

Vesselin Blagoev<sup>1</sup>  
Elena Shustova<sup>2</sup>  
Nina Protas<sup>3</sup>

Volume 31(7), 2022

## WORK MOTIVATION OF BANK EMPLOYEES IN CASE OF IMPLEMENTING AI AND ROBOTS IN THE BANK ACTIVITIES: COMPARATIVE ANALYSIS OF RUSSIA AND KAZAKHSTAN<sup>4</sup>

*The dynamic changes in the banking industry as a result of the AI application and robotisation lead to substantial organisational changes and redefining the roles of bank employees. This, of course, has an impact on bank employees' work motivation. In 2020-2021 the businesses, including banking, encountered one more influencing factor – the Covid-19 pandemic and related quarantine and lockdown measures, leading to forced move to remote work. This research aims to find out if the work motivation of the bank employees has changed, and if yes – in what directions.*

*The analysis is based on the findings of a survey, conducted in the two countries in the period November 2020 – February 2021 and the results show some significant differences between the work motivation in the banking industry in the two countries. The questionnaire items target the main work motivation factors. Two working hypotheses were studied in this research: H1: The intensive implementation of AI in the banking sector positively affects the work motivation of bank employees in Russia and Kazakhstan. H2: The age of the employees matters for appreciation of the AI implementation, as younger employees 18-40 are more positive compared to employees beyond 40. H1 was confirmed, while H2 was confirmed regarding the difference in the opinions and motivation of the two age groups (under 40 and above 40 years of age), but not in regard to the appreciation of the changes by the two age groups.*

*The main beneficiaries of the results of this research are the bank managers, both HRM and line managers, who are directly responsible for supporting the work motivation in the process of intensive implementation of AI and robotisation, e.g., chatbots, in the sector. It is also believed that the managers in the other sectors of the economy may benefit from these findings as well.*

*Keywords: Work motivation; Herzberg theory; motivators; Equity theory; Expectancy theory; intrinsic motivation; financial and non-material motivation; banking*

*JEL: O15; E24; G20; J24*

<sup>1</sup> PhD (Marketing), Professor, Varna University of Management, Sofia, Bulgaria and Alikhan Bokeikhan University, Semey, Kazakhstan, 20 G.Washington street, Sofia 1202, Bulgaria, e-mail: blagoev@vum.bg.

<sup>2</sup> PhD (Finance), Assoc.Professor, Alikhan Bokeikhan University and Altai State University, Barnaul, Russia, 071400, Mangilik el str., 11, Semey, Kazakhstan, e-mail: shustova\_yelena@mail.ru.

<sup>3</sup> PhD (Finance), Assoc.Professor, Novosibirsk State University of Economic and Management, Novosibirsk, Russia, 630005, Novosibirsk, Kamenskaya str., 52/1, Russia, e-mail: n.protas@mail.ru.

<sup>4</sup> This paper should be cited as: Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan. – Economic Studies (Ikonicheski Izsledvania), 31(7), pp. 63-80.

## **Introduction**

The dynamic changes in the banking industry as a result of the AI application and robotisation lead to substantial organisational changes and redefining the roles of bank employees. This, of course, has an impact on bank employees' work motivation. In 2020-2021 the businesses, including banking, encountered one more influencing factor – the Covid-19 pandemic and related quarantine and lockdown measures, leading to forced move to remote work. This research aims to find out if the work motivation of the bank employees has changed, and if yes – in what directions. It is considered that if the bank managers understand which factors have effects on work motivation, they will be able to apply better human resource management in their banks.

The analysis is based on the findings of a survey, conducted in the two countries in the period November 2020 – February 2021 (125 respondents in Russia and 122 respondents in Kazakhstan), and the results show some significant differences between the work motivation in the banking industry in the two countries.

