

# Influence of construction organization project managers' personal qualities on their professional efficiency

*Mikhail Leontev*<sup>1,\*</sup>

<sup>1</sup>Moscow State University of Civil Engineering, Yaroslavskoe shosse, 26, 129337, Moscow, Russia

**Abstract.** The work was aimed at studying the personal characteristics of project managers that affect the effectiveness of their professional activities. The study involved project managers working in construction companies, with different work experience. In the course of the research, the questionnaire "Satisfaction with the work of manager" was used to assess the level of satisfaction of project managers with their professional activities, the following methods were used to study personal qualities: the COS technique (communicative and organizational propensities), the technique of diagnosing a personality for motivating success and avoiding failures of T. Ehlers, "Big Five" test, multi-level personal questionnaire "Adaptability". To effectively perform their professional activities, the project manager should have a number of social and psychological knowledge and skills, knowledge of the industry's activities and the market in which the company specializes. According to the results of the research, such personal qualities as communicative and organizational abilities, motivational orientation of the person, consciousness, emotional stability, extraversion, openness, tendency to work in a team contribute to increase of the efficiency of the project manager's work.

## 1 Introduction

In each large company, the profession of project manager is demanded and economically viable. The project is a task that has the beginning and the end, and several items are clearly defined: the deadline, resource constraints, criteria of qualitative performance and successful completion.

The issues of revealing the social and psychological factors of the professional effectiveness of project managers are closely related to the assessment of their professionally important qualities, as well as the problem of psychological assessment of staff and special abilities. In general, the issues of professional effectiveness and success are increasingly being the subject of scientific researches. There is a need to determine what is the basis of professional effectiveness, the mechanisms for regulating behavior of an effective professional.

---

\* Corresponding author: [miillen@rambler.ru](mailto:miillen@rambler.ru)

A number of authors attribute leadership qualities, the ability to listen, delegation of authority, the ability to motivate staff effectively, initiative, creativity, flexibility (adaptability) to the number of professionally important qualities of a project manager. The authors propose to use the method of peer review of these qualities during the certification of project managers. M. Cheng et al., analyzing the literature on this issue, also showed the connection of such personal qualities as attitude to work, level of knowledge, professional experience, openness, ability to work in a team, focus on results with the effectiveness of project managers [1, 2].

Based on the analysis of literature on the problem, you can be noted that a rather limited number of papers are devoted to the problem of psychodiagnostic evaluation of the professionally important qualities of project managers. Basically we are talking about a broad group of managers in general, without indicating their narrow specialization, this fact determined the relevance of the study.

The purpose of the research is to study the personality characteristics of project managers that affect the effectiveness of their professional activities.

## 2 Literature review

The interest in professionally important qualities that form in the process of professional development of a personality exists and is maintained for a long time. On the one hand, the formation of personality is carried out in the course of professional activity and under its influence; on the other hand, personal traits of an employee have a significant impact on the process and the results of professional activity.

In modern society, the professional activity provides the maximum potential for simultaneous and fullest satisfaction of all basic needs of an individual (security, self-esteem, social recognition, etc.). Ultimately, the self-realization of an individual finds the most vivid and full expression precisely in professional activity.

The organization will not be able to fully realize its purposes without understanding the personal characteristics of staff associated with the labor process. In this regard, the main tasks of managing the labor potential of employees are updated: 1) ensuring the needs of the enterprise by the staff with the necessary level of training; 2) effective use of the available workforce.

The role of workforce of the company depends on the ability of the company to implement technological advances, the necessity of functioning in a competitive market environment and the requirements of improving the quality of products or services. The structure of the workforce can be represented as the ratio of the components related to the abilities and qualities of people in the workplace. The main components of the workforce can be grouped thus: vocational and qualification, psycho-physiological and personality components. Among the personal components, the researchers outline: the analytical mindset, needs, inclinations, perseverance, intuition, propensity to leadership, observation, value orientations, social maturity, non-stereotyped thinking, intellectual level, responsibility, sympathy. The process of personnel management at the company should be structured in such a way that the level of development of the most priority components of the workforce of managerial employees fully corresponds to the interests of the development of the company [3].

It is also important to take into account the psychological characteristics of the professional activities of managers. Various aspects of this problem were covered by such researchers as EA. Klimov, D. Super, J. Holland, O. Lippman [4].

