CIVITAS, 2023, 13(2), 31-46
www.civitas.rs

Jasmina Nedeljković[1]

UDC 531.761
159.937.53.07(=163.41)
Original research article
Received: 02/11/2023
Accepted: 19/12/2023

SHORT SERBIAN VERSION OF THE ZIMBARDO TIME PERSPECTIVE INVENTORY (ZTPI) – ZTPI-15[2]

Abstract: The main goal of this research was the validation of a short version of Zimbardo's Time Perspective Inventory (ZTPI), which was previously adapted into Serbian. The original version of the ZTPI has 56 items and measures five time perspectives – Past-Positive, Past-Negative, Present-Hedonistic, Present-Fatalistic, and Future. The adapted Serbian version has 52 items and confirmed the original five-factor structure of the inventory. The questionnaire was shortened due to the need for economy in the use of the scale, especially when it is given as part of a battery of tests consisting of several psychological constructs. The short ZTPI has 15 items and a validated five-factor structure of the inventory. Considering all the conditions and characteristics of this study, such as the mentioned fit indices, factor saturations, as well as the sample size, it can be concluded that the proposed model with 15 items fits the collected data.

Key Words: time perspective, time perspective measure, ZTPI shortening, confirmation factor analysis

[1] Full Professor, Faculty of Law and Business Dr Lazar Vrkatić, Bulevar oslobođenja 76, Novi Sad; Orcid: https://orcid.org/0000-0002-9869-480X; e-mail: jasmina.nedeljkovic@gmail.com

[2] This article is part of the research project Challenges for Youth in the COVID-19 and post-COVID-19 Period: Violence or Entrepreneurship-Oriented Growth; project no. 142-451-3100/2022-01, funded by the Provincial Secretariat for Higher Education and Research

1. Introduction

We flow with time deceptively, convinced that we are now, not before or after. What we are we cannot relate to the before or after; our only perspective of time says we are never beyond the now. By acknowledging that we were or that we will be we set no precedent. "Were" and "will be" merely means that the now existed and will exist in the future. We were on the bus now and we will be at the movies now. That is the only qualitative difference between the now, before and after.

On the Subjective Dimension of Time (Fajgelj, 1970)

From the beginning of empirical research on time perspectives in the late 20th century, besides operationalization of time perspectives, the focus was also on the study of relationships with various psychological constructs, such as mental health and personal happiness (Boniwell & Zimbardo, 2004; Gruber et al., 2012; Stolarski et al., 2013), procrastination in university students (Nedeljković, 2017) and elementary school students (Đokić & Drobnjak, 2018), self-control in high school graduates (Kostić, 2019), stress in managers (Veljković & Nedeljković, 2021).

People are aware that time is the only non-renewable resource they have. Since it is very difficult to define, and the awareness that it flows exists, time as a concept has always been of interest to philosophers, physicists, theologians, psychologists, and ordinary people. When we talk about time, we are talking about events that have passed a second, a few minutes, days, years, decades and centuries ago. And we are aware that the present moment, while we are still talking about what was or what we hope will be, is blending with the past. Also, we are aware that the future does not exist, but that it is a projection of our hope that something will happen.

1.1. **Identifying the concept *time perspective***

Zimbardo & Boyd (2008) state that Levin (1942) was one of the first researchers to see the importance of time perspective in the study of human behaviour. According to Levin, the life space of an individual extends to the past, present and future, so that it affects not only a person's emotions and behaviour, but also his moral choices. Later it turned out (Boniwell, 2008) that many researchers (Nuttin, 1985; Wessman & Gorman, 1977; Zimbardo & Boyd, 1999) shared Lewin's belief about the influence of future and past events on a person's present.

Time perspective is reflected in the relative importance that an individual attaches to the past, present or future in their thoughts. Our attitudes towards past, present and future time can be positive or negative. The experience of time is shaped by our emotional state, the dominant time perspective, and the pace of life in the community of which we are a member.

