating.

**Table 5.** Modelling results for the event *Getting married*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
Life satisfaction	(1)	(2)	(3)	(4)
Married up to a year	0.324*** (0.027)		0.313*** (0.024)	
Married up to 2 years	0.310*** (0.031)		0.257*** (0.029)	
Married up to 3 years	0.375*** (0.035)		0.250*** (0.032)	
Married up to 4 years	0.324*** (0.039)		0.206*** (0.035)	
Married up to 5 years	0.296*** (0.044)		0.152*** (0.039)	
Married for 5 years or more	0.360*** (0.028)		0.248*** (0.024)	
Married in a year		0.217*** (0.026)		0.189*** (0.023)
Married in 2 years		0.114*** (0.033)		0.117*** (0.029)
Married in 3 years		0.090** (0.038)		0.105*** (0.034)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Number of observations	55,821	118,095	90,225	10,416
Corr. R <sup>2</sup>	0.242	0.221	0.220	0.183

Note: \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

The results for the marriage event are presented in table 5. There is no adaptation to a new level of life satisfaction for men; from their point of view marriage starts well and lasts just as well in the future. Meanwhile, for women we observe a partial adaptation, and they gradually return to the previous level of life satisfaction since the absolute values of the coefficients become smaller with each year of marriage, i.e. the effect is weakening. As expected, a stronger effect of anticipating the event of marriage was revealed for women: the fact that a woman will marry in one, two or three years brings a positive effect to her current life satisfaction, significant at the 1% significance level (the reference group consists of unmarried women who will not marry within the next three years). For men, the phenomenon of anticipation of this event is observed only for two years before marriage.

**Table 6.** Modelling results for the event *Getting divorced*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
Life satisfaction	(1)	(2)	(3)	(4)
Divorced up to a year	-0.124*** (0.041)		-0.157*** (0.028)	
Divorced up to 2 years	-0.151** (0.059)		-0.140*** (0.038)	
Divorced up to 3 years	-0.153** (0.073)		-0.145*** (0.047)	
Divorced up to 4 years	-0.135 (0.088)		-0.060 (0.055)	
Divorced up to 5 years	0.022 (0.106)		0.046 (0.063)	
Divorced for 5 years or more	-0.175** (0.070)		-0.057 (0.041)	
Divorced in a year		-0.363*** (0.056)		-0.360*** (0.040)
Divorced in 2 years		-0.123* (0.063)		-0.225*** (0.044)
Divorced in 3 years		-0.107 (0.074)		-0.173*** (0.050)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Number of observations	116,294	62,686	145,716	68,223
Corr. R <sup>2</sup>	0.212	0.185	0.216	0.189

Note: \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

Estimates of regressions for the divorce event (table 6) indicate the existence of the phenomenon of adaptation for respondents of both genders. While for women full adaptation to a new level of life satisfaction occurs three years after the divorce, for men adaptation is observed already one year after the event (at a 1% significance level). Similar results were obtained when assessing the effect of anticipation (columns 2 and 4, table 6). Models are estimated on a subsample of married respondents; the reference group consists of those who will not divorce in the next three years. All else being equal, men feel they will divorce next year. However, the anticipation effect is not observed over long periods of time. Evaluation of the model on a subsample of women (column 4, table 6) demonstrates statistically significant negative coefficients. Women anticipate divorce even three years before it occurs. The fact they are getting divorced contributes negatively to their current level of satisfaction — even if they are married at the moment. It turns out that the closer an individual is to the event in question, the greater are the absolute values of the coefficients.

**Table 7.** Modelling results for the event *Becoming a widow(er)*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Widow/widower up to a year	-0.266*** (0.058)		-0.253*** (0.027)	
Widow/widower up to 2 years	-0.176** (0.073)		-0.135*** (0.032)	
Widow/widower up to 3 years	-0.087 (0.088)		-0.127*** (0.036)	
Widow/widower up to 4 years	-0.124 (0.103)		-0.099** (0.040)	
Widow/widower up to 5 years	-0.028 (0.121)		-0.135*** (0.044)	
Widow/widower for 5 years or more	-0.167** (0.079)		-0.096*** (0.028)	
Widow/widower in a year		-0.273*** (0.057)		-0.171*** (0.026)
Widow/widower in 2 years		-0.119* (0.064)		-0.109*** (0.030)
Widow/widower in 3 years		0.043 (0.070)		-0.066* (0.034)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Number of observations	123,431	121,484	154,037	139,872
Corr. R <sup>2</sup>	0.209	0.201	0.207	0.197

