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Nadezhda Lebedeva, Lusine Grigoryan

IMPLICIT THEORIES OF INNOVATIVENESS: A CROSS-CULTURAL ANALYSIS

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*Nadezhda Lebedeva*¹, *Lusine Grigoryan*²

IMPLICIT THEORIES OF INNOVATIVENESS: A CROSS-CULTURAL ANALYSIS³

This study reveals and examines cultural differences in values, implicit theories of innovativeness, and attitudes toward innovation across three ethnocultural groups: Russians, representatives of the peoples of North Caucasus (Ingush and Chechens), and Tuvins (N = 801). Individual theories of innovativeness appeared to be more pronounced in Russians, whereas social theories of innovativeness are more discernible in respondents from the North Caucasus and Tuva. Using structural equation modeling, we identified a culturally universal model of value effects (direct and mediated by implicit theories of innovativeness) on attitudes toward innovation. The study demonstrates how the direct negative impact of Conservation values on positive attitudes toward innovation is transformed into a positive impact that promotes the acceptance of innovation through the mediating role of implicit theories of innovativeness. This study sheds light on the important mediating role of implicit theories of innovativeness on the impact of individual values on attitudes toward innovation in different cultures.

JEL Classification: Z13.

Keywords: culture, values, attitudes, creativity, innovation, implicit theories, innovativeness

¹ National Research University Higher School of Economics. International Laboratory for Socio-Cultural Research. Head; E-mail: nlebedeva@hse.ru

² National Research University Higher School of Economics. International Laboratory for Socio-Cultural Research. Junior research fellow; E-mail: lgrigoryan@hse.ru

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Introduction

The economic growth and prosperity of any country in modern times depends not so much on a favorable geographical location and availability of natural resources, as on the concentration and development of intellectual potential. Currently, Russia continues to maintain a low level of innovative activity [Innovative Development of ..., 2008], despite the fact that the intellectual and creative potential of Russian youth is quite high [Lebedeva, 2008, 2009; Kharkurin & Motalleebi, 2008].

Modern scientific literature devoted to the study of creativity and innovativeness increasingly raises the question of similarities and differences between these concepts.

Creativity is both a cognitive and a social process, boosted by the conscious or unconscious ability to generate ideas, concepts, and associations [Lazzarato, 1996]. Innovativeness is the successful exploitation of new ideas; it is the result of a creative process in terms of “profitability”, which involves the generation and implementation of new products, services, procedures, and processes that are desirable and viable [Serrat, 2009].

Creativity is often viewed as an essential building block for innovativeness: innovativeness implies creativity, but creativity itself is not sufficient for a sustainable capacity for innovativeness [Styhre & Börjesson, 2006; West, 2004]. Creativity precedes innovation; it is not born merely in a person’s mind of but in interaction with a social context. There is a considerable amount of evidence indicating that culture can stimulate or frustrate creativity. Arieti [1976], examining the impact of culture on creativity, suggested that potential creativity is more widespread than factual creativity. Some cultures promote creativity much more than others, referring to such as “creativogenic cultures”.

For many years, both psychologists and ordinary people in the West attributed creativity to personal factors, rather than social or cultural factors. Therefore, studies of creativity have focused on personality traits [Barron & Harrington, 1981; Helsen, 1996], cognitive processes [Sternberg, 1988] and the life path of creative people [Gardner, 1993].

In Western psychology, creativity is most commonly defined as a quality attributed to a person or a process that can generate novel, appropriate, non-algorithmic solutions to a problem [Mayer, 1999].

For over 30 years, such an individualistic Western approach to the study of creativity hampered researchers’ understanding of the social nature of creative processes. Numerous studies in Chinese and Korean cultures (Chan & Chan, 1999; Rudowicz & Yue, 2000, etc.) and cultures of Islamic countries (Khaleefa et al., 1997) have demonstrated that there is no

universal understanding of creativity. For a better understanding of creativity, one must study it in the context of individual interaction and socio-cultural variables of creativity.

Research on innovation pays much attention to analyzing its procedural and resulting components. However, studying the characteristics of subjects of innovative activity, which are related to their ability to implement and evaluate these ideas, is no less important. These characteristics are denoted by the term “innovativeness”. Innovativeness by itself can be defined as the ability to adapt new ideas and implement them in practice or to develop new products [Styhre & Börjesson, 2006; Rogers, 2003; West, 1997].

Some authors view innovativeness as the ability an individual to draw ideas from outside and introduce them into the current system, as well as the ability to effectively present these ideas to the public [Grewal, Mehta, and Kardes, 2000; Larsen and Wetherbe, 1999]. Thus, innovation is the successful application of emerging creative ideas, while innovativeness reflects the ability to evaluate and implement these ideas.

Theories and concepts of creativity can be described as explicit (external) and implicit (internal). Explicit theories of creativity are the constructions of psychologists or social scientists drawing on theoretical hypotheses that can be tested empirically (Sternberg, 1985). Implicit theories are derived from individual belief systems rooted in the minds of members of a particular culture; they must be discovered rather than invented. People use their implicit theories as psychological bases for making evaluations of their own and others' behavior, suggesting that they can serve as bases for education and skills training.

