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## Inflation Prediction Based on the “Long Memory” Effect: The Case of Russia

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### *Abstract*

The problem of inflation prediction has been in focus of monetary policies of both advanced and emerging economies for several decades. Specifically, this problem is very relevant to the modern monetary policy of the Russian Federation, even after a tremendous success of the Bank of Russia in struggling inflation after the national currency (ruble) crisis in 2014. As of recently, the forecasts of inflation made by the Russian monetary authorities have been showing quite significant discrepancy with the actual figures. This study is aimed at demonstration how the modern approaches of time-series econometrics can be used to significantly improve the quality of inflation prediction. Relevant policy recommendations are discussed.

*Keywords:* inflation prediction, long-memory effects, autoregressive models.

### 1. Introduction

The problem of inflation prediction has been in focus of attention of monetary authorities of both advanced and emerging economies for several decades now. To increase credibility of their policies, over this period central banks of these countries have been setting inflation targets which were comparatively more difficult to reach at times of expansion of economies (for example, before the Global Financial Crisis of 2008-2009, GFC) and were comparatively easier to achieve at times of recession. But in the both cases, a high level of uncertainty associated with the rate of inflation make the problem of its prediction extremely challenging.

In the literature, there is a wide strand of approaches to inflation prediction. For both advanced and emerging economies the authors use different approaches: the traditional multivariate regression approach (Balogun, 2007); the modified Phillips curve approach (Ashiya, 2017); the standard autoregressive models (Arratibel et al., 2009); dynamic stochastic general equilibrium models (DSGE) (Alvarez, 2017); artificial neural network models (Malek et al., 2017).

The focus of this research is on inflation prediction for the Russian economy in the context of its modern monetary policy. After the National Currency Crisis (NCC) of 2014-2015, when the rate of inflation reached 15.5% in 2015, the Bank of Russia conducted a consecutive and consistent monetary policy aimed at lowering the inflation rate in Russia to hit the 4% target level set for December 2017 (Gilenko, 2017, 2018). And the Bank of Russia succeeded. The actual rate

of consumer inflation in December 2017 turned out to be only 2.5%. Since that time, although being quite volatile, the rate of inflation in Russia never exceeded 6% (as of 2019).

- The difficulty of inflation prediction stems from a high level of uncertainty associated with this macroeconomic indicator.
- The traditional approaches to inflation prediction may have limited predictive power.
- Taking the “long memory” effect into account may allow to half the inflation prediction error.

It is well-known that, in particular, based on inflation forecasts the central bank of a country adjusts its monetary policy by changing (if possible) its key interest rate (refinancing rate). In turn, this rate determines the cost of money in the economy, influencing, in particular, the interest rates of different loans for the citizens and the companies in the economy. Thus, more accurate forecasting of inflation will let monetary authorities set the key interest rate adequately, thus, providing a correct price for the monetary resources in the country.

The problem of inflation prediction is very topical in Russia. It is worth noting that inflation forecasts for the Russian economy are made by different organizations, starting from official authorities (the Bank of Russia, the Russian Ministry of Economic Development) and ending with authoritative international organizations (the OECD, the UN, the IMF). The predictions of these institutions are given in Table 1. As it can be seen from the table, the figures are quite different which definitely speaks in favor of the difficulty of inflation forecasting.

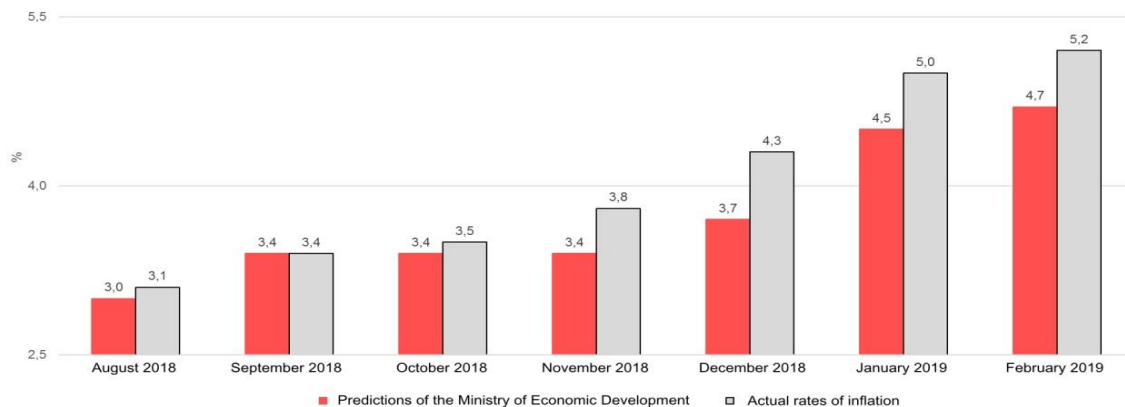
Table 1. Predictions of inflation in Russia for 2019

Institution	Inflation prediction
Bank of Russia	4.7-5.2%
OECD	5.02%
IMF	5.09%
UN	3.9%

Source: Bank of Russia, OECD, IMF, UN.

At the same time, the Russian Ministry of Economic Development (RMED) announces its inflation predictions on the monthly basis. We collected the information on predictions of the RMED and the actual figures of inflation rates and summarized in Fig. 1. As it can be seen from Fig. 1, the predictions of RMED are *systematically inconsistent* with the actual figures of inflation rates.

Figure 1. Predictions by the Ministry of Economic Development and actual rates of inflation in Russia, monthly data



Source: Russian Ministry of Economic Development, Rosstat

This determined the objective of this research. In this paper, using the modern approaches of time-series econometrics we construct an *autoregressive fractionally integrated moving average* (ARFIMA) model (which captures the “long memory” effect in the data) and show that this model outperforms both the model currently used by the RMED and an extended, but still traditionally constructed multivariate regression model.

The rest of the paper is organized as follows. Section 2 gives the methodology and the data collection for the current study. In Section 3 the obtained results are discussed. Section 4 concludes.

## 2. Research methodology

As it was mentioned above, the variety of approaches to inflation prediction is really big. In this research we focus on two of them: a multivariate linear regression model (as a baseline approach) and an ARFIMA-model (as a more advanced approach).

### 2.1 Multivariate linear regression approach

The traditional multivariate linear regression approach to inflation forecasting assumes estimation of the following type of model:

$$\text{Inflation}_t = \beta_0 + \beta_1 \cdot X_{1t} + \beta_2 \cdot X_{2t} + \dots + \beta_k \cdot X_{kt} + \varepsilon_t, \quad (1)$$

where  $X$ s are different economic indicators (and/or their lags);  $\varepsilon_t$  is a non-systematic disturbance term. When building and estimating such types of models, researchers pay close attention both to the economic mechanisms of influence of these economic indicators on the rate of inflation, and to the formal properties of the time-series of these indicators, such as stationarity, seasonality, structural breaks, etc.

The full list of regressors used in this research for multivariate linear regression modeling, as well as their descriptions, expected influences on inflation, and basic summary statistics is given in Table 3.

### 2.2 The ARFIMA modeling

To a major part, time-series analysis is based on studying properties of the underlying time-series, and specifically, how past values of the time-series can be effectively used to predict its future values. From this perspective, different types of “memory effects” have been discussed in the literature.