The "father" of the study of time in psychology, Paul Fraisse (1963), believes that our behaviour at any given moment does not depend only on the situation we are in, but on everything we have experienced so far, as well as on all future expectations (Zimbardo & Boyd, 2008). So, we can say that all our behaviour is placed in some temporal perspective. It depends on our time horizon at the very moment of the event.

Discussing the concept of time perspective, Zimbardo & Boyd (1999) state that time perspective is an often-unconscious personal attitude that each of us has towards time. Thanks to personal attitude, the continuous flow of existence can be placed in five categories, which give order, connection, harmony and meaning to our lives. This personal attitude has a strong influence on the life of all people and represents the first time paradox. Zimbardo & Boyd (2008) state that a balanced attitude – an attitude of medium intensity in relation to all six dimensions of time perspective is another time paradox.

1.2. **Zimbardo's Time Perspective Inventory – ZTPI**

The relationship to time is usually learned in the culture we live in, shaped by religion, economic status, education, family, peers, school, and significant life events. Cultures differ greatly in their dominant time

perspective. They value the past, present, and future in different ways, as well as the impacts of their interactions. Past-oriented cultures strongly believe in the significance of past events. History, religion, and tradition are extremely important to these cultures. Present-oriented cultures place the greatest importance on the immediate moment because they see the future as vague and uncertain. If cultures are future-oriented, they emphasize the importance of what is to come and expect the future to be grander than the present.

According to the theory and thirty years of research by Zimbardo and Boyd, there are six main time perspectives: Past-Negative, Past-Positive, Present-Hedonistic, Present-Fatalistic, Future, and Future-Transcendental. At this point, it should be noted that the Future-Transcendental scale is not included in ZTPI-56, but it is assigned as a separate instrument.

1.2.1. Description of time perspectives measured by the ZTPI

1.2.1.1. Past-Oriented

Past-oriented individuals can distance themselves from actual reality, current situations and personal trials, directing their attention to previously established obligations associated with previously set goals. A large part of their behaviour is influenced by feelings of guilt, due to the inconsistency of current thoughts and actions with previously established obligations. These individuals are often conservative and concerned with maintaining the status quo position regardless of whether that position is good or bad for them. They are risk-averse, and not impressed by new, more efficient ways of doing things. They prefer the well-established ways and previous experiences. They have an intense need to feel safe, secure, and protected under the umbrella of tried and tested experience.

Past-Positive is a time perspective characterized by a warm, sentimental attitude toward the past, rather than an objective record of good and bad events. Past-positive attitude can reflect positive events from this period of life, but also a positive interpretation, a positive reconstruction of past events. Psychologically speaking, what an individual believes happened in the past affects their thoughts, feelings, and behaviour much more than what actually happened. People who expe-

rience unpleasant events in the past and remember them in a positive way can become more resistant to stress, effectively cope with the consequences of stress, and become better adjusted and optimistic individuals.

Past-Negative is characterized by a generally negative attitude towards past events. These individuals usually do not have close friends. Those who know them describe them as unhappy, depressed, shy, anxious, with poor impulse control. Although, as a rule, they do not have much energy, they try to be busy, occupied, to escape from painful memories.

1.1.1.2 *Present-Oriented*

Present-oriented individuals focus on specific factors in the immediate sensory environment (physical prominence – expressiveness, sensory qualities, current social pressures). At the same time, they ignore or minimize the importance of abstract qualities that are relevant to the existence of expected future events or the memory of the past. Such people also tend to be narrowly focused on what is, rather than what could be or what was. Their opinion is more concrete, less abstract, and they tend to use the present tense more often. It is difficult for them to postpone the satisfaction of the need, especially when it is intense, so they are exposed to pressure. They are easily tempted and can distance themselves from the task if they are physically or socially stimulated. They are less focused on instrumental activities to achieve future goals and more on activities that bring immediate pleasure or avoid pain. Unlike people who are predominantly past- or future-oriented, present-oriented individuals sometimes ignore or avoid being influenced by the acquired knowledge if it contributes to the satisfaction of their needs.

