
DETERMINING THE FACTORS AFFECTING LEARNING MOTIVATION OF MASTER CANDIDATES OF ECONOMIC MANAGEMENT BASED ON NEED FOR COGNITION

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Abstract

Most studies on learning motivation of master candidates focus on language learning. Few have discussed the formation and evolution of learning motivation based on the need for cognition (NFC). This paper explores the factors influencing the learning motivation of master candidates of economic management (EM), drawing on the theory of the NFC. A questionnaire survey was conducted on the NFC, the scale and the learning motivation of 233 EM master candidates from several universities in southwestern China. The survey results were analyzed in details. It is concluded that, for EM master candidates, the NFC has a significant positive correlation with active and passive learning motivations; their learning motivation is promoted by both internal drives and external factors. On this basis, the authors gave instructions on the education of EM master candidates.

Key words: Cognitive Needs, Postgraduates in EM Major, Learning Motivation.

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INTRODUCTION

Concerning the NFC, the psychology community define it in such a way that: the NFC is a kind of personality variable that can reflect the extent to which individual tends to make efforts on cognitive activities (source: Wikipedia). In the 1950s, Cohen, Stotland and Wolfe stated in the study of individual differences in cognitive motivation that the NFC meant “the needs for individuals to meaningfully organize their experience” (Cohen, Stotland, & Wolfe, 1955). Cohen, labored with his colleagues, defined diverse priori NFCs by referring to the works of Murphy et al, and made the definition of the NFC distinctive from what Frenkel-Brunswik had asserted: “the need for experiencing a comprehensive and meaningful world (Frenkel-

Brunswik, 1949). However, the contemporary studies believe that Cohen's concept of NFC is a definition that tends to the demand tolerance. Subsequently, it was Cacioppo who first raised the NFC in a statistical sense and interpreted it as a “propensity” or “possibility”. He defined the NFC as: a tendency of individuals to participate in and enjoy thinking, organization, refinery, and evaluation of information (Cacioppo, Petty, Feinstein et al., 1996). The NFC has broad implications in the purposes and important values in real life, for example, it is required to learn the NFCs of target human when judging moral capacity (Strobel, Grass, Pohling et al., 2017), predicting life behaviors (Strobel, Fleischhauer, Luong et al., 2018), and developing marketing strategies (Kim & Kramer, 2006). To measure the NFCs in psychology circles, the scale developed by Cacioppo and Petty is widely used. Revised in 1984, its final version available for measuring the NFCs of subjects covers 18 topics.

The term “motivation”, derived from the

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motive, refers to the cause for people's behaviors, wishes and targets. In mental state, the motivation belongs to a psychological phenomenon and one of the most important causes for inspiring people to develop forward. A persistent and stable motivations, if available, can spur individuals on to pursue high achievement. Motivations vary according to different taxonomies, that is, according to the origin, it can be divided into physiological and social types; according to the cause, it falls into intrinsic and extrinsic types. Learning motivation refers to psychological activities triggered by learning needs to stimulate students to learn and achieve certain learning objectives (Hojat, Amir, & Maryam, 2013). Looking from social cognition, learning motivation refers to an internal motive that directly encourages learners to participate in learning activities (Pintrich, 1999). A number of positive studies at home and abroad have shown that students' attitudes, motivations, self-regulation or independent learning strategies will have a direct or indirect bearing on the enthusiasm of students to participate in specialized courses and the final learning outcomes, thus contributing much to the success of teaching reform under the new situation. How to understand and profoundly analyze the learning motivation is not only the focus those psychologists concern, but also a hot topic in academic circles.

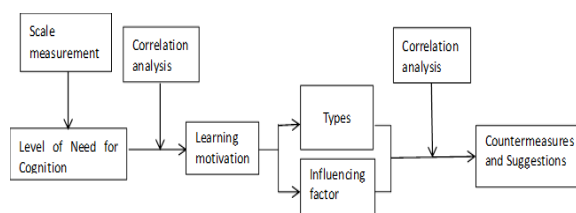
If the level of NFCs is linked to learning motivation to analyze what is the role of mental state in behaviors. There has been a paradigm in psychology circles. H.A. Murray believes that the learning motivation refers to "the needs for affiliation", which means individuals want to gain the recognition and affirmation of others angle groups, and "the needs for achievement" in that individuals expect to strive for excellence and self-improvement. American J.M. Souri and C.W. Telford classified the human learning motivations into communicative and prestige (pursuing reputation) types. D.P. Osabelle designated the learning motivation as the one for the pursuit of success, and thought it to be composed of NFCs, subordinate and self-improvement needs (Baidu: Encyclopaedia). To explore the learning motivation, only when the Students' NFCs is combined with the learning motivation as an internal motive can we make comparison between psychological construction status and practical actions of students to analyze the roots in the formation or transformation of learning motivation (Goldman, Goodboy, & Weber, 2017).