In econometric modeling, the *autoregressive* approach has been widely used to account for the memory effects in time-series data since the seminal work of G. Box and G. Jenkins (1970). For a non-stationary stochastic process  $Y_t$  with mean  $\mu$ , they introduced an autoregressive integrated moving average model (or ARIMA(p,d,q)) of the following type:

$$\Phi(L)(1 - L)^d(Y_t - \mu) = \Theta(L)\varepsilon_t, \quad (2)$$

where  $\Phi(L)$  and  $\Theta(L)$  are lag polynomials of the corresponding orders  $p$  and  $q$ ;  $L$  is the lag operator ( $L^d Y_t = Y_{t-d}$ );  $d$  denotes the order of integration of  $Y_t$ ;  $\varepsilon_t$  is a white noise process ( $\varepsilon_t \sim iid(0, \sigma_\varepsilon^2)$ ).

Granger and Joyeux (1980) and Hosking (1981) showed that  $(1 - L)^d$  (the differencing operator) can be considered for non-integer values of  $d$  once the following formula is defined:

$$(1 - L)^d = \sum_{k=0}^{\infty} \frac{\Gamma(k-d)L^k}{\Gamma(-d)\Gamma(k+1)}, \quad (3)$$

with  $\Gamma(\cdot)$  denoting the gamma (generalized factorial) function.

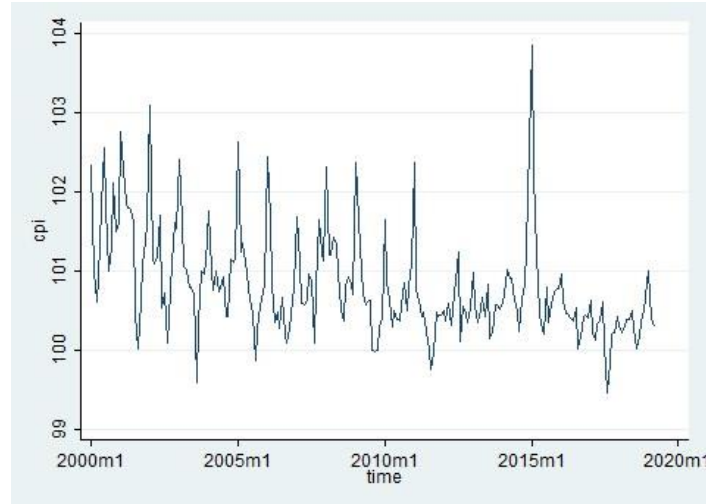
Of specific interest here is the case of  $0 < d < 0.5$ , since, on the one hand, it corresponds to a stationary process, but, on the other hand, the modeled process has a “long memory” in the sense that although individual autocorrelations may be statistically insignificant, their cumulative effect is prominent. Graphically, the “long memory” effect represents the idea that the time-series of a stochastic process resembles itself in its parts.

The importance of long-range dependence in economic time-series was first studied by Mandelbrot (1972), who proposed the R/S (range over standard deviation) statistic, originally developed by Hurst (1951). Lo (1991) modified the R/S statistic to account for the effect of short-range dependence to derive a consistent estimate of the long-range variance of the time series. The Lo test is used in this study to detect the presence of the “long memory” effect in the time-series of inflation.

### 2.3 Data collection

For our empirical analysis we collected information on different relevant macroeconomic indicators. We used the official monthly data for the period from January 2000 to March 2019. For illustrative purposes, Fig. 2 gives the time-series of the CPI index in Russia over that period. As it can be seen from the graph, the dynamic of the CPI index visually has two properties: seasonality and self-resemblance. Preliminarily, this may speak in favor of the presence of the “long memory” effect in the time-series.

Figure 2. Values of the CPI index in Russia, 2000-2019.



Source: Rosstat

To estimate our models, the data were split into a training and a test samples as specified in Table 2. The training samples for the two models were different. For the traditional multivariate regression model we used the training sample from January 2009 to September 2018 to avoid the structural breaks in the variables at the time of the GFC of 2008. But for the ARFIMA-model we used the sample from January 2000 to September 2018 to capture the “long memory” effect as discussed above.



Table 2. Training and test samples for model estimation

Model	Training sample	Test sample
Multivariate linear regression model	January 2009 – September 2018 (117 observations)	October 2018 – March 2019 (6 observations)
ARFIMA-model	January 2000 – September 2018 (225 observations)	October 2018 – March 2019 (6 observations)

Details on the collected macroeconomic variables are provided in Table 3. It gives the names and descriptions of the variables, as well as their measurement units and expected (theoretical) influence on inflation rate (to later compare with the results of estimation of the multivariate linear regression model). Also, basic summary statistics (minimum, mean, and maximum values) are provided.

Table 3. Description of the variables

Variable	Description	Measurement units	Expected influence on inflation rate*	Minimum	Mean	Maximum
CPI	The CPI index	index points	x	99.5	100.6	103.9
keyrate	The key interest rate of the Bank of Russia	%	–	5.5	9.1	17.0
M2	Money supply	bln rubles	+	11431.0	28132.0	44892.0
unemp	Unemployment rate	%	–	104.6	106.0	109.4
GDP	Nominal gross domestic product	bln rubles	+	2862.0	6135.0	10172.0
Brent	Price of oil Brent	USD/barrel	+	35.9	80.2	126.1
exch	Ruble/USD nominal exchange rate	rubles per USD	+	27.91	44.3	77.9
imports	Nominal value of imports	bln rubles	+	9100.0	21425.0	32481.0
tariffs	Index of tariffs of housing and communal services	%	+	92.2	100.8	116.1
capital	Investments in physical capital	bln rubles	–	18224.0	64788.0	310214.0
CPIexp	Index of inflation expectations	%	+	86.0	101.1	118.0

\* Due to the limited space, formally here we do not provide an extended discussion of the expected influence of each of variables on inflation. The directions of these influences (the signs of the variables) follow from a traditional discussion of potential impacts of these variables on inflation.

#### 2.4 Research hypotheses

Based on the previous theoretical discussion and the preliminary analysis of the data, for this research we formulated the following principal working hypotheses:

*Hypothesis 1: The time-series of inflation in Russia has the “long memory” effect.*

*Hypothesis 2: An ARFIMA model outperforms the traditional regression models in the sense of lower prediction error.*

Let us now switch to the discussion of the results of our calculations that were made in Stata 14.0.

### 3. Results and discussion

Below we provide the results of estimation of the two models of this research. We give and discuss the final specifications of the models which were selected based on the Schwarz Bayesian information criterion (SBIC).

#### 3.1 Results of multivariate linear regression estimation

The results of estimation and specification optimization of the adopted multivariate linear regression model are given below:

$$\begin{aligned} \widehat{\Delta CPI}_t = & 24.11 + 0.53^* \cdot \Delta CPI_{t-1} + 0.24^* \cdot \Delta CPI_{t-6} + 0.21^* \cdot \Delta CPI_{exp_t} \\ & - 0.014^* \cdot CPI_{exp_{t-1}} - 0.15^* \cdot keyrate_t + 0.003^* \cdot \log(M2)_{t-1} \\ & - 0.14^* \cdot unemp_{t-6} + 1.99^* \cdot \log(GDP)_t + 0.0003^* \cdot \log(GDP)_{t-12} \\ & + 0.008^* \cdot Brent_{t-1} + 0.026^* \cdot exch_t - 0.027^* \cdot exch_{t-6} \\ & + 0.025^* \cdot exch_{t-12} + 0.02^* \cdot \log(imports)_{t-9} + 0.06^* \cdot \Delta tariffs_{t-9} \\ & - 2.21^* \cdot \log(capital)_t - 0.002^* \cdot \log(capital)_{t-6} \end{aligned} \quad (4)$$

where \* denotes statistical significance of the coefficient at the 5% level of significance.