Cross-cultural studies on implicit theories of creativity in the West (the USA and Europe) and the East (China, Japan, and Korea) have revealed a clear mismatch: The West holds creativity, novelty, originality, and focus on self-expression as essential attributes of creativity and innovation, whereas in the East any innovation is regarded as an interpretation of existing tradition (Ludwig, 1992; Rudowicz, 2003).

Empirical studies on implicit concepts of creativity among teachers in the U.S. and China revealed both similarities and differences that consisted primarily in the fact that such qualities as “aesthetic taste” and “humor” are consistently absent in the Chinese perception of a creative person, whereas such characteristics as “honesty”, “respect for elders”, “responsibility”, and focus on collectivism are perceived as indicative of creativity (Rudowicz & Yue, 2000).

The results of a cross-cultural study of implicit concepts of creativity among teachers and parents in India and the U.S. using the ACL (Adjective Check List) (Runco et al., 1993) revealed that personality traits (individualism, independence, etc.) associated with creativity

are rated as undesirable by teachers and parents, i.e., culturally approved personality traits dominate in implicit culture-specific concepts of creativity (Runco & Johnson, 2002).

In Russia, studies examining teacher evaluations of the concept of a “good student” showed that teachers rated such qualities as “discipline” and “perseverance” as the most desirable; qualities such as “intellectual curiosity” and “independence” as desirable; and qualities like “initiative”, “shrewdness”, and “audacity” as undesirable (Efimenko, Hwang, 2006). Clearly, creativity and innovativeness associate stronger with independence and initiation than with discipline and perseverance. So the question is: Do Russian socialization practices contribute to nurturing qualities necessary for innovation in children? Since comparative studies of implicit theories of creativity and innovativeness in Russia’s multicultural society have not been conducted, we consider them relevant and timely.

Attitudes to innovation are largely conditioned by cultural values. In 2008-2009, Lebedeva carried out an empirical study using student samples in Russia, Canada, and China, which revealed cross-cultural and gender differences in the value priorities of students of the three countries (Lebedeva, 2008, 2009). The results from correlation and multiple regression analyzes of the relationship between values and innovative attitudes allowed us confirm our hypothesis that the values of Openness to change promote positive attitudes toward innovation, whereas Conservation values serve as impediments. These results are consistent with those of other studies (Dollinger et al., 2007) and are indicative of the near-universal nature of this relationship.

A review of theoretical and empirical studies on implicit theories of creativity [Seng, Keung & Cheng, 2008; Runco, Johnson, 2002] as well as investigations of the impact of culture on creativity and innovation [Chan & Chan, 1999; Rudowicz & Yue, 2000; Lim and Plucker, 2001; Amabile, 1996; West and Farr, 1990; Leung & Morris, 2011] allowed us to propose the general hypothesis of our study: Values, implicit theories of innovativeness, and their impact on attitudes toward innovation do vary across cultures.

Specific hypothesis:

1. The content of implicit theories of innovativeness varies between Russians, the peoples of the North Caucasus, and Tuvins: “Individual” theories of innovativeness are more important for Russians, while “Social” theories of innovativeness are more important for the peoples of the North Caucasus and Tuvins.
2. Individual values vary across the three different cultures: Openness-to-change values are more significant for Russians, whereas Conservation values are of greater importance for Tuvins and the representatives of the North Caucasus.

3. The values of individuals affect their attitude to innovation both directly and through implicit theories of innovativeness, and this effect varies across different cultures.

Study objectives:

- 1) To identify and compare individual values and implicit theories of innovativeness in the three abovementioned ethnocultural groups;
- 2) To identify the direct and indirect effects of values – mediated by implicit theories of innovativeness – on attitudes toward innovation in a cross-cultural comparison.

Methodology

Study participants were university students and secondary school teachers from three ethnocultural groups: Russians in Moscow and Novokuznetsk; peoples of the North Caucasus in Grozny, Chechnya, and Nazran, Ingushetia; and Tuvins in the Tuva Republic. The total sample size is 801 people (see Table 1).

Tab. 1. The characteristics of the study sample

Group	Number of respondents	Sex		Age, median (min-max)
		male, number, %	female, number, %	
Russians	390	98 (22%)	292(78%)	Me = 21 (17 - 63)
Peoples of the North Caucasus (Ingush, Chechens)	194	34 (18%)	160 (82%)	Me = 28 (17 - 62)
Tuvins	217	31(14%)	186(86%)	Me = 24 (17 - 69)
Total	801	163(19%)	638 (81%)	Me = 23 (17 - 69)

Students and teachers were intentionally chosen as respondents since secondary school teachers are the ones who translate cultural values and concepts to future generations; they are actively involved in the socio-cultural socialization of children and young people, their ideas about creativity and innovation affect the development of creative abilities and the formation of attitudes towards innovation in their students. University students are the

“product” of school, meaning that their implicit concepts of creativity and innovation influence their attitudes and behavior in relation to innovation and, consequently, the formation of a socio-psychological climate in which an innovative economy is to be developed.

