Knowledge exchange and the trust institution: A new look at the problem

Abstract: In the knowledge economy, the search and exchange of knowledge is widely recognized as a key factor contributing to the creation and mobilization of company's knowledge resources to maintain its competitive advantage. This study is devoted to identifying the role of interpersonal trust in the process of searching and sharing knowledge. Theoretical analysis shows that previously conducted studies in this research field primarily focus on revealing the relationship between interpersonal trust and willingness to use knowledge. This study is interested in willingness to establish contact between economic actors for the purpose of knowledge exchange, and this becomes important when discontinuities in innovation result from a lack of knowledge exchange and interaction between stakeholders. The effects of two different types of interpersonal trust (cognition-based trust and affect-based trust) surrounding willingness to share explicit and tacit knowledge between individuals is separately examined/tested. This analysis presents data obtained from surveying 295 employees from large organizations in Penza, Russia. To validate the survey, a confirmatory factor analysis using structural equation modeling helped verify advanced causal hypotheses. The hypotheses was tested using multiple correlation-regression analysis, and results reveal both types of interpersonal trust positively correlate with willingness to share both explicit and implicit knowledge. Willingness to share tacit knowledge influenced by affect-based trust between individuals is acknowledged in this study, while cognition-based trust is more significant in explaining willingness to share explicit knowledge. An argument from this study is the need to create favorable conditions within organizations to ensure the recognition of knowledge exchange without constraints.

Keywords: knowledge economy; knowledge exchange; interpersonal trust; innovation; interactions; institutions.

JEL: O39 · O43 · B52

1. Introduction

Russia's path and integration into the knowledge economy has endured struggles, but the outlook is feasible. There is a need to address the Russian economic system's inability to implement innovation, and it needs to start with organizations addressing issues within to increase development and competitiveness. Today, organizations in Russia are struggling to perceive and embrace the latest achievements in the field of science and technology. Reasons are

two-fold: 1. the low capacity of economic agents to absorb new knowledge and technologies and apply it to their own organizational mechanisms; and 2. there exists a lack of sufficient interaction between the participants of economic activities within organizations. Transfer and exchange of knowledge is an essential factor for encouraging establishment and mobilization of company's intellectual resources to maintain its competitiveness in the market.

Due to the strategic importance of knowledge exchange, numerous studies in the last decade have been devoted to revealing factors influencing knowledge transfer and exchange. Factors outlined in the literature include: trust (Abrams et al. 2003; Chowdhury 2005; Gausdal 2015; Holste and Fields 2010; Nonaka 1994; Petrakis and Kostis 2015), interaction norms (Bock et al. 2005; Borgatti and Cross 2003; Cross and Sproull 2004; Nadler et al. 2003), sociocultural factors to ease communication, informal interactions and cooperation (Boh and Wong 2015; Liu 2010) and gender (Elias 2015; Ma and Yuen 2011). Previous research also shows that cultural and communication differences can cause problems influencing knowledge sharing behavior (see Zhang and Xu 2014). Concerning these critical areas of research, there has been work that has focused on Russia (e.g. Alnafrah and Mouselli 2017; Gershman and Kitova 2017; Golichenko and Malkova 2017; Kindras et al. 2015), and this conceptual paper attempts to re-consider understandings of knowledge exchange. Thus, there is a need to consider a new look at the problem relevant to Russia and for the wider field of study.

Arguably, to improve knowledge sharing, understanding what motivates individuals or organization to share knowledge is crucial. Meanwhile, the existing literature in the field of knowledge management is inconclusive with regard to motivators to share knowledge. Therefore, the objective of this article is to explore how knowledge is shared in organizations and, specifically, to identify the role of interpersonal trust in the process of searching and sharing knowledge.

2. Literature review

2.1. The role of interpersonal trust in knowledge sharing

Utilizing institutional and neoinstitutional theories scholars have concluded that the trust between economic agents decreases transaction costs promoting business development, thus leading to an increase of socio-economic efficiency (Fukuyama 1995; Hult 2003; North 1995). Cross-disciplinary theoretical understandings from psychology and sociology involve approaches that can help scholars interpret economic processes. This is especially essential for Russian organizations, because the economic systems there have much to gain from research that integrates psychology and/with industrial sociology. To this regard, Milner (1998, p. 84) supports the need for such research

because “trust is the key to successful economic reforms”, in line with the purpose of this paper.