The necessary tests of model specification adequacy (such as tests for normality, heteroscedasticity, autocorrelation, RESET, multicollinearity, stationarity, overall significance and spurious regression) were run and passed. It should be noted that all the coefficients in model (4) have the expected mathematical signs, and the coefficient of determination of the model is  $R^2 = 0.921$ . Thus, it was decided to use the model for prediction purposes (see subsection 3.3).

#### 3.2 Results of ARFIMA-modeling

In order to address *Hypothesis 1*, we, first, ran the test for the “long memory” effect on the training sample for the CPI time-series. To this end, we applied the Lo test for the “long memory” effect. The results of this test are given in Table 4.

Table 4. Results of the Lo test for the “long memory” effect

Lo Modified R/S test		
Critical values for H0: CPI is not long-range dependent		
90%:	[ 0.861, 1.747 ]	
95%:	[ 0.809, 1.862 ]	
99%:	[ 0.721, 2.098 ]	
Test statistic:	.67	(0 lags via Andrews criterion) N = 230

As it can be seen from the table, the value of the test statistic is 0.67 and is beyond even the 99% confidence interval. Thus, we reject the null hypothesis of no “long memory” effect in the time-series of Russian CPI. Thus, *Hypothesis 1 receives support* and building of an ARFIMA-model for this time-series is appropriate.

The optimized and estimated specification of the obtained ARFIMA(13, 0.39, 12)-model is given below:

$$\Delta^{0.39}\widehat{CPI}_t = 100.81^* + 0.37^* \cdot \Delta^{0.39}CPI_{t-1} + 0.97^* \cdot \Delta^{0.39}CPI_{t-12} - 0.38^* \cdot \Delta^{0.39}CPI_{t-13} - 0.083^* \cdot \varepsilon_{t-2} - 0.082^* \cdot \varepsilon_{t-3} - 0.10^* \cdot \varepsilon_{t-5} + 0.054^* \cdot \varepsilon_{t-7} - 0.78^* \cdot \varepsilon_{t-12} \quad (5)$$

where \* denotes statistical significance of the coefficient at the 5% level of significance. The necessary tests of model specification adequacy (such as tests for normality, heteroscedasticity, autocorrelation, stationarity, overall significance) were run and passed.

Of importance here is the value of  $d = 0.39$  which, again, supports the presence of the “long memory” effect, because this value falls into the range (0, 0.5) as discussed in subsection 2.2.

### 3.3 Predictions of inflation

Since the constructed models successfully passed the specification adequacy tests, we used them to construct predictions for the test sample October 2018 – March 2019. For measuring the accuracy of predictions, we employ the *root mean square error* (RMSE) metric. It is also worth noting that on this test sample we have a chance to compare the accuracy of our predictions with the accuracy of predictions of the Russian Ministry of Economic Development (see Fig. 1).

Table 5. RMSE of inflation predictions (October 2018 – March 2019)

Forecasting Approach	RMSE, %
Predictions of the Russian Ministry of Economic Development	0.42
Multiple linear regression	0.27
<b>ARFIMA (13, 0.39, 12)</b>	<b>0.22</b>

The results of calculation of RMSEs for our predictions are given in Table 5. As it can be clearly seen from the table, the ARFIMA approach outperforms the multiple linear regression model and, what is important, *has approximately twice as better accuracy of inflation prediction as the model currently used by the Russian Ministry of Economic Development.*

This means that our *Hypothesis 2* also received support.

It is worth mentioning that since the ARFIMA approach proved its forecasting efficiency, we applied it to a shorter training sample from January 2000 to December 2013 in order to understand whether the model would be capable of predicting a sharp increase in inflation rate in Russia at the end of 2014 due to the NCC (see Fig. 2). In brief, the model succeeded.

### 4. Conclusions

In this research we focused on the problem of inflation prediction. The problem is very topical for the Russian economy, since, on the one hand, based on inflation expectations the Bank

of Russia conducts its monetary policy; and, on the other hand, as the recent figures show, the inflation predictions by the Russian Ministry of Economic Development sometimes are quite far from the actual values.

In this study we adopted two approaches: an extended multivariate linear regression modeling and the ARFIMA-model approach (to capture the “long memory” effect in the Russian CPI data). It turned out that the both constructed models outperform the current inflation predictions of the Russian Ministry of Economic Development, with the estimated ARFIMA-model indeed capturing the “long memory” effect in the Russian CPI index and being almost twice as more precise as the approach used by the Ministry. Thus, the both hypotheses of this research were supported.

As a result, it can be recommended for the Russian Ministry of Economic Development to use for inflation prediction purposes more advanced models from the time-series econometric analysis.

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The authors declare no competing interests.

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# Leadership Styles of Sport Managers' and Achievement Motivation of Judo Practitioners in Bosnia and Herzegovina: Model Proposition

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## *Abstract*

The purpose of this study is to develop theoretical grounds to investigate relationship between different leadership styles of sport managers and achievement motivation of practitioners in judo sport of Bosnia and Herzegovina (B&H). Practitioners' perceptions on sport managers' leadership styles and achievement motivation of practitioners can be used to investigate the mentioned relationships. Methodology used to develop the theoretical model is literature review. Once relevant studies were carefully analyzed, the variables have been defined, relationships among them were explained, and hypotheses were proposed. The validation of proposed model may provide useful findings for sport managers in martial arts, especially judo coaches. Furthermore, practical implications of this study could help sport managers engaged in martial arts to determine more functional leadership style which will result in more effective results. The validation of the proposed model is strongly recommended to different researchers, in different regions at different times.

**Keywords:** leadership styles, achievement motivation, sport managers, judo, Bosnia and Herzegovina.

## 1. Introduction

Despite the fact that there are many studies worldwide hypothesizing the relationship between leadership styles and achievement motivation in variety of sports, there is insufficient empirical evidence for region of Bosnia and Herzegovina (B&H). Speaking of martial arts in Bosnia and Herzegovina, especially judo sport as one of the most popular sport in the country, there is no empirical evidence to confirm or rejected existence of the above-mentioned relationship. Moreover, the measurement of leadership styles of coaches as well as measurement of achievement motivation has never been conducted empirically yet in B&H.

On the other hand, considering results achieved in local and international contests, judo seem to be one of the most developed sports in Bosnia and Herzegovina. Good results of Bosnian judo sport practitioners are coming from all levels, Balkan, European and World Olympic games. However, scientific researchers still did not put this in their focus of interest.

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<sup>1</sup> MA student.

This research is important as this is the first time that the relationship between leadership styles and achievement motivation of sport managers in judo sport in B&H will be investigated. The main objective of this study is to provide a model that may empirically explain relationship between different leadership styles and achievement motivation of sport managers in judo sport of Bosnia and Herzegovina. The secondary objectives are to provide practical implications as well as theoretical ones for the relevant stakeholders of this study. Sport managers can learn which leadership styles will lead to higher effectiveness, and practitioners of judo sport will be achieving more effective results.