Procedure. A questionnaire was administered in Russian to respondents to be completed individually or in small groups of 5-7 people, where each participant had an individual questionnaire that was answered in the presence of an interviewer. The survey was conducted in educational institutions (universities and secondary schools) and the procedure was the same for universities and secondary schools. The average time for filling in the questionnaire was 15-20 minutes.

Measures of the study. This was a socio-psychological survey with the following instruments:

1. A modified ACL (Adjective Check List) (Runco et al., 1993) for measuring traits necessary for an innovator. The measure contained 30 adjectives that a person checks as potential qualities of an innovator. The respondents were asked to rate from 1 (min) to 7 (max) the desirability of each of these personality traits for an innovator, an inventor, and a creative person (trying to choose different numbers).
2. *Innovative Personality Traits*, a measure developed by the author (Lebedeva, Tatarko, 2009), which consisted of 12 statements. The respondents were asked to assess how much they resembled the person whose personality traits were described using a five-point scale ranging from 1 (“absolutely not like me”) to 5 (“absolutely like me”). The testing and adaptation of the measure was carried out in a series of cross-cultural studies (N = 4573) in Russia (2007-2011), Canada (2008), and China (2009).
3. The Schwartz Value Survey (SVS57), translated into Russian and adapted to Russia (Lebedeva, 2001). For this analysis we used a key for the 10 individual value blocks, which were then summed into value-oppositions: Openness to change vs. Conservation and Self-Enhancement vs. Self-Transcendence.

Main variables:

Independent variables:

1. Innovator characteristics (based on ACL): *energetic, active, curious, ambitious, adventurous, self-confident, highly motivated, enthusiastic, optimistic, inspirational, open-minded, intelligent, logical, intuition, imaginative, risk inclination, resourceful, clear thinking, leadership, respect for authority, independent, conformity, individualistic, perseverance,*

daring, honest, trust toward people, humorous, obedient, artistic, aesthetic taste. Measured on a seven-point scale from 1 (min) to 7 (max).

2. Individual implicit theories of innovativeness were identified using exploratory and confirmatory factor analysis (Lebedeva, 2012), taking the arithmetic mean of the following innovator qualities: *open-mindedness, creativity, enthusiasm, risk inclination, imagination, high motivation, optimism.*
3. Social implicit theories of innovativeness were identified using exploratory and confirmatory factor analysis (Lebedeva, 2012), taking the arithmetic mean of the following innovator qualities: *respect for authority, honesty, trust toward people.*
4. Individual value-oppositions were calculated in accordance with the key: Openness to change, Conservation, Self-Enhancement, Self-Transcendence.

The dependent variables:

The Index of innovativeness (attitudes toward innovation) was determined based on the measure of “Innovative qualities of a person”, developed by Lebedeva and Tatarko using confirmatory factor analysis ($X^2 = 21.849$, $df = 18$, $p = .239$, $CMIN/df = 1.214$, $CFI = .995$, $RMSEA = .017$) and consisted of the following statements (standardized regression weights for each cultural group [1 – Russians, 2 – Caucasians, 3 – Tuvins] are given after each statement, all are significant at the level $p < .05$):

- He/she is ready to take risks for the sake of achievement (.533, .462, .430).
- He/she likes to do everything in his/her original way (.652, .672, .651).
- He/she likes variety in life (.692, .694, .653).
- Encounters with something new and unknown don't scare him/her (.584, .689, .546).
- He/she is a creative person, and always tries to invent something new (.480, .264, .270).
- He/she is curious and likes to investigate new things and areas (.537, .182, .256).

The data were processed using SPSS (version 19). To determine the significance of differences, we applied the Kolmogorov-Smirnov test for independent samples and calculated the effect-size (Cohen's d). To determine the relationship between the variables, we used structural modeling of latent variables through SPSS AMOS (version 19).

Results of the study

Cross-cultural similarities and differences between implicit theories of innovativeness, values, and attitudes toward innovation

Among the qualities necessary for an innovator, we revealed both similarities and significant differences between Russians, peoples of the North Caucasus, and Tuvins. In particular, cross-cultural similarities in priority qualities for an innovator are manifest in the fact that in all three groups such qualities as *intelligence*, *logic*, *creativity*, *self-confidence* and *activeness* are present.

The application of the Kolmogorov-Smirnov test for independent samples revealed significant differences in the qualities of innovators between Russians and the people of the North Caucasus: Russians viewed such qualities as *curiosity* ($Z = 2,41$ ***), *high motivation* ($Z = 1,36$ *), and *clear thinking* ($Z = 1,69$ **) as more important, whereas Caucasians valued *conformity* ($Z = 1,59$ *), *honesty* ($Z = 2,77$ ***), *trust toward people* ($Z = 2,05$ * **), and *obedience* ($Z = 3,00$ ***) as being important. It is easy to note that the main differences relate to individual and social personality traits of an innovator, with the former being more important for Russians and the latter holding sway with the peoples of the Caucasus.

