



THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN BUSINESS SCHOOL

Attitudes and Performance: An Analysis of Russian Workers

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William Davidson Institute Working Paper Number 758
March 2005

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January 2005

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Abstract

This paper investigates the relationship between locus of control and performance among Russian employees, using survey data collected at 28 workplaces in 2002 in Taganrog and at 47 workplaces in 2003 in Ekaterinburg. We develop a measure that allows us to categorize the Russian employees participating in our survey as exhibiting an internal or external locus of control. We then assess the extent to which there are significant differences between “internals” and “externals” in work-related attitudes that may affect performance. In particular, we focus on (1) attitudes about outcomes associated with hard work, (2) level of job satisfaction, (3) expectation of receiving a desired reward, and (4) loyalty to and involvement with one’s organization. In each case we identify where gender and generational differences emerge. Our main objective is to determine whether Russian employees who exhibit an internal locus of control perform better than employees with an external locus of control. Our performance measures include earnings, expected promotions, and assessments of the quantity and quality of work in comparison to others at the same organization doing a similar job. Controlling for a variety of worker characteristics, we find that (1) individuals who exhibit an internal locus of control perform better, but this result is not always statistically significant; (2) even among “internals,” women earn significantly less than men and have a much lower expectation of promotion; (3) even among “internals,” experience with unemployment has a negative influence on performance.

Key Words: locus of control, Russia, motivation, performance, gender

JEL Classification: P23, J24

Attitudes and Performance: An Analysis of Russian Workers

How do attitudes affect performance? Economists tend to avoid such questions because of difficulties associated with accurately measuring attitudes and establishing causality between attitudes and performance (Bowles *et al* 2001). Yet a number of studies focusing on individual perceptions of the relationship between effort, performance, and reward find that one's attitude about the causal relationship between one's behavior and its consequences – one's "locus of control" (Rotter 1966) – does influence a variety of labor market outcomes (Andrisani 1977 1981, Borg and Elizur 1992, Coleman and DeLeire 2003, Duncan and Dunifon 1981 1998, Goldsmith *et al* 1996 2000, Ritter and Anker 2002). Individuals who believe that the outcomes they experience are consequences of their own behavior, ability or effort are defined as exhibiting an "internal" locus of control (Rotter 1966). Individuals with an "internal" locus of control tend to invest more in human capital and have higher earnings than individuals who exhibit an "external" locus of control and who believe that the outcomes they experience are a function of luck or fate or other factors that are beyond their control or manipulation (Andrisani 1977 1981, Coleman and DeLeire 2003).

More generally, a large literature based on surveys conducted in Australia, Britain, Germany, Japan, and the U.S. documents a strong relationship between locus of control (LOC) and a variety of work-related characteristics: motivation, effort, productivity, job satisfaction, experience with unemployment, job-related stress, feelings of job insecurity, entrepreneurship, supervisory style, participation in teams, and responses to particular management techniques (see, for example, Bandura 1989, Garson and Stanwyck 1997, Goldsmith *et al* 1996, Hansemark 2003, Kirkcaldy *et al* 2002, Lee *et al* 1990, Mitchell *et al* 1975, Seligman 1975, Skinner *et al* 1998, Spector 1982). Studies involving individuals in developed market economies tend to support the general proposition that employees exhibiting an internal LOC perform better – are both more motivated and more productive – than those exhibiting an external LOC (Bandura and Cervone 1983, Baum *et al* 1986, Goldsmith *et al* 2000, Harter 1978, Heckhausen 1991, Skinner 1996).

Do these same relationships hold for individuals in former socialist economies?¹ Are differences in beliefs about the extent to which personal initiative results in the achievement of desired

¹ The importance of cross-cultural research is well-documented in the recent managerial literature (Adler 2002, Hempel 2001, Li and Karakowsky 2001, Puffer 1996, Puffer *et al* 2000, Sanyal and Guvenli 2004).

outcomes related to differences in labor market experiences in Russia, for example? More specifically, do Russian employees who exhibit an internal locus of control perform better than employees with an external locus of control? This paper investigates the relationship between locus of control and performance among Russian employees, using survey data collected at 28 workplaces in Taganrog in 2002² and at 47 workplaces in Ekaterinburg in 2003.³ Our performance measures include earnings, expected promotions, and assessments of the quantity and quality of work in comparison to others at the same organization doing a similar job.

Why does it matter if attitudes about one's ability to control outcomes influence performance among Russian employees? Three answers to this question are readily apparent. First, identifying whether Russian employees who exhibit an internal LOC perform better than those who exhibit an external LOC broadens the application of existing research to a new cultural paradigm. Such information will assist firms, both domestic and foreign, in developing management strategies and incentive structures that effectively motivate Russian workers, as well as provide the foundation for explorations of regional and ethnic differences in employee attitudes in Russia. Second, studies which evaluate the link between attitudes and performance offer a new dimension to consider when analyzing gender differences in earnings and career opportunities. However, existing studies evaluating the link between performance and LOC focus predominately on males; gender differences in locus of control have received little attention. Our study uses survey data collected from Russian employees to examine the link between gender differences in locus of control and gender differences in performance. Third, existing studies evaluating the link between performance and locus of control focus tend to ignore the potential link between LOC and other work-related attitudes that may affect performance. Our study

² We refer to the 2002 survey as the "Taganrog survey" because, by design, the majority of the participating workplaces (86%) were located in Taganrog; one workplace was located in Rostov, and three in Azov. Taganrog, a port city on the Azov Sea and formerly a "closed" city, has been identified by Soviet and Russian researchers as the "average" or "typical" city – the Peoria of Russia and the former Soviet Union (Grushin 1980, Chichilymov 1995, Rimashevskaya 1997). Located in the Rostov-on-Don region, Taganrog's current population is about 300,000. Rostov, located on the Don River and about 60 kilometers from Taganrog, has a current population of about 1 million. Azov, also a port city, has a current population of less than 100,000. We thank Inna Petrova for her assistance in coordinating the data collection process in the Taganrog survey.

³ We thank Inna Maltseva for her assistance in coordinating the data collection and data entry process for the Ekaterinburg survey. Ekaterinburg, located in the Urals and known as Sverdlovsk between 1924 and 1992, is one of the largest industrial regions in the country. Formerly a "closed" city because of the concentration of military-related production, Ekaterinburg has a current population of 1.5 million. All but four workplaces included in the 2003 survey were located in Ekaterinburg. Polevskoy, where two workplaces were located, is on the outskirts of Ekaterinburg. The two remaining workplaces in the "Ekaterinburg survey" were located in Chelyabinsk and Tomsk. Chelyabinsk, with a current population of 1.2 million, like Ekaterinburg is a major industrial center (metallurgy, steel pipe, farm and military vehicles) in the Urals and also was formerly a "closed" city. Tomsk, located in Western Siberia and once known for its gold mining, has a current population of 480,000 people.

of Russian employees incorporates the premise that if differences in locus of control are related to differences in work-related attitudes in a gender-specific way, this relationship needs to be made explicit in studies investigating gender differences in earnings and career opportunities. One objective of our work is to assess the nature and scope of gender and generational differences in locus of control and other work-related attitudes.

Our analysis of the relationship between LOC and performance among Russian workers is divided into six parts. Part I discusses why it is now possible to evaluate the influence of attitudes on performance among Russian workers. Part II provides a detailed description of the survey and the characteristics of the participating employees. Pronounced regional differences in work-related experiences and attitudes indicate the need to conduct our analysis and report our results separately for the two participating regions. Part III develops a measure that allows us to categorize the Russian employees participating in our survey as exhibiting an internal or external locus of control. For comparative purposes, select worker characteristics are provided for the “internals” and “externals” participating in the project. Moreover, we assess the extent to which there are significant differences between “internals” and “externals” in work-related attitudes that may affect performance. In particular, we focus on (1) attitudes about outcomes associated with hard work, (2) level of job satisfaction, (3) expectation of receiving a desired reward, and (4) loyalty to and involvement with one’s organization. In each case we identify where gender and generational differences emerge in response patterns among the participants in our survey. Part IV evaluates the link between performance and locus of control among the Russian employees participating in this project. Controlling for a variety of worker characteristics, we find that “internals” consistently perform better than “externals,” although statistically speaking this result is not significant across all specifications. In both regions we find that even among “internals” women perform worse than men in terms of earnings and promotions. Concluding remarks are offered in Part V.