The contribution of this study is threefold: practical, theoretical and social. Practical contribution of this study is high due to fact that it will provide grounds for getting insight to sport managers of judo sport about the effects that different leadership styles have on achievement orientation of different judo practitioners. As this is the first study of this kind in the region of Bosnia and Herzegovina, theoretical contribution is obvious, and it shall serve as opening door for new studies of this kind. Considering social contribution of judo sport to youth of Bosnia and Herzegovina, investigating this specific sport and mentioned variables is supposed to have also indirect contribution to overall Bosnian society.

In line with mentioned objectives, research questions to be addressed in this study are: (1) Do sport managers apply any leadership styles in judo sport? (2) Which leadership styles are applied more compared to the others? (3) Do judo practitioners find leadership styles of their sport' managers (coaches) useful in practicing judo? (4) Do judo practitioners think that their achievement motivation in judo is result of specific leadership style used by their coach? (5) What is the significance of the relationship between the leadership styles of coach and achievement motivation of judo practitioners?

The coming section will review the literature relevant for the initiation of this study. It will be followed by the sections on model, methodology and expected results.

## 2. Literature review

This review will provide basic insights into up to date literature when it comes to following issues: about judo; about leadership styles; leadership in sports management; leadership styles and effectiveness in martial arts; about judo in B&H; history of judo in B&H; B&H in judo Olympic games; achievements of judo practitioners at international competitions; key contributors to judo sport of B&H; hypotheses and research model.

Fiedler (1967) thinks that the individual in the group given the task of directing and coordinating task-relevant group activities or who, in the absence of a designated leader, carries the primary responsibility for performing these functions in the group.

House (1996) considered that role of the leader is to provide the necessary incremental information, support, and resources, over and above those provided by the formal organization or the subordinate's environment, to ensure both subordinate satisfaction and effective performance

Zaccaro, Rittman and Marks (2001) assert that social problem solving, where leaders are responsible for (a) diagnosing any problems that could potentially impede group and organizational goal attainment, (b) generating and planning appropriate solutions, and (c) implementing solutions within typically complex social domains.

In similar vein, Naidoo (2007) expressed that the sport administrator in HEIs is required to demonstrate effective leadership qualities to manage the personnel in the sport department. The fact that the leadership role appears to pervade all the managerial activities of the sport administrator, makes it an important factor contributing to the overall process of an organization.



Jung, Wu and Chow (2008) posit that the contractual agreement is the motivating factor that drives individuals towards the achievement of task set out for them. This type of leadership encourages them to focus on the tangible or mental rewards gained at the fulfillment of a task. For example, with regard to sport administrators this may mean offering incentives or rewards to get teams or individuals to qualify, to compete or to win in high level competitions. According to Pounder (2001), transactional leaders do not actively seek out deviations from desired performance and only react after problems present themselves.

Conger & Kanungo (1987) says that despite the unequivocal significance of these proposals, insufficient attention has been given to the recent developments in leadership research, which is focused on observing individuals with an extraordinary ability to convince others of their capacity to achieve high levels of performance and to adopt new work principles.

Mokhtarpour, Mohammadi and Mokhtarpour (2014) regard that people's values influence the way they manage and especially determines their satisfaction about the organization. The concepts of transformational leadership styles of managers, their gender and level of mental stimulation showed the greatest effect on job satisfaction

Gomes and Resende (2014) propose an instrument to evaluate leadership styles in three domains (e.g., transformational, transactional, and decision-making leadership) and test the augmentation effect of these domains on the explanation of satisfaction with leadership and coach-athlete compatibility. In total 348 male athletes who play futsal and soccer were recruited. We evaluated leadership styles, satisfaction with leadership, and coach-athlete compatibility. The confirmatory factor analysis demonstrated acceptable fit levels for the organization of the leadership scales with second-order factors of transformational leadership and two correlated factors for transactional and decision-making leadership. Confirmatory factor analysis also points out acceptable fit levels for the measures of satisfaction with leadership and coach-athlete compatibility. The hierarchical regression analysis indicated the predictive value of the leadership domains for explaining satisfaction with leadership (61% of variance explained) and coach-athlete compatibility (50% of variance explained). We found partial support for the validity of the leadership scale and confirmed the augmentation effect.

Transformational/transactional leadership theory became a focus in sport management research beginning in the mid-1990s. Wallace and Weese (1995) looked at YMCA organizations in Canada and found that those leaders with a highly transformational style engaged in more culture-building activities, handled change better, and had a greater degree of coordinated teamwork than leaders low in transformational leadership.

Moreover, Weese (1995) examined transformational leadership and organizational culture at the administrative levels of campus recreation programs of Big Ten and Mid-American Conference universities. The findings revealed that the campus recreation programs administered by high transformational leaders possessed significantly stronger, more positive cultures than ones administered by low transformational leaders. Furthermore, high transformational leaders carried out culture-building activities to a significantly greater extent than low transformational leaders. In addition, transformational leaders were more effective in transmitting the culture throughout the organization

Sivanathan and Fekken (2002) posit that this requires the sport administrators to foster their commitment and inspire them to exceed their expected performance. As budgets and human resources diminish and the need to do more with less increases, leadership that transforms or inspires individuals to act in the organization's best interest, will become vital.

Tepper and Percy (1994) declared that transformational leaders in sport achieve a level of performance that surpasses expectations by instilling pride, and communicating with followers

in an attempt to promote a feeling of personal respect amongst the followers themselves, as well as between the follower and the leader, facilitating creative thinking, and providing inspiration.

Nosanchuk (1981) explored different methods of fighting skills. Judo made its first appearance on the Olympic program at the Games of the XVIII Olympiad in Tokyo in 1964. It was then absent from the Games in Mexico City in 1968, only to return for the Games in Munich in 1972 and has been on the Olympic program ever since. Women's judo appeared as a demonstration sport at the Games in Seoul in 1988 and joined the Olympic program for the Games of the XXV Olympiad in Barcelona in 1992. A mixed team event will be included for the Games of the XXXII Olympiad in Tokyo in 2020. According to van Bottenburg (1994), the popularity of the Asian martial arts in the West has resulted from a number of factors, such as the growing economic power and international prestige of Japan and, to a lesser extent, other Eastern-Asian countries. Also, the post war stationing of American and European troops in Japan and South Korea, as well as the emigration of Asians to the United States and Europe have contributed to the spread of Asian martial arts in the West.

Considering fact that judo sport is the most accomplished Olympic sport in B&H, it represents one of the sports that contributed most to the affirmation of B&H's sport on the international sport scene and the organization of these great sporting events. Certainly, the organization of these and these sporting events contributes immensely to the development and popularization of judo sports, the affirmation of Bosnia and Herzegovina as an international sporting destination.

### 3. Research question, hypotheses and model

In line with mentioned literature, five research questions are to be addressed in this study:

RQ1: Do sport managers apply any leadership styles in judo sport?

RQ2: Which leadership styles are applied more compared to the others?

RQ3: Do judo practitioners find leadership styles of their sport' managers (coaches) useful in practicing judo?