M.H. Meskon believes that in most cases a full (detailed) analysis of the activities of managers cannot be conducted without consideration (accounting) of personal characteristics

which necessary for the implementation of professional activities in the field of management [5].

In recent decades, the studies of the professional personality are conducted in two directions. The first direction represents a synthetic approach to the study of personality, the psychological study of professions, which seeks to embrace the totality of personality traits in their most characteristic combination. A considerable number of researches are devoted to the study of some individual psychological characteristics of people in labor activity, representing the second direction. The focused observation of the personality traits allows to trace in depth and in detail the manifestation of this property in professional activities, as well as its influence on the process and results of activities. Often, the study of the second direction is caused by the requests of practice and devoted to a specific type of professional activity, in particular, the activities of a project manager.

J. Hackman et al. give the main results of the experimental studies, which were caused by increased attention to the problems of the professional personality. It was found that personality characteristics can have a significant impact on the success, reliability, and other indicators of professional activity. Personality traits act as important determinants of professional training. The influence of personality traits on the characteristics of the professional activity is often mediated by the satisfaction of employees with their work. In some areas the differences in the quality and efficiency of the professional activity are manifested only in terms of personal traits. It was shown the possibility of purposeful formation and correction of the personality of a professional. This fact allows to move away from a rigid professional selection. In this direction, there is significant potential of psychological optimization of professional activity [6].

First, the positions of project managers appeared in IT companies, there is the highest demand for them in this branch. Then these positions appeared in industry, construction and other branches of the economy: financial sphere, insurance, pharmaceuticals, organizing and holding of events, sports.

As suggested by N. Matter et al., required knowledge, abilities and skills of a project manager largely depends on the company profile. A common set of requirements for candidates for the position of project manager for a construction company is: higher technical education (preferably on the profile of the company's activity); experience from one year (in some cases from three years); good knowledge of activity and its market; ability to prepare technical and project documentation; leadership experience within project teams; communication skills. You also need to have skills in staff management, negotiating at a high level and defend his point of view, skills of time management, the ability to handle stress [7, 8].

According to a number of scientists, one of the important subjective factors affecting the achievement of professional effectiveness are the psychological qualities and abilities of a person. Questions relating to the mutual influence of professional activity and personal characteristics, were considered in the works of various authors – E.A. Klimova, Z. Freud, E. Erickson, etc. At the same time, for each specific professional activity, a special set of personal qualities assigning professional effectiveness is determined [9].

In this regard, an important problem of psycho-diagnostics is the ideas of the nature and structure of abilities. One can highlights general and particular, elementary and complex abilities, and complex abilities are called special or professional abilities. Professional abilities are a combination of sufficiently stable individual psychological qualities and personality traits that determine the success of vocational training or work on a particular specialty.

The project manager, according to V.N. Funtov, should successfully implement the full cycle of the project, which includes initiation, planning, implementation, completion. He must also monitor and control the fulfillment of tasks and report on this. He is a high-level

professional who at the same time is a strong expert in his functional area, a competent manager and can carry out integrated planning and inspire people to do the work [10].

The scientific literature indicates a rather large list of personality traits required for a successful manager. F. Voskoboynikov points out the relationship of such qualities of a person as the professional orientation, self-control, emotional balance, responsibility, communicative, organizational, intellectual abilities with effective performance of the work of manager [11].

According to P. Morris and J. Pinto, the Project Manager should have outstanding personal qualities, among these: the responsibility, focus on results, leadership skills, communicative skills, developed analytical skills, ability to make managerial decisions, organization and flexibility, compliance ethical principles, high efficiency and stress resistance.

This means that the project manager is personally responsible for its results and therefore should be able to respond for his actions, and for the results of work of the whole team. At the same time, the project is continuously influenced by external factors, to which the manager has little or no influence.

During the implementation of the project there are many obstacles, therefore the project manager should achieve the planned result even in the presence of unfavorable conditions, since a significant part of the income of Project Manager is a bonus that directly depends on the results of the project. The project manager should be not just a good administrator, not only perform clearly prescribed procedures, but be a leader capable of capturing people behind him, showing them the prospect, rallying them into a single team.

The project manager should be a good communicator and negotiator. After all, he needs to reconcile the conflicting interests of many project participants: the customer, contractors, the parent company, the project team, government agencies, etc.