I. Russia’s Labor Market in Transition

Is it reasonable, given the disruptions associated with Russia’s transition from a centrally-planned economy to a market-oriented economy, to evaluate the influence of attitude on performance at this point in time? Are economic, political or social conditions in Russia too unstable to evaluate the influence of individual characteristics and attitudes on labor market outcomes? We observed dramatic changes in the labor market throughout the 1990s as the Russian economy underwent the transformation to a market-oriented economy. Labor force participation rates fell (Clarke 1998, Linz 1995, Popova 2001), employment shifted from the public to the private sector (Brown and Earle 2003, Linz 2002);

unemployment rose (Standing 1994 1996), real wages fell, fringe benefits all but disappeared (Lehmann *et al* 1999, Linz 1996, Treisman 2000), multiple job holding became the norm (Foley 1997); payment in-kind was pervasive, as was non-payment of wages (Desai and Idson 2000, Gerry *et al* 2004); gender-based, rural-urban, and regional wage differentials grew (Arabsheibani and Lau 1999, Brainerd 2000 2002, DeLoach and Hoffman 2002, Glinskaya and Mroz 2000, Newell and Reilly 2001, Olgloblin 1999, Reilly 1999); pensioners remained in the workforce in unprecedented numbers (Kolev and Pascal 2002).

The past few years of modest improvements in macroeconomic conditions, however, have contributed to stabilization in Russia's labor market conditions. This is perhaps most evident in the reduction of non-payments or wage arrears. Studies based on the Russian Longitudinal Monitoring Survey (RLMS) find that about 25% of working-aged adults were owed back wages in October 2001, down from over 60% in November 1998 (Mroz *et al* 2002). The State Statistical Agency of the Russian Federation, Goskomstat, estimates wage arrears at about 30 billion rubles in 2002 and 2003; even without adjusting for inflation, this figure is less than half of the 1999 level (77 billion rubles) (Goskomstat 2004).

While the financial crisis in 1998 substantially worsened macroeconomic and labor market conditions at the end of the 1990s (Avraamova and Ovcharova 2001, Lokshin and Ravallion 2000, Lokshin and Yemtsov 2004, Pastor and Damjanovic 2003, Sutela 2000), by the end of 2000, the real value of pensions and wages had nearly regained their pre-financial crash levels; the unemployment rate fell from 12.6% in 1999 to 9.8% (Goskomstat 2001). Since then, output and employment have continued to expand, contributing to an even lower unemployment rate in 2002 of 7.1% (Goskomstat 2004). Domestic investment and consumer-driven demand continue to play an increasingly important role in the expansion of output and employment. In addition, a decade of exposure to global markets forced Russian firms to adopt strategies that increasingly focused on profitability, putting pressure on managers to adhere to hiring and firing strategies much like those employed in developed market economies (Gimpelson and Lippoldt 2001, Krueger 2004, Puffer *et al* 2000). Indeed, the U.S. Commerce Department on 1 April 2002 decreed Russia as having established a market economy.⁴ Given the stability of the economy and the greater reliance on western managerial strategies and practices with regard to employee performance, rather than Soviet-style managerial practices that were governed by job rights and excess demand for labor (Granick 1987), we believe it is now reasonable

⁴ See "Russia Gains Market Economy Status," *BISNIS Bulletin*, U.S. Department of Commerce, International Trade Administration (July 2002), p. 2. An earlier and much more optimistic claim was offered by Aslund (1995).

to examine the question: To what extent can differences in labor market outcomes – work effort, earnings, promotions, or experience with unemployment – be explained by differences in locus of control among Russian workers?

II. Characteristics of the Survey Participants

Who participated in the survey? As part of a study to explore general factors influencing motivation to work among Russian employees, local project coordinators in Taganrog and Ekaterinburg were instructed to contact top-level managers at a wide variety of workplaces to request permission to conduct a survey of their employees. Since the unit of analysis was to be the employee rather than the workplace, the objective was to include as many work environments and occupational categories as possible. While funding constraints precluded selecting a representative sample of firms in each location, permission was secured at 75 workplaces, and questionnaires administered.⁵ When asked to participate in the survey, potential respondents were informed about the confidentiality and anonymity of their participation, and, if they elected to participate, were given the option of choosing not to complete the survey instrument. Altogether, 645 Russian employees participated in the survey project in 2002, and 854 employees participated in 2003.⁶

Just under half (48%) of the participating employees who reported their age (n=1391) were 35 years old or younger at the time the survey was conducted; about one-third (36%) were between the ages of 36 and 50; the remainder (16%) were over 50 years old. At least 458 men and 1020 women participated in the employee survey (21 did not report their sex). Over half (58%) were married at the time the survey was conducted. More than three-quarters had completed at least 15 years of schooling. Over one quarter (29%) held a supervisory position.

Where did these employees work? Given the research objective of identifying the factors that motivate workers, the survey project was designed to include both manufacturing and non-manufacturing firms, as well as small, medium and large firms in terms of workforce size. Nearly half (46%) of the employees completing the questionnaire worked in trade and other services. Among those who worked in manufacturing companies, both blue- and white-collar occupations were included. More than 200 participating employees (14%) reported working at more than one job (workplace). In the Taganrog survey, twelve companies engaged in manufacturing (aviation products, agricultural

⁵ The questionnaire, pre-tested in Russia in 2000, was adapted from a questionnaire administered to Russian and Polish retail workers in 1995 (Huddleston and Good 1999).

⁶ Information about the number of employees who were asked but declined to participate was not recorded, so it is not possible to calculate the actual response rate.

equipment, construction materials, metals, food processing, consumer goods, packaging materials); the remainder were involved in trade (retail and wholesale) and other services (education, health care, consulting, communications, R&D, and transportation). In terms of workforce size, approximately 8% of the respondents worked in organizations which employed 20 or fewer workers; 26% worked in organizations employing 21-100 workers; 38% in organizations employing 101-1000 workers; and 28% in organizations employing more than 1000 workers.

In 2003, forty-three of the participating workplaces were located in Ekaterinburg, two in nearby Polevskoy, one in Tomsk and one in Chelyabinsk. Fourteen workplaces engaged in manufacturing (machine building, food processing, equipment building, clothing, instrument making); ten were involved in trade (retail and wholesale); three in construction or transportation; the remainder were involved in other services (health care, education, housing, banking, insurance, tourism, communications). Once again, the survey included small, medium, and large firms in terms of workforce size: 9% of respondents worked in organizations employing 20 or fewer people; 27% in organizations employing 21-100 people; 42% in organizations employing 101-1000 people, and 22% in organizations employing more than 1000 people.

As seen in Table 1, there appear to be strong similarities among participating employees in both the Taganrog and Ekaterinburg surveys. In both cases, participants on average were in their mid-20s when Russia's transition from a centrally-planned economy to a market-oriented economy began. In both cases, participants on average had completed 14 years of schooling, although a slightly higher percentage (25% compared to 20%) completed more than 15 years of schooling in Ekaterinburg. At least two-thirds of the participants are female; more than half were married at the time the survey was conducted. In both cases, nearly two-thirds (63%) had not changed workplaces in the previous 5-year period; less than 20% had changed workplaces once, and about 15% reported changing workplaces at least twice. Approximately the same proportion of participants held supervisory positions in both survey locations. Fewer than one-quarter had experienced a period of unemployment.

Statistically speaking, however, there are a number of significant differences in the characteristics of the participating employees that might influence attitudes or performance. Employees participating in the Taganrog survey had worked at their current workplace on average about one year longer than the employees participating in the Ekaterinburg survey, and significantly more had received at least one promotion (55% in Taganrog compared to 43% in Ekaterinburg). Even after controlling for inflation, reported earnings are significantly higher among the Ekaterinburg employees. A greater proportion of women comprise the Ekaterinburg employees who participated in the survey – 71% of

the participating employees in Ekaterinburg are women, compared to 66% in Taganrog. More employees in Taganrog were married at the time of the survey – 62% compared to 56% in Ekaterinburg. Each of these factors might contribute to differences in work-related attitudes or differences in performance emerging in our survey results. While there is also a significant difference between participants in the two regions in the average number of employees supervised, in our view, the magnitude of the difference (supervising an average of 4 instead of 6 individuals) is unlikely to account for any variation in work-related attitude by region.