Note: \* p<0.1; \*\* p<0.05; \*\*\* p<0.01

Finally, for the event of becoming a widow(er) the results are presented in table 7. For women the coefficients from column 3 are consistently significant and negative. With the time passing, the effect weakens but there is only partial adaptation to a new level of satisfaction with the loss of a loved one. For men the situation is different: after a year of being a widower there is a complete adaptation to a new level of satisfaction. The anticipation effect of an unfortunate event a year before its occurrence was confirmed for men, and two years before — for women (columns 2 and 4, table 7). The reference group for these specifications is the married part of the sample that will not face the loss of a loved one in the next three years.

Table 8 shows the results of the difference-in-differences model for the event of childbirth. The graphical analysis of the model is shown in Fig. 3 and 4 (for 99% confidence interval); the red vertical line shows the moment of the childbirth (it is indicated by the period  $t = 0$ ).

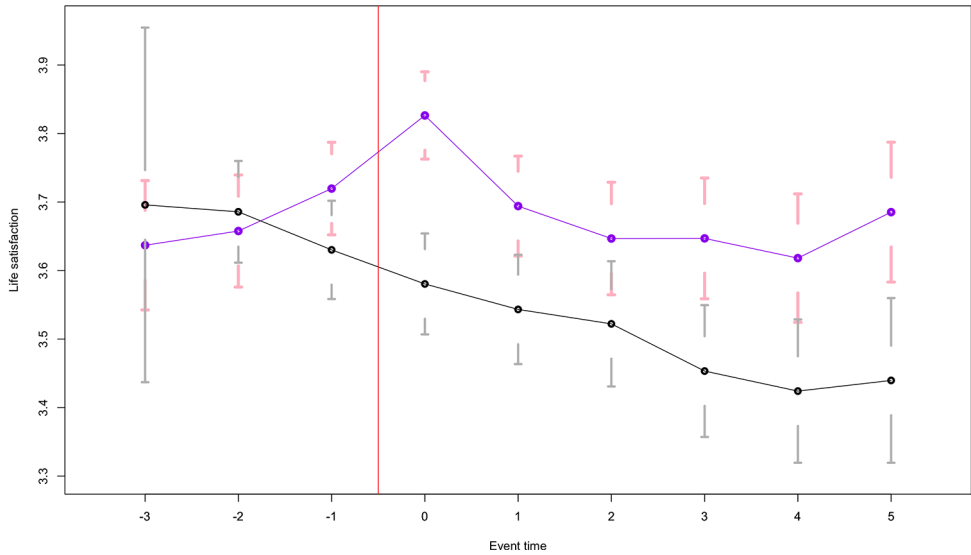
**Table 8.** Difference-in-difference model estimation results

<b>Dependent variable:</b>	<b>Men</b>	<b>Women</b>
Life satisfaction	(1)	(2)
Treatment	0.085** (0.036)	0.021 (0.034)
After the event	-0.147*** (0.027)	-0.145*** (0.028)
Treatment * After the event	0.192*** (0.032)	0.168*** (0.034)
Fixed effects of the year	X	X
Fixed effects of the region	X	X
Control for individual characteristics	X	X
Number of observations	20,232	19,630
Corr. R <sup>2</sup>	0.091	0.079

