










ORIGINAL PAPER

Jacek Łukasiewicz ¹ (ABCDG), Marcin Stencel ¹ (ABCDG), Adam Raczkowski ¹ (ABCDG),
Andrzej Cwynar ¹ (DGH), Wiktor Cwynar ¹ (DGH), Tomasz Saran ² (ABCDG),
Anna Mazur ² (BCDEFG)

Personality correlates in the tendency to incur debt in patients with and without osteoarthritis

¹ University of Economics and Innovation, Lublin, Poland

² Department of General and Neuro Rehabilitation, Witold Chodźko Institute of Rural Health, Lublin, Poland

ABSTRACT

Introduction. Osteoarthritis is the most common disease of the musculoskeletal system. Osteoarthritis progresses slowly, but with time it results in movement disability and chronic pain. Its progression is also significantly associated with personality functioning and the ability to make rational life choices regarding various aspects of human life, including the economic sphere.

Aim. The aim of the research was to determine how personality correlates with a tendency towards indebtedness between patients with and without osteoarthritis.

Material and methods. The researched sample consisted of two groups - 50 patients diagnosed with osteoarthritis hospitalized in the Department of General and Neuro Rehabilitation in the Institute of Rural Health in Lublin and 50 healthy people. The KOS-B Questionnaire, the IVE Questionnaire, the SES Scale, the SPP-25 Scale, the Delta Questionnaire and the APSZ questionnaire were used in the research.

Results. In the group of patients with osteoarthritis, the leading correlates of indebtedness are: assessment of the stress situation related to the current economic situation seen as a threat, and perceiving it as harm or loss. In the healthy group, the leading correlates of incurring financial liabilities are impulsiveness, self-esteem, assessment of the stress situation related to the current economic situation seen as a threat, openness to new experiences and sense of humor, empathy, and the need for social approval.

Conclusion. In the group of patients with osteoarthritis, the factor conducive to incurring financial liabilities is the assessment of the stressful situation related to the current economic situation seen as a threat, while perceiving it as harm or loss leads to abandoning reliance on credit. In the healthy group, the factors that favor this type of activity are impulsiveness, self-esteem, the assessment of the stress situation related to the current economic situation seen as a threat and the need for social approval; the factors protecting against indebtedness in healthy persons are openness to new experiences and sense of humor as well as empathy.

Keywords. life on credit, osteoarthritis, personality

Corresponding author: Jacek Łukasiewicz, e-mail: jacek.lukasiewicz@wsei.lublin.pl

Participation of co-authors: A – Author of the concept and objectives of paper; B – collection of data; C – implementation of research; D – elaborate, analysis and interpretation of data; E – statistical analysis; F – preparation of a manuscript; G – working out the literature; H – obtaining funds

Received: 2.12.2018 | Accepted: 19.12.2018

Publication date: March 2019

Introduction

Osteoarthritis is the most common disease of the musculoskeletal system caused by the disorder of surface smoothness and loss of articular cartilage. Structurally, the disease is characterized by the formation of subchondral cavities, bone excrescences and excessive calcification of the subchondral bone. Primary degenerative disease results from involutonal processes, however, overloading of motor organs and metabolic disorders accelerate natural degenerative processes within the joint.¹ As a result of pain and movement disorders, changes in the tissues surrounding the affected joint become evident over time, which leads to muscular atrophy, deformities and contractures of the entire limb, similarly as in the case of inflammatory diseases of the joints. Osteoarthritis progresses slowly, but over time it causes physical disability and chronic pain and socio-economic exclusion, which is also significantly associated with personality functioning and the ability to make rational life choices regarding various aspects of human life, including the economic sphere.²