A comparison of qualities for innovators in Russians and Tuvins revealed the following significant differences: Russians regard such qualities as *ambition* ($Z = 1,70$ *), *enthusiasm* ($Z = 1,58$ *), *intuition* ($Z = 1,69$ *), *imagination* ($Z = 1,36$ *), *risk inclination* ($Z = 1,69$ *), *creativity* ($Z = 1,44$ *), *perseverance* ($Z = 1,82$ **), and *individualism* ($Z = 1,59$ *) as more important; whereas Tuvins value *respect for authority* ($Z = 1,58$ *), *conformity* ($Z = 1,51$ *), *honesty* ($Z = 2,60$ ***), *trust toward people* ($Z = 1,96$ ***), and *obedience* ($Z = 3,68$ ***). Again, as is the case with peoples of the Caucasus, Russians give a higher value to individual qualities of innovators, while Tuvins prefer social qualities.

An intergroup comparison of innovator quality preferences in the North Caucasian respondents and Tuvins showed that the representatives of the peoples of the North Caucasus value *risk inclination* ($Z = 1,43$ *), *clear thinking* ($Z = 1,59$ *) , *independence* ($Z = 1,86$ **), and *individualism* ($Z = 1,94$ ***), more so than do Tuvins; Russian's value the individual qualities of an innovator.

Using exploratory factor analysis (the extraction method for principle components, and varimax rotation for), we identified a two-factor structure of the ACL list (KMO =

0.780; $p < .000$). These two factors explained 49.5% of the variance. Then we tested the given structure through confirmatory factor analysis, and developed two scales that were metrically invariant for all three cultural groups (CFI = .975, RMSEA = .029). The two final blocks of implicit concepts of innovativeness were called “individual” (*open-mindedness, creativity, enthusiasm, risk inclination, imagination, high motivation, optimism*), and “social” (*respect for authority, honesty, trust toward people*) (Lebedeva, 2012).

Next, we conducted a cross-cultural comparison of the identified implicit theories of innovativeness using the Kolmogorov-Smirnov test (see Tables 2-4).

Tab. 2. Cross-cultural differences in implicit theories of innovativeness (Russians - Representatives of the Peoples of the North Caucasus)

Group	Russians			Peoples of the North Caucasus			Z-factor
	Me	range	Min-max	Me	range	Min-max	
Implicit theories of innovativeness							
Individual ITI	5.50	5.17	1.83-7	5.33	4	3-7	1.119
Social ITI	3.75	6.25	.75-7	4.5	5.75	1.25-7	1.957**

Notes: *** - $p < 0.001$, ** - $p < 0.01$, * - $p < 0.05$; ITI – Implicit theories of innovativeness

The Kolmogorov-Smirnov analysis revealed significant differences in social theories of innovativeness between Russians and representatives of peoples of the North Caucasus. Namely, Caucasian respondents believe that social qualities – respect for authority, honesty, trust to people – are more necessary for an innovator than do Russian respondents.

Tab. 3. Cross-cultural differences in implicit theories of innovativeness (Russians - Tuvins)

Group	Russians			Tuvins			Z-factor
	Me	range	Min-max	Me	range	Min-max	
Implicit theories of innovativeness							
Individual ITI	5.50	5.17	1.83-7	5.17	5	2.00-7.00	2.196***
Social ITI	3.75	6.25	.75-7	4.75	6	1.00-7.00	2.975***

Notes: *** - $p < 0.001$, ** - $p < 0.01$, * - $p < 0.05$; ITI – Implicit theories of innovativeness

According to Table 3, significant differences were observed in individual theories, which are more important for Russians, and social theories of innovativeness, which are more important for Tuvins.

Tab. 4. Cross-cultural differences in implicit theories of innovativeness (Representatives of the Peoples of the North Caucasus - Tuvins)

Group	Caucasians			Tuvans			Z-factor
	Me	range	Min-max	Me	range	Min-max	
Implicit theories of innovativeness							
Individual ITI	5.33	4	3-7	5.17	5	2.00-7.00	1.063
Social ITI	4.5	5.75	1.25-7	4.75	6	1.00-7.00	.814

*Notes: *** - p<0.001, ** - p<0.01, * - p<0.05; ITI – Implicit theories of innovativeness*

The data in Table 4 demonstrate that Caucasians give a higher priority to the individual qualities of an innovator, whereas Tuvins rate highly the social qualities of an innovator. Next, we compared values and attitudes to innovation in the three groups of respondents (Table 5-7).