Present-Hedonistic has been found to be the dominant time perspective in individuals who are impulsive, creative, curious, sociable, adventurous, and sometimes irresponsible. Their guiding principle is: *If it makes you feel good, do it*. They tend to engage in risky behaviour, be it sex, extreme sports, alcohol, or drug use. They dislike a lot of obligations and try to have as few as possible. They like a fast-paced and luxurious life with little work. Time is not of much value for them. They are unlikely to state: "Time is money".

Present-Fatalistic is predominant in individuals with a helpless, hopeless attitude towards the future and life. Lack of personal efficacy leads to anxiety and depressive behaviour. It is difficult for them to establish relationships, whether friendly or romantic. Acquaintances describe them as unhappy, careless, and apathetic. They rarely seek pleasures and leave the impression of people for whom nothing is particularly important. They are not afraid to get into risky situations, because their belief is that everything is predetermined and that no matter what they do, it will not significantly change the course and quality of their life in the future. Their motto is: *What will be will be*.

1.2.1.3 Future-Oriented

Future-oriented individuals, focused on planning and setting goals, are characterized by the principle of reality. They can postpone lesser satisfaction for the sake of greater satisfaction, which they expect as a reward for the effort and dedication. For this reason, they are very careful about their behaviour. They have many acquaintances and few close friends because cultivating friendships requires the time they need to achieve their goals. To achieve their dreams, they take great care of their health, spend moderately, have lists of priorities and daily tasks and obligations, do not like excessive excitement. In a word, they have good control over their own lives.

These individuals show a tendency to base their decisions less on concrete, empirically based aspects of current behaviour and more on anticipated, abstract imaginations of future consequences of alternative courses of action. They are prone to if/then reasoning, probabilistic thinking, careful analysis, and establishing causality. They carefully and conscientiously consider the consequences of one's actions, try to optimize results and are very responsible. They accept the postponement of immediate gratifications in order to achieve better long-term goals. They are ready to invest great efforts in ongoing activities and to endure unpleasant situations on the way to achieving positive results in the future. They save time and energy and avoid engaging in tasks that are not important to them.

1.3. ZTPI: Translations, validations, and short versions

ZTPI has not only been translated, but also validated in several languages. Currently available versions include the French (Apostolidis & Fieulaine, 2004), Italian (D'Alessioet al., 2003), Spanish (Diaz-Morales, 2006), Russian (Sircova et al., 2008), Greek (Anagnostopoulos & Griva, 2012), Lithuanian (Liniauskaite & Kairis, 2009), Czech (Lukavska et al., 2011), Swedish (Carelli et al., 2011) and Portuguese version developed in Brazil (Milfont et al., 2008). Some of these versions have been tested on large representative samples, e.g. the Lithuanian (N = 1529) or Czech version (N = 2030). The Serbian adapted version of the ZTPI (Nedeljković, 2012) was tested twice on large representative samples, the first time on a sample of N = 1304 (Nedeljković, 2012) and then on a sample of N = 933 (Kostić & Nedeljković, 2013). ZTPI has also been examined through cross-cultural comparisons (Sircova & Mitina, 2007; Sircova et al., 2014). Validation studies have confirmed that the translations are useful tools in psychological practice and that they generally match the original inventory on significant items of each scale. This experience led to the assumption that in different cultural contexts abbreviated versions of the ZTPI, containing only a few key items for each scale, could provide a more valid and practical tool.

1.4. Research Objectives

The present research has two objectives. The first is a brief description of the parameters of the adapted version of ZTPI in the Serbian language. The second goal is to present the results of the validation of the short version of the Serbian adapted ZTPI-52.

2. Method

2.1. Sample

The sample, which was checked by exploratory and confirmatory factor analysis of the original ZTPI translated into Serbian, consisted of 400 students of both sexes, mostly aged 21. It was validated on a sample of 1304 students of both sexes with a mean age of 21.

The sample on which the shortened adapted version of the ZTPI was conducted consisted of 752 respondents with the most common age of 24.