Differences in response patterns may arise for reasons unrelated to differences in worker characteristics. Because economic, political, and social conditions remained relatively stable in Russia between 2002 and 2003, we do not think the timing of the two surveys will generate differences in response patterns. We do think, however, that regional differences might be significant. According to Goskomstat, the Rostov-on-Don region (which includes Taganrog, Rostov and Azov) has significantly more people affiliated with agricultural production than the Sverdlovsk region (which includes Ekaterinburg): 22% and 9%, respectively. Not surprisingly, there is a significant regional difference in the fraction of the workforce engaged in industrial employment: 18% in Rostov region compared to 26% in Sverdlovsk region (Goskomstat 2004). Studies using the Russian Longitudinal Monitoring Survey (RLMS), a nationally representative sample of Russian households, document dramatic differences in work experiences and opinions between individuals in the agricultural and non-agricultural sectors (Petrin 2004, Mroz *et al* 2002). More generally, RLMS data also document significant rural-urban differences in work experiences and opinions. Given the rural-urban composition of the two regions participating in our survey – urban residents account for 80% of population of Sverdlovsk region and 57% of population of Rostov region – we anticipate regional differences in attitudes. Regional differences in attitudes and values among Russians, as well as between Russians and other ethnic groups, are well-documented in the political science and sociology literatures that focus on Russia and the former Soviet Union (see Kolsto and Blakkisrud 2004 for a recent literature review).

To evaluate the nature and scope of regional differences in work-related attitudes among our survey participants, we checked for differences in attitudes that are unlikely to be influenced by current economic or political conditions. All of the work-related attitude statements used in this study were pre-tested in Russia in 1995 (Huddleston and Good 1999). The first three attitude statements listed in Table 2 focus on the perceived results of hard work (WKHPROD, WKHWELL, WKHPERFM). Eight statements focus on more general attitudes toward work (FORGETJB to EASYWAY); statements

originally used by Blood (1969) to develop a scale to measure Protestant work ethic. Four statements derived from Cook and Wall (1980) focus on loyalty and commitment to the organization (CONTRIB to NOTCHGJB). For each of the fifteen statements presented in Table 2, survey participants were given a 5-point Likert scale, where 1 = *strongly disagree* and 5 = *strongly agree*. As seen in Table 2, participants from both regions tend to agree that working hard results in doing the job well (WKHWELL) and good job performance (WKHPERFM). Participants tend to agree that it is good to leave work at the workplace (FORGETJB), and that wasting time is as bad as wasting money (WASTE). There are significant differences in the response patterns for the remaining eleven statements, however. At this point, it is not important to identify whether the differences are a consequence of worker characteristics or regional differences. The preponderance of evidence simply suggests that we analyze the responses of these two groups of participants separately.

In addition to checking for regional differences in work-related attitudes, we also checked for gender and generational differences within each region, where generation is defined by age at the time Russia's transition began. YOUNG are individuals who were 20 years old or younger in 1992, and thus unlikely to have substantial work experience in the socialist centrally-planned economy. OLDER are individuals 40 years old or older in 1992; individuals trained during the Soviet regime and likely to have worked a decade or more in a state-owned organization.

As seen in Table 2a, statistically significant gender differences emerge in the response patterns in fewer than half of the cases. Interestingly enough, only in two cases are they the same for both regions: CONTRIB and GOODJOB. In both the Taganrog and Ekaterinburg surveys, the participating female employees were more likely than the male employees to agree that knowing their work made a contribution to the good of the organization would please them (CONTRIB) and that they feel that they are making a contribution to the good of the organization (GOODJOB). In four of the fifteen cases, men and women in both regions exhibit the same response patterns (WASTE, RESPON, EASYWAY, PROUD).

Generational differences occur less frequently than gender differences among the participants in this project: in almost half of the cases, both YOUNG and OLDER response patterns are the same (Table 2a). Generational differences were more evident among the participants in the Ekaterinburg survey than among those participating in the Taganrog survey, however. Older employees in Ekaterinburg were much more likely to think that wasting time is as bad as wasting money (WASTE), a person should relax and accept life as it is rather than always striving for unreachable goals (RELAX), a good indication of a person's worth is how well his/her job is done (WORTH), and that it is better to

have a job with a lot of responsibility rather than one with little responsibility (RESPON).

On the basis of these results, we expect to find gender and generational differences influencing the link between attitudes and performance among the participants in this study.

III. Locus of Control Measures

Locus of control, a concept originally proposed by Rotter (1966), summarizes a person's underlying beliefs about his/her ability to control outcomes of various kinds. Individuals who believe that the outcomes they experience are consequences of their behavior, ability, or effort are said to exhibit an "internal" locus of control (LOC). Individuals who believe that the outcomes they experience are beyond their control – individuals whose outcomes are perceived by them to be a function of luck, chance, or fate – are said to be "external." Among studies conducted in developed market economies, individuals with an internal LOC perform better and/or receive higher earnings than individuals with an external LOC (Andrisani 1977 1981, Coleman and DeLeire 2003). Does this same result hold for the Russian employees participating in our project?

We use ten statements taken from Rotter (1966) in our locus of control measure.⁷ Survey participants were asked to indicate their degree of agreement with each statement, using a 5-point Likert scale where 1 = *strongly disagree*, and 5 = *strongly agree*.⁸ Five statements addressed the belief that an individual has control over his/her fate; that is, the belief that one's effort will translate into a desired goal. These five statements are presented in the upper panel of Table 3. While the statements cover a relatively broad range of beliefs, they appear to be viewed by Russian employees in both regions as roughly similar in covering a common topic. The reliability coefficient (Cronbach alpha) for these five statements was in the acceptable range: .59 for participants in the Taganrog survey and .64 for participants in the Ekaterinburg survey, and comparable to results associated with employee surveys conducted in Russia in 1995 and 2000.⁹ Five statements addressed the belief that an individual has little if any control over achieving desired outcomes (see Table 3, bottom panel). The reliability coefficient for these five components was .73 for participants in both Taganrog and Ekaterinburg, and, once again,

⁷ The ten statements used in this project were pretested in Moscow and St. Petersburg prior to a survey of Russian retail workers conducted in 1995 (Huddleston and Good 1999).

⁸ Rotter (1966) used a range which included both positive and negative numbers (-3 to +3) and summed all the responses together to get a single locus of control score. We found that using only positive numbers worked better in the Russian survey.

⁹ These same questions were included in a 1995 survey of retail workers in Moscow and St. Petersburg (Huddleston and Good 1999) and a 2000 survey of employees in Moscow, Taganrog and Saratov (Linz 2003). In each case, the reliability coefficient was in the .62 range.

is consistent with results generated in earlier studies.¹⁰

We use a two-step procedure to identify individuals participating in this study as “internal” or “external.” In the first step, we sum the responses for the five internal statements into a single composite variable, which has a minimum value of 5 and maximum value of 25. As seen in Table 3, the mean value of this composite measure is approximately 17 for Taganrog participants and 18 for Ekaterinburg participants. We sum the responses for the five external statements, generating a mean value of approximately 16 for both regions. In the second step, we categorize respondents as “internal,” “external,” or “undefined” using the following rule: an individual is internal if the score on the internal composite measure is greater than the score on the external composite measure; an individual is external if the score on the internal composite measure is less than the score on the external composite measure; an individual is categorized as “undefined” if the scores on both measures are equal.

How do our survey participants score on the locus of control measures? Of the 1,397 participants for whom we have sufficient data, about half (49.7%) are categorized as “internal;” just over one-third (38.4%) are “external,” with the remainder (12%) “undefined.” Given the regional differences associated with a wide variety of work-related attitudes, it is not surprising that significant regional differences emerge with respect to locus of control. In Taganrog, 44% of the participants are categorized as internal and external, respectively; in Ekaterinburg, more than half (54%) are categorized as internal and about one-third (34%) as external. We view this as additional support for our decision to conduct our analysis and present our results for each region separately.

Are worker characteristics significantly different between the “internals” and “externals”? Table 4 reports the locus of control results by worker characteristics in each region. Four results emerge that are common to both regions. First, among the young – individuals who were 20 years old or younger in 1992, when Russia’s transition from a centrally-planned economy to a market-oriented economy began – it is more likely that an individual will exhibit an internal LOC.¹¹ Among the young, 56% are internal in the Taganrog survey and 62% are internal in the Ekaterinburg survey. Interestingly enough, among the older participants, individuals who were 40 years old or older in 1992, approximately the

¹⁰ The reliability coefficient exceeded .72 for these variables in both the 1995 survey conducted by Huddleston and Good (1999) and the 2000 survey conducted by Linz (2003).