Problems of interpersonal trust take a special place in the process of knowledge exchange and transfer. Concerning the very definition of ‘trust’, understood as “confidence in one’s honesty, sincerity, in rightness of something, as well as the attitude towards somebody/something based thereon” (Ozhegov 1988 p. 138). Trust is therefore the foundation of both interpersonal relations and social institutions. Modern economists define trust as an “expectation that your partner is reliable, honest in actions and negotiations,” with someone (Zaheer et al. 1998 p. 146). This suggests people will trust others they can rely on and/or be able to predict particular behaviors to enhance knowledge exchange and collaboration. Perrini and Castaldo (2007) distinguish four popular definitions of trust that reflect main approaches to its conceptualization; these include expectations, willingness, confidence and attitude. Likewise, and according to Fukuyama (1995 p. 52), “trust is an expectation occurring in members of a society that other members thereof will behave more or less predictably, honestly and considerate to others in accordance with some common standards.” Together with the notion of confidence and social trust, people direct interpersonal trust towards a certain person in a certain social situation where they feel comfortable to share and communicate. Moreover, trust in the state power and interpersonal trust are key factors for expanding collaboration when it comes to contributing to growth and increasing competitiveness.

This paper considers how interpersonal trust influences people’s motivation to “extract” and share knowledge, as such an issue has been broadly addressed, nor has the study of willingness and unwillingness to resort to assistance when searching for knowledge. These may be caused by various motives, including some psychological, social or other expenditures of a principal, for example, side effects caused by recognition of principal’s incompetence, poor skills as a part of a company’s staff, or undermining of principal’s authority among colleagues (Borgatti and Cross 2003). One can single out the following types of trust: trust based on elimination of undesired deeds or reckoning (deterrence-based or calculus-based trust); trust based on anticipating another person’s behavior (according to personal experience or social networks); knowledge-based trust; and trust based on the identification of personal and partner interests (identification-based trust). Some authors define trust by a number of opposite properties: fragile trust versus resilient trust; cognition-based versus affect-based trust; and goodwill trust and competence trust. A classic distinction of trust, according to Luhmann (1979), is addressed at micro- (between people as something associated with certain personal risks) and macro-levels (relying on social institutions and organizational culture). Furthermore, Belyanin and Zinchenko (2010) argue that the lack of social institutions would not just entail personal risks, but also threatens an

organizational system.

Conceptualizations of trust and searching for its predictors, as discussed by many scholars (e.g. Miller 2000; Natkhov 2011; Ullmann-Margalit 2004; Uslaner 2002) is not the focus of this research. However, this work is devoted to understanding if a correlation exists between interpersonal trust and willingness of people to search for knowledge, whereas earlier work mainly focused on revealing if a correlation exists between interpersonal trust and willingness to use the knowledge already obtained. Foremost, this paper is interested in willingness to contact between economic actors for the purpose of knowledge exchange. This appears to be extremely important in conditions when serious discontinuities emerge in the links of innovation systems due to the lack of a proper level of interaction between all stakeholders, and their demotivation for interaction (see Gamidullaeva 2016).

2.2. The role of different forms of interpersonal trust in sharing knowledge

A sociological survey on the level of trust in Russia displays low levels of trust (as outlined in Table 1 and Figure 1). The level of interpersonal trust, indicated by an integral index, shows people responded positively to: Do you think most people can be trusted or is it necessary to be careful with people? It is important to mention that some authors have revealed that affect-based trust influences knowledge exchange more significantly, than cognition-based trust (Chowdhury 2005; Huang et al. 2011; Levin and Cross 2004; Zhou et al. 2010).

[Table 1 about here]

[Figure 1 about here]

When researching how affect-based trust and cognition-based trust affect willingness to share knowledge, it is necessary to draw a distinction between explicit and tacit forms of knowledge.

Explicit knowledge is subject to articulation, where codification is reflected in documents, reports, formulas, patents, databases or guidelines (Holste and Fields 2010 p. 132), whereas tacit knowledge (views, beliefs, skills) can hardly be articulated and fixed in documents (Balogun and Gabriel 2015). Instead, tacit knowledge is embedded in actions, habits, preferences in concrete cases of a person's activity (Nonaka 1994). Tacit knowledge is thus implemented in behavioral sets and individual strategies, highlighting a worker's individual approach to problem solving (see Nonaka 1994; Nonaka, et al. 2001). Another argument brought forward in this paper is the belief that

relations between the categories of interpersonal trust and willingness to search for new knowledge will vary depending on a type of knowledge sought by a person. It then becomes important to determine the influence of interpersonal trust on willingness to search for knowledge—which is important regarding the mechanism of knowledge sharing between companies in Russia.