The project is influenced by a huge number of various factors, and often the manager is the only person who sees the picture completely. Therefore, system thinking is especially important for the decision making of balanced and responsible decisions by the project manager. Often, the project manager must quickly make managerial decisions in the face of a lack of information. Organizationality and flexibility associated with the need to solve many diverse tasks in a short time, – these qualities are especially important, since subordinates usually adopt the manager's style of work. In the process of implementing projects, there are many ethical dilemmas, and the direct responsibility of the manager is resolve their. In recent years, various ethical codes of project managers have become increasingly popular.

For the effective activity of the project manager, emotional-volitional and motivational qualities are highly significant. Summing up the above and remembering that the project always has a limited time, it's no surprise that the project manager should have the ability to work a lot and effectively, to resist the emerging stresses. However, often periods of continuous work are replaced by rest periods, when the project is successfully completed, and the bonus is received [12].

Due to the specific nature of his activities, the project manager should have the abilities to enable him to adequately understand other people and the situation of communication.

An important role in the implementation of successful professional activity of project managers is also motivated by the achievement of success. Employees focused on success in the medium or strong degree, prefer an average level of risk. Those who fear failures, prefer a small or, conversely, too high level of risk. At the same time, the motivation for success influences the expectations of success: with a strong motivation to achieve success, the expectation of success is usually more modest than with a weak motivation for success. People motivated for success and having high expectations tend to avoid a high degree of risk.

Employees strongly motivated for success and having high risk readiness are less likely to fall into accidents than those who have a high degree of risk readiness and high motivation to avoid failures (protection). Conversely, when a person has a strong motivation to avoid failures (protection), it prevents motivation to success – the achievement of the purpose .

However, in the vast majority of cases, the researchers limit themselves to only listing the necessary qualities for a manager, from their point of view, without revealing either their optimal value, the degree of desirable manifestation, or the levels of expression [13].

The success and quality of the activity of leaders and project managers is determined by functional and psychological criteria. Functional level includes theoretical knowledge, practical skills and skills, level of professionalism. Psychological criteria have a more general character and therefore are often used in assessing the professional activities of a specialist.

Summarizing the data obtained, one can come to the conclusion that among the personal qualities of project Managers, it is possible to allocate unconditionally significant: motivational, communicative and organizational groups of qualities that include a professional orientation, discipline, commitment, honesty, organizational skills, emotional stability, combined with extraversion, openness, ability to work in a team.

The manager's job is to guide people, aiming at achieving pre-set purposes [14]. Management activities are considered as effective, if it ensures the realization of purposes and the task solution based on the optimal use of available resources [15, 16, 17].

The criteria that determine the effectiveness of the activities of a project manager are very diverse. In the study, the criteria are: the satisfaction ratio of project managers with their professional activities and the effective performance indicators of a project manager, which consist of the following parameters: the number, volume, nature of projects and the cumulative work experience [18].

According to J. Turner, for the effective implementation of his professional activities, the project manager should have certain knowledge and skills in the field of management psychology, organizational management issues, the industry in which he specializes. In the opinion of many authors, a special role in ensuring the effective operation of project managers is assigned to their communicative, organizational, adaptive abilities, openness, tendency to work in a team, and a focus on results [19].

Based on the foregoing, the hypothesis was put forward that such personal qualities as communicative and organizational abilities, motivational orientation of a person, consciousness, emotional stability, extraversion, openness, ability to work in a team contribute to the increase in the efficiency of the project manager's work.

### **3 Materials and methods**

Achieving the purpose of research required solving a number of problems: on the basis of expert assessments, the degree of professional effectiveness of project managers included in the sample has been determined; on the basis of psycho-diagnostic methods, the assessment of the personal qualities of project managers with different efficiency of professional activity and work experience, including an analysis of their communicative, organizational, adaptive abilities, openness, teamwork skills and motivation has been conducted; on the basis of the data obtained, the socio-psychological criteria of an effective project manager has been determined.

In the study, 44 project managers took part, they work in construction companies, age between 27 and 43, with different work experience.

When assessing the level of satisfaction of project managers with their professional activities, a specially developed questionnaire "Satisfaction with the work of manager" was used.