RQ4: Do judo practitioners think that their achievement motivation in judo is result of specific Leadership style used by their coach?

RQ5: What is the significance of the relationship between the Leadership styles of coach and achievement motivation of judo practitioners?

In line with hypotheses tested by the previous researchers discussed in the previous section, following hypotheses are proposed for this study:

*H1: Democratic style of Bosnian judo coaches has influence on achievement motivation of judo practitioners.*

*H2: Autocratic style of Bosnian judo coaches has influence on achievement motivation of judo practitioners.*

*H3: Laissez-faire style of Bosnian judo coaches has influence on achievement motivation of judo practitioners.*

*H4: Transformational style of Bosnian judo coaches has influence on achievement motivation of judo practitioners.*

*H5: Transactional style of Bosnian judo coaches has influence on achievement motivation of judo practitioners.*

All five hypotheses are presented in the model shown within Figure 1.

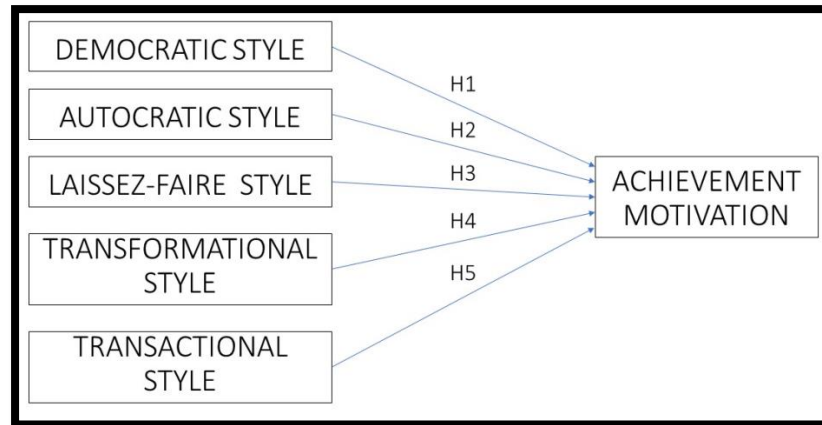


Figure 1. Research model (proposed by authors based on literature review)

#### 4. Methodology

The main methodology used to develop the theoretical model presented above is literature review. Once studies were carefully analyzed, the variables have been defined, relationships among them were explained, and hypotheses were proposed.

Talking of methodology for the validation of proposed model, there are two approaches, qualitative and quantitative one. For those who choose to use quantitative approach, structured survey is recommended to be used to measure variables in the hypothesized relationships, and data are to be collected from at least 200 judo practitioners all over the country of Bosnia and Herzegovina. For purpose of statistical analysis, Microsoft Excel package and Software Package for Social Sciences 18 (SPSS 18) will be applied. Descriptive statistics, principal component analysis, regression analysis and ANOVA will be used to respond to investigate validity, reliability of measures, but also hypothesized relationships. In the other case, interview can be applied and the collected data can be analyzed qualitatively.

#### 5. Expected results

In line with conclusions based on literature, it is expected that all hypothesized relationships among variables will be confirmed. However, it is suggested to conduct testing of the proposed model using adequate measurement scales. To get better, more valid and reliable results, it is suggested to validate the proposed model in different geographical contexts and across different time periods. Still, regardless of the positive and optimistic forecast on supporting the proposed research model, it is on future researchers to test the model and provide empirical evidence.

#### 6. Conclusion

This study develops a theoretical model with purpose to investigate relationship between different leadership styles of sport managers and achievement motivation of practitioners in judo sport of Bosnia and Herzegovina (B&H). Practitioners' perceptions on their sport managers' leadership styles and achievement motivation of practitioners may be very useful to investigate the above mentioned relationship. The suggested statistical methodologies to be applied upon data collection are Descriptive Statistics, Principal Component Analysis and Regression Analysis. Furthermore, ANOVA method may be applied to find out if there is a

relationship between different characteristics of sample and main variables. However, researchers are also encouraged to apply different approaches, for example qualitative. Accordingly, it is suggested to do both quantitative approach (use structured survey) and qualitative approach (use interview). The model validation will provide useful findings for sport managers in martial arts, especially judo coaches. Furthermore, practical implications of this study could help sport managers engaged in martial arts to determine more functional leadership style which will result in more effective results.

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## Main Factors of Turnover and Minimization of Turnover Rate within Business Organization

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### *Abstract*

The report presents the turnover problems in a call center positioned in Bulgaria. This research identify the main reasons of high turnover within business case study and to identify key actions that could be done to decrease the turnover rate. The recommendations drawn from the research of a particular company may serve the project managers of other call center companies. But leaders need to consider the specificity of their organizations and make a similar study of key factors, benchmarking the results of the study presented here, and only then plan action steps for change.

*Keywords:* turnover problem, level of stress, poor management, lack of career growth and development, lack of recognition.

### 1. Introduction

Turnover problem has been one of the main topics of scientific researches in the human resources and organizational behavior field for more than 40 years.

This article presents the results of a case study. This research was done within a call center positioned in Bulgaria by a well-known international organization TELUS International Europe. The research was carried out through the collaboration of a team of researchers at New Bulgarian University and a student who is an employee holding a key position in the selection and training department.

*The Case Study:* TELUS International Europe is a multilingual contact center, BPO (business process outsourcing) and ITO (information technology outsourcing) provider that was founded in Sofia in 2004. Currently the company has around 3,500 team members in Bulgaria, Romania and England. In 2014 the company became part of TELUS International – global BPO company with over 28,000 team members around the world with headquarters in Canada.

TELUS International offers outsourcing services in following spheres: contact centers, back-office administration, finance and accounting, supply chain management, IT, analytics and business intelligence, business process improvement and others.

The organizational structure of TELUS is project-based, meaning that for each project a separate team is chosen, headed by project manager and supervisors. Projects can be in different areas, usually employees from different projects do not communicate with each other on a regular basis. This is the reason of why job satisfaction of employees and turnover rate can differ significantly between different projects.

*Object of research* is Project X that has more than 100 employees, it deals with inbound calls and e-mails from customers in 10 different languages. Therefore, the whole team is divided into 4 smaller teams that serve different markets: Russian market, German market, CEE Market (including Poland, Hungary, Romania and Bulgaria) and Mediterranean Market (including Greece, Israel and Turkey).

*Subject of study.* One of the main problems that each call center has to combat is the problem of high turnover. In our project the turnover rate exceeds 30%, which is much more than expected by the management of the company. Interestingly, turnover rate differs significantly even within the same project, but between different markets. For example, 11 out of 21 current members of Russian market team are employees that have worked less than 1 month in the project (they are all newcomers), and at the same time during the first 5 months of 2018 year 6 employees left the team. It shows that only for 5 months of this year the turnover rate within Russian market team exceeds 35%.

*The main goal of this research* is to identify the main reasons of high turnover within our project X and to identify key actions that could be done to decrease the turnover rate.

In order to achieve this research goal *the following tasks should be performed:*

- To identify the essence and the main reasons of turnover by reviewing the literature on this topic;
- To identify the main expectations of newcomers within the project X;
- To identify the main reasons of turnover within project X;
- To identify factors that have the biggest impact on turnover rate within project X, and whether expectations of newcomers are fulfilled or not;
- To propose actions for reducing turnover rate within project X.