Domestic scholars rarely associate the learning motivation with the students' NFCs based on its positive study, and the purposes of studies are mostly to improve the students' performance in professional subjects or construct an incentive mechanism to stimulate the English learning motivation of non-English majors, etc.

Based on the NFCs, this paper makes a survey on the motivation of students in EM major to grasp their motivational orientation in the psychological state, helping analyze their self-efficacy level and needs for achievement. There are some problems to be solved herein, including (1) What is the level of Students' NFCs in EM major.

(2) How the types of students' learning motivations in EM major are subjected to the NFCs? (3) What are the factors influencing the formation of the types of motivation? The framework of this paper is shown in Figure 1.

Figure 1. Study framework



STUDY METHOD

Study samples

A survey should be conducted on the learning motivation of the master samples at the School of Economic Management of several universities in southwest areas by offline interview and online questionnaires. A total of 250 questionnaires were distributed online, and 233 copies, i.e. 90.3 % of the total, were available as required by the survey. The questionnaire survey includes two parts, i.e. NFCs and learning motivation, and the scores of the subjects are determined according to different scales. Based on the scoring principle determined in this study, the information about subjects' NFCs and learning motivation are available.

Sample measurement

The questionnaire consists of two parts, one is Cacioppo, J. T., & Petty, R. E's NFC Scale, by which the subject's NFCs can be measured; the other is prepared based on Huang Xiting's learning motivation questionnaire for the purpose of this study, used to explain the current learning

motivations of subjects in the postgraduate phase.

NFC scale

The NFC scale, originated by Cacioppo, J. T., & Petty, R. E, is widely used in the survey on students' curiosity about things at all stages. It explains the NFC as an important personality trait by measuring human curiosity, that is, the propensity of individuals to engage in and enjoy the efforts for thinking activities, which influences the breadth and depth of individuals' information organization, refinery, and evaluation to a large extent. Individual's cognitive activities are closely associated to other psychological or behavioral variables. To explore the relationship between the NFCs and other psychological variables, it is helpful for scholars to better understand the characteristics of these variables, complement some theoretical models or further explain certain phenomena. Therefore, the Subjects' NFCs measured in this study can not only respond to the stable propensity of subjects to contemplate the unknown world at this stage, but also explain as a stable level of NFCs formed based on the past experience accumulated by the subjects. It is wisdom to use the NFC scale created by Cacioppo, J. T., & Petty, R. E to measure the Subjects' NFCs. There is a total of 18 questions in the scale. From four dimensions, i.e. cognitive stimulus, complexity preference, commitment to cognitive efforts, and comprehension desire, the Students' NFCs in EM major are surveyed using the combination of forward and reverse scoring principle. The higher the score, the greater the curiosity, which suggests that the level of Subjects' NFCs is higher. After the Spss23.0 software performs data analysis, the questionnaire confidence is 0.703, and the availability is 0.851. It is suitable for factor analysis.

Learning motivation questionnaires

The questionnaires used in this study mainly derive from the learning motivation questionnaires prepared by Huang Xiting. The

questions therein have been modified for subjects. Combined with the DPAusubel learning motivation theory, there are two major dimensions, i.e. active and passive learning motivations. Ausubel believes that the learning motivation includes three driving forces: cognition, self-improvement, and subsidiary drives. Based on this theory, we correspond the cognitive drive to personal interest, values, and performance of internal pursuits, the self-improvement drive to academic ideals, life attitudes, career development performance, and for the subsidiary drive proposed by Ausubel, we associate it with peer, tutorial and parental influences, social opinion direction and social pressure, economic factors, and the objective requirements for obtaining diplomas. Focusing on these 13 dimensions, we prepare 27 questions for survey on postgraduate phase. Here, the questionnaire confidence is 0.919 and the availability is 0.954, which shows that the questionnaire is suitable for factor analysis.