For the study of personal qualities the following psycho-diagnostic methods were used [20, 21]:

1. COS-test (communicative and organizational propensities). The test indirectly reveals the communicative and organizational abilities through the identification and evaluation of the corresponding inclinations. The technique is based on the principle of reflecting and evaluating by person of certain behavioral characteristics in different situations. In the structure of organizational abilities, anyone can highlight the ability to influence people, the ability to quickly understand the situational interaction of people and to direct the interaction in the required direction, the desire to show initiative, to perform public work. The technique includes 40 questions: 20 of them are aimed at identifying organizational skills, and 20 questions are aimed at identifying communicative abilities. Primary indicators of these abilities can be presented in the form of assessments, indicating different levels of considered skills.
2. Test for diagnosing a person for motivation for success of T. Ehlers. The technique is designed to diagnose the personal motivational orientation to achieve success, identified by H. Heckhausen. The stimulus is 41 statements, it is necessary to give one of two answers on which: "yes" or "no". The test refers to mono-scale techniques. The degree of motivation for success is estimated by the number of points that coincide with the key. The result of the test "Motivation for success" should be analyzed together with the results of the next one – "Motivation to avoid failures".
3. Test for diagnosing a person for motivation to avoid failures of T. Ehlers. 30 personality qualities grouped in threes was represented to the respondents. It was necessary to choose one quality among the three that is most inherent for a respondent.
4. Test for diagnosing a person "Big Five", a questionnaire by P. Costa and R. McCrae. The brief description of each scale, – the personality trait considered in the technique, is given below.

Consciousness/good faith is the dependence, reliability, veracity, inclination to adhere to the norms, rules and values of a company. Emotional stability is the general level of emotional regulation and stability under conditions of environmental pressure and stress at work. Extraversion is the tendency to be sociable, communicative, expressive. Openness is receptivity to changes, innovations, new experience and knowledge. A propensity to work in a team is a tendency to work together as a team and within working groups.

Multi-level personal questionnaire "Adaptability" (MLO-AM) by A.G. Maklakov and S.V. Chermyanin - allows to recognize the respondent's adaptability with respect to the following parameters: communicative abilities, neuropsychological stability, moral normativity.

First of all, the choice of research methods took into account data on their validity, reliability and differentiation for specialists in communicative professions, managerial activities and managers.

Mathematic and statistical data processing was carried out using the application software package "SPSS" [22], which provides calculation of statistical variables, correlation and factor analysis.

## 4 Results

The data obtained in the study were processed in the SPSS program. The results of descriptive statistics make it possible to determine the following social and psychological characteristics of respondents.

According to the results of the analysis of such indicators as "age", "education", "gender" and "work experience", anyone can say that the majority of project managers in this sample are males (81%) in the age range of 30-35 years (35%). The youngest respondent was 27

years old, and the oldest one was 43 years old. The majority of respondents had higher technical education.

Indicators of satisfaction with their work (assuming an attitude toward the work as a whole and its individual aspects) are given in Table 1.

**Table 1.** Job satisfaction.

Points	Prevalence (%)
1 – quite satisfied	16.1
2 – satisfied	21.0
3 – not completely satisfied	32.3
4 – not satisfied	21.0
5 – extremely dissatisfied	9.7

Further, the results of descriptive statistics of communicative and organizational propensities (test "CBS") are presented. Parameters of descriptive statistics on the scales of the "CBS" test are: communicative abilities – the average value for the sample was 0.52 (below-average level), the standard deviation was 1.15; organizational abilities – average value for the sample was 0.57 (average level), the standard deviation was 1.32. Respondents with average indicators tend to contact people, do not limit their circle of acquaintances, defend their opinion, plan work, but the potential of their propensities is not very stable. Those who have results of below-average level can sometimes feel constrained in a new company, a collective, have difficulties in establishing contacts with people and, speaking to the audience, are poorly oriented in an unfamiliar situation, do not always insist on their opinions, are hard pressed for resentment, manifestation of initiative in public activity is extremely understated, in many cases they prefer to avoid making independent decisions. This group of respondents needs further serious and systematic work for the formation and development of communicative and organizational propensities.

The study of the leading motivation of project managers was carried out using the test of T. Ehlers. The respondents were more motivated to avoid failure than motivation for achieve success. The average value for the indicator of motivation to avoid failure, which refers to negative motivation, was 2.34, and the standard deviation was 1.01 with  $p = 0.001$ .

The average value for the indicator of motivation for achieve success was 2.14, and the standard deviation was 1.07 with  $p = 0.001$ .

Data on the test of P. Costa and R. McCrae "Big Five" are given below.