¹¹ The literature suggests that locus of control can change over time in response to particular dramatic or repeated experiences (Goldsmith *et al* 2000). The “shock therapy” that Russia introduced to transform its economic system would likely qualify as a dramatic experience. Consequently, we construct a group of respondents whose work experiences were likely **not** shaped by the Soviet legacy (20 years or younger in 1992) to compare with a group whose work experiences were likely shaped by the Soviet legacy (30 years and older in 1992).

same share in both regions exhibit an internal LOC, but among the participants in Ekaterinburg, the “undefined” share is much higher. Second, the male employees participating in the survey are more likely to be internal than external. In the Taganrog survey, 46% of the men are internal and 13% are “undefined;” in the Ekaterinburg survey, 58% of the men are internal and 15% are “undefined.” This pattern is not repeated for the female employees, however. Nor does it follow that the women participating in the survey are more likely to be external than internal. Third, in both regions, individuals who hold supervisory positions are more likely to be internal than external. Fourth, at least half of those participating in the survey who have experienced unemployment – that is, in the 5 years prior to the survey, they report themselves as having been out of work and looking for work for more than two weeks – are internal.

Regional differences in the LOC results are rather pronounced, especially with regard to education. While we might expect that individuals with at least some university education would be more likely to exhibit an internal LOC,¹² this result only holds among participants in the Ekaterinburg survey: of those completing at least some university education, nearly 60% are internal. Among Taganrog survey participants, those who completed at least some university education are split equally between “internals” and “externals,” and, when compared to Ekaterinburg survey participants, Taganrog “internals” comprise a significantly greater fraction of those who completed fewer than 10 years of schooling. The pattern of a relatively equal split between “internals” and “externals” is repeated in Taganrog for a number of worker characteristics: whether one holds one or multiple jobs, whether one has recently been promoted or recently changed workplaces, and whether one is married. By contrast, in Ekaterinburg, those individuals who report holding multiple jobs, a recent promotion, and a recent job (workplace) change are much more likely to exhibit an internal LOC.

Do Russian employees participating in the survey who exhibit an internal LOC differ from those who exhibit an external LOC with respect to attitudes that may influence their work performance? Numerous studies link work performance to general attitudes toward work, job satisfaction, expected rewards, and one’s involvement with or loyalty to the company (for recent survey of literature, see Linz *et al* 2004). Based on results emerging from studies conducted in developed market economies, we hypothesize that the “internals” participating in our survey, in comparison to the “externals,” will (1)

¹² This result holds for numerous studies conducted in developed market economies (see Coleman and DeLeire 2003 for a review of literature). Unlike in Soviet times when university education was “free” (students were assigned for 3 years to a job after graduation as payment for the free education), in Russia, only a few engineering and science programs remain “free.” Business-related programs and English-language programs, for example, are relatively expensive. Consequently, we assume that an individual’s investment in university education, whether it be financial or strictly time and effort, reflects some assessment of anticipated higher earnings.

have stronger beliefs about the positive consequences of hard work; (2) be much more likely to express a higher level of job satisfaction; (3) have a higher expectation of receiving their desired reward; and (4) exhibit a stronger degree of organizational commitment.

As seen in Table 5, individuals who exhibit an internal locus of control do have stronger beliefs about the positive consequences of hard work. In both Taganrog and Ekaterinburg, “internals” are significantly more likely than “externals” to say that hard work leads to high productivity (WKHPROD), doing the job well (WKHWELL), and good job performance (WKHPERFM).¹³ The results are somewhat mixed for job satisfaction. We find that among Taganrog participants, “internals” do express higher job satisfaction than “externals,” whether it be for their job (JOBSATIS) or the work that they do in their job (SATISFY).¹⁴ Among Ekaterinburg respondents, however, the result only holds for satisfaction with their job (JOBSATIS); “internals” express significantly *lower* satisfaction than “externals” about the work that they do in their job (SATISFY). Part of this regional difference may stem from the fact that participants in Taganrog view the two job satisfaction statements similarly (Cronbach alpha is .80), while participants in Ekaterinburg view these statements as more different than similar (Cronbach alpha is .33).

Do individuals exhibiting an internal locus of control have a higher expectation of receiving their desired reward? To evaluate participants’ expectation of receiving their desired reward, we first had to establish what is desired. All participants were given a 5-point Likert scale, where 1 = *not important* and 5 = *extremely important*, and asked evaluate a series of monetary and non-monetary rewards.¹⁵ These particular motivators had been used in prior surveys of Russian employees and were

¹³ Participants were given the following instructions on the survey instrument: *Below you will see a number of pairs of factors. You are to indicate by circling the appropriate number to the right of each pair how often it is true for **you personally** that the first factor leads to the second on **your job**. Remember, for each pair, indicate how often it is true by circling the number on the response which seems most accurate.* A 5-point scale was provided where 1 = never, 3 = sometimes, and 5 = almost always. The three statements (pairs of factors) were: *Working hard leads to high productivity; working hard leads to doing my job well; working hard leads to good job performance.*

¹⁴ Participants were given the following instructions on the survey instrument: *The purpose of the following section is to give you a chance to tell **how you feel about your present job**, what things you are **satisfied** with and what things you are **not satisfied** with. Circle the appropriate answer.* A 5-point scale was provided where 1 = strongly disagree and 5 = strongly agree. The two statements used in this analysis are: *Generally speaking, I am very satisfied with this job and I am generally satisfied with the kind of work that I do in this job.*

¹⁵ Participants were given the following instructions on the survey instrument: *Different people want different things from their work. Below is a list of things a person could have on his or her job. How **important** is each of the following to you?* A 5-point scale was provided where 1 = not important and 5 = very important. Two sets of five statements and one set of three statements were provided. At the beginning of each set, the phrase *How important is ...?* was included. The eleven motivator statements were worded as follows: *The amount of pay you get; The chance you have to do something that makes you feel good about yourself as a person; The opportunity to develop your skills and abilities; The amount of job security you have; The chance you have to learn new things;*

found to be reliable (Huddleston and Good 1999, Linz 2003 2004). For these same motivators, participants were then asked to evaluate the likelihood of receiving the particular reward if they did their job especially well.¹⁶ To identify the participant's expectation of receiving desired reward, we calculated the gap between the two responses: the importance of a particular reward minus the expectation of receiving it. The smaller the gap between these two values, the greater the expectation of receiving the desired reward. We hypothesize that "internals" will have a significantly smaller gap than "externals" for many of the included rewards. We recognize, however, that one's belief about the extent to which an individual can influence particular outcomes is unlikely to matter for some of these rewards. For example, we think locus of control is unlikely to influence how you expect to feel about yourself for doing your job well (EXP_FEEL) or whether you expect to feel a sense of accomplishment (EXP_ACCMPL) if you have done your job well, or if you expect to receive more freedom on your job in response to doing your job well (EXP_FREEJB). Consequently, we do not expect to find significant differences between "internals" and "externals" for these variables.

As seen in Table 5, our hypothesis that "internals" will have a higher expectation of receiving their desired reward is supported. In cases where there is a significant difference, "internals" are consistently more likely to think they will receive their desired reward. Among participants in the Taganrog survey, this result emerges for three of the motivators: the expectation of receiving a bonus or additional pay (EXP_PAY), the expectation of having better job security (EXP_JBSCR), and the expectation of having more chances to learn new things (EXP_LEARN). Among participants in the Ekaterinburg survey, a significantly higher expectation (smaller gap) by "internals" emerges for six motivators: the expectation of receiving a bonus or additional pay (EXP_PAY), the expectation of having an opportunity to develop skills (EXP_SKLDV), the expectation of having better job security (EXP_JBSCR), the expectation of getting a promotion or better job (EXP_PROMO), the expectation of receiving respect from co-workers (EXP_RESP), and the expectation of praise from supervisor

Your chance at getting a promotion or getting a better job; The chance you have to accomplish something worthwhile; The amount of freedom you have on your job; The respect you receive from the people you work with; The praise you get from your supervisor; The friendliness of the people you work with.