The issue of personality is one of the most interesting and at the same time the most controversial issues in psychology. Different psychological approaches capture the personality of a person in a very diverse way. All authors try to explain the mechanisms that affect the functioning of people, and at the same time determine the uniqueness of the individual and the sense of its identity. It should be noted, however, that no specific personality definition can be used in a universal way. This means that the definition of personality depends strictly on the adopted theoretical assumptions. Therefore, it should be assumed that the human personality comprises a set of descriptive features that characterize a person in terms of dimensions occupying a central position within the applied theory.³

This work is based on a cognitive approach to a personality, which is characterized by eclecticism and deals with a human-specific way of constructing events, the personal level of integration of one's behavior and the style of action. In terms of this concept, what gives meaning to human experience is the concept of "Self", whereas personality is treated as a system of personal knowledge, used in the interpretation of experience and control of behavior.^{4,5} The cognitive approach to personality strongly concentrates on the image of one's "self", because this concept is responsible for giving a comprehensive sense to our experiences and for determining our attitude to the world through subjective control and self-regulation. Thanks to these processes, a human being can exert the desired influence on the course of events and ensure their own behavior an adequate level of internal integration.⁶

Thanks to the theoretical framework determined by cognitive concepts, it was possible to include personali-

ty as a variable in the study of relationships of individual personality traits with various aspects related to personal finance management, with a particular focus on financial liabilities. Works devoted to this subject indicate the existence of two major dimensions representing different aspects of attitudes towards money. The first is the belief in the symbolic nature of money and refers to their psychological functions, while the second dimension is related to the management of money in accordance with their economic functions.⁷

As Gąsiorowska points out, belief in the symbolic meaning of money is related to materialism, neuroticism, anxiety (understood as a trait and state), low agreeableness and extraversion, external locus of control and low self-esteem, as well as assessing one's financial situation as bad. In turn, the attitude focused on money management coincides with completely different variables. The only personality trait linked to this attitude is conscientiousness, while the remaining correlates are typically economic behaviors (e.g. the number of bank accounts, payment cards or the value of savings).⁸

Interesting results on personality correlates of financial management are also provided by Watson, Jones and Morris.⁹ They show that the desire to have money is an integral part of the narcissistic development of the "Self". People with a high level of narcissistic tendencies covet money, consider it a sign of prestige and success in life, but also experience fear that they will lack resources for a decent life. The results of Lester, Yang and Spinelli research show additionally that people with high levels of anxiety (understood as a trait) may have problems with organizing their budget, they also perceive money as a source of strength and prestige in the eyes of other people. They are also more uncertain and suspicious and in financial decision-making situations compared to people with low levels of anxiety as a trait. The above considerations indicate a significant relationship between specific personality traits and selected aspects of personal finance management. Awareness of these links can help you understand how to budget and control your personal financial resources. It should also be the basis for broadly understood financial education.¹⁰

Aim

The aim of the study was to determine the personality correlates of life on credit of patients with osteoarthritis and healthy people.

Material and methods

The research sample was collected on the basis of intentional choice. It consists of two groups - 50 patients with a diagnosis of osteoarthritis hospitalized in the Department of General and Neuro Rehabilitation in the Institute of Rural Health in Lublin and 50 healthy people. Detailed characteristics of the subjects are presented in Table 1.

Table 1. Sociodemographic characteristic of the researched groups

Variables	Group				
	patients		health people		
	N	%	N	%	
Sex	woman	25	50.0	25	50.0
	man	25	50.0	25	50.0
Marital status	single	6	12.0	10	20.0
	married	28	56.0	39	78.0
	divorced	5	10.0	1	2.0
	widowed	11	22.0	0	0.0
Education	elementary	10	20.4	1	2.0
	vocational	11	22.4	2	4.0
	secondary	17	34.7	31	62.0
	higher	11	22.4	16	32.0
Place of residence	village	19	38.8	21	42.0
	city up to 100 thousand residents	16	32.7	15	30.0
	city over 100 thousand residents	14	28.6	14	28.0

Source: Our own research results.