## **Theoretical Background and Framework**

There is a plethora of research in this area, including for example Drive theory (Cherry, 2021; Mangena, 2021; Hull, 1952), Reinforcement theory (Skinner, 1969), Expectancy theory (Vroom, 1964; Chopra, 2019) which is one of the most popular as it focusses of the impact on the individual by the expected outcomes of their actions, Equity theory (Adams, 1963) describing motivation as based on comparison of one's compensation versus those of the colleagues or rivals, Self-Determination Theory and the Facilitation of Intrinsic Motivation (Ryan, Deci, 2000; Deci, Ryan, 1985; Cherry, 2022; Woolley, Fischbach, 2018; Munir, 2022), Herzberg et al. (1959) theory and different views including criticism on it, e.g., relationship between satisfaction and performance and the effect on work motivation (Gawel, 1996; Lawler, 1970; House, Widgor, 1967; Dunaway, 2009; Shmailan, 2015; Maidani, 1991; Tileston, 2004; Weinberg, et al, 2010), Personality Systems Interactions (PSI) theory (Baumann, Kazen, Quirin, Koole, 2017) and other. Jones and George (2004) define motivation as the psychological force which frames the person's efforts used to overcome the perceived obstacles and achieve their goals in the organisation. Latham (2007) argues that the motivation is a process of deciding what kind and what level of efforts will be allocated to achieve their goals depending on the "importance of motives or tasks". Locke and Latham (2004, p. 388) argue that the motivation "refers to internal factors that impel action and to external factors that can act as inducements to action". Robins (2005) argues that the type and level of motivation differ over time, depending on the situation. The employees behave in different ways depending on their positions and functions in the organisation, as well as on the assigned tasks (Beardwell, Claydon, 2007).

Out of all theories, we will concentrate on Herzberg's Hygiene theory and motivators vs dissatisfiers (Herzberg et al., 1959; Chiat, Panatik, 2019), Equity theory (Adams, 1963), the Expectancy theory of Victor Vroom (1964), Deci and Ryan (2004; Ryan, Deci, 2000) three factors model and Kuhl, Quirin & Koole's effects of contingent and noncontingent rewards

and controls on intrinsic motivation (Kuhl et al., 2020). The reasons to concentrate on them is their focus on work motivation and their relative simplicity, as well as our attempt to study such relationships in our survey.

*Herzberg Motivator and Hygiene Factor Theory*

With all critical views on Herzberg’s Motivator and Hygiene Factor Theory (e.g. Ewen, Smith, Hulin, 1966; House and Widgor, 1967; Maidani, 1991; Tan, Waheed, 2011), his Dissatisfiers vs Motivators model seems to be of interest in the bank industry, as these are the main factors which the bank employees consider at the stage of applying for the job, and later – deciding what to do if the dissatisfiers change on comparative basis versus what was considered acceptable work motivators. However, under the combined influence of AI-robotization implementation in combination with the accelerators of the process – the anti-Covid-19 measures, including remote work, change of operations and work performance measurement, some of these factors may change their importance, or even categorisation. For example, the AI implementation leads to a new interpretation of supervision from technological and organisational points of view, and what has been considered in the previous time periods may have become simply inconsistent (e.g. Anatomy of change, Oracle, 2021).

Figure 1

Herzberg’s Dissatisfiers vs Motivators

Herzberg’s Dissatisfiers vs Motivators	
Dissatisfiers (Hygiene)	Motivators (Job satisfaction)
Supervision	Achievement
Interpersonal relations	Recognition
Physical working conditions	The work itself
Salary	Responsibility
Company policy and administration	Advancement
Benefits	Personal growth
Job security	

Source: Herzberg, 2003.