Statistical disposition

Here we use the Spss23.0 for data processing, mainly by the single sample T-test and correlation analysis of data.

DATA ANALYSIS AND RESULTS

Single sample T-test on NFC scale

First, conduct a single sample T-test on the NFC scale to study whether there is significant difference in the students' NFC level at the School of Economic Management, and learn what are their scores in various dimensions; the test results are shown in Table 1.

As shown in Table 1, there is a significant difference in the students' NFCs at the school of EM at 0.01 ($P < 0.01$), which suggests that the NFCs of the respondents are different, and the NFCs as personality trait are subjected to change with internal and external factors. The complexity preference, comprehension desire, and the

Table 1. Results from single sample T-test on NFC scale

Projects	M	SD	t	p	The difference between a 95% confidence interval	
					Lower limit	Upper limit
Complexity preference	2.53	0.49	78.22	0.00	2.46	2.59
Comprehension desire	2.41	0.42	88.63	0.00	2.36	2.46
Commitment to cognitive effort	2.26	0.53	65.26	0.00	2.19	2.32
Enjoyment of cognitive stimulus	2.11	0.54	59.74	0.00	2.04	2.18
Level of Need for Cognition	48.09	5.68	113.22	0.00	41.40	42.86

commitment to cognitive effort are 2.53, 2.41, 2.26, and 2.11, respectively. Among them, the enjoyment of cognitive stimulus has a lower score, which shows that they lack internal motivations for pursuing complexity. The score of the commitment to cognitive efforts is not high, showing that most students lack strong desire for exploration, but the scores on complexity preferences and comprehension desires are higher since students as higher education audiences have a certain comprehensive quality for solving complex and difficult problems, that is, they are not afraid to solve complex problems. As subjects, aged 22-26, are full of confidence in life and future, and believe that they will be able to respond to external challenges.

Correlation analysis

The relationship between the NFCs and the active and passive learning motivations of students in EM major is investigated by the correlation analysis, in order to reveal whether both interact with each other; explore which factors play an effect on active and passive learning motivations. The results from data analysis of relationships between the NFC scale and active, passive learning motivations and between relevant factors and active, passive learning motivation are shown in Tables, 2, 3 and 4, respectively (where $P < 0.01$ indicates that the correlation is significant at 0.01 level, and $P < 0.05$

indicates that the correlation is significant at 0.05 level).

From the results in Table 2, it is known that the NFC scale has a significantly positive correlation with the average score of the active learning motivation of the subjects ($r = 0.50$, $P < 0.01$), so does with the average score of passive learning motivation ($r = 0.18$, $P < 0.01$).

From the results in Table 3, it is known that there is a significantly positive correlation between individual pursuit and average score of active learning motivation ($r = 0.91$, $P < 0.01$), between individual interests and average score of active learning motivation ($r = 0.85$, $P < 0.01$); between individual values and active learning motivation ($r = 0.89$, $P < 0.01$), between academic ideals and active learning motivation ($r = 0.75$, $P < 0.01$), between career development and active learning motivation ($r = 0.82$, $P < 0.01$), and between life attitude and active learning motivation ($r = 0.78$, $P < 0.01$).

Table 2. Correlation between the NFC scale and active, passive learning motivation

Variables	M	SD	1	2	3
NFCs	42.13	5.68	1		
Active learning motivation	27.58	8.10	0.50**	1	
Passive learning motivation	35.11	8.32	0.18**		1

Table 3. Correlation between relevant factors and active learning motivation

Variables	M	SD	1	2	3	4	5	6	7
1. Individual pursuit	1.89	0.78	1						
2. Individual interests	2.37	0.65	0.74**	1					
3. Individual values	1.94	0.79	0.89**	0.73**	1				
4. Academic ideals	2.50	0.81	0.55**	0.63**	0.58**	1			
5. Career development	1.94	0.74	0.74**	0.55**	0.68**	0.47**	1		
6. Life attitude	1.97	0.77	0.61**	0.54**	0.59**	0.48**	0.72**	1	
7. Active learning motivation	27.58	8.10	0.91**	0.85**	0.89**	0.75**	0.82**	0.78**	1