Tab. 5. Intergroup differences in values (Russians - Caucasian peoples)

Groups	Russians		Peoples of North Caucasus		Cohen's D
	M	SD	M	SD	
Conservation	3.94***	.57	4.42***	.46	-.85
Openness to Change	3.78***	.83	3.35***	.85	.48
Self-Transcendence	4.14*	.48	4.24*	.46	n.s
Self-Enhancement	3.49***	.71	3.26***	.71	n.s

*Notes: p<0.05; ** p<0.01; *** p<0.001; n.s. –non-significant effect-size*

We see significant differences in the values between Russians and representatives of the peoples of Caucasus –: Conservation values (security, conformity, tradition) are more important for Caucasians – and these differences are not random, as evidenced by the size of the effect size. Close to this threshold is the difference in values of Openness to change, which are more significant for Russians.

Tab. 6. Intergroup differences in values (Russians - Tuvins)

Groups	Russians		Tuvins		Cohen's d
	M	SD	M	SD	
Values					
Conservation	3.94***	.57	4.13***	.39	-.39
Openness to Change	3.78***	.83	3.55***	.63	.36
Self-Transcendence	4.14	.48	4.19	.53	n.s
Self-Enhancement	3.49**	.71	3.65**	.61	n.s

Notes: p<0.05; ** p<0.01; *** p<0.001; n.s. –non-significant effect-size

Tuvins, in comparison with Russians, attribute a higher rating to the values of Conservation and Self-Enhancement, whereas Russians prefer the values of Openness to change, which are more pronounced in Russians.

Tab. 7. Intergroup differences in values (peoples of the Caucasus - Tuvins)

Groups	Peoples of North Caucasus		Tuvins		Cohen's d
	M	SD	M	SD	
Values					
Conservation	4.42***	.46	4.13***	.39	.66
Openness to change	3.35**	.85	3.55**	.63	n.s.
Self-Transcendence	4.24	.46	4.19	.53	n.s.
Self-Enhancement	3.26***	.71	3.65**	.61	n.s.

Notes: p<0.05; ** p<0.01; *** p<0.001; n.s. –non-significant effect-size

Comparing the values of representatives of the North Caucasus and Tuvins revealed significant and non-random differences in the values of Conservation, which is more important for the peoples of the Caucasus.

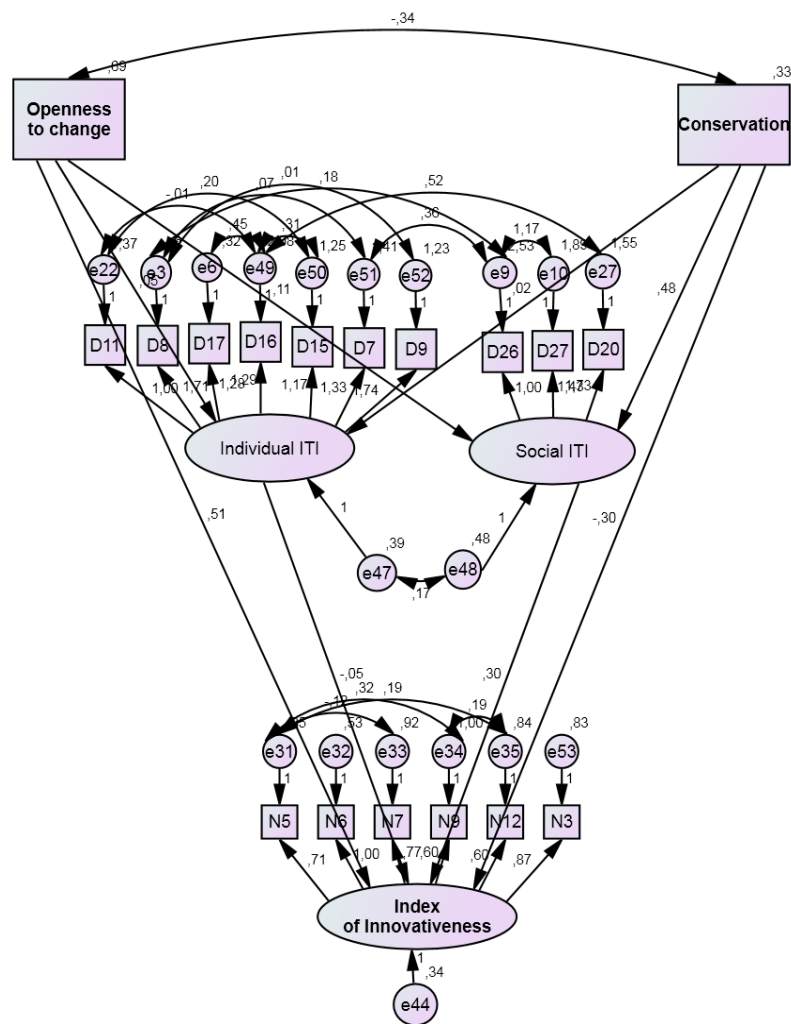
Next, we conducted a cross-cultural comparison of the Index of Innovativeness in the three cultural groups using the Kolmogorov-Smirnov test, which showed no significant cross-cultural differences in the Index of Innovativeness.

