Resilience predictors for older adults in Tomsk region

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Abstract. In this article, we analyze the resilience of older adults and its probable predictors. Among predictors that affect the individual level of a person's resilience in older age, we consider the participation in different types of activities and personal coping strategies to respond to challenges through the life-course. The article presents the results of a correlation analysis of resilience with the financial, consumer and labor behavior of older adults. We have revealed that the types of financial and consumer behavior, information and communication practices significantly differ for individuals with different resilience levels. Constructive coping with the new conditions and requirements for the well-being allows older adults to maintain a high level of resilience and participation in society. Older people, focused on mastering new skills for a successful life in a changing world, have high indicators of resilience, focus on self-confidence, energy, preventive overcoming of difficulties, have low rates of catastrophic situations.

1 Introduction

The study is relevant due to the need to determine the ability of the older generation to adapt to the changing socio-economic and sociocultural conditions at the society level and to identify the features of adaptation to a new goal- and value-semantic stage of life at the individual level. Current social policy and rhetoric are focused on recognizing that older adults play an active role in shaping their own well-being. Financial, labor, social behavior in older age influence well-being, but it is fair to expect that the foundation of well-being should be provided through decisions and efforts in the previous stages of the life trajectory. The well-being and resilience are complex phenomena with a wide range of manifestations - from objective (social, economic) to subjective (psychological), which are in certain relationships with each other. The basic systemic concept is well-being, which is the result of actions taken by a person in order to meet the needs for his own life and the lives of others. A person is faced with certain conditions that facilitate or impede the achievement of his goals, and the way they positions themselves, react to difficulties and what subsequent actions they take, determines the level of resistance to problems and the desire to change the situation - the resilience. Life satisfaction serves as a self-assessment of individual current position. Materially deprived individual may have higher life satisfaction

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compared to a relatively well-off individual. According to the way people respond to difficult situations, they may be divided into resilient (prosperous) and non-resilient. Resilience, considered primarily as the ability of an individual to recover from life's difficulties, to "bounce back", can be indirectly determined by the level of income, a subjectively sufficient level of which can smooth out the process of adaptation, rehabilitation and exit from difficult life situations. The coping process changes the individual value-semantic sphere. In this context, resilience reflects the subjective well-being of a person and is associated with motivation and practice of transforming stressful life events, the level of self-efficacy and satisfaction with one's own.

2 Materials and methods

In attempt to identify the resilience predictors, we chose variables related to personal character traits and socio-economic environment. In order to analyze the relationship between the phenomena of well-being and resilience, we have applied a subjective method based on self-esteem and fixing the degree of a person's identification with the events taking place in their life. We associate the possibility of using the subjective method with finding a balance in the modern unstable, constantly changing world of the economically centric (traditionally dominant) and newly actual human-centered approaches. The use of the human-centered approach in the context of the subjective method allows orienting the choice of life support tools for the older adults on the criterion of human development by expanding opportunities and creating conditions for choosing constructive options for action, including increasing income, increasing educational level, life expectancy, psychological future, and others. This understanding is consistent with the rationale in modern gerontopsychology of the idea of the continuity of the development of the human psyche, its openness to the continuing activity of a person, regardless of his age. The limits to this process are set only by the person themselves, making decisions regarding what concerns their own personality and fate.

The appeal to individuals to use themselves as a means and resource of their own survival, regulation of freedom of choice and activity based on personal attitudes and beliefs made it possible to substantiate the relationship of well-being and resilience from the standpoint of the individualistic and subcultural approaches. We used data from the sociological surveys of older adults conducted in Tomsk region in 2015, 2017, 2019 and 2021 by the International Scientific Educational Laboratory for the Improvement of Well-being Technologies of Older Adults.

The latest survey was carried out in April 2021 among 400 older adults aged 55+ living in the city of Tomsk and Tomsk region. We selected respondents at random by quota sampling. The data was collected through questionnaire interviews conducted in the homes of the respondents. Only one older person was interviewed in each family. All interviews were conducted in Russian. We obtained oral informed consent from all respondents prior to the interview. The confidence level is 95%, which corresponds to the practice of conducting sociological research in Russia and the international community. The sampling error for a given sample size is 4.89%. To measure resilience in our survey we used Connor-Davidson Resilience Scale (CD-RISC-25) [1]. Respondents were required to give their assessments based on the events of the past month. If over the past month a specific situation with the respondent did not occur, then the reaction of the person should have been determined by how they would feel if it happened. The questionnaire includes 25 questions, the answers to which are evaluated on a 5-point scale from 0 to 4 points (0 - completely incorrect, 4 - almost always true). The resilience index is placed on a scale from 0 to 100 points.

To interpret the results of resilience assessment in the literature, it is possible to use two methods: median and quartile. The median value of the resilience of older adults in the Tomsk region is 64 points. The average value of the indicator of the resilience of the respondents is 62.5 points (the score among people over 60 years old in the United States - 75.7 points, Australia - 73.4 points, in China - 64.8 points [2-4]).