Table 4. Correlation between relevant factors and passive learning motivation

Variables	M	SD	1	2	3	4	5	6	7	8
1. Peer influence	2.69	0.73	1							
2. Parental influence	2.56	0.79	0.61**	1						
3. Economic stress	2.57	0.82	0.59**	0.62**	1					
4. Objective requirement for obtaining diplomas	2.70	0.82	0.49**	0.54**	0.43**	1				
5. Social opinion direction	2.39	0.74	0.53**	0.57**	0.57**	0.59**	1			
6. Social pressure	2.06	0.74	0.37**	0.47**	0.42**	0.42**	0.62**	1		
7. Tutorial influence	2.59	0.77	0.63	0.51**	0.59**	0.39**	0.52**	0.44**	1	
8. Passive learning motivation	35.11	8.32	0.78**	0.81**	0.79**	0.72**	0.82**	0.69**	0.76**	1

From the results in Table 4, it is also known that there is a significantly positive correlation between the peer influence and the average score of passive learning motivation of subjects ($r=0.78$, $P<0.01$), between the parental influence and the average score of passive learning motivation ($r=0.81$, $P<0.01$), between economic stress and the average score of passive learning motivation ($r=0.79$, $P<0.01$); between objective requirement for obtaining diplomas and the average score of passive learning motivation ($r=0.72$, $P<0.01$); between social opinion direction and average score of passive learning motivation ($r=0.82$, $P<0.01$); between social pressure and the average score of passive learning motivation ($r=0.69$, $P<0.01$); and between the tutorial influence and the average score of the passive learning motivation ($r=0.76$, $P<0.01$).

DISCUSSION

Results

The psychological scale used for NFCs in this study enables an in-depth evaluation on the NFCs of graduate students in EM major. After we conduct the single sample T-test on the NFC scale, the NFCs of the students at the current stage can be known: there are strong preferences for complexity and desires for comprehension, explaining that the graduate students in EM major have certain comprehensive qualities, strong curiosity about things, and enough confidence to face the difficulties (Liu, Luo, & Xiao, 2018). However, the commitment of cognitive efforts and the enjoyment of cognitive stimuli are relatively weak, which suggests that there is lack of internal motivation of students in the pursuit of complexity, and should be a need of measures to be taken to further improve the NFCs. Now, we have responded to the first question discussed herein.

From the analysis of the correlation between the NFC scale and active and passive learning motivations, the current NFCs of EM graduate students have a positive influence on their own learning motivation. The efforts for individual information processing is subjected to the NFCs. Autonomous learning is also a process in which the information can be processed and transformed, so that there is a significant relationship between the NFC and learning motivation. In learning process, students with high NFCs are more likely to explore complex topics involving professional areas or things of interest, from which they seek enjoyment

of cognitive stimuli; the personal pursuits, values, and interests build up the internal cognitive drive to form high NFCs, and intensify active learning motivation; the NFCs derived from data analysis is also positively correlated with passive learning motivation, suggesting that the personality traits of NFCs are stable and able to greatly influence one's pursuit of learning and achievements. In this way, we have answered the second question discussed hereof. It is believed that the learning motivation of EM students will be influenced by the individual's own NFCs.

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From the analysis of the correlation between individual factors and active and passive learning motivations, active learning motivation of EM graduate students has a significantly positive correlation with individual pursuits, interests and values, academic ideals, career development and life attitudes; passive learning motivation also matters the peer influence, parental influence, economic pressure, objective demand for obtaining diplomas, the guidance of public opinion, social pressure, and tutorial influence. It is suggested that the active learning motivation of EM graduate students may depend on the psychological factors such as individual's own curiosity and thirst for knowledge. The activation of passive learning motivation is more dependent

on the pressures that the outside world applies on individual students. Only when these pressures are perceived to form a driving force can an effective learning motivation generate. However, whichever type of learning motivation is rooted in the stable NFCs formed by individuals. In this way, we have answered the third question raised hereof.

As above, we can draw a conclusion: the motivation of the graduates in EM major is subjected to the individual's own NFCs, internal factors such as individual pursuits, interests and values, as well as extrinsic factors such as peer influence, parental influence, economic pressure. These factors all play a positive role in stimulating the behaviors of EM graduate students.