According to Nonaka et al. (1994 p. 24), interpersonal trust appears to be a foundation for which to form cooperative behavior on—so to implement joint projects aimed at promoting tacit knowledge exchange. Moreover, cooperative behavior based on interpersonal trust is one of the most important means of ensuring a company's competitive advantage. It is obvious that without trust people are reluctant to share knowledge, as evidenced in a number of studies (see Lucas 2005; Renzl 2008; Holste and Fields 2010). Here, interpersonal trust refers to "willingness to subject to another party's deeds on the basis of expectations that this party would accomplish certain activities important for a principal regardless of the ability to control the said party" (Mayer et al. 1995 p. 712). However, this definition can be further developed because one can define interpersonal trust as an individual's confidence in, and reliability on (or of) others if there is willingness to act on other individuals decisions.

In addition to interpersonal trust, scholars also highlight institutional levels of trust. McKnight et al. (2002) describe impersonal trust as a form of trust that describes consumers' views and beliefs. While this understanding is common, knowledge sharing within a company still happens from person to person (Pee and Min 2017). Interpersonal trust involves a multilevel structure; as noted earlier, there can be cognition-based trust and affect-based trust. Cognitive trust is perception of the experience, knowledge and competence belonging to a "knowledge bearer"—a reliable and trustworthy source (McAllister 1995). Alternatively, the second type concerns emotional relations between persons (McAllister 1995). This paper argues that in spite of some similarity of these types of trust, they have considerable qualitative differences. Such differences helped develop research hypotheses around interpersonal trust and the process of knowledge sharing.

Table 2 displays content-analysis results of existing theories and approaches to investigating the process of knowledge sharing in the scope of interpersonal trust. It is logical to assume that cognition-based trust plays a significant role in motivating other agents to search for knowledge because a trustworthy agent must be reliable and possess particular subject competence. Uncertainties and risks may negatively affect willingness of economic actors to share tacit knowledge (and use the knowledge), because they lack confidence when it comes to how precise or reliable the source of knowledge is, and if the knowledge will be capable of providing high quality results (see Choo

1998). At the same time, there is a need for knowledge bearers who have the ability to transfer knowledge, especially tacit knowledge (which is difficult to explain and apprehend). Therefore, personal ties and close relationships may encourage tacit knowledge exchange between economic agents (Smith 2001).

2.3. The role of cognition-based trust in seeking different forms of knowledge

Previous research has shown that affect-based trust and cognition-based trust have different influence on explicit knowledge exchange, as well as on tacit knowledge exchange (Zhou et al. 2010; Hansen 1999; Levin and Cross 2004; Chowdhury 2005). Affect-based trust is more important at explicit knowledge exchange, as "a knowledge bearer" (source of knowledge) must be confident in a principal's ability to apprehend and use the knowledge transferred. Moreover, affect-based trust is extremely important at tacit knowledge exchange, which is often connected with "knowledge bearer's" beliefs, views, institutions and habits.

Empirical research carried out by the authors formed a considerable probative foundation, supporting positive effects of affect-based trust on sharing both explicit and tacit knowledge (Levin and Cross, 2004; Chowdhury 2005; Holste and Fields 2010; Zhou et al. 2010; Huang et al. 2011).

Cognition-based trust is capable of accelerating social interaction between "knowledge seekers" and "knowledge bearers" creating the joint experience necessary for efficient tacit knowledge sharing. People who have close working relations are more motivated to share tacit knowledge with each other, paying no attention to risks.

According to Chowdhury (2005), cognition-based trust promotes the tacit knowledge sharing, since the knowledge seeker and knowledge bearers must trust each other's competencies to create a common professional experience.

Recent empirical evidence seems to support a lesser role of cognition-based trust in explicit knowledge sharing (Levin and Cross, 2004; Zhou et al., 2010; Huang et al., 2011). Levin and Cross (2004). The knowledge seeker must be confident that the knowledge bearer has the ability to externalize the knowledge. Whereas knowledge bearer must be sure in the knowledge seeker's ability to perceive and absorb the tacit knowledge. This ability is less important for the exchange of explicit knowledge, because such knowledge is easier to understand without explanation from the knowledge bearer.