## 2. Research background and theoretical framework

In 1977 turnover was defined by Price as “the ratio of the number of the organizational members who have left during the period being considered divided by the average number of people in that organization during period”. In 1995 Woods looked at turnover from a different perspective and described it as “replacement cycle” – a time, when position is vacant after dismissal of previous employee and when new employee has to be found and hired. In 2000 Abassi defined turnover in a much broader perspective – as movement of employees not only in and out of an organization, but as movement of employees around the labor market: between firms, jobs, between states of employment and unemployment.

Turnover is usually perceived automatically as a bad and undesirable process. However, turnover can also have positive impact on the organization, depending on whether high performers or low performers are leaving. This is the reason why the typology of turnover has been elaborated (Allen, 2008):

- Voluntary (initiated by the employee) and involuntary (initiated by the organization);
- Functional (is not harmful for the organization) and dysfunctional (is harmful for the organization);



- Unavoidable (is caused by factors over which organization does not have control) and avoidable (is caused by factors over which organization has control).

Iqbal (2010) in his article also defined two types of involuntary turnover: discharge turnover (dismissal of individual employee due to discipline or job performance problem) and downsizing turnover (part of organizational restructuring and/or cost-reduction program).

In general, all studies on turnover can be divided into 3 main groups: defining main reasons of employee turnover, defining effects of employee turnover on organization and elaboration of main strategies to minimize the turnover rate.

Usually, each employee's decision to leave is determined by some shock (positive or negative) and falls within one of the following 4 paths:

- Dissatisfaction – the most traditional reason of turnover, when employee perceives that he/she is giving more to the organization than he/she is receiving from the organization, or when employee understands that his/her capabilities are wider than / or do not correspond with the requirements of the position;
- Better alternative – the situation when employee may be even satisfied with his/her current position, but receives better proposal (for example, in terms of remuneration or career advancement);
- Following a plan – the situation when employee leaves the organization according to a certain pre-defined plan (for example, when employee leaves the company due to pregnancy);
- Not following a plan – turnover as a result of some impulsive reaction of employee (for example, being passed over for a promotion).

Most of the researches dedicated to the problem of voluntary turnover are highly practical and study turnover in a certain organization or in a certain sector. This can easily be explained by the fact that voluntary decision to quit is always individual and can differ from person to person, even within the same organization. Therefore, the more precise is the sample for the research, the more practical will be the conclusions, and the more beneficial it will be for the organization.

As an example, research of Robert D. Gardner (2010) in his study on the factors that influence turnover of K-12 (meaning primary and secondary education) music teachers in the United States came to the conclusion that there are some factors of turnover that are specific for that category of teachers:

- Music teachers receive less support than other teachers for work with children with special needs;
- There is lack of a music supervisor support (that could handle large part of the administrative work), meaning lack of administrative support (this factor is especially crucial for male teachers);
- Music teachers that work part-time and have to visit separate buildings during the day are more likely to quit than those who work full-time and spend the whole working day in one building etc.

This is an example of a research of turnover problem in one single profession. However, currently there are more than 40,000 different professions all over the world and the reasons of turnover can differ significantly among them.

Our study is aimed to investigate the turnover problem in the project X of TELUS call center. Therefore, the specific literature on turnover problems in call centers can be useful for our research.

So far, many scientists have examined the problem of turnover in various call centers in different parts of the world. Although most of the call centers are considered to have a lot in common – for example, the presence of the so-called “emotional burnout”, when agents have to face negative emotions of clients on a daily basis, or the need to “hide emotions”, when in each conversation agents have to maintain pleasant tone of their voice, even when they have negative emotions – they can also significantly differ.

A lot depends on the type of service that is provided by the call center – whether it is just receiving orders for delivery of pizza, or it is request to repair IT systems. Also, some call centers may specialize in outbound calls, while others work only with inbound calls. Obviously, the level of emotional burnout should be greater in outbound call centers because of high percentage of rejections from the part of the customers.

Therefore, the results of scientific researches on identifying the main reasons of turnover in a call center can differ significantly. Part of the researches make accent on the performance indicators that influence the turnover rate, while another part come to the conclusion that performance is not that important as level of job autonomy, job satisfaction and supervisor’s support.

For example, one of the recent studies conducted by Italian researchers M. Zito, F. Emanuel, M. Molino, C. G. Cortese, C. Ghislieri, and L. Colombo (2018) in the call center of Italian Telecommunication Company, proved that emotional dissonance has a positive relation with turnover intentions, while job satisfaction, supervisor’s support and job autonomy have a negative relation with turnover intentions. Researchers also proved that job satisfaction can be a mediator in negative relation between job resources (supervisor’s support and job autonomy) and turnover intentions, as well as a mediator in positive relation between emotional dissonance and turnover intentions.

At the same time, another study, conducted by Chilean researchers M. A. Valle and G. A. Ruz (2015) in one of the Chilean call centers specialized in outbound calls for selling insurance services, proved that performance indicators (mostly the number of sales and amount of sales) during the first 2 months of work influence the turnover intentions of agents in the following months. They also proved that dynamics of performance indicators is even more important, as those employees who have positive dynamics in performance tend to stay in the company, and those who have negative dynamics tend to leave the company.

Another research, conducted by Malcolm C. McCulloch and Daniel B. Turban (2007), studied the problem of person-organization fit (P-O fit) in general and its impact on turnover intentions. They distinguished complementary fit (when candidate possesses skills and knowledge that organization is missing) and supplementary fit (when individual values and values of organization coincide). The results of the study show that P-O fit has positive relation with turnover intentions and it can be used to predict the turnover rate. Interestingly, researchers did not find support for their hypothesis that P-O fit is positively related with job performance of agents, and it cannot be used for prediction of job performance.

The last two researches described above demonstrate the existence of specificities in every single call center, and while in one call center there may be strong relation between job performance and turnover, in another call center this relation may not exist at all.

Following the range of other articles on this topic, we would make the following list of possible reasons of turnover:

- *Job stress;*
- *Lack of commitment to the organization;*
- *Job dissatisfaction;*
- *Economic reasons (low salary);*
- *Lack of job autonomy;*
- *Lack of role clarity;*
- *Ambiguity of performance evaluation methods;*
- *Organizational instability;*
- *Absence of openness in sharing information;*
- *Toxic workplace environment;*
- *Lack of recognition;*
- *Inconvenient working schedule;*
- *Corporate culture and management style;*
- *Lack of opportunities for future development.*

As job satisfaction/dissatisfaction itself is a quite complex phenomenon, many scientists examine the main factors that influence job satisfaction. For example, Stewart and Brown (2011) defines 6 dimensions of job satisfaction: satisfaction with empowerment, with job fulfillment, with pay, with work group, with security and with work facilitation.

Henry Ongori (2007) in his article also pays attention to the effects of turnover on the organization: costs for searching, hiring and induction of a substitute employee; overtime payment for existing employees; reduction of profitability of a company; worsening of customer service and customer satisfaction level etc. I would add to that list the effect on overall corporate culture and image of employer for potential external candidates, as well as for existing employees.

In fact, turnover can have a significant negative effect on organizational effectiveness, so it is very important to identify the main factors of turnover and to elaborate plan that will mitigate impact of those factors. This problem is very practical and in our research it is important to identify factors of turnover that exist exactly in our project X in TELUS.