Countermeasures

As we learn from the analysis of conclusions, this study discusses the strategies for stimulating the motivation of EM graduate students in four respects: individual NFCs, stimulus of individualized learning motivation, and strengthening active and passive learning motivation.

Clarifying individual Students' NFCs

The NFC as one of human needs and motivations is produced and developed from acquired life and learning activities based on individual curiosity and the tendency to explore the environment. It depends on specific, proper environment stimuli, learning experiences, right education guidance and cultivation (Baidu Encyclopaedia). Individuals have different NFCs in different development phases, that is, individual preferences for complexity, desires for comprehension, commitment to cognitive efforts, and enjoyment of cognitive stimuli have different performances (Cacioppo, Petty, Feinstein, & Jarvis, 1996). As graduate students, we should learn to ponder things from a new perspective and try to deal with complex things that can exercise our own thinking ways. At this stage, it is necessary for EM students to determine what are their NFCs, and further clarify what are their learning objectives to continuously stimulate learning motivation and reach their ultimate learning objectives.

Stimulus of individual learning motivation

The individual Students' NFCs are different, so do the motivations that influence their learning behaviors. It is impossible to consider active or passive learning motivations only, but focus on any one based on the combination of both. Though students crowd in one environment, students'

individual growth and family factors lead to the formation of different NFCs. It is therefore required to carry out personalized tutoring for individual students. In this process, not only is the standardization of the tutorial system required, but also the counselors should closely cooperate with students and respect them to learn their needs, and with students-centered, to accept the feedback in the implementation of training programs, achieve scientific and humane education.

Improving the motivation of graduate students

The active learning motivation derives from individual's interests in something; once formed, the individual can persevere in accomplishing the learning objective without external drives (Di Domenico, & Ryan, 2017). Active learning motivation actuates students to carry out the ongoing activities. What students should do in universities is not only to learn professional knowledge but also do the following: first, enhance their interest in learning and prompt themselves to concentrate on doing something, continue to learn, in order to reach the learning objectives; second, improve their values and develop themselves to get satisfaction from finishing tasks or achieving their objectives, third, correct their own attitude towards life, bear in mind the life principle, that is, "smile even if upset, calm if anxious and persist even if hard", face a complex social phenomenon with a mature attitude (Liu, Pu, & Hou, 2016); fourth, establish a lofty academic ideal, and urge yourself to continuously pursue, improve and strive for academic goals. In terms of individual interests, values, life attitudes and academic ideals, great efforts should be made to adjust the internal learning motivation, so as to spur them on to continuously finish their learning objectives.

Enhancing passive learning motivation of students

Passive learning motivation involves social demands and individual living environment, that is to say, the motivation of individuals to engage in learning activities does not lie in the learning task itself, but in everything rather than learning activities. Passive learning motivation mainly derives from students' peer influence, parental influence, economic pressure, objective demands for obtaining diplomas, and direction of social opinion. When students fulfill their learning objectives, passive learning motivation seems to

be as important as active learning motivation. To enhance the students' passive learning motivation, we should consider the following: first, correctly face the family environment, students should have a correctly understanding of and face family culture background and spiritual outlook, create the appropriate learning motivation to achieve the learning objectives; second, develop scientific and rational multi-dimensional scholarship incentive mechanism which can encourage students to produce the learning motivation in the process of obtaining scholarships to reduce economic pressure, and strive for it until they reach their learning objectives (Hidi, 2016); third, rationally adjust the training program and perfect the conditions for obtaining diplomas, encourage students to steadily finish the tasks at each stage in training process, and finally realize the learning objectives; fourth, correctly direct social public opinion to be going in such a way that "the highly educated are higher in social status or recognition", encourage students to constantly struggle for turning into a useful human in society (Liu, Luo, & Xiao, 2018). To enhance the passive learning motivation of students, the active learning motivation should complement it to help improve their learning motivation level and accomplish their learning objectives.

Significance

Today, the study of learning motivation at home and abroad focuses on the self-efficacy, learning involvement, learning behavior and academic achievement of students (Junko, 2012), but extremely less on the NFCs. From analysis of correlation between the NFCs and the learning motivation of the students, it is found that the factors influencing the learning motivation are not limited to the individual itself, but can also be explained from the NFCs of individuals.