The average age of the patients undergoing rehabilitation was over 61 years ($M = 61.27$, $SD = 16.00$), and healthy persons approximately 60 years ($M = 59.95$; $SD = 9.93$). Both the clinical group and the healthy population were homogenous in gender. Each group is dominated by married people, who have completed secondary education and come from rural areas.

The research was carried out using the Stress Appraisal Questionnaire, version to assess dispositional stress appraisal (KOS-B) by D. Włodarczyk and K. Wrześniewski, IVE Impulsiveness Inventory by HJ Eysenck and SBG Eysenck in the Polish adaptation by A. Jaworowska, SES M. Rosenberg Self-Esteem Scale in the Polish adaptation by I. Dzwonkowska, K. Lachowicz-Tabaczek and M. Laguna, the Resiliency Assessment Scale (SPP-25) by Ogińska-Bulik and Juczyński, the Delta Questionnaire by R.Ł. Drwal and the Psychosocial Aspects of Debt Questionnaire (APSZ).¹¹⁻¹⁵

The KOS-B questionnaire is used to measure a dispositional appraisal of a stressful situation. It comprises 35 adjectives that make up 4 scales: 1) threat, 2) harm/loss, 3) challenge-activity, 4) challenge-passivity. Subjects give answers based on a 3-point scale. The tool is designed for individual and group research of adolescents and adults, both healthy and sick.¹¹

The IVE questionnaire was constructed to assess three personality traits: impulsiveness, venturesomeness, and empathy. It consists of 54 questions to be answered with Yes or No. It can be administered in research as well as in the individual diagnosis.¹²

The SES scale is the most commonly used tool for self-esteem measurement. SES can be used in studies of adolescents and adults. SES consists of 10 statements. Subject answers on a four-point scale depending on the degree to which he or she agrees with the statements.¹³

The SPP-25 scale was based on the concept of resilience, which recognizes this resource as a personality feature, which is a self-regulatory mechanism, including cognitive elements typical of beliefs and expectations, emotional characteristic of emotional stability and readiness to undertake diverse and effective strategies to deal with the encountered difficulties and the tendency to seek new experience. The tool includes 5 scales: 1) persistence and determination in action, 2) openness to experience and sense of humor, 3) personal competences to cope and tolerance of negative emotions, 4) tolerance of failure and perceiving life as a challenge, 5) optimistic attitude to life and the ability to mobilize oneself in difficult situations. Participants respond to 25 items using a five-point Likert scale. It is intended for adults, both healthy and sick.¹⁴

Delta questionnaire is used to measure the locus of control - a stable and generalized belief of an individual regarding their own location of reinforcement control. People with internal locus of control are convinced that they control what is going on around them, while people with an external locus of control believe that they have no influence on the course of actions related to them. The tool, apart from the main scale, additionally contains a scale for measuring the level of social approval.¹⁵

The APSZ survey was constructed for the needs of the presented research and concerns various social situations related to incurring financial liabilities. It consists of 17 questions concerning subjects' current financial situation, current or past financial obligations, a self-description of the so-called economy, conviction about having basic knowledge about financial management and reliability in repayment of one's financial obligations. When answering the eight questions, the subjects choose the correct answer, and in nine items they give answers on the 5-point Likert scale.

The research was carried out in 2018 after having obtained the consent of the Bioethical Commission of the Witold Chodźko Institute of Rural Medicine in Lublin. The research was voluntary, individual and anonymous. It was conducted in accordance with the Declaration of Helsinki from 2013.

The subjects were informed about the purpose and course of the research, the confidentiality of the collected data and they consented in writing to participate in the research.

Statistical calculations were performed using the IBM SPSS 24 software. The characteristics of the researched sample were based on the calculation of the percentage distribution of the qualitative data frequen-

Table 2. Personality correlates of life on credit in a group of patients with osteoarthritis

Model	Measures of model fit			Regression weights for predictors				
	<i>R²adjusted</i>	<i>F</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Step 1								
Threat	0.09	5.99	0.018	0.03	0.01	0.33	2.45	0.018
Step 2								
Threat	0.16	5.73	0.006	0.06	0.02	0.63	3.37	0.001
Harm/loss				-0.06	0.03	-0.42	2.23	0.03

Source: Our own research results.