The average value for "Consciousness" was 44, and the standard deviation was 1.86. The average value for the indicator "Emotional stability" was 38, the standard deviation was 2.15. For the indicator "Extraversion", the average value was 45, and the standard deviation was 1.37. The average value for the indicator of "Openness" was 39, and the standard deviation was 1.85. The average value for the indicator "Tendency to work in a team" was 57, and the standard deviation was 1.92. Cronbach Alpha coefficient of reliability for each scale was, respectively: 0.74; 0.79; 0.81; 0.82; 0.81. Score range: from 15 to 75, average values: 38-52.

Data on the MLO "Adaptability" test are given below.

The average value for the indicator "Adaptive abilities" was 4.43, the standard deviation was 1.93. The average value for the indicator "Neuropsychological stability" was 4.29, the standard deviation was 2.01. For the indicator "Communicative features" the average value was 4.04, and the standard deviation was 1.53. The average value for the indicator "Moral normativity" was 5.51, and the standard deviation was 1.73.

Further, the correlation analysis, using the Pearson correlation coefficient, was performed, the data was processed in the SPSS 11 program. Statistically significant differences were obtained at significance levels: at  $p < 0.01$  (\*\*) – at a high level, at  $p < 0.05$  (\*) – the differences were statistically significant. The results of the correlation analysis are presented in Table 2.

**Table 2.** Correlation analysis of the relationship between the indicators of expert evaluation of performance and job satisfaction, with the personal characteristics of project managers.

	Age	Work experience	Performance evaluation	Job satisfaction
Job satisfaction	0.197	-0.131	-0.788**	1
Communicative propensities	-0.04	0.297*	0.782**	-0.658**
Organizational propensities	-0.142	0.342*	0.713**	-0.611**
Motivation to achieve success	-0.127	-0.061	0.035	-0.278*
Motivation to avoid failures	0.209	-0.008	-0.243	0.280*
Adaptive abilities	-0.095	0.124	0.766**	-0.687**
Neuropsychological stability	-0.206	0.094	0.751**	-0.658**
Communicative features	-0.026	0.172	0.793**	-0.683**
Moral normativity	-0.053	0.189	0.754**	-0.662**
Conscientiousness	-0.038	0.123	0.653**	-0.597**
Emotional stability	-0.032	0.148	0.526**	-0.507**
Extraversion	-0.064	0.121	0.342**	-0.435**
Openness	-0.008	0.275*	0.375**	-0.441**
Tendency to work in a team	-0.007	0.274*	0.373**	-0.441**

The results of the correlation analysis showed the presence of a direct link between the expert evaluation of performance and communicative (0.782) and organizational propensities (0.713), adaptive abilities (0.766), neuropsychological stability (0.751), moral normativity (0.754), conscientiousness (0.653), emotional stability (0.526), extraversion (0.342), openness (0.375), and tendency to work in a team (0.373).

## 5 Discussion

Based on the indicators of job satisfaction (assuming an attitude toward the work as a whole and its individual aspects), we can conclude that the majority of project managers (32,3%) were not completely satisfied with their work. The average value was 2.87, the standard deviation was 1.21. However, a rather large percentage of employees showed dissatisfaction with their work (see Table 1).

In general, the satisfaction with work of each employee at the individual level is related to the satisfaction of a unique combination of his actual needs. Job satisfaction is expressed mainly in satisfaction with the content and nature of the work, it is closely related to the commitment of employees of their organization, their desire to do their best in its interests, to share its values and purposes.

According to the results of the study of communication and organizational propensities (test "CBS"), some respondents were characterized by overestimate level of the communication (11% of respondents) and organizational (16%) abilities. It means that respondents tend to feel the need and actively seek communication and organizational activities, quickly orient themselves in difficult situations, to behave at ease in a new team, show initiative, preferring to make independent decisions in important cases or in difficult situations, defend their opinions and seek their own perception. They can make a revival in an unfamiliar company, like to organize various events, persistently engage in attractive activities. They themselves are looking for an activity that would satisfy their need for communication and organizational activity.

A significant number of respondents had high (within the limits of the norm) indicators on the scales of communicative and organizational abilities (respectively, 22% and 18% of



the respondents). It means that the respondents are not lost in unfamiliar surroundings, quickly find friends, constantly strive to expand the circle of acquaintances, engage in social activities, help relatives and friends, take initiative in communication, take part in the organization of social events with pleasure, are able to make an independent decision in a difficult situation. All these qualities are coordinated with the internal motives of these respondents and do not depend on coercion.