2.2. Instruments

2.2.1. Original ZTPI

Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999) contains 56 items. Factor analysis identified five dimensions: Past-Negative, generally negative, aversive view of the past (*I think of bad things that happened to me*); Present-Hedonistic, hedonistic attitudes towards time and life that imply risk (*The existence of risk makes my life exciting*); Future, planning goals and achievements (*I am able to resist temptation when I know there is work that must be done*); Past-Positive, an optimistic and positive attitude towards the past (*I enjoy talking about the good old times*), and Present-Fatalistic, a hopeless attitude towards the future and life (*My life is controlled by forces I cannot influence*).

2.2.2. Serbian version of ZTPI

Validation of the Serbian version of ZTPI confirmed the assumed five-factor structure explained by 52 items, i.e. four items less than in the original questionnaire.

2.3. Procedure

The research was conducted in 2017 on a sample of 800 respondents. There were 752 validly completed questionnaires.

2.4. Data Analysis

In the process of shortening the Serbian adapted version of ZTPI, exploratory and confirmatory factor analysis was applied. The fit indices CFI (Comparative Fit Index, $0 < CFI \leq 1$) and RMSEA (Root mean-square error of approximation, $0 < RMSEA \leq 1$) were also used. The values

of χ^2 (df) < 2, CFI ≥ 0.85 and RMSEA < 0.05 suggested that the theoretical model fits the data well (Lazarević, 2008). As a measure of reliability, alpha, Krombach's measure of internal consistency, was used.

3. Results

The results will be presented in accordance with the research goals. The translation of the original inventory into Serbian was done in 2008 (Nedeljković, 2012) as part of a large cross-cultural adaptation project (Sircova et al., 2014). Kostić & Nedeljković (2013) published the entire procedure and results of the cross-cultural adaptation of the inventory into Serbian.

3.1. Results of the ZTPI adaptation into Serbian

For an adequate application of confirmatory factor analysis (KFA), the entire sample was randomly divided into two subsamples. Exploratory factor analysis was applied to one and confirmatory factor analysis to the other.

3.1.1 Exploratory factor analysis

A factor analysis was applied to the data obtained by the Serbian version of the ZTPI. The data sample for the application of factor analysis was adequate (KMO = 0.81). As a factor extraction method, the principal components method was used. Factor extraction was first performed with *oblimin* rotation. Since the correlations between the obtained factors were very low, it was decided to perform an extraction with varimax rotation. Five isolated factors explained 33.50% of the total variance.

Factor saturations and the distribution of items by factors were examined. The results were compared with the results on the original version of the inventory. Items #9, #35, #37, and #52 correlated with multiple factors and had significantly high saturations on two factors. Correlations lower than 0.3 were not considered in the analysis.

3.1.2 Confirmatory factor analysis of the adapted original version of the ZTPI in Serbian

CFA was implemented with the following objectives:

1) to compare the Serbian model with the original version of ZTPI (Model 1) and

2) to determine the validity of the model elaborated using EFA (Model 2).

The statistical indices of suitability of theoretical models to empirical data are classified as modest in terms of significance (see Table 1).

After the model modifications, the following indicators of its significance were obtained (Model 3): $\chi 2 = 3154.216$, df = 1266; X2 /(df) = 2.39, CFI = 0.708, RMSEA = 0.050. All parameters are better than before modifications (Table 1).

Table 1. Adaptability parameters of the Serbian version of the ZTPI, model comparison

Model	χ^2	Df	χ^2/df	CFI	RMSEA	AIC	CAIC	α
1.	4267,893	1473	2,80	0,604	0,056	1321,893	-6627,784	0,82
2.	4110.289	1474	2,79	0,577	0,059	1162.289	-6567.612	0,83
3.	3154,216	1266	2,39	0,708	0,05	622,216	-6210,296	0,81

Legend: Models: 1 = original version with 56 items; 2 = model based on results of EFA with 56 items; 3 = final version with 52 items. All $\chi 2$ statistics are significant at the less than 0.001 level. $\chi 2$/df = quotient of $\chi 2$ and degrees of freedom; CFI = comparative fit index; RMSEA = root mean square error of approximation; AIC = Akaike's informativeness criterion; CAIC = consistent Akaike's informativeness criterion; α = Cronbach's coefficient of internal consistency.