As found by Epstein (2000) people in close friendly relationships are motivated to share important tacit knowledge and personal experience via personal communication. As shown by Fukuyama (1995) the longer people remain in close relationships, the more motivated they are to act in a mutually beneficial manner. Borgatti and Cross

(2003) examined the extent to which the relations between a seeker and a bearer of knowledge influence the probability of information searches, and established that the assessment of "bearers" knowledge and skills influences the probability of information searching by a person.

Chowdhury (2005) has shown that cognition-based trust encourages tacit knowledge exchange, because "a knowledge seeker" and "a knowledge bearer" should be confident in each other's competence to develop joint expertise.

The authors (Santosh and Muthiah 2012) analyzed knowledge exchange between repatriate workers and their colleagues at companies in India, revealing that the level of colleagues' trust in relation to repatriate workers and their reliability positively correlates with a knowledge-searching environment. Levin and Cross (2004) showed that cognition-based trust has less influence on explicit knowledge exchange and competence-based trust does not encourage codified knowledge transfer.

Consequently, it can be assumed that cognition-based trust is concerned with both explicit and tacit knowledge exchange, since the assessment of the competences of the knowledge holder is necessary regardless the type of knowledge being requested.

Based on the above analysis, it is expected that cognition-based trust would be positively associated with a willingness to seek both explicit and tacit knowledge.

2.4. The role of affect-based trust in seeking different forms of knowledge

An analysis of pivotal prerequisites of knowledge searching at multinational companies shows that cognition-based trust has a positive influence on perceptible value of sought knowledge, thus increasing the probability of contact between a seeker and a bearer of knowledge. This is shaped by emotional ties, good formal or informal relations may lead to fulfillment of "knowledge seeker's" expectations that "a knowledge bearer" would interact and share knowledge. Affect-based trust increases the chance that a "knowledge bearer" will be inclined to establish a contact (Nebus 2004).

The authors (Foos et al. 2006) found out that tacit knowledge exchange at companies from the United States quickens provided mutual trust between work group members. It is explained by the fact that trust promotes cooperation, launches interaction between co-workers, improves perceptiveness and promotes important information exchange between persons.

Social factors have been found to be influential in knowledge sharing (Boh and Wong, 2015; Gross and Kluge, 2014; Lee et al., 2014). Managers and coworkers participate in knowledge sharing within organizations and individuals' social characteristics affect their behavior (Boh and Wong 2015). In a study of knowledge sharing among companies in Korea, Jeon et al. (2011) found that social factors positively affected knowledge exchange. Engagement in social interaction was also found to positively influence knowledge sharing in multinational organizations in Denmark (Minbaeva, Makela, and Rabbiosi, 2012).

As acquiring knowledge from someone requires good formal and informal relationships, can lead to the knowledge seeker expecting the knowledge holder to collaborate in knowledge exchange (Nebus, 2006).

Accordingly, it was expected that affect-based trust would be positively associated with a willingness to seek explicit and tacit knowledge.

From the insight outlined here, based on the gaps in knowledge recognized in Table 2, the following hypotheses are outlined:

Hypothesis 1: Affect-based trust positively correlates with willingness to share explicit knowledge.

Hypothesis 2: Affect-based trust positively correlates with willingness to share tacit knowledge.

Hypothesis 3: Cognition-based trust positively correlates with willingness to share explicit knowledge.

Hypothesis 4: Cognition-based trust positively correlates with willingness to share tacit knowledge.

[Table 2 about here]

3. Methodology

3.1. Sample and Data Collection

This research employed a survey method. 380 respondents were randomly selected from nine large companies in Russia's Penza region. Of the 380 distributed questionnaire forms 78% were valid (using 295 responses for the analysis). The management of each of the companies recognize teamwork and knowledge sharing as extremely important to their firm's success. The parameters that informed the evaluation conducted in this research are outlined in Table 3. Participants of the survey were mostly males with 185 men and 110 women (63%). Participants' ages

ranged from 24 to 54 years old (M = 31.5, SD = 6.29) and their working experience ranged from 19 to 4 years old (M = 8.15, SD = 7.36).

[Table 3 about here]

3.2. Methodological procedure and measurement

Correlation analysis was chosen to help in solving the research problems. Calculations based on correlation models increase the degree of accuracy of the analysis, often revealing the shortcomings of the preliminary analysis. The advantage of this method also lies in the fact that it makes it possible to solve problems that cannot be solved using other methods of economic analysis - such as, for example, determine the influence of factors that are interconnected and interdependent as different types of trust and knowledge.