Practical significance

Based on the foregoing analysis, we learn that the learning motivation of students in EM major is subject to the level of individual's NFC, and their active and passive learning motivations will be enhanced as the NFC increases. Therefore, up to now, in the education for EM students in Chinese universities, we should not only understand their pursuit of academic ideals, individual values and high achievement levels, but also differentiate the factors relevant to external pressures, so as to arouse persistent and stable learning motivation of high-quality youth groups, enhance conscious

learning behavior to provide effective help (Pintrich, 2004).

Study limitation

This study takes a dive into the learning motivation survey on graduate students in EM major and useful measures based on the NFC, and positively tests the factors influencing learning motivation by a study case. However, there are still lots of room for further study: first, the survey was only conducted for postgraduates in Sichuan universities, that is, the sample is limited. Subsequent study should expand the sample size and conduct the survey on a greater scale; second, the study content only uses lateral comparison instead of vertical comparison in learning motivation between triennial postgraduate students. The follow-up study should trace vertical survey and analysis.

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REFERENCES

- Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in co-gnitive motivation: the life and times of individuals varying in need for cognition. *Psych-ological Bulletin*, 119(2), 197-253.
- Cohen, A. R., Stotland, E., & Wolfe, D. M. (1955). An experimental investigation of need for cognition. *Journal of Abnormal Psychology*, 51(2), 291-294.
- Di Domenico, S. I., & Ryan, R. M. (2017). The emerging neuroscience of intrinsic motivation: a new frontier in self-determination research. *Frontiers in Human Neuroscience*, 11, 145-145
- Frenkel-Brunswik, E. (1949). Intolerance of ambiguity as an emotional and perceptual personality variable. *Journal of Personality*, 108-143.
- Goldman, Z. W., Goodboy, A. K., & Weber, K. (2017). College Students' Psychological Needs and Intrinsic Motivation to Learn: An Examination of Self-Determination Theory. *C-ommunication quarterly*, 2(8), 167-191.
- Hidi, S. (2016). Revisiting the Role of Rewards in

- Motivation and Learning: Implications of Neuroscientific Research. *Educational Psychology Review*, 28(1), 61-93.
- Hojat, J., Amir, M. V. Z., & Maryam, D. T. (2013). Motivation, Integrativeness, Organizational Influence, Anxiety, and English Achievement. *Glottology*, 4(2), 3-25.
- Junko, M. C. (2012). Motivational orientations and psychological needs in EFL learning among elementary school students in Japan. *System*, 2(6), 191-202.
- Kim, H. M., & Kramer, T. (2006). The moderating effects of need for cognition and cognitive effort on responses to multi-dimensional prices. *Marketing Letters*, 17(3), 193-203.
- Liu, B., Luo, L., & Xiao, Q. (2018). Determination and Correlation Analysis of Mental Health Influencing Factors Among Ant Tribe Young Intellectuals Based on Cognitive Neuroscience. *NeuroQuantology*, 16(5), 901-906.
- Liu, B., Luo, L., & Xiao, Q. (2018). Determination and Correlation Analysis of Moral Choice Influencing Factors Among Ant Tribe Young Intellectuals Based on Cognitive Neuroscience. *Educational Sciences-Theory & Practice*, 18(5), 1483-1493.
- Liu, B., Pu, J., & Hou, H. (2016). Effect of perceived stress on depression of Chinese "Ant Tribe" and the moderating role of dispositional optimism. *Journal of Health Psychology*, 21(11), 1-7.
- Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, 31, 459-470.
- Pintrich, P. R. (2004). A Conceptual Framework for Assessing Motivation and Self-Regulated Learning in College Students. *Educational Psychology Review*, 16(4), 385-407.
- Presbitero, A. (2015). Proactivity in career development of employees: the roles of proactiv-e personality and cognitive complexity. *Career development international*, 20(5), 525-538.
- Strobel, A., Fleischhauer, M., Luong, C., & Strobel, A. (2018). Predicting Everyday Life Behavior by Direct and Indirect Measures of Need for Cognition. *Journal of Individual Differences*, 39(2), 107-114.
- Strobel, A., Grass, J., Pohling, R., & Strobel, A. (2017). Need for Cognition as a moral capacity. *Personality and Individual Differences*, 117: 42-51.