Table 3. Personality correlates of life on credit in a group of healthy people

Model	Measures of model fit			Regression weights for predictors				
	<i>R²adjusted</i>	<i>F</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Step 1								
Impulsiveness	0.12	13.31	0.001	0.05	0.01	0.36	3.65	0.001
Step 2								
Impulsiveness	0.15	8.99	0.001	0.05	0.01	0.36	3.71	0.001
Self-esteem				0.02	0.01	0.20	2.05	0.044
Step 3								
Impulsiveness	0.19	8.13	0.001	0.03	0.01	0.25	2.35	0.021
Self-esteem				0.05	0.01	0.35	3.66	0.001
Threat				0.03	0.01	0.30	2.90	0.05
Step 4								
Impulsiveness	0.23	7.68	0.001	0.03	0.01	0.26	2.53	0.13
Self-esteem				0.05	0.01	0.36	3.91	0.001
Threat				0.04	0.01	0.38	3.52	0.001
Openness to experience and sense of humor				-0.04	0.02	-0.22	2.27	0.026
Step 5								
Impulsiveness	0.28	8.17	0.001	0.03	0.01	0.26	2.61	0.011
Self-esteem				0.04	0.01	0.34	3.76	0.001
Threat				0.04	0.01	0.38	3.72	0.001
Openness to experience and sense of humor				-0.06	0.02	-0.33	3.24	0.002
Empathy				-0.04	0.01	-0.27	2.79	0.007
Step 6								
Impulsiveness	0.31	7.81	0.001	0.03	0.01	0.30	2.30	0.004
Self-esteem				0.04	0.01	0.33	3.78	0.001
Threat				0.04	0.01	0.37	3.66	0.001
Openness to experience and sense of humor				-0.06	0.02	-0.34	3.44	0.001
Empathy				-0.04	0.01	-0.31	3.18	0.002
Need for social approval				0.07	0.03	0.19	2.09	0.039

Source: Our own research results.

cy, and descriptive statistics of quantitative variables. The predictive analytics was performed using multi-variable stepwise regression. In the work, the boundary point of committing type I error is 0.05.

Results

In the group of people undergoing rehabilitation due to osteoarthritis, calculations made it possible to build a two-step model, in which two predictors explaining 16% of the variance of the explanatory variable (life on credit) were introduced.

In the first step, an appraisal of the stress situation related to the current economic situation as a threat was introduced as an explanatory variable. The model proved to fit the data well and explained 9.0% ($R^2_{adjusted} = 0.09$) of the variance of the dependent variable, $F(1, 49) = 5.99$; $p = 0.018$. In the second step, an appraisal of the stress situation related to the current economic situation as a harm / loss was introduced to the model. The model proved to fit the data and explained 16.0% ($R^2_{adjusted} = 0.16$) of the variance of the explained variable, $F(2, 48) = 5.73$; $p = 0.006$.

The model developed reveals that in the group of people undergoing rehabilitation due to osteoarthritis, significant predictors of incurring financial liabilities are the appraisal of the stress situation related to the current economic situation as a threat, $\beta = 0.64$; $p = 0.001$ and perceiving it as harm or loss, $\beta = -0.42$; $p = 0.030$.

The relationship between the assessment of a stressful situation related to the current economic situation as a threat and the explained variable is directly proportional, and between the perception of a stressful situation as harm or loss and life on credit - negative, which implies that the more the current financial situation is treated as a potential threat for people diagnosed with osteoarthritis, the higher their inclination to incur financial liabilities. In turn, the higher the sense of harm or economic losses of the examined patients, the lower their readiness to take credit. The results of the predictive analysis in the group of patients with osteoarthritis are presented in Table 2.