An empirical model of the effect of values on attitudes to innovation through implicit theories of innovativeness

In the second phase of our study, we verified the hypothesis about the mediating role of implicit theories of innovativeness in the effect of values on attitudes to innovation. This was done through the use of structural equation modeling. The analysis included three groups of variables:

1. The value-oppositions of “Openness to change” and “Conservation”, since, according to our previous study (Lebedeva, 2008, 2009, 2012), these value-oppositions affect attitudes toward innovation.
2. Implicit theories of innovativeness (individual and social).
3. The scale of the Index of Innovativeness, tested earlier with confirmatory factor analysis [Lebedeva, 2012].

Two competing models of full and partial mediation were tested. The results of the analysis have shown that the model of partial mediation has better fit ($CFI = .954$ against $CFI = .906$ for the model of full mediation). The model of partial mediation is shown in the Fig. 1. This model reflects relations between the variables as we hypothesized: Individual values influence attitudes to innovation both directly and indirectly, through individual and social implicit theories of innovativeness. The significance of particular regressions within this universal structure vary across cultures, so we carried additional analysis to test the metric invariance of the model in order to have a possibility to compare the regression coefficients between three groups.



Note: CMIN/DF = 1.46, CFI = .95, RMSEA = .03, PCLOSE = 1.00

Fig. 1. Model of the effect of values and implicit theories of innovativeness on attitudes to innovation (“Index of Innovativeness”)

The results of intergroup analysis confirmed the metric invariance of the model across the three cultural groups (Russian, Caucasians, and Tuvins) ($P = .090$, $CFI = .951$), which allow us to compare the regression coefficients for these three groups of respondents. Table 5 shows the standardized regression coefficients for significant relationships.

Tab. 5. Standardized regression coefficients for the three ethnic groups

	Russians	Caucasians	Tuvins
Conservation values → Social ITI	.38***	.23	.16**
Conservation values → Individual ITI	.01	-.13	-.23***
Conservation values → Index of Innovativeness	-.22**	-.19	-.19
Openness to Change values → Index of Innovativeness	.52***	.19	.31***
Individual ITI → Index of Innovativeness	-.04	.22	.28**
Social ITI → Index of Innovativeness	.27***	.03	-.08

We see significant correlations between values, implicit theories of innovativeness, and attitudes to innovation in groups of Russians and Tuvins, and their absence in the group of representatives of the peoples of the North Caucasus. Below, in Figures 2-4, the effects of values and ITI on the Index of Innovativeness for each of three ethnic groups are given. All significant effects are shown in red.

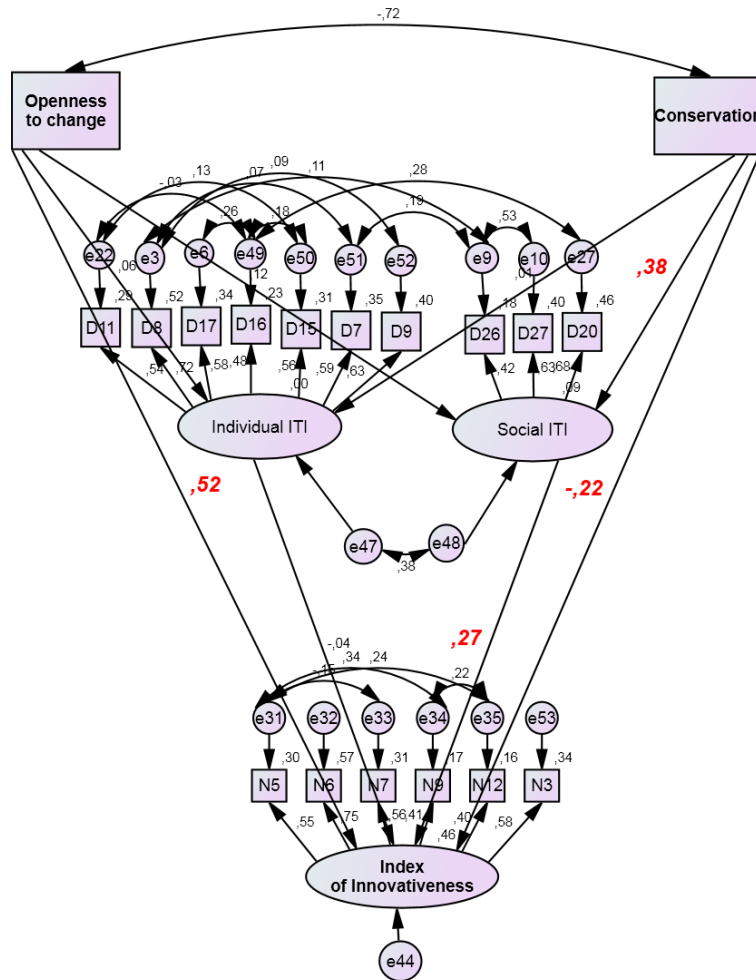


Fig.2. Model of individual values' effects (direct and mediated by implicit theories of innovativeness) on attitudes to innovation (the Russian sample)