The physical working conditions are the clearest example of such inconsistencies, which are changing their substance and interpretation from the point of view of work motivation. Herzberg’s suggestion that if an organisation wants its employees to do a good job, it has to give them a good job to do (Giancola, 2010) gets new dimensions if the work architecture and working conditions change significantly. This is not the only view on this matter. For example, Lawler (1970) has a different view on the relationship between satisfaction and performance as it is not possible to increase the motivation of all employees by giving them a good job to do. There are not so many “good jobs” in the organisation to satisfy everybody. More than that, in difficult times, the motivation and morale of the employees limit the success of the organisation, provided that they are given real chances to prove themselves. The important question before the bank management is to understand and redefine well the new real chances and to communicate them to the bank employees. The motivation theories underline the values and long-term goals set by employers as motivating factors. Simons and Enz (2006), for example, argue that the employees do their assigned jobs with the aim to be

*Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

satisfied from their performance, and as a result – increase their own value. This argument is valid now as it has been valid before. What is unclear is to what extent the changes in the environment change the analytical process and the importance of the specific factors, e.g., Herzberg's dissatisfiers and motivators.

### *Equity theory*

For the same reason, the Equity theory (Adams, 1963), which is regarding the motivation based on how the employee finds their compensation compared to one of the colleagues, also becomes good-as-theory, still inconsistent in the new working conditions. Huseman, Hatfield & Miles (1987), for example, have criticised the application of Equity theory as being a laboratory product. Dittrich & Carrell (1979) argue that employees have different views for equity – one may think it a fair compensation approach, while others might consider it unsatisfactory and unfair. Mullins has argued that any employee is unique and the way their task is performed is based on their mental abilities and how they are involved in the work process. In general, if the performance and dedication of an employee are appreciated, it is more likely to expect higher motivation for better performance (Mullins, Christy, 2007; Ryan, 2016). As to motivate the employees is an important role of the managers, they have to be capable of giving employees reasons to believe in their own abilities, and in the company where they are working (Baldoni, 2005). When this is not done, the employees become dissatisfied and less motivated. However, if the work architecture changes as result of AI implementation, and the anti-Covid measures lead to significant changes of the market conditions, the ability of the employee to judge the equity of their compensation becomes an intellectual exercise only, as there is not enough objective information on which to stand any kind of such analysis.

### *Vroom's Expectancy theory*

The Vroom's expectancy theory (1964) considers the individual's motivation as based on their goodwill for achieving certain goals and their belief that the motivation will lead to expected performance. Robbins (2003, p. 173) defines expectancy theory as "the strength of a tendency to act in a certain way [which] depends on the strength of an expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual". Vroom's expectancy theory considers the following relationships:

- *Effort-performance relationships*: the probability that an extra effort of the employee will lead to higher performance.
- *Performance-reward relationship*: the extra efforts will lead to the desired outcome.
- *Reward-personal goal relationship*: the organisational rewards, personal goals, and is the individual personally considered for rewards? Robbins (2003) argues that organisations with more satisfied workers perform better, compared to those with less satisfied workers.

*The effects of contingent and noncontingent rewards and controls on intrinsic motivation*

Munir (2022), for example, states that extrinsic motivation is “not enough enough”. Mac and Sockel (2001) argue that internal motivators are related to the intrinsic needs of the employee, while external motivators are environmental factors, normally provided by the organisation. Cherry (2020) argues that intrinsic motivation influences a person’s effectiveness as it comes within them. Deci & Ryan (1985) and Ryan & Deci (2000) consider a person is intrinsically motivated when they engage in an activity which gives pleasure and satisfaction, while the extrinsic motivation relates to an activity, performed not for pleasure or satisfaction but for achieving the required result or to avoid a negative outcome. In most cases, the extrinsic rewards include financial rewards and verbal appreciation, always decided outside of the person, whereas intrinsic rewards are interpreted and stated within the person (Sprigg HR, 2020). For example, Kuhl et al. (2020) argue that a person is intrinsically motivated to perform an activity if there is no apparent reward except the activity itself or the feelings which result from the activity. It seems obvious that the effects of the two are complementing each other. In our research, we study the relationships and the effects of external rewards and controls on intrinsic motivation. As Kuhl et al. (2020) argue, the intrinsic motivation to perform an activity decreases when the employee expects or is subject of “contingent monetary payments, threats of punishment for poor performance, or negative feedback about his performance”. The intrinsic motivation does not change in the case of noncontingent monetary payments, and verbal reinforcements stimulate intrinsic motivation. What needs additional research is to study to what extent the ongoing changes in the bank environment support the previous research findings. The process is quite complex as, for example, Woolley & Fishbach (2018) have found that immediate rewards increase intrinsic motivation. They predict that “more immediate rewards increase intrinsic motivation by creating a perceptual fusion between the activity and its goal (i.e., the reward)”. This sounds like common sense, still from research, as well as from a management point of view, it is important to consider the different effects of intrinsic vs extrinsic motivation (e.g., Cherry, 2022; Itri et al., 2019; Kuvaas et al, 2017).