In the healthy group, calculations made it possible to build a six-step model in which six predictors explaining 31% of the variance of the variable life on credit were introduced.

In the first step, impulsiveness was introduced as the explanatory variable. The model proved to fit the data and explained 12.0% ($R^2_{adjusted} = 0.12$) of the variance of the dependent variable, $F(1, 49) = 13.31$; $p = 0.001$. In the second step, the self-assessment was introduced to the model. The model also proved to fit the data and explained 15.0% ($R^2_{adjusted} = 0.15$) of the variance of the explained variable, $F(2, 48) = 8.99$; $p = 0.001$. In the third step, the appraisal of the stress situation related to the economic situation as a threat was introduced to

the model. The model also proved to fit the data and explained 19.0% ($R^2_{adjusted} = 0.19$) of the variance of the dependent variable, $F(3, 47) = 8.13$; $p = 0.001$. In the fourth step, the model was supplemented by variable openness to new experiences and a sense of humor. The model also proved to fit the data and explained 23.0% ($R^2_{adjusted} = 0.23$) of the variance of the dependent variable, $F(4, 46) = 7.68$; $p = 0.001$. In the fifth step, empathy was introduced to the model. The model also proved to be correctly matched to the data and explained 28.0% ($R^2_{adjusted} = 0.28$) of the variance of the explained variable, $F(5, 45) = 8.17$; $p = 0.001$. In the sixth step, the model was supplemented with a parameter illustrating the need for social approval. It proved to be correctly matched to the data and explained 31.0% ($R^2_{adjusted} = 0.31$) of the variance of the dependent variable, $F(4, 44) = 7.81$; $p = 0.001$.

The developed model reveals that in the healthy group significant predictors of life on credit are impulsivity, $\beta = 0.30$; $p = 0.004$, self-esteem, $\beta = 0.33$; $p = 0.001$, assessment of the stress situation related to the material situation as a threat, $\beta = 0.37$; $p = 0.001$, openness to new experiences and sense of humor, $\beta = -0.34$; $p = 0.001$, empathy, $\beta = -0.31$; $p = 0.002$ and the need for social approval, $\beta = 0.19$; $p = 0.039$.

The dependencies between impulsivity, self-esteem, regarding stress situation related to the economic situation as a threat and the need for social approval and the explained variable are directly proportional, while the relation between openness to new experiences and sense of humor and empathy and life on credit - negative, which indicates that together with the increase of emotional hyper-reactivity, negative anticipation of the material situation and the need to gain the acceptance of other people, the willingness to incur financial obligations increases. In turn, the inclination to indebtedness of healthy people decreases with the increase of motivation to undertake new tasks, the tendency to experience positive emotions and empathy. The results of the prediction analysis carried out in the healthy group are presented in Table 3.

Discussion

The results of the research indicate that for people representing the clinical group, perceiving a stressful situation as a threat is an important indicator of getting into debt. These people are above all concerned about upcoming difficulties that have not yet occurred. The possibility of experiencing harm and loss is paralyzing for them. This perception of upcoming events, perhaps the goal of avoiding them, is conducive to making decisions about taking loans. It is worth mentioning that such a perception of stressful situations is characteristic of people experiencing emotions of a depressive character, i.e.: feelings of depression, strong tension and anxiety, which are associated with high intensity of neuroticism.¹⁶⁻¹⁸

At the same time, the perception of stressful situations as the loss of what is valuable and important for a given person seems to be a factor protecting against incurring liabilities for persons belonging to a clinical group. In this case, however, these feelings are connected with the loss or harm experienced currently or earlier. When it comes to emotional states, they look the same as those in the situation of perceiving stressful situation as a threat (described above).¹⁹