Table 1 shows the respondents breakdown into quartiles. For the lowest quartile (1–25% of the total number of respondents), the estimate ranges from 12 to 47; second quartile (26–50%) scores ranges from 48 to 63; for the third quartile (51–75% of the respondents) - 64–76 and for the highest quartile (76–100%) the score varies from 77 to 100.

Table 1. Quartile breakdown of older adults (N=400, Tomsk region, 2021).

Quartile	Score	Number of male	Number of female	City (pers)	Rural (pers)
1	12-47	34	66	51	49
2	48-63	37	63	55	45
3	64-76	41	59	52	48
4	77-100	41	59	47	53
Total		153	247	205	195

The results of sociological measurement obtained using the statistical package SPSS-26.

3 Results and discussion

The hypothesis was that a high level of resilience in old age allows you to constructively cope with difficulties without reducing the quality of subjective well-being achieved earlier in the previous stages of life. According to studies [5], those who do not accept the challenge of the situation, are removed from decision-making and setting tasks to overcome them, have low level of resilience. To verify the hypothesis, we identified the research tasks:

- 1. Does the absolute income of older adults and their subjective assessment of income correlate with resilience?
- 2. Does the level of resilience affect the ability of older adults to cope with financial difficulties?
- 3. Does the usage of information technologies by older adults depends on their level of resilience?
- 4. Are resilience predictors interconnected with life satisfaction and subjective well-being?

The data suggests an interconnection between the level of resilience and the life practices of older people and significant differences in the level of well-being depending on the level of resilience. Absolute income and subjective assessment of income correlate with the psychological resilience of older adults. Table 2 shows the correlations identified in surveys conducted by the International Scientific Educational Laboratory for the Improvement of Wellbeing Technologies of Older Adults at TPU in the period between 2015 and 2021.

Table 2. Life satisfaction, health and income of older adults in Tomsk region (N=400-600, Tomsk region, 2015–2021).

Variables	Coefficient	Life satisfaction	Bad health	Resilience
Income is subjectively insufficient (2015)	Spearman's Rho	-,139*	,229**	-
	Sig.	0,017	0	-
	N	293	296	-
Income is subjectively insufficient (2016)	Spearman's Rho	-,403**	,161**	-
	Sig.	0	0	-
	N	851	851	-
Absolute income (2017)	Spearman's Rho	,192**	-,123**	-
	Sig.	0	0	-
	N	400	395	-
Income is subjectively insufficient (2020)	Spearman's Rho	0,031	,183**	-
	Sig.	0,446	0	-
	N	593	598	-
Absolute income (2021)	Spearman's Rho	,216**	-,114*	,144**
	Sig.	0	0,024	0,004
	N	394	394	394

The results of Tomsk surveys demonstrate comparatively weak correlations between income and subjective wellbeing. Similar results are obtained in all-Russia surveys: Comprehensive monitoring of living conditions (CMLC-2018) and Sample Survey of Population Income and Participation in Social Programs (VNDN-2017). Repeated adjustments of the pension system and pension formula, and low average salaries result in insignificant returns from long work experience, the correlation of which with income is weak (, 138 **). Russian data shows that one of the strongest correlations is the relationship between income and unemployment (-, 314 **), and this is for the 2018 sample of retirees, taking into account the previous retirement age. It is incorrect to view working beyond the pension age as a prerequisite for well-being, especially in the context of later retirement, when health opportunities will leave even fewer options for employment. For the current generations of older adults, the education factor statistically weakly correlates with income (, 237 **).

Formally, absolute poverty among pensioners should not exist, however, according to statistical data (VNDN, 2012–2019 [5]), a certain number of poor people are identified among people over the working age - 5.31% in 2012, 4.66% in 2014, 4.76% in 2015, 7% in 2016 (the year of "under-indexing" of pensions), 6.35% in 2017, 5.26% in 2018 and 4.11% in 2019. The division of older people into “poor” and “non-poor” is not very informative. In terms of the sources of passive income in the form of pensions benefits and property rentals, both groups are practically identical, but in the group of the poor, a significantly smaller proportion of respondents work, are engaged in entrepreneurship and have poor housing conditions. In the CMLC sample, on average, about 52% of the older adults are experiencing difficulties coping on present income.

The results of the 2021 survey reveal a low participation of the older adults in labor practices. In the group below the median value of resilience, 23.3% of respondents are employed in income-generating activities, in the group above the median value of resilience - 39.2%. Money remain the main motive for working beyond the pension age. Assessing their financial situation, a large share of respondents in the first group noted that all the money is spent on food - 48%, 12% have enough money for many things without major

restrictions; the respondents of the second group noted the ability to buy new clothes and shoes - 36%, 33% can buy things, except for the large purchases.

Analyzing the purchases via the Internet, we revealed that such practices are still rare (Table 3). Differences between the groups of respondents in terms of median resilience were identified for the level of awareness of digital consumer behavior practices and their application.

Table 3. The use of the Internet and consumer behavior, %.