3.1.2.1. How has the model been improved?

1) Correlations between residuals (E) were examined. Since many items showed a high correlation with the residuals, it was decided to

include the correlations of the residuals in the model for the following items: 42 and 31, 41 and 15, 20 and 2, 11 and 7.

2) The factor saturations of the items were examined to search for concordance with the original ZTPI model. Items that were significantly highly correlated with two factors were dropped, as well as items that had saturations of less than 0.3 on a certain factor, which impaired factor stability. The result of such indicators was that items with double correlations and those with saturations less than 0.3 were dropped from the model.

Compared to the original version of the ZTPI instrument (Zimbardo & Boyd, 1999), in which five items had to be reverse scored, in the Serbian version two items should be reverse scored, one in Past-Negative and two in Future, which are also reverse scored in the original version. The number of items per subtest is also different, so that in the Serbian version, Past-Negative is determined by eight, instead of the original ten items. Present-Hedonistic, instead of the original fifteen, is determined by sixteen items. Future orientation is determined by eleven items in the Serbian version, and thirteen in the original. Present-Fatalistic is determined by four items in the Serbian version, and nine in the original. Past-Positive is determined by nine items in the original version, and thirteen in the Serbian version.

After all these procedures, the internal reliability of the subscales was checked again (Table 2).

Table 2. Reliability of individual subscales prior to and after applying CFA

Factor	α	α before CFA
F1: Past-Negative	0,81	0,79
F2: Present-Hedonistic	0,78	0,76
F3: Past-Positive	0,75	0,66
F4: Future	0,67	0,55
F5: Present-Fatalistic	0,69	0,66

Legend: α – Cronbach's reliability coefficient

The confirmatory check and change of the model resulted in an increase in the reliability of all subscales of the inventory.

3.2. Validation of the abbreviated Serbian version of the ZTPI

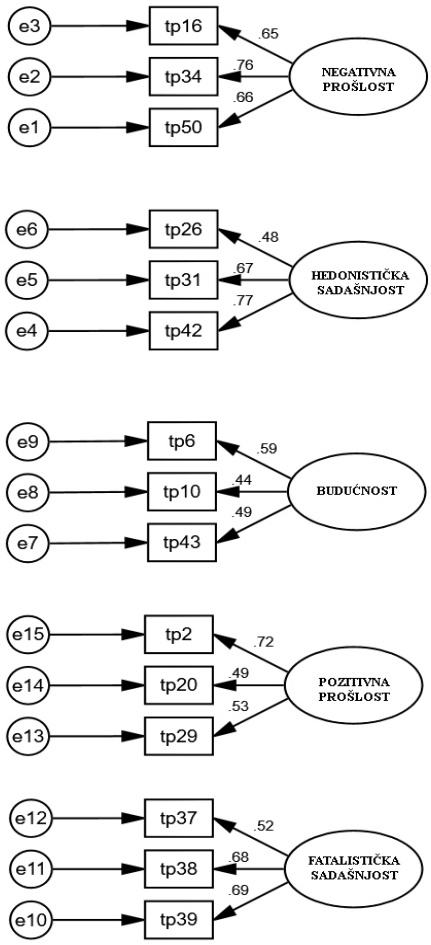
Using confirmatory factor analysis (KFA), the five-factor structure of ZTPI (Zimbardo & Boyd, 1999) was examined. A model consisting of fifteen items evenly distributed over five factors was tested: Past-Negative (NEGATIVNA PROŠLOST) – items 16 (.65), 34 (.76) and 50 (.66); Present-Hedonistic (HEDONISTIČKA SADAŠNJOST) – items 26 (.48), 31 (.67) and 42 (.77); Future (BUDUĆNOST) – items 6 (.59), 10 (.44) and 43 (.49); Past-Positive (NEGATIVNA PROŠLOST) – items 2 (.72), 20 (.49) and 29 (.53); Present-Fatalistic (FATALISTIČKA SADAŠNJOST) – items 37 (.52), 38 (.68) and 39 (.69). Figure 1 (Model) shows the factor saturations of all items graphically. The only item that is cause for concern is item 10 (factor saturation = .44), but the deviation from the desired limit is not so great that it would necessarily require the omission of the mentioned item from the continuation of the analysis.