There are other theories, such as Alderfer’s ERG – Existence, Relatedness and Growth model (Kumar, 1998, p. 230), which attempt to develop Maslow’s theory with an accent on the soft psychological factors. They have been argued for using categories such as “Respect for the organisation” and “respect for one’s supervisor” (Wilcove, 1978, p. 305). In our survey, we tried to study the importance of respect for the organisation (bank) as a motivation factor, and we think it works well. Other writers argue that it is not universally applicable as a result of the national culture specifics (Song, Wang, Wei, 2007).

## **Method**

This research is based on the results of a survey through non-probability convenience sampling of bank employees in the two studied countries – Russia and Kazakhstan. As there is no previous research of the work motivation of Russian and Kazakhstani bank employees, known to us, we decided to apply the inductive approach. We are going from the specific to the general, where arguments are based on experience and observation (e.g., Trochim, 2006;

*Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

Soiferman, 2010; Young et al., 2020). We presume that our research considers the knowledge, beliefs and cultural specifics, which, although specific for the respondents (e.g., Ryan, 2018), altogether interpret the bank employees' general views on the studied matters in a meaningful way, which allows correct analysis.

The survey population (Saunders et al., 2009; Dibb, Simkin, Pride, Ferrell, 2016) is formed by bank managers and employees, all of them above 18 years of age. The sampling frame is formed by bank employees in Russia and Kazakhstan approached using their personal emails, which the researchers have from consulting different banks in the two countries, especially in Novosibirsk and Barnaul in Russia and Semey and Pavlodar in Kazakhstan. The sample size included 125 respondents from Russia and 122 respondents from Kazakhstan. We used the non-probability sampling method using the convenience sampling technique to get a sample (Burns, Bush, 2014) which can address the research questions and hypotheses (Bryman & Bell, 2015), both as a number of respondents from the two countries, and as their quality – all being bank managers and employees. Chi-square analysis was used to check the validity of the observations if the two samples were significantly larger. In most of the cases, the p-values were pretty small and the results are significant at  $p < .01$ .

The questionnaire targeted the main work motivation factors. It contains 20 questions, of which 5 are focusing on the AI application in bank activities, 2 address the effects of the anti-Covid measures, including work from home, and 5 demographic questions. The questions about AI are complex, as the interviewed bank officers consider any form of software – both facilitating the bank operations (e.g., digitalisation of the operations) and communications with clients (e.g., chatbots, robots), to belong to the general category artificial intelligence application. This is not correct from a technical and technological point of view, but as far as our task is to study the effects on the motivation of employees, it is correct to the extent that the bank officers interpret them as factors with similar effect.

All questions are multiple-choice. Questions which could interfere with the anonymity of the respondents were avoided (Bernard, 2011). The Google Forms platform was used, which allowed contacting the participants of the survey by email and private messages and, of course – obtaining a statistical analysis of the results. This prevents distortion of results, as the questionnaire was sent and available only to people included in the sampling frame.