¹⁶ Participants were given the following instructions on the survey instrument: *Listed below are some things that could happen to people if they do their jobs **especially well**. How likely is it that each of these things would happen if you performed your job **especially well**? Circle the appropriate number. A 5-point scale was provided where 1 = not at all likely and 5 = extremely likely. The eleven statements were worded as follows: You will get a bonus or pay increase; You will feel better about yourself as a person; You will have an opportunity to develop your skills and abilities; You will have better job security; You will be given chances to learn new things; You will be promoted or get a better job; You will get a feeling that you have accomplished something worthwhile; You will have more freedom on your job; You will be respected by the people you work with; Your supervisor will praise you; The people you work with will be friendly with you.*

(EXP_SUPRVZ). The expectation of having more chances to learn new things (EXP_LEARN) is marginally significant. For the three cases where we do not expect to find significant differences (EXP_FEEL, EXP_ACCMPL, EXP_FREEJB), there are none. Overall, these results strongly support our hypothesis about locus of control differences in expectations of receiving a desired reward.

Do individuals who exhibit an internal locus of control convey a stronger degree of organizational commitment? Among studies conducted in developed market economies, individuals with an internal LOC tend to exhibit a higher degree of organizational commitment. Moreover, these studies tend to document a strong positive correlation between organizational commitment and performance. Does this result hold for the participants in our project? Five statements developed by Cook and Wall (1980) and used in prior surveys of Russian employees (Huddleston and Good 1999, Linz 2003) are employed in this analysis to measure organizational commitment.¹⁷ We hypothesize that “internals” will have a stronger organizational commitment than “externals.” A stronger organizational commitment would coincide with *higher* values for PROUD (proud to tell people where I work), PARTORG (feel part of the organization), NOTCHGJB (would not change to another company if offered a little more money), RECOMEND (would recommend friend to join this company), and a *lower* value for DONOMORE (not willing to do more than my job description).

The bottom panel of Table 5 summarizes locus of control differences associated with the organizational commitment statements. While there appears to be little regional difference in the interpretation of these five statements – the Cronbach alpha coefficient is .62 for Taganrog participants and .71 for Ekaterinburg participants – there is regional difference in the response patterns of men and women: among Ekaterinburg participants, women were much more likely than men to *disagree* with DONOMORE and NOTCHGJB.

We observe the hypothesized pattern of “internals” exhibiting stronger organizational commitment than “externals” in the Taganrog survey, although it is not always statistically significant. Among Ekaterinburg participants, LOC differences are as predicted and statistically significant, except for one instance: “internals” are more likely than “externals” to say they would do no more than their

¹⁷ Participants were given the following instructions on the survey instrument: *For the following items, indicate your level of agreement or disagreement by circling the appropriate number. A 5-point scale was provided where 1 = strongly disagree and 5 = strongly agree. The statements were worded as follows: I am quite proud to be able to tell people the company for whom I work; I am not willing to do more than my job description requires just to help the organization; I feel myself to be a part of the organization; The offer of a little more money with another company would not seriously make me think of changing jobs; I would recommend a close friend to join this company.*

job description requires.¹⁸ With one exception, these results tend to support our hypothesis that individuals with an internal locus of control have a stronger organizational commitment than individuals with an external locus of control.

IV. Performance and Locus of Control

Our main objective is to determine whether, among the Russian employees participating in our survey, individuals with an internal LOC perform better than individuals with an external LOC. We use three performance measures: one's assessment of the quantity and quality of one's work in comparison to others at the organization doing a similar job, earnings, and expected promotions. Table 6 provides summary statistics for our performance measures. Participants were asked to evaluate (1) the quantity and quality of their performance (PERF), (2) their productivity (PROD), and (3) their ability to anticipate and solve problems (ANTICIP) relative to others at their workplace doing the same or similar work. In each case, they were given a 5-point Likert scale, where 1 = *much worse than others* and 5 = *much better than others*. Concerns about self-reported performance exaggerating actual performance were mediated by the mean response results emerging from our participants. As seen in Table 6, there is no significant difference between "internals" and "externals" with regard to these performance measures in Taganrog or Ekaterinburg; in both regions the mean response is "about the same as others." The Cronbach alpha reliability measure exceeds .8 for these three variables, so we combine them into a single composite measure (PERFORM) to use in our analysis.¹⁹

Participants were asked about the number of promotions they had received at their current workplace (NUMPROMO) and about the number of promotions they expect to receive in the upcoming five years (EXPPROMO). While there is no LOC difference in actual promotions received, it is the case that in both Taganrog and Ekaterinburg "internals" are more likely than "externals" to expect to receive a promotion at their current workplace in the upcoming five years. As seen in Table 6, average monthly earnings are higher among "internals" than "externals," but only among Ekaterinburg participants is the

¹⁸ This result is driven by gender differences among the Ekaterinburg participants that are not evident among Taganrog participants.

¹⁹ Individuals in both regions who report themselves as performing better than others tend to hold supervisory positions and/or have higher earnings, and have not experienced unemployment. In Taganrog, the male employees participating in the survey are significantly more likely than the female employees to report performing better than others doing similar work. Individuals in both regions who report themselves as performing better than others tend to have a high expectation of receiving a bonus or additional pay for doing their job especially well. The participating employees in the Taganrog survey who reported themselves as performing better than others had a high expectation of friendly co-workers, but a very low expectation of receiving additional job security or praise from their supervisor. Among the participating Ekaterinburg employees, only one expected reward variable was significant in explaining the variation in response patterns to this performance measure: EXP_SKLDV; individuals who reported themselves as performing better had very little expectation of acquiring additional skills.

difference statistically significant.

We use both OLS and Poisson²⁰ regression analysis to evaluate the influence of locus of control on performance, controlling for age, gender, schooling, and work-related experiences. Our LOC measure was constructed to capture the degree to which a person is internal or external. That is, LOC equals the internal composite measure minus the external composite measure. The higher the value, the more internal the individual. We expect the sign on this variable to be positive.

In the first specification, where PERFORM is the dependent variable in the OLS regression, LOC is positive but not statistically significant in either Taganrog or Ekaterinburg (Table 7). Individuals in both regions holding supervisory positions tend to report themselves as performing better. In both regions, age, education, and job tenure have no significant influence on performance assessments. Among Taganrog participants, women and individuals who experienced unemployment tend to report themselves as performing worse than their peers, but this result did not emerge among Ekaterinburg participants.

In the second specification, where log of monthly earnings is the dependent variable in the OLS regression, LOC is positive but not statistically significant (Table 8). Coefficients on age and age-squared have the expected signs – we observe the usual concave earnings profile – and are statistically significant, however, the magnitude of the coefficients is quite small, implying that the return to labor market experience is rather modest. Job tenure, our measure of firm-specific human capital, has a positive coefficient, but is statistically insignificant in terms of its effect on earnings once we account for general human capital (approximated by age). Education has a positive, albeit relatively small, effect on earnings. Among participants in the Taganrog survey, an additional year of schooling leads to an increase in monthly earnings of only 1 percent; among Ekaterinburg participants, the earnings increase associated with an additional year of schooling is 3 percent.

Overall, we observe modest returns to human capital in comparison to results emerging from studies conducted using data collected in the Russian Longitudinal Monitoring Survey (RLMS). Clark (2003) finds, for example, that returns to education may be as high as 10 percent. Findings based on RLMS data may be driven in large part by the inclusion of Moscow and St. Petersburg in the analysis – regions with an above-average level of foreign investment, and with income and employment

²⁰ Poisson regression analysis is appropriate when the dependent variable is a positive count variable for which the frequency declines as the value of the variable increases. Wooldridge (2002) offers several examples that fit Poisson: the number of times someone is arrested during a given year, the number of cigarettes smoked per day. While using Poisson regression analysis is not appropriate for our composite performance measure or earnings, it is likely to provide a better fit for the model using expected promotions.

opportunities comparable to European cities. Our results may be influenced by labor mobility constraints associated with Taganrog and Ekaterinburg – both were formerly “closed” cities with a tradition of very low labor mobility in and/or out of the region. More generally, housing shortages, internal passports, and limited information about job opportunities elsewhere restricted labor mobility in Russia in the early stages of the transition process. We expect these constraints to diminish over time, but the pace will be much slower for areas quite distant from Moscow and St. Petersburg (Krueger 2004, Linz 2002). In Taganrog, the result may be driven by the relatively high proportion of respondents with advanced engineering degrees employed in heavy industry and other low wage sectors (state-funded R&D institutes, transportation, agricultural machinery).