Further analysis involved checking the fit of the proposed model. The value of the basic parameter, chi-square, was $\chi 2$ (90, N = 752) = 344,568 and the data showed that such chi-square value was statistically significant (p = .000), which did not indicate a good fit of the model. However, it should be considered that the research included 752 respondents, since it is known that the value of the chi-square largely depends on the sample size. Also, the value of the chi-square ratio and the number of degrees of freedom indicated that there is still a basis for stating that the model fits well ($\chi 2$ / df = 3.829). For this reason, a check of the fit index followed. GFA (.94) and AGFA (.92) values indicated good model fit, as did RMSEA (.06, with confidence intervals of .05 and .07) and SRMR (.08). The fit indices that did not indicate an ideal fit were the CFI (.86), which did not meet the criterion > .90, and the PCFI (.73), whose desirable value is > .80. The mentioned data are also shown in Table 3. Considering all the conditions and characteristics of this research, such as the specified fit indices, factor saturations and sample size, it can be concluded that the proposed model fits the collected data.

Table 3. Fit indices of short Serbian version of ZTPI

χ^2	df	p	χ^2/df	GFI	AGFI	CFI	PCFI	RMSEA	LO90	HI90	SRMR
344.568	90	.000	3.829	.94	.92	.86	.73	.06	.05	.07	.08

Figure 1. *Model*



Note: Item numbers correspond to the original ZTPI (Zimbardo & Boyd, 1999).

4. Conclusion

The aim of this research was to reduce the number of items of the adapted Zimbardo Time Perspective Inventory – ZTPI (Kostić & Nedeljković, 2013). ZTPI has operationalized five time perspectives related to past, present, and future. The reduction was based on the application of confirmatory factor analysis of the adapted Serbian version of the inventory. Using this approach as a starting point, the results of three different studies are presented. The first two are related to the adaptation of the original instrument into Serbian, and the third deals with the results of shortening the adapted version. The short version was completed in 2017. For the past six years, this short version was checked in dozens of studies, which examined the correlations with many psychological constructs, such as self-efficacy, self-control, decision-making modality, propensity for entrepreneurship, and personality dimensions. The studies were conducted on different samples, from adolescents and adults, the unemployed and employed, to managers and executives, both in normal circumstances and in social isolation during the Covid-19 pandemic.

In every situation the short version of the ZTPI showed stability in measuring time perspectives. The clear and stable five-factor structure of the inventory was retained. Five isolated factors, in our opinion, provide sufficient frameworks for evaluating an individual's time perspective, as part of the reference frame of their complex, cognitive and social characteristics.

The short version of the ZTPI enables data collection without excessively engaging respondents while maintaining the same informativeness. This version can also be used as a protocol for observing the predominance of the respondents' time perspectives, as well as for determining the balance of time perspectives, as an indicator of optimal well-being. This opens the possibility of comparing the data obtained by individual self-assessment and the data obtained by observation, which is another important criterion of measurement objectivity. The limitations of this research open new paths for future researchers, with the aim of checking the stability of the measured construct.

References

Anagnostopoulos, F., Griva, F. (2012). Exploring Time Perspective in Greek Young Adults: Validation of the Zimbardo Time Perspective Inventory and Relationships with Mental Health Indicators. *Social Indicators Research*, Volume 106, Number 1 (2012), 41–59, DOI: 10.1007/s11205-011-9792-y

Apostolidis, T. and Fieulaine, N. (2004). Validation française de l'échelle de temporalité, *European Review of Applied Psychology*, vol. 54 (3), p. 207–217.

Boniwell, I. (2008). 27 Perspectives on Time.

Boniwell, I., & Zimbardo, P. (2004). Balancing time perspective in pursuit of optimal functioning. In P.A. Linley & S. Joseph (Eds.), *Positive psychology in practice*. New Jersey: John Wiley & Sons.

Carelli, M., Wiberg, B., and Wiberg, M. (2011). Development and construct validation of the Swedish Zimbardo time perspective inventory. *Eur. J. Psychol. Assess*. 27, 220–227.