## **Hypotheses**

The above-mentioned publications analyse the work motivation from different angles, considering extrinsic and intrinsic factors. Based on their analysis, we stated two working hypotheses in our research, namely:

H1: The intensive implementation of AI in the banking sector positively affects the work motivation of bank employees in Russia and Kazakhstan.

H2: The age of the employees matters for appreciation of the AI implementation, as younger employees 18-40 are more positive compared to older employees beyond 40.

The working hypotheses are directly focusing the possible changes in work motivation of the studied bank employees in the period of systematic accelerating substitution of work positions with AI of a different kind and the post-COVID-19 effects on the motivation, if any.

#### *Research validity*

The survey questionnaire is self-administered. This minimises the risk of manipulating collected information. The research provides appropriate answers to the research questions, leading to confirmation or rejection of the research hypotheses (Crowther, Lancaster, 2012).

#### *Ethical issues*

The primary data collected for this research is obtained from individual respondents working in banks in the two countries, who filled in the questionnaires in an anonymous and voluntary way (Bryman, Bell, 2015). All respondents are above 18 years old, with significant professional experience in the banking sector and their opinions, with all differences which they show, altogether represent a correct picture of the banking sector in the studied areas.

### **Results and Discussion**

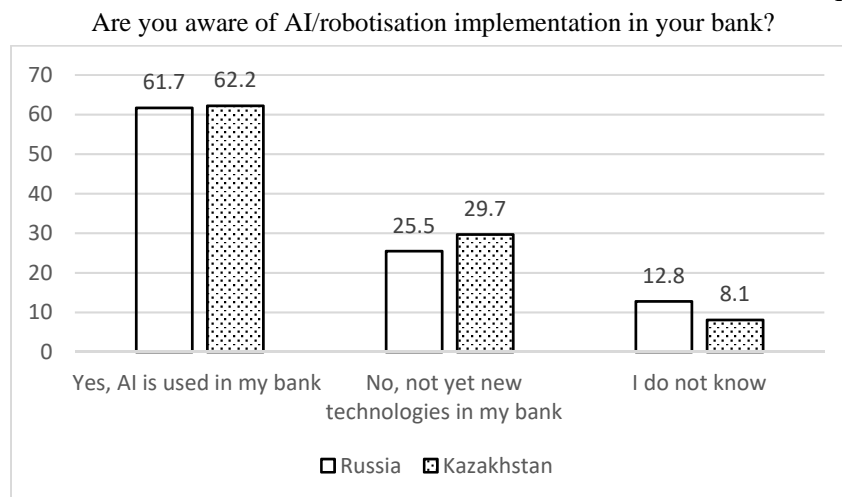
The primary research included 125 respondents in Russia, and 122 respondents in Kazakhstan, all of them belonging to the research population as they are bank employees. The results of the survey are quite interesting. We will discuss them following the hypotheses, which are stated above.

The analysis of the results will be done following the two hypotheses, stated above.

#### **Hypothesis 1: The intensive implementation of AI in the banking sector positively affects the work motivation of the bank employees in Russia and Kazakhstan**

Hypothesis 1 was tested based on the research results. A similar percentage of the respondents in the two countries (61.7% in Russia and 62.2% in Kazakhstan) are aware of the AI and/or digitalisation and/or robotisation implementation in the banks where they are working (Figure 1). Obviously, a higher percentage of knowing respondents would add value to the results in Fig. 1, but even this result – two-thirds of the respondents being aware of the technological changes – is a good basis for analysis of how AI and robotisation affect the work-motivation. The p-value of the Chi-square test (.479) shows that there are no significant statistical differences in the answers of Kazakhstani and Russian respondents.

Figure 1



We studied the effect of financial stimuli on motivation, as this is considered to be one of the main dissatisfier (Hygiene) factors according to Herzberg’s theory (Herzberg, 2003). The results are in the range of expected, as 98% of the Russian respondents and 100% of the Kazakhstani respondents claim that the financial stimuli are the main or probably the main factors. This also corresponds to the theory of the effects of contingent and noncontingent controls on intrinsic motivation (Kuhl et al., 2020; Cherry, 2020).