Data on the study of leading motivation were obtained using the test of T. Ehlers. Respondents were more motivated to avoid failures than the motivation for success, which is not the most constructive trend for project managers. At the same time, such results can be caused by subjectively perceived complexity of projects and high responsibility.

With the predominance of motivation to avoid failures, the activity of an employee is related to the need to avoid stalling, blaming, punishing. The basis of this type of motivation is the idea of avoidance and negative expectations. Starting new business, an employee is already afraid of a hypothetical failure, thinking about ways to avoid it, and not about ways to achieve success. Such workers usually have increased anxiety, low self-confidence, try to avoid responsible tasks. All these factors, at the same time, can be combined with very responsible attitudes.

Motivation to achieve success refers to a positive motivation. Workers with a predominance of this type of motivation are usually active, initiative, persevering in achieving a purpose. In the presence of obstacles, they seek ways to overcome them. The productivity of activities and the degree of its activity are dependent on external control to a small extent. They tend to plan their future for a long time. They prefer to take the middle purposes on difficulty or slightly overstated, but fulfillable obligations, put realistic purposes, risk prudently. Usually such qualities provide a total success, which differs significantly from both minor achievements under understated obligations, and from accidental luck at inflated ones. When performing complex tasks, as well as in conditions of time depletion, the performance of the activity, as a rule, improves. The subjective attractiveness of the task increases in proportion to its complexity, which is more clearly manifested in the case of voluntary obligations rather than imposed ones.

The results obtained by the method of P. Costa and R. McCrae "The Big Five" showed that the only one indicator was above the average: "Tendency to work in a team", which corresponds to the specifics of the work of a Project Manager.

For other indicators, average results were obtained. Among them emotional resistance, which is a sign that is most closely related to subjective well-being and indicates a satisfying with career in professional groups. Emotionally stable managers can better cope with stress at work, the stress, unfortunately, is an essential characteristic of most works. The obtained result for extroversion is well correlated with the recommendations that the skills of interpersonal interactions and communication should be given special attention in the professional training of project managers. Openness was also significant (although at a relatively low level than other variables considered in the technique), it is related to job satisfaction, it is difficult to translate into an obvious skill, but it is a key attribute for many professions, including project managers.

In fact, it is difficult to imagine how project managers closed to new ideas and not susceptible to change can function satisfactorily at work.

Based on the results obtained with the MLO "Adaptability" methodology, we can say that the respondents as a whole belong to the group of satisfactory adaptation. The majority of the group have signs of various accentuations, which are partially compensated in the usual conditions and can be manifested during the change of activities. Therefore, the success of adaptation depends on the external environment. These people, as a rule, have low emotional stability. It is possible antisocial disruptions, the manifestation of aggression and conflict, difficulties in establishing social contacts. This group requires an individual approach,

constant monitoring, corrective measures. The indicator "moral normativity" received a higher value, which indicates that respondents adequately assess their role in a team and are guided by the observance of generally accepted behavioral norms.

Based on the results of the correlation analysis (see Table 2), one can affirm that the effectiveness of professional activities of project managers is facilitated by such personal characteristics as high level of communicative and organizational abilities, perseverance in activity, emotional stability, "open" character in communication, skills of team work, make decisions independently and be consciousness.

Also effective project managers are characterized by the ability to adapt quickly to new conditions of activity, high level of neuropsychological and emotional stability, behavioral regulation, adequate self-esteem, observance of generally accepted behavioral rules.

The correlation analysis revealed an inverse relationship between the performance evaluation and job satisfaction ( $-0.788$ ) for project managers and between job satisfaction and motivation to achieve success ( $-0.278$ ). Hence, we can say that with increasing the effectiveness of professional activities, project managers are less satisfied with their work and less motivated to achieve results. We can assume that the factor of professional burnout of project managers affects the decrease in job satisfaction, but this assumption requires further researches.

The results of the correlation analysis revealed a direct relationship between communicative ( $0.297$ ) and organizational ( $0.342$ ) propensities of project managers with work experience. That is, in the process of professional activity, project managers form and develop the ability to establish interpersonal contacts and make managerial decisions. Also, a direct relationship between work experience and tendency to work in a team was found ( $0.274$ ). This means that in the work process, project managers gain experience in a team and learn to choose appropriate behavior strategies to achieve common purposes.