As expected, individuals who hold supervisory positions earn higher wages. The corresponding increase in monthly earnings associated with supervisory responsibilities is about 29 percent among the Taganrog participants and 36 percent among the Ekaterinburg participants.

Results are mixed regarding the influence of unemployment. Experience with unemployment has an insignificant effect on earnings among Ekaterinburg participants; the effect is negative, and significant, among Taganrog participants. This suggests that among Taganrog participants the job separations were probably involuntary.

Regardless of region, being female is a disadvantage in terms of earnings outcomes. The monthly earnings of the female employees participating in our project are significantly lower than the male employees – the gender difference is about 33 percent among Taganrog participants and 36 percent among Ekaterinburg participants. More importantly, the LOC measure has no significant effect on earnings once we control for gender. This implies that within each gender group there are no significant gains from being internal.

In the third specification, where expected promotion is the dependent variable, LOC is positive, and in Ekaterinburg, statistically significant – “internals” have a higher expectation of receiving a promotion in the upcoming years than “externals” (Table 9). The OLS estimates imply that if a person’s LOC score is by one standard deviation higher than the average LOC score in the group of Ekaterinburg respondents, then his or her expected number of promotions increases by 0.076, which is about 16 percent for a worker with the average expected number of promotions ($EXPPROMO = 0.49$). According to the Poisson regression, the estimated increase also is approximately 15 percent. We interpret this as a signal of the robustness of the result. Notably, women have significantly lower expectations of future promotions even after we control for LOC. This result is observed in all specifications, implying that if we consider women and men who are equally internal, women still

perceive their promotion opportunities to be more limited.

The number of expected promotions decreases with age and job tenure – that is, older workers expect to receive fewer promotions than younger workers in the upcoming years. This would be consistent with firm strategies for promotion to supervisory positions that target younger workers who have recently acquired training in the post-transition environment. Younger, and recently trained employees, are less likely to have experiences shaped by Soviet labor market conditions and/or state-owned firms, and thus more likely to adhere to performance standards commensurate with a profit-oriented firm.

The effect of education on expected promotions is positive in both cases, but only among Ekaterinburg participants is the coefficient significant. According to OLS results, the number of expected promotions among Ekaterinburg participants increases by 0.05 (10 percent) for each additional year of schooling. Similarly, the interpretation of the Poisson coefficient is that an additional year of schooling would raise that individual's expected number of promotions by 10 percent. We interpret this as a signal of the robustness of the result that additional education, among the participants in this survey, provided a relatively small payoff.

Neither past unemployment experience nor current supervisory responsibilities have a significant effect on expected promotions.

V. Conclusions

Are differences in beliefs about the extent to which personal initiative results in the achievement of desired outcomes related to differences in labor market experiences in Russia? Survey data collected in Taganrog and Ekaterinburg are used here to assess the extent to which labor market outcomes – work effort, performance, earnings, promotions, or experience with unemployment – can be explained by differences in locus of control among Russian workers. We find that individuals who exhibit an internal locus of control do perform better than those who exhibit an external locus of control, but this result is not always statistically significant. We find that, even among “internals,” women earn significantly less than men and have a much lower expectation of promotion. We find that, even among “internals,” experience with unemployment has a negative influence on performance.

Our results underscore the need to consider gender and generational differences in the relationship between locus of control and performance. The female employees participating in our survey, for example, expressed significantly lower expectations of future promotions, even after control for LOC. Generational differences may be constraining returns to education among our survey participants – workers trained in prestigious Soviet institutions, earning degrees in specialities that were well-rewarded in the Soviet

economy may find their employment opportunities in the post-Soviet economy closely linked to the state sector, where earnings have not kept pace with the private sector.

While the cross-section nature of our data limits our ability to establish causality, we are able to document significant differences between “internals” and “externals” in terms of a variety of work-related attitudes that have been linked to performance among employees in developed market economies. We view this result as an encouraging sign for possibly extending studies conducted in developed market economies that link performance to other attitudinal measures – challenge-affiliation, for example – as well as to pursue options to develop a panel data set which will enhance our opportunities for identifying causal relationships between attitudes and performance among Russian workers.

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Table 1: Worker Characteristics

	Taganrog		Ekaterinburg	
	Mean	N	Mean	N
Age at time of survey (years)	37.5 (10.31)	553	37.8 (12.07)	837
Age in 1992 (years)	27.5 (10.31)	553	26.8 (12.07)	837
Gender (% female)	0.66	619	0.71	853
Married (% yes)	0.61	588	0.56	850
Years of schooling	13.8 (4.07)	552	14.1 (2.59)	845
Job tenure (years)	9.9 (8.81)	564	8.9 (9.20)	840
Supervisor (% yes)	0.31	538	0.28	846
Number employees supervise	5.9 (33.34)	538	3.7 (14.24)	846
Receive promotion (% yes)	0.55	533	0.43	846
Change workplace (% yes)	0.36	547	0.38	835
Unemployment (% yes)	0.21	563	0.23	836
Log of monthly wage	7.76 (0.53)	506	8.30 (0.67)	753

Standard deviations in parentheses.

Table 2: Regional Differences in Work-Related Attitudes

Item		Taganrog		Ekaterinburg	
		Mean	N	Mean	N
WKHPROD	Working hard leads to high productivity.	3.73* (1.06)	625	3.92 (1.11)	854
WKHWELL	Working hard leads to doing any job well.	4.10 (0.91)	625	4.14 (0.97)	853
WKHPERFM	Working hard leads to good job performance.	4.32 (0.82)	633	4.29 (0.92)	852
FORGETJB	When the workday is finished, a person should forget his job and enjoy himself.	4.10 (1.05)	627	4.16 (1.07)	853
BETTERPR	Hard work makes one a better person.	1.81* (1.17)	631	2.07 (1.20)	851
ENJOY	The principle purpose of a person's job is to provide a means for enjoying free time.	3.99* (1.13)	633	3.80 (1.18)	851
WASTE	Wasting time is as bad as wasting money.	4.20 (1.04)	626	4.11 (1.05)	850
RELAX	Whenever possible, a person should relax and accept life as it is, rather than always striving for unreachable goals.	3.68* (1.22)	627	3.53 (1.23)	853
WORTH	A good indication of a person's worth is how well his/her job is done.	3.59* (1.11)	625	3.85 (1.07)	851
RESPON	If all other things are equal, it is better to have a job with a lot of responsibility than one with little responsibility.	2.99* (1.24)	630	3.21 (1.19)	854
EASYWAY	People who "do things the easy way" are the smart one.	2.82* (1.30)	632	2.66 (1.32)	853
CONTRIB	To know that my own work has made a contribution to the good of the organization would please me.	4.01* (1.05)	628	2.85 (1.19)	851
GOODJOB	In my work I like to feel that I am making some contribution, not just for myself but for the organization as well.	3.67* (1.13)	621	2.48 (1.25)	849
PROUD	I am quite proud to be able to tell people about the company where I work.	3.57* (1.20)	629	3.74 (1.19)	849
NOTCHGJB	The offer of a little more money with another company would not cause me to change job.	3.26* (1.34)	624	3.81 (1.00)	850

Standard deviation in parentheses.

* Difference in means is statistically significant at .01.

Table 2a: Gender and Generational Differences in Work-Related Attitudes

	Taganrog				Ekaterinburg			
	Men		Women		Men		Women	
	Mean	N	Mean	N	Mean	N	Mean	N
WKHPROD	3.64 (1.05)	205	3.80* (1.05)	400	3.93 (1.07)	244	3.92 (1.13)	609
WKHWELL	4.03 (0.89)	205	4.17* (0.89)	400	4.10 (0.97)	244	4.16 (0.97)	608
WKHPERFM	4.21 (0.82)	208	4.42*** (0.77)	404	4.27 (0.91)	243	4.30 (0.93)	608
FORGETJB	4.02 (1.04)	205	4.15 (1.08)	403	4.04 (1.11)	243	4.21** (1.05)	609
BETTERPR	1.91 (1.25)	206	1.77 (1.12)	406	2.27 (1.26)	244	1.99*** (1.16)	606
ENJOY	4.00 (1.08)	208	3.99 (1.15)	405	3.85 (1.17)	243	3.78* (1.18)	607
WASTE	4.22 (0.91)	206	4.22 (1.09)	401	4.22 (0.93)	243	4.07 (1.09)	606
RELAX	3.52 (1.15)	206	3.76** (1.24)	402	3.60 (1.18)	243	3.50 (1.25)	609
WORTH	3.57 (1.04)	206	3.63 (1.15)	400	3.98 (0.97)	244	3.79** (1.11)	606
RESPON	2.99 (1.21)	208	2.99 (1.26)	403	3.29 (1.21)	244	3.19 (1.19)	609
EASYWAY	2.91 (1.23)	207	2.78 (1.34)	406	2.76 (1.26)	243	2.62 (1.35)	609
CONTRIB	3.86 (1.06)	205	4.09*** (1.02)	404	2.72 (1.13)	244	2.90** (1.22)	606
GOODJOB	3.53 (1.10)	203	3.78*** (1.13)	399	2.29 (1.15)	243	2.55*** (1.29)	605
PROUD	3.64 (1.17)	204	3.58 (1.21)	406	3.83 (1.11)	243	3.70 (1.22)	605
NOTCHGJB	3.31 (1.33)	205	3.23 (1.35)	401	3.90 (0.90)	243	3.77* (1.04)	606

Standard deviations in parentheses.