The non-material motivation factors play significant importance as well (Figure 2). There is a big difference between the two countries regarding the work satisfaction, while the other factors are of similar importance, all except the bank’s image being above 50%. This corresponds to the Equity theory (e.g. Mullins, Christy, 2007; Baldoni, 2005).

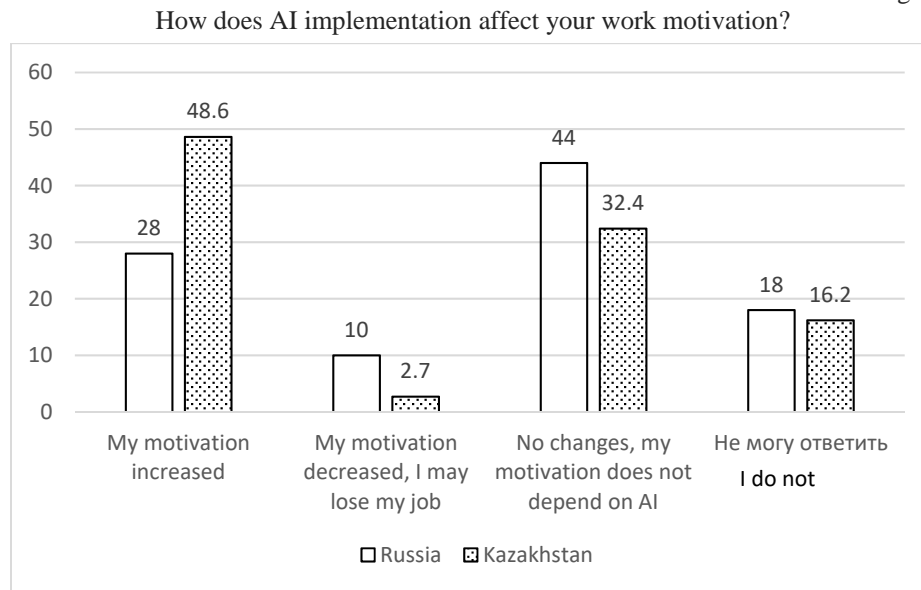
Figure 2





It should also be mentioned that the performance-reward relationship of the Expectancy theory (Robbins, 2003), marked here as promotion options, is of high importance as well (Figure 3: 76% and 67.6%, respectively). The Chi-square p-value here is  $p=0.050652$ , and as a result, is not significant at  $p<.05$ , we cannot expect a replication of the findings in the case of larger samples. Still, as we see, the differences will probably manifest in the work satisfaction as a motivating factor. Interestingly, the corporate culture seems to be equally effective in the two countries.

Figure 3



To our surprise, Figure 3 shows a significant difference in the respondents’ attitude to the effects of the AI/robotisation implementation on the work-motivation in the two countries. The percent of Kazakhstani respondents who believe that the AI/robotisation implementation positively affects their attitude to improve as valuable specialists in the bank (48.6%) is about 73.6% higher than that of the Russian respondents (28%).

The p-value of the Chi-square test ( $p=0.009$ ) is significant at  $p<.01$ . There is a significant difference in those who think that their job positions do not depend on the new technologies: 44% in Russia vs 32.4% in Kazakhstan (Fig.4). As Fig. 4 shows, only 10% of the respondents in Russia and 2.7% of those in Kazakhstan claim that AI/robotisation negatively affects their work-motivation as they believe they may lose the job being “substituted by robots”. As the percentage of positive motivation is significantly higher than the percentage of negative expectations, e.g., 48.6% to 2.7% for Kazakhstan and 28% to 10% for Russia, we can say with a high degree of confidence that **H1 is confirmed**: *The intensive implementation of AI in the banking sector does not negatively affect the work motivation of the bank employees in Russia and Kazakhstan.*