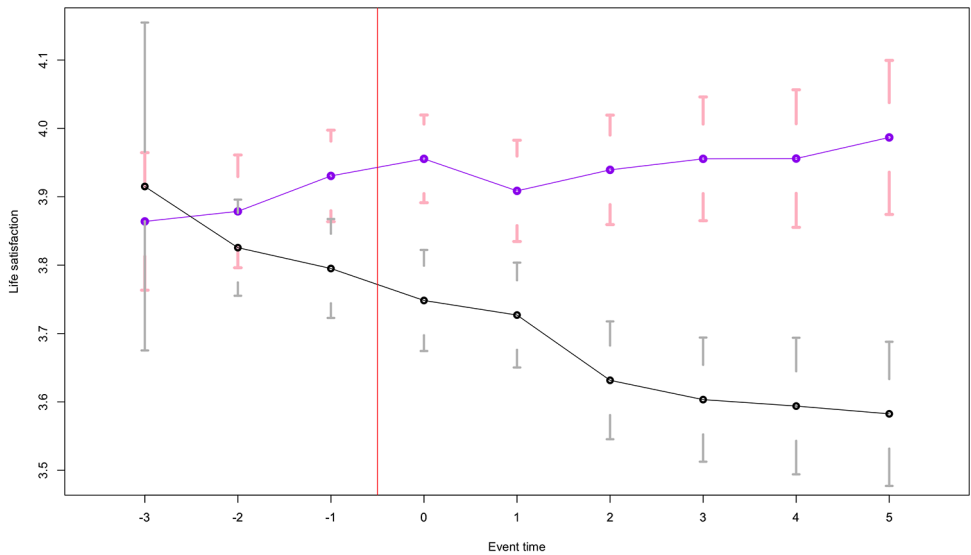
Note: \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

An important prerequisite for the difference-in-differences method is the parallelism of previous trends: it is necessary that the studied indicators for both groups behave in the same way until the moment of treatment introduction. It can be seen from the graphical illustration that at the moments of time  $t < 0$  the lines for the treatment group and the control group differ insignificantly from each other. Therefore, we are able to interpret the results of the regression equation (4).

The obtained estimates show there is a positive and statistically significant cross-effect for both genders (table 8). On average, the treatment group demonstrates a higher level of life satisfaction after the childbirth than the control group. Fig. 3 shows there is a noticeable and stable difference in the level of life satisfaction for men for five years after the birth of a child. For women, this effect is very different: at the time of the event the level of subjective well-being rises sharply, but after a while this effect dies out and the obvious difference is no longer noticeable.



**Fig. 3.** Graphical illustration of the difference in differences model for men. *Source:* author’s estimates on the RLMS-HSE data



**Fig. 4.** Graphical illustration of the difference in differences model for women. *Source:* author’s estimates on the RLMS-HSE data

**Robustness check**

To check the robustness of the models<sup>1</sup> in the regression equations (1) and (2), the  $X_{it}$  vector was replaced with an extended control for the individual characteristics of respondents

<sup>1</sup> Robustness check is carried out for all events in question except for the birth of a child; in this case the sample becomes too small for further analysis.

which includes additional variables: hours of work per month, smoking factor, factor of religiosity of a person and body mass index (and body mass index squared — to fix the parabolic dependence). This subsample consists of a smaller number of observations but contains more detailed control for individual characteristics. The number of events for the new subsample is presented in table 9.

The results of estimation of models with an extended control vector show that the main simulation results are robust (see Appendix of the paper). An exception is the event of becoming a widow(er) where the coefficient estimates are not robust. Perhaps limited sample leads to too few observations for a given event (table 9). This may be the reason for the lack of significance of the coefficients for women and even more so for men. The coefficients for most of the control variables in all the estimated specifications turned out to be statistically significant and their signs were stable (they do not change for each variable from specification to specification).

**Table 9.** The number of individual events for verification of the results robustness

	<b>Men</b>	<b>Women</b>
Job loss	1153	807
Finding a job	1199	858
Marriage	779	1042
Divorce	305	830
Becoming a widow(er)	103	703

*Note:* number of observations 113,077

*Source:* author's estimates on the RLMS-HSE data

## Conclusion

The paper investigates the phenomena of anticipation and adaptation of the level of life satisfaction to individual shocks: empirical assessments are made for the population of Russia. Modelling shows stable results: after a sharp change in the level of life satisfaction people indeed adapt to a new state, partially or completely. However, this effect only applies to certain life events.