Methodological procedure consists of some stages.

At the first stage two multiple regression analyses were conducted to test the research hypotheses, using affect-based trust and cognition-based trust as the independent variables and explicit knowledge seeking and tacit knowledge seeking as the dependent variables respectively.

In the first step of each regression analysis, demographic variables (age, gender, working experience) were introduced at the analysis.

In the second step of the regression analysis, two independent variables (SEK, STK) were added simultaneously.

At the final stage to validate the survey instrument, a confirmatory factor analysis (CFA) in combination with structural equation modeling (SEM) was conducted to checked the causal hypotheses using SPSS was to assist and conduct the analysis.

An instrument was developed to gather data related to knowledge sharing using a 7-point Likert scale. For each question, respondents were asked to determine whether they agree or disagree with one or another statement, using a seven-point Likert scale (1: absolutely disagree; 7: absolutely agree). To disseminate the survey, respondents were asked to introduce one of their colleagues (subordinates, peers or superiors) in their organization. The final sample consisted of 295 employees from large organizations in Penza city from Russia.

The questionnaire contained 20 questions with items related to the independent and dependent variables, including demographic section. Table 4 presents a description of the instrument.

[Table 4 about here]

Table 5 presents the results of Cronbach's alpha reliability test for cognition-based trust, affect-based trust, willingness to share explicit knowledge and willingness to share tacit knowledge. All scales demonstrated acceptable reliability.

[Table 5 about here]

To validate the survey questions, a confirmatory factor analysis (CFA) in combination with structural equation modeling (SEM) checked the causal hypotheses (see Harrington 2009). SPSS was used to assist and conduct the analysis. The literature that this paper draws upon notes SEM is a common notion for such particular models that include direct bonds between variables, directly unmeasurable constructs (for example latent variables) and potential measurement errors (Nadler 2003). Model (0) was then compared with alternative models to check its value. Previous research states that cognition-based and affect-based knowledge closely correlate with each other, so these two types of trust were united into one factor to form a Three-Factor Model (1). Similarly, willingness to share explicit knowledge and willingness to share tacit knowledge were united into one factor forming the Three-Factor Model (2). A Two-Factor Model (3) was formed as well by joining together factors representing types of trust as well as types of knowledge (see Table 6). The confirmatory analysis results indicate that Model (0) includes the best set of criteria, dependent and independent variables having no empirical connections in-between (see Nasledov 2013). Cronbach's alpha method helped analyze reliability cognition–based trust and affect-based trust, as well as willingness to share explicit and tacit knowledge. The reliability coefficients for indices CT, AT, SEK, and STK totaled 0.76; 0.89; 0.91; and 0.93, respectively. In Table 6, the obtained coefficients' values are interpreted as follows:

1) The chi-square criterion should be not less than 2

2) The CFI, CIF criteria – not less than 0.95 (good fit) or not less than 0.9 (acceptable fit)

3) The AGF criterion should not be less than 0.90 (good fit). Usually AGFI < GFI

4) The RMSEA coefficient for a 90 % confidence interval: not more than 0.05 – good fit, not more than 0.08 – acceptable fit, 0.08, 0.1 – poor fit, over 0.1 – none

[Table 6 about here]

4. Results and discussion

At the final stage of the research, obtained data were subject to descriptive analysis and correlation analysis (see Table7).

[Table 7 about here]

A multiple regression analysis was conducted to reveal predictors of a person's willingness to share knowledge (SEK, STK) and test the presented hypotheses. The independent variables measured were affect-based trust and cognition-based trust (AT, CT). Accordingly, willingness to share explicit knowledge and willingness to share tacit knowledge (SEK, STK) were dependent variables. Demographic variables (age, gender, working experience) were introduced at the first stage of the analysis. For instance, in previous research Tulgan (1995) found younger workers are less trusting, and Lee (2002) highlights women are more trusting and thus request assistance more often. Holste and Fields (2010) notes the more working experience someone has, the less they are willing to request assistance and share knowledge. At the second stage of the analysis, two independent variables (SEK, STK) were added simultaneously.