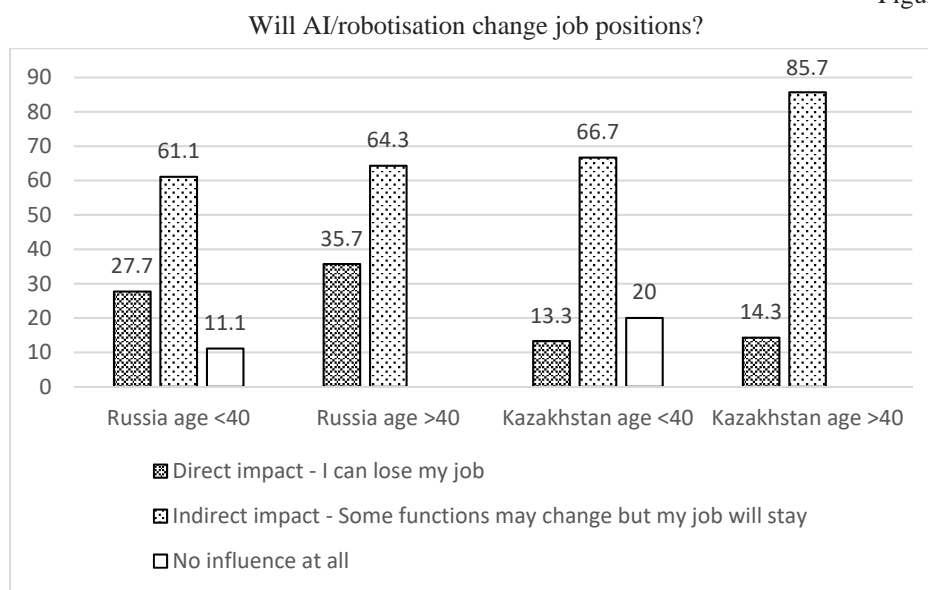
*Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

An interesting question is to what extent the national culture causes such a big difference of the responses in the two neighbouring countries (e.g. Hofstede, Hofstede, Minkov, 2010; Minkov, Blagoev, Hofstede, 2013; Sun, Yoo, Park, Hayaty, 2019), and this will be addressed further in the cross-cultural analysis.

**Hypothesis 2: The age of the employees matters for appreciation of the AI implementation, as younger employees 18-40 are more positive compared to older employees beyond 40.**

The H2 hypothesis is also confirmed. The results of the survey show that age matters, although to our surprise it matters not in the way we expected. The Russian respondents of age over 40 show a higher percentage of negative expectations of the effect of AI/robotisation on their job positions (Fig.4: 35.7% for age over 40 vs 27.7% for the younger respondents). The p-value of the Chi-square test for Russia ( $p=0.009$ ) shows that the differences in the responses of the different generations are statistically significant at  $p < .01$ . The Kazakhstani respondents show similar results for the two age groups (13.3% and 14.3%) and the differences are also significant ( $p < 0.001$ ). We expected that in the two neighbouring countries, the percentage of those being afraid of the technological changes would be similar. Instead, we see that the Russian respondents are significantly more afraid of the AI/robotisation implementation than their Kazakhstani colleagues (27.7% vs 13.3% for those under 40 years old, and 35.7% vs 14.3% for those over 40) (Figure 4).