The hypotheses saying that demographic events have a more significant effect on women and their level of life satisfaction while the levels of subjective well-being of the male part of the population are more sensitive to economic events, are not confirmed. Moreover, the empirical analysis allows us to make quite the opposite conclusion. For women who have experienced individual shocks associated with the labor market, the level of satisfaction changes in one or the other direction and does not return to the previous level. If a woman for example becomes more unhappy at the loss of her job, she is significantly unhappy to the same extent every period after the event. At the same time, individual shocks associated with starting a family consistently and significantly change men's life satisfaction. The level of their subjective satisfaction changes and significant differences are observed throughout all further periods so there is no adaptation to the new status.

The hypothesis saying that the Russians on average tend to feel and expect events that will happen to them in the next three years is confirmed. Both women and men feel they



will soon lose their jobs. However, if we consider demographic events the anticipation effect is confirmed only for the female part of the population. The fact that a woman will marry, go through a divorce or become a widow within the next 2–3 years has a significant effect on her current level of life satisfaction. For men, there is only a «short» anticipation: they anticipate only those events that will happen to them in the next 1–2 years.

The paper found significant immediate responses of life satisfaction to individual events, which is consistent with the results of other studies (Headey and Wearing 1989; Clark et al. 2008; Clark and Georgellis 2013, et al.). Positive life shocks are associated with an increase in subjective well-being and negative events are associated with a decrease in it. At the same time, in contrast to the study on data from East Germany (Clark et al. 2008) this paper does not show a similar effect of adaptation to a new level of life satisfaction. This allows us to conclude that citizens of Russia in general are more sensitive to events in their lives. The satisfaction of Russians is on average less flexible and is not a subject to frequent changes.

The presented study has several limitations. One of them is the problem of endogeneity. By using panel data, it was possible to partially cope with the causality problem between subjective well-being and individual life events (Clark et al., 2008). Tracking periods before an event and periods after it (at the level of each individual) allows us to take into account the fact that initially happier people tend to start a family, find a job, etc., while a priori more unhappy people are more likely to get divorced and lose their jobs. However, this does not ensure a complete solution to the problem of endogeneity, in particular due to the existence of potentially important missing factors related to the level of life satisfaction. This issue requires more careful consideration in the future. This work is also limited by considerations of individual events without taking into account their overlaps. An example of a sequence of events is the loss of a job as a consequence of a newborn child appearance for a woman. These situations are of great interest; however, to carry out such an analysis for the population of Russia one needs data of better quality and structure.

This paper allows us to make a contribution to the assessment of the effects of anticipation and adaptation for the level of subjective well-being for the population of Russia. Prospects for the development of the study include a possible extension of the range of individual shocks in question and a potential addition of new categories (for example, events related to self-realization, such as admission to university, promotion, etc., as well as events related to the individual health status, such as assigning to a disability group, recovery from disease, etc.).

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## Appendix

**Table A1.** Robustness check for the event *Job loss*

Dependent variable:	Men		Women	
	(1)	(2)	(3)	(4)
Life satisfaction	(1)	(2)	(3)	(4)
Unemployed up to a year	−0.305*** (0.031)		−0.360*** (0.036)	
Unemployed up to 2 years	−0.270*** (0.055)		−0.401*** (0.072)	
Unemployed up to 3 years	−0.235** (0.079)		−0.347*** (0.126)	
Unemployed up to 4 years	−0.221** (0.107)		−0.435** (0.180)	
Unemployed up to 5 years	−0.167 (0.142)		−0.629** (0.264)	
Unemployed for 5 years or more	−0.166 (0.164)		−0.551* (0.329)	
Unemployed in a year		−0.166*** (0.029)		−0.157*** (0.035)
Unemployed in 2 years		−0.116*** (0.038)		−0.122*** (0.046)
Unemployed in 3 years		−0.064 (0.049)		−0.120** (0.059)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Employment status control	X		X	
Number of observations	47,509	29,385	65,568	33,372
Corr. R <sup>2</sup>	0.160	0.099	0.133	0.108