The analysis results reveal that the demographic factors have no considerable influence on willingness to share explicit and tacit knowledge. Consequently, these factors are not predictors in the model and findings. The presented hypotheses above were proved by means of the correlation-regression analysis. It was established that affect-based trust and cognition-based trust positively correlate with willingness to share both explicit (Δr^2=0.52) and tacit (Δr^2=0.44) knowledge. Moreover, affect-based trust has a greater influence on willingness to share tacit knowledge (r=0.54), and cognition-based trust (r=0.57), on the contrary, has a deeper impact on willingness to share explicit knowledge.

The study details the problem of interdependence between interpersonal trust and willingness to share knowledge within Russian organizations. This research is also concerned with the interrelation of certain categories of affect-based and cognition-based trust, and correspondingly, willingness to search and share explicit and tacit knowledge. The results obtained partially align with previously published results by Nonaka et al. (1994) and Epstein (2000), asserting that personal ties or relationships promote tacit knowledge exchange between co-workers.

Furthermore, results in this study are concordant with Holste et al. (2010), who discovered various influence of cognition-based and affect-based trust on willingness to share tacit knowledge. Thus, tacit knowledge is a valuable resource for workers that forms (and enhances) their organizations competitiveness. Alternatively, the exchange of such knowledge with untrustworthy colleagues may constitute a threat, as the said knowledge may be used later to weaken a certain worker's position at a company.

Since the data used in this research came from Russia, the research findings may be of interest to companies operating in Russia. However, while Russian culture has traditionally valued affect-based trust, cognition-based trust has become quite influential in contemporary Russian society in sharing explicit knowledge between individuals within organizations. The wider contribution here is the need to explore how interpersonal trust influences people's motivation to "extract" and share knowledge, and this widens the scope of what is disseminated in this study—of interest to the wider research and business community.

5. Conclusion

Taking into account the importance of tacit knowledge exchange at companies, results suggest the need to create a more distinct environment, where workers not just easily and readily exchange knowledge with another party, but feel no hesitation about asking other workers to give information or share knowledge when particular knowledge becomes a necessity. The culture of trust may encourage knowledge exchange—and thus managers should develop close relationships among staff members and stimulate emergence of emotional ties between all workers by means of, for instance, socialization, team project implementation or corporate culture development. Considering development of cognition-based trust at companies, quite a promising method, is the creation of 'competence portfolios.' This means each employee (at all levels) would be available to any staff member, as this will improve knowledge exchange efficiency and improve organization efficacy.

In summarizing the results of this research, trust is a key factor and predictor displaying a person's willingness to seek out and share knowledge. Moreover, trust is significant for knowledge exchange at the interpersonal level; therefore, this field of research deserves more attention in the scientific community, especially among economists, psychologists and sociologists. This study revisited and reviewed the related literature and puts forth an approach that researchers can adopt in similar future studies. The role of interpersonal trust during the absorption and adaptation of knowledge obtained by exchange will help offer practical insight for organizations. It can help companies with large numbers of employees to understand trust and knowledge exchange within their

organization, and among employees, to promote growth and innovation. The key take away message surrounds the integration of a particular skills-sets and specific ideas each with the aim of enhancing an organization's competitiveness.

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Table 1 – Cross-tabulation table of answers to the question "Do you think most people can be trusted or it is necessary to be careful with people?"

			Federal districts							Total
			Central	North-Western	Southern	Volga	Ural	Siberian	Far Eastern	
Do you think most people can be trusted or it is necessary to be careful with people?	most people can be trusted	Quantity	1,572	1,068	455	1,124	405	780	857	6,261
		%	25.1%	17.1%	7.3%	18.0%	6.5%	12.5%	13.7%	100%
	it is necessary to be careful with people	Quantity	7,114	3,689	1,919	5,646	1,982	3,501	2,360	26,211
		%	27.1%	14.1%	7.3%	21.5%	7.6%	13.4%	9.0%	100%
	I don't know	Quantity	317	249	126	251	113	227	279	1,562
		%	20.3%	15.9%	8.1%	16.1%	7.2%	14.5%	17.9%	100%
	no response	Quantity	1	0	0	1	0	1	1	4
		%	25%	0%	0%	25%	0%	25%	25%	100%
Всего		Quantity	9,004	5,006	2,500	7,022	2,500	4,509	3,497	34,038
		%	26.5%	14.7%	7.3%	20.6%	7.3%	13.2%	10.3%	100%

Source: Sociological survey of "Georating" public opinion foundation. The database is the courtesy of the Institute of Institutional Research of National Research University "Higher School of Economics."