D'Alessio, M., Guarino, A., De Pascalis, V., Zimbardo, P.G. (2003). Testing Zimbardo's Stanford Time Perspective Inventory (STPI)- short form. *Time and Society*. 12(2): 333–347.

Díaz-Morales, J. F. (2006). Estructura factorial y fiabilidad del inventario de perspectiva temporal de Zimbardo [Factorial structure and reliability of the Zimbardo Time Perspective Inventory]. *Psicothema* 18, 565–571.

Đokić, V., Drobnjak, D. (2018). Odugovlačenje i vremenska perspektiva kod učenika osnovne škole. *Civitas*, 8(1): 13-29.

Fajgelj, S. (1970). O subjektivnoj dimenziji vremena. *Naši dani*, Sarajevo.

Fraisse, P. (1963). *Psychology of time*. New York: Harper & Row.

Gruber, J, Cunningham, W. A., Kirkland, T., et al. (2012) Feeling stuck in the present? Mania proneness and history associated with present-oriented time perspective. *Emotion* 12(1): 13–17.

Kostić, A. i Nedeljković, J. (2013). *Studije vremenske perspektive u Srbiji*. Niš: Punta.

Kostić, A. (2019). Vremenska perspektiva i samokontrola kod maturanata. *TEME*, XIII, 1, 275–291.

Lewin, K. (1942). Time perspective and Morale, in *Resolving Social Conflicts*. G. W. Lewin, ed.

Liniauskaitė, A. & Kairys, A. (2009), The Lithuanian Version of the Zimbardo Time Perspective Inventory (ZTPI), *Psichologija*, 40, 66–87.

Lukavska´, K., Klicperova´-Baker, M., Lukavsky´, J, et al. (2011) ZTPI—Zimbardu˚v dotazní´k cˇasove´ perspektivy. *Cˇeskoslovenska´ psychologie* 55(4): 356–374.

Milfont, T. L., Andrade, P. R., Belo, R. P., Pessoa, V. S. (2008). Testing Zimbardo Time Perspective Inventory in Brazilian sample. *Interamerican Journal of Psychology*, 42 (001): 49–58.

Nedeljković, J. (2012). *Integrativni model psiholoških prediktora akademske neefikasnosti.* PhD dissertation, University of Niš, 28th December 2012

Nedeljković, J. (2017). The Influences of Time Perspectives on Academic Procrastination. In: Kostić, Aleksandra & Derek Chadee (Eds.). *Time Perspective – Theory and Practice*. Palgrave Macmillan.

Sircova, A, Sokolova, E. T. and Mitina, O. V. (2008) Adaptation of Zimbardo Time Perspective Inventory. *Psykhologicheskii Zhurnal* 29(3): 101–109.

Sircova, A, Van de Vijver F. J. R., Osin, E., et al. (2014). A global look at time. A 24-country study of the equivalence of the Zimbardo Time Perspective Inventory. *Sage Open*, 1–12.

Stolarski, M., Matthews, G., Postek, S., et al. (2013). How we feel is a matter of time: Relationships between time perspectives and mood. *Journal of Happiness Studies*.

Veljković, B., Nedeljković, T. (2021). Vremenska perspektiva kao prediktor stresa kod menadžera. *Civitas*, 11 (1), 13–23.

Zimbardo, P. G. & Boyd, J. N. (2008). *The time paradox, The New Psychology of Time that Will Change Your Life*, Free Press, Simon & Schuster, Inc.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-difference metric. *Journal of Personality and Social Psychology*, 77, 1271–1288.

Лазаревић, Љ. (2008). Примена индекса подесности у тестирању теоријских модела у психологији: могућности и ограничења. Зборник Института за педагошка истраживања, 1, 101–121.

Сырцова, А., Митина, О. Б. і др., (2007). Феномен временной перспективы в разных культурах (по материалам исследований с помощью методики ZTPI). КУЛЬТУРНО -ИСТОРИЧЕСКАЯ ПСИХОЛОГИЯ 4/2007, 4. – P. 19–31.