Note: \* p<0,1; \*\* p<0,05; \*\*\* p<0,01

**Table A2.** Robustness check for the event *Finding a job*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Employed up to a year	0.335*** (0.032)		0.265*** (0.038)	
Employed up to 2 years	0.380*** (0.041)		0.205*** (0.047)	
Employed up to 3 years	0.448*** (0.050)		0.253*** (0.059)	
Employed up to 4 years	0.407*** (0.061)		0.316*** (0.075)	
Employed up to 5 years	0.368*** (0.077)		0.412*** (0.103)	
Employed for 5 years or more	0.408*** (0.086)		0.562*** (0.109)	
Employed in a year		0.011 (0.037)		-0.097** (0.044)
Employed in 2 years		0.003 (0.061)		-0.220*** (0.084)
Employed in 3 years		0.005 (0.092)		-0.330** (0.131)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Employment status control	X		X	
Number of observations	22,486	5,711	35,304	3,955
Corr. R <sup>2</sup>	0.201	0.195	0.170	0.167

Note: \* p<0,1; \*\* p<0,05; \*\*\* p<0,01

**Table A3.** Robustness check for the event *Getting married*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Married up to a year	0.405*** (0.038)		0.364*** (0.033)	
Married up to 2 years	0.427*** (0.046)		0.310*** (0.040)	
Married up to 3 years	0.474*** (0.054)		0.269*** (0.047)	
Married up to 4 years	0.332*** (0.063)		0.228*** (0.054)	
Married up to 5 years	0.345*** (0.076)		0.176*** (0.066)	
Married for 5 years or more	0.355*** (0.077)		0.328*** (0.064)	
Married in a year		0.202*** (0.037)		0.190*** (0.032)
Married in 2 years		0.227*** (0.048)		0.107*** (0.041)
Married in 3 years		0.086 (0.060)		0.105** (0.051)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Number of observations	22,878	20,325	37,444	33,933
Corr. R <sup>2</sup>	0.213	0.205	0.156	0.146

Note: \* p<0,1; \*\* p<0,05; \*\*\* p<0,01

**Table A4.** Robustness check for the event *Getting divorced*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Divorced up to a year	-0.093 (0.057)		-0.189*** (0.036)	
Divorced up to 2 years	-0.202** (0.083)		-0.160*** (0.050)	
Divorced up to 3 years	-0.218** (0.108)		-0.070 (0.063)	
Divorced up to 4 years	-0.076 (0.137)		-0.030 (0.078)	
Divorced up to 5 years	0.070 (0.176)		0.126 (0.095)	
Divorced for 5 years or more	0.213 (0.186)		0.140 (0.099)	
Divorced in a year		-0.388*** (0.079)		-0.344*** (0.055)
Divorced in 2 years		-0.183* (0.096)		-0.292*** (0.065)
Divorced in 3 years		0.006 (0.122)		-0.171** (0.080)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Number of observations	46,216	27,184	60,546	31,635
Corr. R <sup>2</sup>	0.155	0.127	0.134	0.110

Note: \* p<0.1 \*\*p<0.05 \*\*\*p<0.01

**Table A5.** Robustness check for the event *Becoming a widow(er)*

<b>Dependent variable:</b>	<b>Men</b>		<b>Women</b>	
	(1)	(2)	(3)	(4)
Life satisfaction				
Widow/widower up to a year	–0.109 (0.096)		–0.206*** (0.039)	
Widow/widower up to 2 years	–0.150 (0.140)		–0.106** (0.051)	
Widow/widower up to 3 years	–0.322* (0.183)		–0.056 (0.060)	
Widow/widower up to 4 years	0.055 (0.242)		–0.011 (0.070)	
Widow/widower up to 5 years	–0.152 (0.305)		–0.135 (0.084)	
Widow/widower for 5 years or more	0.150 (0.322)		–0.063 (0.079)	
Widow/widower in a year		–0.178* (0.096)		–0.170*** (0.038)
Widow/widower in 2 years		–0.167 (0.117)		–0.109** (0.048)
Widow/widower in 3 years		–0.158 (0.139)		–0.044 (0.056)
Fixed effects of the year	X	X	X	X
Fixed effects of the region	X	X	X	X
Control for individual characteristics	X	X	X	X
Number of observations	47,076	46,843	60,128	57,909
Corr. R <sup>2</sup>	0.164	0.149	0.137	0.118

Note: \* p<0,1; \*\* p<0,05; \*\*\* p<0,01

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