For healthy people, the perception of stressful situations as a threat (which may appear) is also related to making decisions about debt. Additional determinants are: impulsiveness, high level of self-esteem and strong need for social approval. People who are self-confident willingly take credits and they have a strong need to appreciate their own personal qualities. At the same time, these people do not always have the ability to make a critical assessment of reality - concerning themselves and the situation, as well as the ability to realistically deal with the difficulties encountered. They are inclined to make hasty, often risky decisions and actions, not fully predicting their consequences and taking responsibility for them.^{20,21}

In turn, people who are avoiding debts are characterized by low openness to experience, low sense of humor and low empathy. Therefore, these are people who definitely prefer predictability, steady and unchanging principles; they are reluctant to changes - especially sudden and spontaneous. These features give them a sense of safe functioning in their personal, family and professional lives. In relationships with others, they remain serious, have a large emotional distance, and are more focused on their own needs than on others.²²⁻²⁴

Thus, comparing the main correlates of "living on credit" in two researched groups, it can be stated that the fact of experiencing health difficulties makes the personality features and interpersonal relations irrelevant in this aspect. Life difficulties associated with experiencing stress, and in particular the way in which it is perceived, in this case become a leading factor.^{25,26}

The research does not take into account the relationship between the time of incurring financial debt and the occurrence of the disease (before, during or after its occurrence). Nevertheless, it can be clearly indicated that the fear of experiencing loss is conducive to making decisions about indebtedness regardless of the current or previous experience of the disease (the main factor in each group). In emergency situations, the desire to avoid the experience of impending loss (harm) makes subjects ready to make far more risky decisions, regardless of the personality predispositions. On the other hand, the real experience of loss or such a perception of a stressful situation is a factor that causes greater caution before undertaking the risk of indebtedness.²⁷

This undoubtedly indicates the necessity of support and reliable advice for people in the situation of the disease who are struggling with financial difficulties and face the dilemma of incurring financial liabilities. Research results indicate that in such a situation, the level of desperation of potential borrowers can be very intense, and the desire to avoid losses may contribute to excessive hopes in persons or institutions offering financial assistance.^{28,29}

Conclusion

1. The analysis showed that particular personality traits are linked to incurring financial liabilities, and health condition is the moderator of the relationships.
2. In the group of patients diagnosed with osteoarthritis, the factor conducive to living on credit is the assessment of a stressful situation related to the current economic situation seen as a threat, and perceiving it as a harm or loss makes people refrain from incurring financial liabilities.
3. In the healthy group, impulsivity, self-esteem, the appraisal of stress situation related to the economic situation as threats and the need for social approval are the factors that contribute to indebtedness, and openness to new experiences, sense of humor as well as empathy play a protective role against making decisions about incurring financial liabilities.
4. The results indicate the need to take into account the specificity of the health situation of participants of psycho-preventive programs aimed at helping people who seek support when making decisions about incurring financial liabilities.

Acknowledgement

The study was financed entirely by the Ministry of Science and Higher Education under the program called "Dialogue".

References

1. Hart DJ, Spector TD. The relationship of obesity, fat distribution and osteoarthritis in women in the general population: the Chingford Study. *J Rheumatol.* 1993;20(2): 331-335.
2. O'Neill TW, Felson DT. Mechanisms of Osteoarthritis (OA) Pain. *Curr Osteop Rep.* 2018;16(5):611-616.
3. Hall CS, Linzey G, Campbell JB. *Teorie osobowości.* Warszawa: Wydawnictwo Naukowe PWN;2010:31-32.
4. Reykowski J. *Procesy emocjonalne, motywacja, osobowość.* Tomaszewski T, ed. Warszawa: Wydawnictwo Naukowe PWN;1992: 189-198.
5. Kolańczyk A. *Czuję, myślę, jestem. Świadomość i procesy psychiczne w ujęciu poznawczym.* Gdańsk: Gdańskie Wydawnictwo Psychologiczne;1998:79-90.