Table 2 – Analysis of contemporary studies on the correlation of interpersonal trust categories and the process of knowledge sharing

Author	Research summary and results
Chowdhury 2005 Hansen 1999 Huang et al. 2011 Levin and Cross 2004 Zhou et al. 2010	It is shown that cognition-based trust and affect-based trust have different influence on explicit knowledge exchange, as well as on tacit knowledge exchange. Affect-based trust is more important at explicit knowledge exchange, as "a knowledge bearer" (source of knowledge) must be confident in a principal's ability to apprehend and use the knowledge transferred. Moreover, affect-based trust is extremely important at tacit knowledge exchange, which is often connected with "knowledge bearer's" beliefs, views, institutions and habits.
Stenmark 2002	A worker might be demotivated to share tacit knowledge with colleagues due to the risk of losing the competitive advantage at a company.
Nonaka and Konno 1998	Cognition-based trust is capable of accelerating social interaction between "knowledge seekers" and "knowledge bearers" creating the joint experience necessary for efficient tacit knowledge sharing. People who have close working relations are more motivated to share tacit knowledge with each other, paying no attention to risks.
Chowdhury 2005 Holste and Fields 2010 Huang et al. 2011 Levin and Cross 2004 Yang and Farn 2009	Empirical research carried out by these authors formed a considerable probative foundation, supporting positive effects of affect-based trust on sharing both explicit and tacit knowledge.
Epstein 2000	People in close friendly relationships are motivated to share important tacit knowledge and personal experience via personal communication.
Chowdhury 2005	Cognition-based trust encourages tacit knowledge exchange, because "a knowledge seeker" and "a knowledge bearer" should be confident in each other's competence to develop joint expertise.
Levin and Cross 2004	The authors showed that cognition-based trust has less influence on explicit knowledge exchange and competence-based trust does not encourage codified knowledge transfer.
Borgatti and Cross 2003	The authors examined the extent to which the relations between a seeker and a bearer of knowledge influence the probability of information searches, and established that the assessment of "bearers" knowledge and skills influences the probability of information searching by a person.
Fukuyama 1995	The longer people remain in close relationships, the more motivated they are to act in a mutually beneficial manner.
Nebus 2004	An analysis of pivotal prerequisites of knowledge searching at multinational companies shows that cognition-based trust has a positive influence on perceptible value of sought knowledge, thus increasing the probability of contact between a seeker and a bearer of knowledge. This is shaped by emotional ties, good formal or informal relations may lead to fulfillment of "knowledge seeker's" expectations that "a knowledge bearer" would interact and share knowledge. Affect-based trust increases the chance that a "knowledge bearer" will be inclined to establish a contact.
Santosh and Muthiah 2012	The authors analyzed knowledge exchange between repatriate workers and their colleagues at companies in India, revealing that the level of colleagues' trust in relation to repatriate workers and their reliability positively correlates with a knowledge searching environment.
Hansen 1999 Levin and Cross 2004	The "knowledge bearer's" ability to codify and document tacit knowledge is more important for searching of tacit knowledge, than the explicit one.
Foos et al. 2006	The authors found out that tacit knowledge exchange at companies from the United States quickens provided mutual trust between work group members. It is explained by the fact that trust promotes cooperation, launches interaction between co-workers, improves perceptiveness and promotes important information exchange between persons.
Zhou et al. 2010	Cognition-based trust positively correlates with perceived willingness to share both explicit and tacit knowledge.

Cross and Sproull 2004	Cognition-based trust may stimulate tacit knowledge searching by establishing close relationships and cooperation between two parties.

Table 3 – Mean values, standard deviations and pair correlation coefficients between variables (N = 295).

Variables	Mean	Standard deviation	1	2	3	4	5	6
1. Willingness to share explicit knowledge	5.07	1.34						
2. Willingness to share tacit knowledge	4.81	1.32	.67**					
3. Affect-based trust	5.24	1.51	.68**	.64**				
4. Cognition-based trust	5.39	1.231	.67**	.69**	.78**			
5. Age	31.5	6.29	.02	-.01	.10	.03		
6. Gender	-	-	-.10	-.09	-.02	-.01	.06	--
7. Working experience	7.15	6.36	-.18**	-.20**	-.25**	-.25**	-.07	-.37**