### 3. Empirical research

This current conducted empirical study does not claim to be fully comprehensive. It is limited within a relatively small group of subjects with relatively homogeneous age limits. But its results make it possible to draw conclusions about a little research topic in Bulgaria and provoke discussions with other researchers in this field.

### 4. Methodology and approach of research

As it has been mentioned before, this study is aimed to achieve following research goals:

- To identify expectations of newcomers within the project X;
- To identify main reasons of turnover within the project X;
- To identify factors that have the biggest influence on turnover within project X, and whether expectations of newcomers are fulfilled or not;
- To propose actions that could reduce the turnover rate.

In order to achieve the first goal 11 newcomers (that have joined the company during the last 1 month) were asked 2 open questions:

- Why did you decide working in this project?
- In your opinion, what is the main difficulty that you will have to face at your new position?

After that the responses were analyzed to figure out what are the expectations of newcomers.

Similarly, the best way to understand why people are leaving is to ask them directly. Therefore, to achieve the second research goal we could use either the method of exit interviews with those employees that are going to leave the company within following 3 months (i.e. they have already signed resignation letter and are within notification period) or the method of interviews with those employees that have left the company during the last 6 months (i.e. they still remember well the reasons of leaving the company).

Due to constraints of the first method (we are not allowed to conduct exit interviews with employees and do not have access to the database of exit interviews), we used the second method – interviews with employees who have left the project during the last 6 months.

These are employees that occupied different positions within the project: 2 employees from Back-office (that conduct manual calculations, issuance and reissuance of documents); 1 employee from Mentors (that provide support for other agents on the platform, answering all kind of questions related to performing project tasks) and 7 employees from Front-office (that receive phone calls and answer e-mails).

Questions in those interviews were mostly open with the main one – “What are three main reasons (ranked by importance) that made you to leave the project?”. All answers were grouped into categories (low salary, lack of recognition etc.), which gave us the possibility to calculate the most frequently mentioned categories. Also, the first answer in individual ranking received 3 points, the second – 2 points, the third – 1 point. In this way it was possible to examine a little bit deeper the importance of each category. The results of those interviews are shown in the following chapter of this research – “Results”.

However, in order to understand fully the problem of turnover it is important not only to ask those who left about why they left, but also to ask those who stayed about why they stayed. This approach is making accent on the “other side of the coin”, identifying good aspects of the organization of work process, and factors that motivate employees to stay. However, by ranking those factors it is possible to identify factors that contribute the least to the intentions of employees to stay, and, therefore, can be considered as factors of turnover in the future.

For this purpose also the method of stay interviews could be used, but in order to provide anonymity we have chosen the method of survey.

Currently there are 110 employees, working in our project X. We have designed a questionnaire and have asked 20 employees (18% from the total amount) to fill it in. In order to provide reliability of results questionnaire was given to different categories of employees: 1 mentor, 2 Back-office specialists, 1 quality specialist and 16 Front-office agents.

There were 13 closed questions:

1. I have exciting, challenging and meaningful work.
2. I have supportive management / good boss.
3. I feel recognized, valued and respected for my job performance.
4. I have enough opportunities for career growth, learning and development within the project.

5. I have a flexible work schedule.
6. I receive appropriate amount of salary for the work I perform.
7. Job location is convenient for me.
8. I feel that my position is secure and I will not be dismissed in the future.
9. I am proud of organization I am working for.
10. My manager possesses needed skills and knowledge to perform his job well.
11. I can deal with stress at work well.
12. I have enough independence in performing my job.
13. I rarely think about quitting my job.

And with the scale offering 5 possible answers: “Strongly disagree” (1 point), “Disagree” (2 points), “Neither” (3 points), “Agree” (4 points), “Strongly agree” (5 points). Then the average score was calculated for each answer, describing the level to which certain characteristics of the job are present in our project. It was also decided to analyze the differences between males (8 respondents) and females (12 respondents), as well as between employees, working in project less than 1 year (10 respondents), from 1 year to 2 years (6 respondents) and more than 2 years (4 respondents). For each of the above-mentioned categories of personnel average score was calculated as well.

The final step was to compare the results of interviews with those who already left the company and the results of the survey among existing employees.

All the participants of the survey were informed that the research was conducted with learning purpose only and all answers were kept anonymous.

## 5. Findings and research results

After asking newcomers about their expectations we have elaborated the list of factors that attract candidates to work in our project:

- Interesting job;
- Good salary;
- Good benefits;
- Flexible work schedule.

Among possible difficulties that may be faced at new position newcomers mentioned primarily the need to learn a lot of procedures and to handle complex tasks, as well as multitasking. However, only 4 of them mentioned that the main difficulty is job-related stress and need to hide emotions.

The results of interviews with employees who have already left the company during the last 6 months, demonstrated that the absolute “leader” among factors is Poor management (see Table 1). It actually proves the typical saying that “employees join the company, but leave the manager”.

The second important factor is Low salary – it can be explained by the fact that almost all of the interviewees found a greater-paid job after they left our project. This means that currently the BPO market can offer greater level of payment and this is a problem to which special attention should be paid by the management of the project.

Other factors were mentioned more or less with the same frequency. However, the third important factor is Job-related stress, which can partially be explained by the fact that work in call centers is characterized by emotional dissonance and need of hiding emotions. However, as many of employees just changed one call center to another, it can mean that in our project this

issue (emotional dissonance) is not considered a big problem and management does not act in a proper way to reduce its impact.

Table 1. Factors of leaving the company by employees who left during the last 6 months

Reasons of leaving the company	Total score
Low salary	13
Poor bonus system	4
Poor management	18
Lack of opportunities for future development	5
Job-related stress	7
Lack of job autonomy	5
Lack of recognition	3
Inconvenient job location	5

The results of the survey conducted among existing employees (see Table 2) show that the most dissatisfying factors are poor management, lack of recognition and lack of career growth and development. At the same time, there are 2 factors that are considered as big advantages – flexible work schedule and job security. All other factors have neutral value.

Table 2. Factors of staying in the project

Factors of staying within the project	Average	Average (Male)	Average (Female)	Average (0-1)	Average (1-2)	Average (>2)
Exciting work	3.7	3.4	3.9	4.2	3.5	2.8
Supportive management	2.8	2.4	3.1	3.8	1.8	1.8
Recognition	2.7	2.4	2.9	3.6	2.0	1.5
Career growth and development	2.8	2.5	2.9	3.4	2.2	2.0
Flexible work schedule	4.0	3.9	4.0	4.2	3.8	3.5
Decent salary	3.4	3.0	3.7	4.0	2.8	2.8
Secure position	4.1	4.0	4.2	4.3	3.8	4.0
Pride for organization	3.4	2.9	3.8	3.8	3.3	2.5
Highly skilled manager	3.7	3.8	3.7	4.3	3.3	2.8
Dealing with stress well	3.5	3.4	3.5	3.2	3.7	3.8
Job autonomy	3.6	3.1	3.9	3.7	3.3	3.8
Intentions to stay	3.3	2.8	3.7	4.1	2.7	2.3
Total	3.4	3.1	3.6	3.9	3.0	2.8

\*red – critical factors; white – neutral factors; green – positive factors.