* = 10%

** = 5%

*** = 1%

Table 2a (Continued)

	Taganrog				Ekaterinburg			
	Young		Older		Young		Older	
	Mean	N	Mean	N	Mean	N	Mean	N
WKHPROD	3.87 (1.03)	163	3.88 (1.14)	77	3.87 (1.07)	315	4.00 (1.20)	155
WKHWELL	4.15 (0.88)	162	4.26 (0.86)	77	4.16 (0.90)	314	4.19 (1.01)	155
WKHPERFM	4.34 (0.78)	161	4.44 (0.80)	77	4.29 (0.89)	313	4.35 (0.90)	155
FORGETJB	4.01 (1.06)	162	4.40 (0.98)	78	4.25 (1.00)	315	3.92* (1.29)	154
BETTERPR	1.90 (1.05)	163	2.08 (1.44)	79	2.17 (1.15)	315	2.02* (1.34)	154
ENJOY	3.74 (1.12)	163	4.13*** (1.20)	79	3.74 (1.16)	315	3.83 (1.23)	155
WASTE	4.14 (1.04)	162	4.37 (1.06)	78	3.98 (1.09)	313	4.38*** (0.97)	154
RELAX	3.23 (1.24)	163	4.12*** (1.21)	78	3.36 (1.18)	315	3.72*** (1.24)	155
WORTH	3.54 (1.02)	159	3.74 (1.34)	78	3.69 (1.04)	314	4.19*** (1.08)	154
RESPON	2.91 (1.12)	163	3.43 (1.42)	79	3.09 (1.14)	315	3.41*** (1.16)	155
EASYWAY	2.74 (1.15)	163	2.86 (1.60)	79	2.64 (1.27)	314	2.49 (1.43)	155
CONTRIB	4.13 (0.90)	159	4.28 (1.14)	78	2.80 (1.19)	314	2.81 (1.22)	154
GOODJOB	3.66 (0.99)	157	4.19 (1.20)	78	2.49 (1.22)	312	2.22 (1.23)	153
PROUD	3.74 (1.10)	159	3.52 (1.53)	79	3.67 (1.20)	312	4.01 (1.07)	155
NOTCHGJB	3.29 (1.28)	159	3.44 (1.49)	77	3.70 (0.99)	313	4.18*** (0.91)	153

Standard deviations in parentheses.

* = 10%

** = 5%

*** = 1%

Table 3: Locus of Control Measures

Item		Taganrog		Ekaterinburg	
		Mean	N	Mean	N
	Internal				
NOLUCK	Becoming a success is a matter of hard work; luck has little or nothing to do with it.	3.25 (1.17)	627	3.39 (1.20)	853
DESERVE	In the long run, people get the respect they deserve in this world.	3.48 (1.20)	626	3.81 (1.20)	852
PLAN	When I make plans, I am almost certain I can make them work.	3.37 (1.05)	628	3.57 (1.11)	854
MYSELF	What happens to me is of my own doing.	3.32 (1.12)	620	3.67 (1.14)	848
WANTLUCK	In my case, getting what I want has little to do with luck.	3.35 (1.13)	621	3.48 (1.14)	843
	NOLUCK + DESERVE + PLAN + MYSELF + WANTLUCK	16.70 (3.45)	605	17.91 (3.69)	834
	External				
GDLEADR	Without the right breaks, one cannot be a good leader.	3.61 (1.19)	616	3.55 (1.18)	848
BADLUCK	Many of the unhappy things in people's lives are partly due to bad luck.	3.08 (1.20)	618	2.98 (1.20)	841
WHOPROMO	Who gets promoted often depends on who was lucky enough to be in the right place first.	3.60 (1.20)	623	3.50 (1.20)	850
ACCIDENT	Most people do not realize the extent to which their lives are controlled by accidental happenings.	3.40 (1.17)	623	3.34 (1.15)	851
NOINFLU	Many times I feel I have little influence over the things that happen to me.	2.97 (1.17)	626	2.99 (1.20)	851
	GDLEADR + BADLUCK + WHOPROMO + ACCIDENT + NOINFLU	16.65 (4.06)	599	16.37 (4.06)	827

Standard deviation in parentheses.

Table 4: Worker Characteristics and Locus of Control

<i>Characteristic</i>	Taganrog				Ekaterinburg			
	<i>Frequency</i>	<i>% Internal</i>	<i>% External</i>	<i>% Undefined</i>	<i>Frequency</i>	<i>% Internal</i>	<i>% External</i>	<i>% Undefined</i>
Young*	151	55.6	33.1	11.3	297	61.9	27.6	10.4
Old**	72	44.4	50.0	5.6	144	43.1	12.5	44.4
Men	196	46.4	40.3	13.3	226	58.4	27.0	14.6
Women	374	43.3	46.3	10.4	584	51.9	36.8	11.3
Low educ (<=10 yrs)	68	52.9	41.2	5.9	95	46.3	40.0	13.7
High educ (>15 yrs)	394	42.6	44.4	12.9	442	57.3	31.3	11.4
One job	463	44.7	43.0	12.3	673	53.8	34.5	11.7
Multiple jobs	123	42.3	49.6	8.1	138	53.6	31.9	14.5
Supervisor	152	48.7	40.8	10.5	219	63.0	30.6	6.4
Promoted	278	43.5	43.2	13.3	345	55.9	34.2	9.8
Change workplace	183	47.5	41.0	11.5	303	59.1	31.0	9.9
Ever unemployed	104	50.0	39.4	10.6	179	54.7	34.1	11.2
Married	325	46.8	43.4	9.8	465	55.7	32.7	11.6

* 20 or younger in 1992

** 40 or older in 1992

Table 5: Work-related attitudes and characteristics, by Locus of Control and Region

	Taganrog			Ekaterinburg		
	Internal Mean	External Mean	t-stat	Internal Mean	External Mean	t-stat
Attitude toward work						
WKHPROD	4.008	3.521	5.41	4.016	3.819	2.29
WKHWELL	4.253	4.047	2.62	4.255	4.011	3.16
WKHPERFM	4.430	4.273	2.27	4.422	4.170	3.45
Job satisfaction						
JOBSATIS	3.891	3.597	3.26	3.503	3.243	2.61
SATISFY	3.933	3.627	3.59	2.843	3.130	-2.76
Expect desired reward						
EXP_PAY	1.611	2.004	-3.12	1.544	2.007	-3.65
EXP_FEEL	0.335	0.339	-0.04	0.487	0.529	-0.44
EXP_SKLDV	0.565	0.529	0.33	0.646	0.858	-2.10
EXP_JBSCR	0.879	1.482	-5.11	0.680	0.930	-2.36
EXP_LEARN	0.669	0.968	-2.46	0.712	0.901	-1.80
EXP_PROMO	1.298	1.510	-1.68	1.262	1.496	-2.12
EXP_ACCMP	0.563	0.562	0.01	0.764	0.905	-1.38
EXP_FREEJB	1.246	1.443	-1.54	1.056	1.254	-1.76
EXP_RESP	0.614	0.703	-0.86	0.491	0.695	-2.33
EXP_SUPRVZ	0.398	0.529	-1.16	0.355	0.703	-3.53
EXP_FRDWRKR	0.813	0.763	0.52	0.583	0.703	-1.36
Organizational commitment						
PROUD	3.661	3.467	1.52	3.889	3.565	3.95
DONOMORE	2.627	2.950	-2.96	3.103	2.753	3.24
PARTORG	3.663	3.419	2.78	3.832	3.453	4.49
NOTCHGJB	3.285	3.228	0.49	3.931	3.635	3.62
RECOMMEND	3.508	3.376	2.60	3.053	2.876	5.04