6. Kofta M, Doliński D. *Poznawcze podejście do osobowości*. Strelau J, ed. Gdańsk: Gdańskie Wydawnictwo Psychologiczne; 2000:561-600.
7. Belk RW, Wallendorf M. The sacred meaning of money. *J Econ Psychol*. 1990;11:35-67.
8. Gąsiorowska A. The relationship between objective and subjective wealth is moderated by financial control and mediated by money anxiety. *J Econ Psychol*. 2014;43:64-74.
9. Watson PJ, Jones ND, Morris RJ. Religious orientation and attitudes toward money: relationships with narcissism and the influence of gender. *Mental Health, Religion & Culture*. 2004;7:277-288.
10. Lester D, Yang B, Spinella M. Depression, anxiety, and personal finance behaviour: implications for the classical economic conception of humans as rational decision makers. *Psychol Rep*. 2006;99:833-834.
11. Włodarczyk D, Wrześniewski K. Kwestionariusz Oceny Stresu (KOS). *Przeł Psychol*. 2010;53(4):479-496.
12. Jaworowska A. *IVE - Kwestionariusz Impulsywności*. Warszawa: Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego; 2011.
13. Dzwonkowska I, Lachowicz-Tabaczek K, Łaguna M. *SES - Skala Samooceny Rosenberga*. Warszawa: Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego; 2008.
14. Ogińska-Bulik N, Juczyński Z. Skala pomiaru prężności SPP-25. *Now Psychol*. 2008;3:39-55.
15. Brzozowski P. *Kwestionariusz do Pomiaru Poczucia Kontroli (Delta) R. Ł. Drwala*. Drwal RŁ, ed. Warszawa: Wydawnictwo Naukowe PWN; 1995:228–241.
16. Agarwal S, Mazumder B. Cognitive abilities and household financial decision making. *Am Econ J App Econ*. 2013;5(1):193-207.
17. Brown S, Taylor K. Household finances and the "big five" personality traits. *J Econ Psychol*. 2014;45:197-212.
18. Perry VG, Morris MD. Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behaviour. *J Cons Aff*. 2005;39:299-313.
19. Delaney L, Harmon C, Ryan M. The role of noncognitive traits in undergraduate study behaviours. *Econ Edu Rev*. 2013;32:181-195.
20. Borghans LA, Duckworth L, Heckman JJ, ter Weel B. The Economics and Psychology of Personality Traits. *J Hum Res*. 2008;43(4):972-1059.
21. Jaeger DA, Thomas JD, Armin F, Huffman D, Uwe S, Bonin H. Direct evidence on risk attitudes and migration. *Rev Econ Stat*. 2010;92:684-689.
22. Adams T, Monique M. High-risk health and credit behaviour among 18- to 25-year-old college students. *J Am Coll Health*. 2007;56:101-108.
23. Noon KL, Fogarty G. *Cognitive and personality predictors of financial literacy among adult Australians*. Moore K, ed., Proceedings of the 2007 Conference of the Australian Psychological Society, Brisbane, Australia; 2007:297-301.
24. Cobb-Clark DA, Kassenboehmer SC, Sinning MG. Locus of Control and Savings. *J Bank & Finance*. 2013;73(C):113-130.
25. Brown S, Taylor K. Household finances and the "Big Five" personality traits. *J Econ Psychol*. 2014;45:197-212.
26. Brown S, Taylor K. Household Debt and Financial Assets: Evidence from Germany, Great Britain and the USA. *J Royal Stat Soc*. 2008;171(3):615-643.
27. Almlund M, Duckworth A, Heckman JJ, Kautz T. *Personality psychology and economics*. Hanushek EA, Machin SJ, Woessmann L, ed. Amsterdam: Elsevier; 2011:1-181.
28. Howlett E, Kees J, Kemp E. The role of self-regulation, future orientation, and financial knowledge in long-term financial decisions. *J Con Aff*. 2008;42:223-242.
29. Sweet E, Nandi A, Adam EK, McDade TW. The high price of debt: household financial debt and its impact on mental and physical health. *Social Science & Medicine*. 2013;91:94-100.