Hypothetical statements were supported and generally agreed with similar conclusions based on various theoretical approaches, in particular, on career anchors, motivators of work and key professional skills of specialists.

## 6 Conclusions

The results of experimental study of the personality characteristics of project managers and the effectiveness of their activities confirmed the hypothesis of the study.

To effectively perform their professional activities, project manager should have certain social and psychological knowledge and skills, knowledge of the activities of the industry and market in which the company specializes.

The main criteria that determine the effectiveness of the activities of project manager are: coefficient of the manager's satisfaction with his professional activity and evaluation of the effectiveness of his work.

Correlation analysis showed the relationship between the effectiveness of the work of project managers and their communicative and organizational propensities, adaptive abilities, neuropsychological and emotional stability [23, 24, 25], consciousness, extraversion, openness, tendency to work in a team. Also, a correlation between work experience and communicative, organizational propensities, the ability to work in a team was found.

The results allow to formulate the psychological criteria of a successful project manager, as well as to develop recommendations and improve work on selection and further training of these managers. From a practical point of view, the results of research can be useful for programs of career planning and development as whole, personal counseling programs for project managers.

## References

1. M. Cheng, A. Dainty, D. Moore, *Human Resource Management Journal* **15(1)**, 25–37 (2005)
2. E. Khripko, MATEC Web of Conferences **106**, 08064 (2017)
3. V.A. Tolochev, *Modern Labor Psychology* (Piter, SPb, 2005)
4. O.A. Kozyreva, *Educational Technologies and Society* **10(4)**, 376-379 (2007)
5. M.H. Mescon, M.A. Albert, F. Khedouri, *Fundamentals of Management* (Williams Publishing House, Moscow, 2015)
6. J.R. Hackman, G. Oldham, R. Jensen, K. Padi, *A New Strategy for Enriching the Work* (Vershina, Moscow, 2005)
7. E. Khripko, MATEC Web of Conferences **106**, 09011 (2017)
8. N. Madter, D. Bower, B. Aritua, *International Journal of Project Management* **30**, 273–281 (2012)
9. A.I. Balashov, I.D. Kotlyarov, A.G. Sanina, *Human Resource Management: a Tutorial* (Piter, SPb, 2012)
10. V.N. Funtov, *Project Management of the Company Development: Theory and Practice* (Piter, SPb, 2009)
11. F. Voskoboynikov, *The Psychology of Effective Management. Strategies for Relationship Building* (Routledge, N-Y, 2014)
12. P.W. Morris, J.K. Pinto, *The Wiley Guide to Project Organization and Project Management Competencies* (J. Wiley & Sons, New Jersey, 2007)
13. P.F. Drucker, *Management Challenges for the XXI Century* (Williams Publishing House, Moscow, 2007)
14. A.V. Bulgakov, D.B. Belinskaya, V.U. Fedorovich, I.A. Abrosimova, MATEC Web of Conferences **73**, 08069 (2017)
15. A.D. Ishkov, N.G. Miloradova, A.Yu. Chernyshev, *Procedia – Social and Behavioral Sciences* **171**, 765-770 (2015)
16. N.G. Miloradova, A.D. Ishkov, MATEC Web Conf. XV International Conference **73**, 07003 (2016)
17. N.G. Miloradova, A.D. Ishkov, *Advanced Materials Research* **1065-1069**, 2538-2541 (2015)
18. V.V. Bogdanov, *Project management. Corporate System – Step by Step* (Mann, Ivanov and Ferber, Moscow, 2013)
19. J. Turner, R. Müller, *Choosing Appropriate Project Managers: Matching their Leadership Style to the Type of Project* (Project Management Institute, PA, 2006)
20. J.E. Hecker, G.L. Thorpe, *Introduction to Clinical Psychology. Science, Practice and Ethics* (Routledge, N-Y, 2016)
21. D.Ya. Raygorodskiy, *Practical psychodiagnostics: methods and tests. Textbook* (Bakhrakh-M, Samara, 2006)
22. R. Ho, *Handbook of Univariate and Multivariate Data Analysis with IBM SPSS* (CRC Press, N-Y, 2014)
23. A.D. Ishkov, T.N. Magera, *Procedia Engineering* **117**, 148-153 (2015)
24. T.N. Magera, MATEC Web of Conferences **73**, 09007 (2017)
25. I.P. Pryadko, I.M. Lebedev, MATEC Web of Conferences **73**, 09015 (2017)