We see that, in Russians, the values of Openness to change directly affect the Index of Innovativeness and that the effect is significant and positive. Conservation values have an impact on the Index of Innovativeness that is both direct and negative. In doing so, they have a positive influence on social ITI, which, in turn, also have a positive impact on the Index of Innovativeness. This model revealed the mediating role of social values in the impact of ITI on attitudes toward innovation. It is important to note that both the direct impact and the

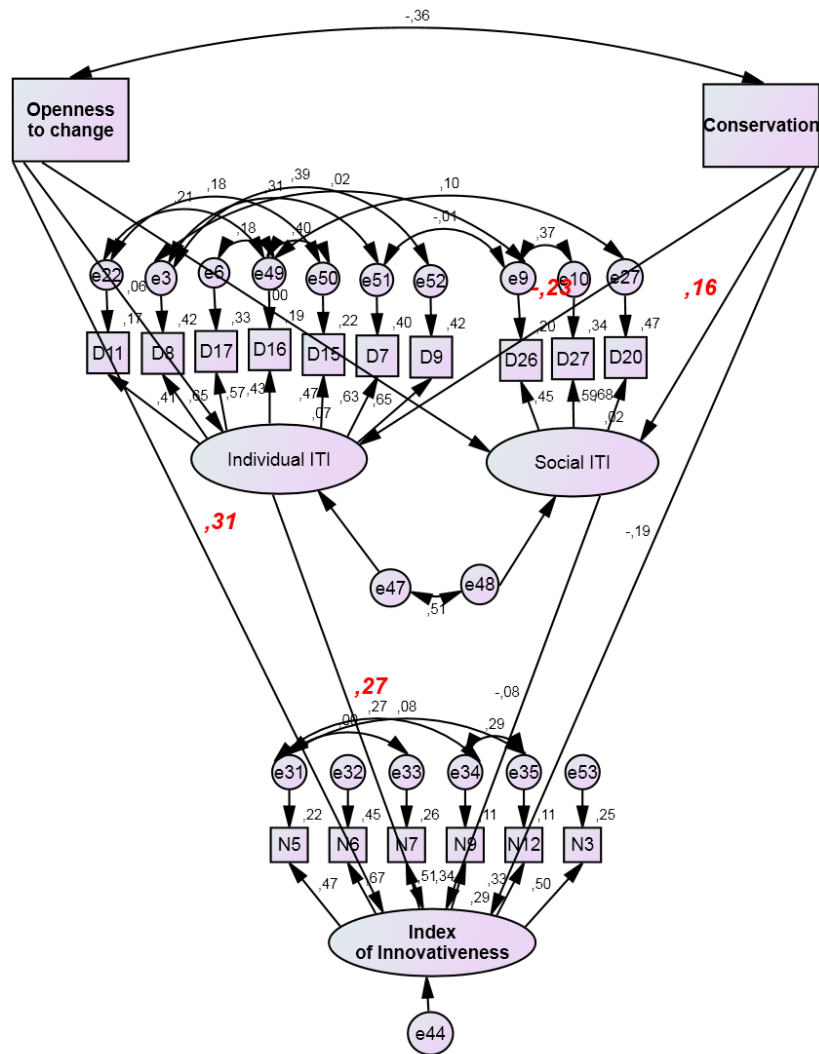


Fig.4. Model of individual values' effects (direct and mediated by implicit theories of innovativeness) on attitudes to innovation (the Tuvin sample)

In Tuvin, the Openness-to-change values affect the attitude to innovations both positively and directly. Conservation values have a negative impact on Individual ITI, which in turn positively affect the Index of Innovativeness. Conservation values also positively affect social ITI, which has no effect on attitudes toward innovation.

Discussion

Thus, our study revealed cross-cultural similarities and differences in those qualities that are necessary for an innovator as viewed by Russians, respondents from the North Caucasus, and Tuvin. The two blocks of implicit theories of innovativeness identified earlier with exploratory and confirmatory analyses – “individual”, meaning *open-mindedness, creativity, enthusiasm, risk inclination, imagination, high motivation, optimism,*

and “social”, meaning *respect for authority, honesty, trust toward people* (Lebedeva, 2012) – differ in their significance in different cultures: For Russians, individual implicit theories of innovativeness are more significant, whereas peoples of the Caucasus and Tuvins consider the social implicit theories of innovativeness to be significant. This is consistent with the research results of our colleagues in China, who discovered that the concept of creativity among Chinese teachers included such characteristics as “honesty”, “respect for elders”, “responsibility”, and a collectivist orientation (Rudowicz & Yue, 2000). It is also consistent with findings that show that, in the implicit culture-specific theories of creativity in India and the U.S., culturally approved personality traits dominate (Runco & Johnson, 2002).

A comparison of values revealed significant differences between Russians and representatives of the peoples of North Caucasus: Conservation values are more important for the representatives of the peoples of the North Caucasus than for Russians and Tuvins, and Openness to change values are more important for Russians than for Tuvins and peoples of the North Caucasus. These differences reflect different positions of studied cultures on the “traditional vs. modernized” continuum, where Russian culture is closer to the modernized pole, while Tuvins culture and that of the peoples of the North Caucasus are closer to the pole of traditionalism. Comparing the values of the representatives of the North Caucasus and Tuvins revealed significant differences in values of Conservation, which are more important for the peoples of the North Caucasus.