Table 4. – Instrument description

Variable	Level of measurement	Source	Variable type
1. Willingness to share explicit knowledge	Ordinal	Instrument	Dependent
2. Willingness to share tacit knowledge	Ordinal	Instrument	Dependent
3. Affect-based trust	Ordinal	Instrument	Independent
4. Cognition-based trust	Ordinal	Instrument	Independent
5. Age	Ordinal	Instrument	Independent
6. Gender	Ordinal	Instrument	Independent
7. Working experience	Ordinal	Instrument	Independent

Table 5 – Sources of information and question samples for evaluation of required parameters

Parameters	**Source**	**Cronbach's alpha**	**Total questions in a section**	**Statement sample from the questionnaire**
Cognition-based trust (CT)	McAllister 1995	0.93	6	Most people, even those not in close friendly relations, trust and respect him/her
Affect-based trust (AT)	McAllister 1995	0.93	5	I can say that we experience a sense of "emotional collaboration" and involvement in our working relations
Willingness to share explicit knowledge (SEK)	Bock et al. 2005; Huang et al. 2011	—	2	If necessary, I can ask this person to give me official documents and reports without any hesitation
Willingness to share tacit knowledge (STK)	Holste and Fields 2010	0.69	4	If necessary, I can request any information from this person without any hesitation

Table 6. Confirmatory factor analysis results

Models	Chi-square	Goodness of fit index (GFI)	Comparative index of fitting (CIF)	Adjusted goodness of fit index (AGFI)	Root mean square error of approximation (RMSEA)
Model (0)	1.274	0.905	0.956	0.887	0.05
Model (1)	1.812	0.944	0.991	0.892	0.04
Model (2)	2.306	0.911	0.973	0.869	0.08
Model (3)	2.239	0.931	0.976	0.881	0.08

Table 7 – Regression analysis results

Variables	**Willingness to share explicit knowledge (SEK)**		**Willingness to share tacit knowledge (STK)**	
	1	**2**	**3**	**4**
Age	0.02	-0.01	0.1	-0.02
Gender	-.04	.03	0.04	0.05
Working experience	-0.18	0.02	0.08	-0.03
Affect-based trust		0.24**		0.54**
Cognition-based trust		0.57**		0.29**
r^2	0.06	0.52	0.2	0.44
Δr^2	0.04	0.48	0.1	0.46
F-ratio		86.73**	0.04	58.42**
*Correlation is significant at level 0.05% (two-sided) ** Correlation is significant at level 0.01% (two-sided)				

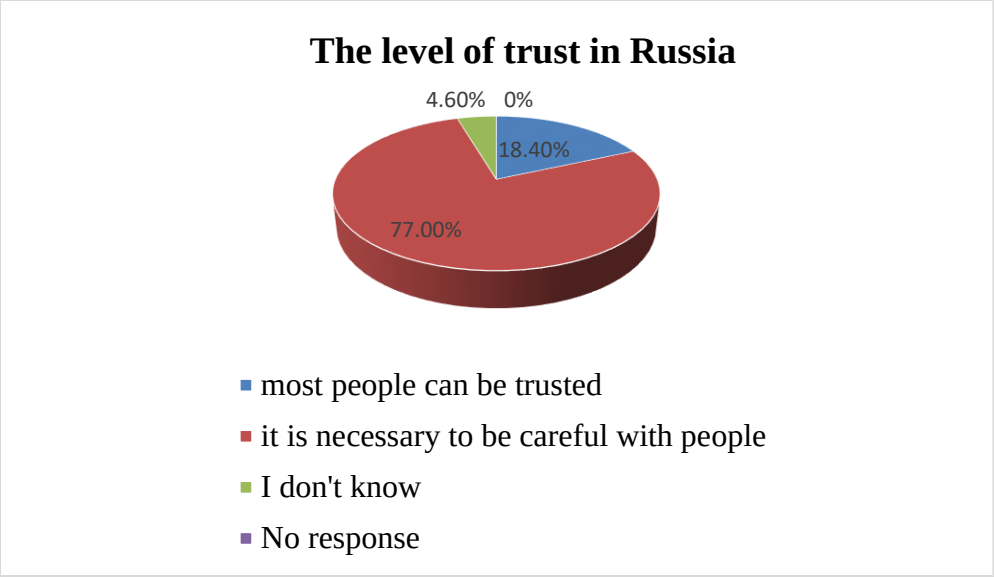

Figure 1. Results of the interpersonal trust research in regions of Russia. (Source: Sociological survey of "Georating" public opinion foundation. The database is the courtesy of the Institute of Institutional Research of National Research University "Higher School of Economics").