	Yes, use it all the time	Yes, use it occasio nally	No, I don't use it, but I'm aware of this option	No, I'm not aware of this option
Resilience group	Use the Internet to buy products and personal care products			
below median	1	6	71,5	22
above median	5	3	84	9
	Use the Internet to buy clothes and footwear			
below median	2	7	72	20
above median	4	8	80	8
	Use the Internet to buy household appliances, electronic equipment, means of communication, etc.			
below median	2	5	72	21
above median	3	7	81	9

Having IT devices for personal use and the possibility of using information technology allows an older individual to feel confident and to withstand destabilizing factors with optimism. 50% of the respondents use modern computer devices in everyday life, 65% of the respondents who use PCs have an indicator of resilience above the average (62.5 points). Elderly people who do not know how to use and have no desire to learn (33.25%) have a resilience score of less than 62.5. 64% of respondents in the 1st quartile of resilience do not use a PC, while in the 4th quartile, 65% of respondents use a PC in their daily life.

42% of survey participants use the Internet almost every day, 13% use it once or several times a week, and 45% never use the Internet. At the same time, in more than 57% of the respondents who do not use the Internet, their resilience is below the average level, and, on the contrary, among those who use the Internet almost every day, the resilience is above 62.5 points. The trend repeats by quartiles. In the first quartile of resilience, 53% of respondents do not use the Internet, and in the last quartile with the highest level of resilience, only 20% do not use it. Tomsk older adults use the Internet for the reasons shown in Fig. 1.

Fig. 1. Activities performed by the older adults in the Internet (N=400, Tomsk region, 2021).

According to the survey, the most popular reasons for using information and communication technologies by older adults are searching for the necessary information on

the Internet and various forms of communication (with family and friends via video conferencing, in social networks).

In the context of the digitalization of the economy, the problem of financial transactions is given a new perspective for the older adults [6]. Financial resilience is assessed based on the demand for financial products (bank account, credit, insurance) and their availability. According to research [7-8], older adults are marginally involved in the use of information technology in the financial sector, which significantly limits their possibilities for obtaining financial products and services.

According to the sociological survey of 2021, the financial behavior of older people is focused on saving money. 67% of respondents make savings and try to save money, 30% - conduct an organized money management, draw up a financial plan of income and expenses. At the same time, the majority of respondents do not use credit products and loans, and 61% of survey participants do not have savings for difficult times. Are there financial constraints and does resilience affect them? When answering the question: "In the past 12 months, has it been difficult for you to cover the necessary living expenses such as housing, electricity, water, health care, food, clothing, transportation?" two groups of respondents were identified. The first group with a level of resilience of 12-24 and 27-50 points, for which it is "difficult" and "very difficult" to cope with these expenses (64% and 53%, respectively); and the second group with a level of resilience of 51–75 and 76–100 points, which is characterized by the assessment "neither difficult nor easy" (51% and 69%, respectively). The survey data are presented in Table 4.

Table 4. Resilience and ability to cope with financial difficulties.

Resilience score	Difficult to cope with priority expenses, % of respondents in the group	Neither difficult nor easy to cope with priority expenses, % of respondents in the group	Easy to cope with priority expenses, % of respondents in the group
12-24	64	27	9
27-50	53	41	6
51-75	40	51	9
76-100	19	69	12

The data above suggests the relationship between the level of resilience, distributed by quartile groups, and the self-assessment of the ability of older people to cope with financial difficulties. The majority of respondents (77%) with a low level of resilience cannot cope with large unexpected expenses. In the group with a high level of resilience (group 76–100), the majority of respondents note that it is necessary to cope with the priority expenses ("neither difficult nor easy").

4 Conclusion

The hypothesis regarding the relationship between resilience in old age and the quality of a person's subjective well-being has been confirmed. The analysis of sociological data made it possible to identify a trend that manifests itself in a direct relationship between the level of resilience and subjective well-being, which is consistent with the concept of resilience by S. Maddi [9]. Subjective well-being and satisfaction with life among older adults are

associated with a sense of need for loved ones; support of family and friends; communicating with friends; interest in life; the ability to make decisions on their own, take responsibility for their own lives, do what they like; social recognition of the importance (need) of what was done and is being done by the older individual. According to the results of sociological surveys, we revealed correlation between the degree of satisfaction with life in older population and the emotional state, which is determined by non-material factors. A positive attitude is influenced by the system of life priorities as a basic personal tool for self-regulation. Weak correlations between income (and / or subjective assessment) and life satisfaction are indicated by data from long-term surveys of older adults living in the Tomsk region. We found that even with a low level of material well-being, the older adults did not experience anxiety, and considered themselves as happy people.

The data of the all-Russian polls indicate the deflating and disorienting influence of institutional factors on the well-being of older adults in Russia and the absence of strong relationships between the individual's personal strategies in relation to work and education and material well-being in old age. The Comprehensive monitoring of living conditions and Sample Survey of Population Income and Participation in Social Programs data do not make it allow us to identify variables that strongly correlate with the level of income beyond the working age for residents of Russia.

Older adults with higher resilience scores rate their ability to cope with financial difficulties higher. Older people who use information technology in their daily lives have significantly higher levels of resilience. There is a direct relationship between the level of resilience and the demand for information technology by older people. The use of the Internet by older people is associated with communication and the search for useful information.

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