Table 5: Work-related attitudes and characteristics, by Locus of Control and Region

	Taganrog			Ekaterinburg		
	Undefined Mean	t-stat (IN)	t-stat (EN)	Undefined Mean	t-stat (IN)	t-stat (EN)
Attitude toward work						
WKHPROD	3.606	3.30	-0.68	3.960	0.49	-1.12
WKHWELL	3.821	4.01	2.01	4.091	1.63	-0.71
WKHPERFM	4.364	0.71	-0.92	4.162	2.57	0.08
Job satisfaction						
NOTSATIS	3.627	2.46	-0.28	3.364	1.09	-0.88
SATISFY	3.561	3.36	0.59	3.092	-1.87	0.27
Expect desired reward						
EXP_PAY	1.552	0.34	2.64	1.429	0.67	3.13
EXP_FEEL	0.045	1.84	1.83	0.541	-0.40	-0.08
EXP_SKLDV	0.239	2.03	1.75	0.490	1.22	2.62
EXP_JBSCR	1.523	-4.04	-0.26	0.571	0.85	2.47
EXP_LEARN	0.318	2.08	3.68	0.616	0.70	1.94
EXP_PROMO	1.493	-1.14	0.10	1.000	1.69	3.01
EXP_ACCMP	0.369	1.21	1.20	0.768	-0.03	0.91
EXP_FREEJB	1.156	0.57	1.80	1.071	-0.10	1.13
EXP_RESP	0.348	1.82	2.37	0.571	-0.66	0.94
EXP_SUPRVZ	0.369	0.18	0.96	0.455	-0.78	1.81
EXP_FRDWRKR	0.569	1.71	1.31	0.643	-0.49	0.45

t-stat (IN) compares Undefined with Internal

t-stat (EN) compares Undefined with EXternal

Table 6: Performance Measures and Locus of Control

	Taganrog			Ekaterinburg		
	Internal Mean	External Mean	t-stat	Internal Mean	External Mean	t-stat (IE)
Performance evaluation						
PERF	3.406	3.383	0.42	3.450	3.393	1.20
PROD	3.367	3.402	-0.65	3.396	3.341	1.19
ANTICIP	3.453	3.424	0.52	3.407	3.376	0.63
Promotions						
NUMPROMO	1.124	1.077	0.37	0.914	0.829	0.87
EXPPROMO	0.721	0.495	2.62	0.595	0.411	2.65
Earnings						
YTHISJOB	2712.16	2552.74	1.12	5113.38	4434.80	2.81
YALLJOB	2911.75	2840.20	0.41	5745.46	5253.92	1.01

	Taganrog			Ekaterinburg		
	Undefined Mean	t-stat (IN)	t-stat (EN)	Undefined Mean	t-stat (IN)	t-stat (EN)
Performance evaluation						
PERF	3.452	-0.54	-0.82	3.299	2.08	1.25
PROD	3.500	-1.79	-1.33	3.330	0.94	0.15
ANTICIP	3.484	-0.39	-0.77	3.412	-0.08	-0.48
Promotions						
NUMPROMO	1.033	0.53	0.27	0.907	0.04	-0.39
EXPPROMO	0.772	-0.37	-2.04	0.422	1.22	-0.08
Earnings						
YTHISJOB	3306.45	-1.73	-2.24	4811.60	1.04	-1.35
YALLJOB	3380.33	-1.31	-1.50	5841.60	-0.23	-1.06

YTHISJOB = monthly earnings from primary job, rubles

YALLJOB = monthly earnings from all jobs currently held by respondent, rubles

Table 7.
The Ordinary Least Squares Estimates for Performance by Location.*

	Taganrog	Ekaterinburg
Age (years)	0.062 (0.042)	-0.010 (0.041)
Age squared	-0.001 (0.000)	0.000 (0.001)
Job tenure (years)	-0.019 (0.030)	0.044 (0.024)
Job tenure squared	0.000 (0.001)	-0.001 (0.001)
LOC**	0.030 (0.069)	0.045 (0.057)
Female (dummy)	-0.449 (0.159)	0.118 (0.136)
Years of schooling	-0.015 (0.022)	0.029 (0.022)
Dummy =1 if the respondent has supervisory responsibilities	0.490 (0.155)	1.033 (0.142)
Dummy =1 if respondent was unemployed for >2 weeks in last 5 years	-0.678 (0.192)	-0.164 (0.174)
Constant	9.511 (0.802)	9.463 (0.832)
R^2	0.090	0.110
Number of observations	432	747

Heteroskedasticity-robust standard errors in parentheses.

* The dependent variable (PERFORM) is a sum of three measures: (1) self-evaluated quantity and quality of respondent's own performance (PERF), (2) self-evaluated productivity (PROD), and (3) ability to anticipate and solve problems (ANTICIP) relative to others doing the same or similar work.

** The LOC measure was standardized within each location, so that the attitude scores became measured in standard deviations from the corresponding sample means.

Table 8.
The Ordinary Least Squares Estimates for the Log of Monthly Earnings Equations by Location.*

	Taganrog	Ekaterinburg
Age (years)	0.051 (0.016)	0.060 (0.014)
Age squared	-0.001 (0.000)	-0.001 (0.000)
Job tenure (years)	0.000 (0.011)	0.001 (0.009)
Job tenure squared	0.000 (0.000)	0.000 (0.000)
LOC**	0.034 (0.021)	0.014 (0.027)
Female (dummy)	-0.407 (0.045)	-0.447 (0.054)
Years of schooling	0.010 (0.007)	0.030 (0.008)
Dummy =1 if the respondent has supervisory responsibilities	0.256 (0.050)	0.307 (0.066)
Dummy =1 if the respondent was unemployed for >2 weeks in last 5 years	-0.156 (0.076)	0.071 (0.077)
Constant	6.888 (0.323)	6.956 (0.305)
R^2	0.282	0.198
Number of observations	406	687

Heteroskedasticity-robust standard errors in parentheses.

* The dependent variable is log monthly earnings on the main job (log of YTHISJOB).

** The LOC measure was standardized within each location, so that the attitude scores became measured in standard deviations from the corresponding sample means.

Table 9.
The Ordinary Least Squares and Poisson Estimates for the Number of Expected Promotions by Location.*

	OLS		Poisson	
	Taganrog	Ekaterinburg	Taganrog	Ekaterinburg
Age (years)	-0.043 (0.024)	-0.110 (0.038)	-0.014 (0.047)	-0.167 (0.075)
Age squared	0.000 (0.000)	0.001 (0.001)	0.000 (0.001)	0.002 (0.001)
Job tenure (years)	-0.032 (0.015)	-0.008 (0.010)	-0.054 (0.030)	-0.016 (0.030)
Job tenure squared	0.001 (0.000)	0.000 (0.000)	0.000 (0.001)	-0.001 (0.001)
LOC**	0.037 (0.040)	0.076 (0.034)	0.069 (0.063)	0.139 (0.062)
Female (dummy)	-0.397 (0.096)	-0.250 (0.093)	-0.555 (0.128)	-0.402 (0.136)
Years of schooling	0.006 (0.011)	0.050 (0.021)	0.016 (0.018)	0.102 (0.037)
Dummy =1 if the respondent has supervisory responsibilities	0.012 (0.081)	-0.026 (0.089)	0.041 (0.127)	0.023 (0.166)
Dummy =1 if the respondent was unemployed for >2 weeks in last 5 years	-0.002 (0.150)	0.089 (0.138)	-0.008 (0.177)	0.112 (0.181)
Constant	2.132 (0.516)	2.466 (0.777)	0.691 (0.834)	1.832 (1.385)
R^2	0.190	0.182	-	-
Pseudo R^2	-	-	0.109	0.161
Number of observations	397	704	397	704

Heteroskedasticity-robust standard errors in parentheses.

* The dependent variable is the number of promotions the respondent expects to receive in the next five years.

** The LOC measure was standardized within each location, so that the attitude scores became measured in standard deviations from the corresponding sample means.

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