For males' poor management is among critical factors, while for females it is among neutral factors. For those who work less than 1 year in the project, there are much more positive factors than for others, including exciting work, decent salary, highly skilled manager and overall Intentions to stay. So, at this point we can state that many of expectations of newcomers are fulfilled, especially with regards to interesting job, good salary and flexible work schedule.

Those who work from 1 to 2 years are dissatisfied with their salary, and are thinking about quitting the company. Those who work more than 2 years, also demonstrate dissatisfaction with job content, corporate culture, and level of skills of manager.

Among other factors it is important to mention that job-related stress is more spread among employees who work less than 1 year in a project. Job autonomy and job security have almost the same value for all categories of employees.

## 6. Discussion

As it has been already mentioned in the previous chapter, the results of research show that expectations of newcomers are usually fulfilled – they get good salary, good benefits and they perceive their new job as exciting and interesting. However, employees with greater tenure demonstrate lower level of engagement, as those factors (salary, benefits and job content) have short-term effect and cannot maintain high level of engagement of employees for a long period of time.

Comparing the results of interviews with employees who have recently left the project and the results of the survey among existing employees, we can notice that poor management is the most important reason of turnover. Poor management means lack of managerial support, lack of regular feedback, taking wrong decisions and poor team management. Consequently, level of engagement of employees is decreasing and they leave the project. Interestingly, employees who work in the project for less than 1 year evaluate level of management relatively well, but those who work more than 1 year, mention poor management as very dissatisfying factor.

Overall in the project around 40% employees have experience of more than 1 year in the project, meaning that they can leave the project in the nearest future because of poor management.

Interestingly, other factors of turnover differed between those who already left the company and those who still work within the project.

For those who left, low salary was the second factor of turnover, but the average score from the survey showed that for existing employees this is a neutral factor. Nevertheless, it is possible to notice that employees with greater tenure (more than 1 year) also mention low salary as a negative factor. It can be explained by the fact that salary of employees with greater tenure is usually not greater than salary of newcomers. Therefore, “old” employees feel it is unfair that having more experience they receive the same salary, and many of them decide to leave, especially if they find jobs with greater salary on the job market.

The other problem with regards to remuneration is that “old” employees usually perform more diversified tasks than newcomers: they answer calls from corporate clients, respond on e-mails, answer calls from premium customers etc. However, this difference in the amount of work performed is not reflected in the salary they receive.

The third important negative factor mentioned by existing employees is lack of opportunities for career growth and development. Again, employees with greater tenure complain more often about that. As the majority of respondents were representatives of Front-office, they may feel that it is very difficult to be promoted to a higher position within the project, although having experience of more than 1 year they feel that they deserve a promotion.

However, those who left the company did not mention lack of career prospects as one of the main reasons of turnover. This underlines the fact that this factor is not as crucial for changing job as poor management and low salary. Many of employees, who left, started working in another company at position of the same level as their previous position within the project.

Job-related stress and difficulty in dealing with it is not among negative factors for each of the categories of existing employees, but it is the third factor of turnover within employees who already left the project. Job-related stress is especially common among newcomers and can

be the reason of turnover within the first 6 months. As for our research we took a wider range for classification (0-1 year), we were not able to observe importance of this factor among newcomers, and this problem should be studied additionally.

Lack of recognition was not often mentioned by employees who left the project, but at the same time it was often mentioned by existing employees. It can be explained by the fact that existing bonus system does not encourage employees to do the work of high quality, it only encourages employees to have as many transactions (calls and e-mails) as possible. In this situation “old” employees, obviously, perform work of a much higher quality than newcomers, but they do not receive a much higher bonus for that.

However, lack of recognition itself does not force employees to leave the project, because they understand that in a new company they will have to start creating their image from the very beginning, and it can take a long time before they will receive recognition at their new position.

Two positive factors that already now help to retain employees within the project are the following: flexible working schedule and job security. Moreover, nobody from those who left the project complained about flexibility and job security as well. Those factors can attract mostly 2 categories of employees: students, who need to combine their studies with earning the living, and employees who need stable income (for example, parents who have small children, those who need to pay loans etc.).

It is important to mention that although other factors such as poor job content, low skill level of manager and poor corporate culture are not frequently met among employees in general, at the same time they are quite often met among employees with greater tenure. This can be explained by the limits of the job content – at a certain point employee just stop learning something new, repeat similar tasks during the day, and at the same time they feel that they can do much more than they do now, and they leave the company. This is the reason of why there are so few employees with tenure within the project of more than 2 years.

## 7. Recommendations

As the research showed, there is a lot to do by the management in order to reduce the turnover rate, and there are many factors to which they have to pay attention to:

(1) Newcomers that join the company are not always acquainted with the level of stress that they will have to face. They are excited by the job content, good salary and good benefits, but many of them become demotivated during the first months of their job, because they are not prepared for job-related stress. In order to secure smoother adaptation of newcomers to the excessive workload during the first month every newcomer should have a mentor who could sit next to them and explain all nuances and details. In this way newcomers will be able to adapt much quicker. Management could also introduce separate bonus for mentors who do their job very well. Apart from that, recruitment process should be improved as well in order to prevent hiring employees who cannot deal with stressful situations and high workload.

(2) Poor management – most of employees who occupy currently the managerial position started their career within the project from the lowest position. This career growth is good as it demonstrates the possibility of the company to grow up their own managers. However, existing managers have good professional skills (i.e. they know all the processes and can assist agents



in their work) but they miss managerial skills. Possible solution to that – to provide soft skills training for them, to provide mentoring and coaching from the part of those managers that have greater tenure within the company.

(3) Low salary level and poor bonus system – those 2 factors go together, because they form the remuneration of every employee. Unfortunately, today there is no significant difference in the level of pay between Front-office agents, Back-office agents, Mentors, and the accent of bonus system is done on quantity, not quality. The solution to this could be creation of salary grid for different categories of employees, as well as new bonus system with better balance between quality and quantity.

(4) Lack of career growth and development – unfortunately, in a call center there are not many possibilities for career growth. However, every employee can continue their personal development along with their job. They can be encouraged to read books, scientific articles, attend seminars on their interest. And here the role of supervisor is important who has to conduct regular career development meetings with employee, giving advices and new directions of development for employees.

(5) Lack of recognition – management should create the system of “small” rewards. For example, to reward unexpectedly employees who handled well a very difficult case, or who paid attention to discrepancies between knowledge portals that they use for their work. It could be some small goody, or just simple “Thank you” from the boss, but it should be incorporated into day-to-day work, and to become part of corporate culture.

As it can be seen, all the above-mentioned actions are quite real and can be introduced into practice. Of course, financial aspects should be taken into consideration as well, because many of those actions can be quite costly, and the project budget is quite limited. However, step by step, with the implementation of proper strategy, it is possible to reduce significantly turnover rate within our project, and to improve the results of the project as a whole. Project Manager, together with supervisors have to take responsibility for elaboration of such strategy, and HR Business Partner has to assist them in order to provide them with necessary tools for HR management.

## 8. Conclusion

The recommendations drawn from the research of a particular company may serve the project managers of other call center companies. But leaders need to consider the specificity of their organizations and make a similar study of key factors, benchmarking the results of the study presented here, and only then plan action steps for change.

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