In addition, the comparison of the Index of Innovativeness across the three cultural groups based on Kolmogorov-Smirnov showed no significant cross-cultural differences in the Index of Innovativeness, meaning that the attitudes of respondents from all cultural groups are positive, with mean values from 3 to 4 points on the 5-point scale (Lebedeva, 2012).

An analysis through structural equation modeling revealed a culturally universal model for the influence of values on attitudes to innovation – both direct and through implicit theories of innovativeness – in the three different cultures. In addition, the indicators of the partial mediation model, combining both the direct effect of values on attitudes to innovation and the indirect effect of implicit theories of innovativeness, were better, allowing us to treat this as a model closer to studied reality. Significant correlations between values were revealed, specifically implicit theories of innovativeness and attitudes to innovation in the Russian and Tuvins groups, but not in the sample of representatives of the peoples of North Caucasus. This can be tentatively attributed to the fact that individual values in more traditional cultures may not have a significant effect on attitudes and behavior. This is confirmed by international studies that show the degree to which values

motivate behavior depending on social norms and group pressure: The more normative the behavior is, the more it is influenced by individual values (Bardi & Schwartz, 2003; Lebedeva, Schmidt, 2012).

The cross-cultural analysis of the models and relationship schemes in the three cultural groups separately showed that, in Russians, the values of Openness to change have a direct and positive impact on the Index of innovativeness, while the values of Conservation affect it directly and negatively. In this case, the values of Conservation exercise a positive impact on social implicit theories of innovativeness, which transmit this positive impact onto attitudes towards innovation (for example, the Index of Innovativeness) without changing. This model revealed the mediating role of social implicit theories of innovativeness in the impact of Conservation values on attitudes to innovation. It is important to note that both the direct impact and the impact mediated by social theories of innovativeness of Conservation values on attitudes toward innovation are of a multidirectional nature: While the direct impact is negative, the impact mediated by social theories of innovativeness is positive.

In Tuvins, the values of Openness to change, just like in Russians, positively and directly affect attitudes towards innovation. Conservation values have a negative impact on individual implicit theories of innovativeness, which transform this effect into an opposite (positive) effect on attitudes towards innovation (Index of Innovativeness). Conservation values also positively affect the social ITI, which do not have a significant effect on attitudes to innovation.

The two samples reveal a positive mediating role of implicit theories of innovativeness – both individual and social – in the influence of Conservation values on attitudes toward innovation. This is the principal novelty of this study that throws light on the salient role of implicit theories of innovativeness in the relationships between values and attitudes to innovation in different cultures, which consists in converting the direct negative impact of Conservation values on attitudes to innovation into a positive impact mediated by implicit theories of innovativeness.

In conclusion, this study was the first to identify implicit theories of innovativeness in different cultural groups among Russian society. It revealed a culturally universal model of influence of values through implicit theories of innovativeness on attitudes to innovation. This indicates that innovative human behavior is conditioned not only by one's attitudes toward innovation, but also by the culture in which one was socialized and learned values and implicit theories of innovativeness. The study demonstrates how Conservation values, commonly regarded as a hindrance to innovation, can be transformed through implicit

theories of innovativeness and, thus, support innovation. The notion that an innovator must possess socially oriented qualities (trust toward people, honesty, obedience, and respect for authority) can contribute to the acceptance of innovations, and this is important to consider when planning and implementing innovation in different regions of Russia.

Findings

1. We revealed cross-cultural differences in implicit theories of innovativeness: Individual theories of innovativeness are more pronounced in Russians, whereas the respondents from the North Caucasus and Tuva have more pronounced social theories of innovativeness.
2. We found significant cross-cultural differences in values between Russians and representatives of the peoples of the North Caucasus: Openness-to-change values are more important for Russians, while Conservation values are more essential for the representatives of the Caucasus and Tuvins.
3. The study constructed a culturally universal model of both direct effects of values and effects mediated by implicit theories of innovativeness on attitudes towards innovation.
4. The direct effect of Openness-to-change values on attitudes to innovation is positive, while that of Conservation values is negative.
5. The study revealed the important mediating role of social implicit theories of innovativeness in the effect of Conservation values on attitudes to innovation, transforming the negative effect of Conservation values into a positive one.

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Nadezhda M. Lebedeva

Higher School of Economics (Moscow, Russia), International Laboratory for Socio-Cultural Research, director;

E-mail: nlebedeva@hse.ru; lebedhope@yandex.ru

Phone: 8 – 962 – 946 68 01

Lusine K. Grigoryan

Higher School of Economics (Moscow, Russia), International Laboratory for Socio-Cultural research, junior research fellow;

E-mail: lgrigoryan@hse.ru; grigoryanlusine@yandex.ru

Phone: 8 - 903 - 663 82 84

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