Figure 4

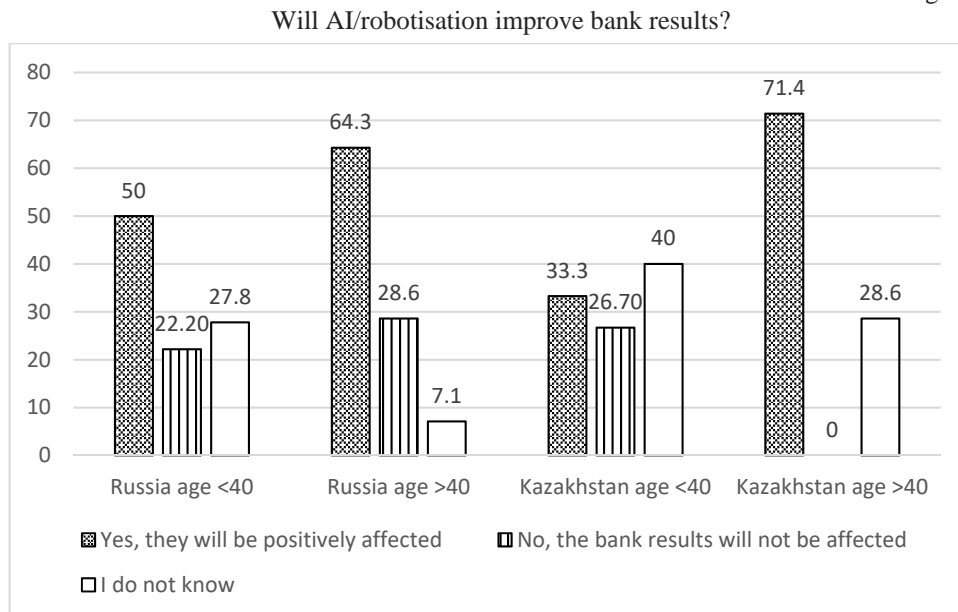


Interestingly, a relatively very high percent of the respondents do not expect significant negative effects for themselves, as they believe that the AI/robotisation will have a minor

effect on their jobs, and only some functions may change, with no threat to their job positions. About 85.7% of the Kazakhstani respondents of age over 40 (Figure 4) believe that the technological changes will not affect their job positions to the extent to lose their jobs and 64.3% of the Russian elderly respondents believe the same. The Chi-square p-value for Kazakhstan is  $p < 0.001$  and for Russia  $p = 0.009$ , and both are significant at  $p < .01$ . Our expectation was that the younger respondents (below the age of 40) would be more positive on that question, as they are more educated and flexible. Surprisingly, the respondents over 40 are less afraid of losing their jobs as a result of AI/robotisation: 85.7% vs 66.7% for Kazakhstan, and 64.3% vs 61.1% for Russia (Fig.4). A possible explanation is that the elderly respondents are more experienced and higher positioned, while the younger employees feel that they will be the first to be released, if the work positions for humans will be reduced.

H2 was also tested with a question about the effect of the implementation of AI/robotisation on the bank results, based on the expectations of the respondents as they interpret the effects of the technological changes. The results show a significant difference between the opinions of the two studied age groups (Figure 5). In Russia, 64.3% of the age group over 40 believe the technological changes will positively affect bank results, while only 50% of those of age below 40 share this view. The Chi-square p-value for Russia is .000481, and for Kazakhstan is  $< 0.00001$ , and the two results are significant at  $p < .01$ . As we see, there is 28.6% difference. In Kazakhstan, the difference is even much higher – 71.4% vs 33.3%.

Figure 5



In combination, the results from Figure 4 and Figure 5 **confirm Hypothesis 2**: the age matters in terms of understanding the effects of the technological changes in the banks. The expected risks of losing the job position (Figure 4) are manifested more in Russia, while the

*Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

Kazakhstani respondents do not expect reduction of their jobs or changes which can make them unfit for the job after the technological changes.

We also studied the opinion of the respondents about the effects of the implementation of AI and robotisation in the bank. The Kazakhstani respondents show a significantly higher positive impression of the results of that implementation (Figure 6). About 70% of those under 40 and 100% of the respondents over 40 years share the view that AI and robotisation help bank employees work faster and more efficiently. Interestingly, the differences are significant for the Kazakhstani respondents ( $p < 0.001$ ) but not for the Russian respondents ( $p = 0.189$ ).

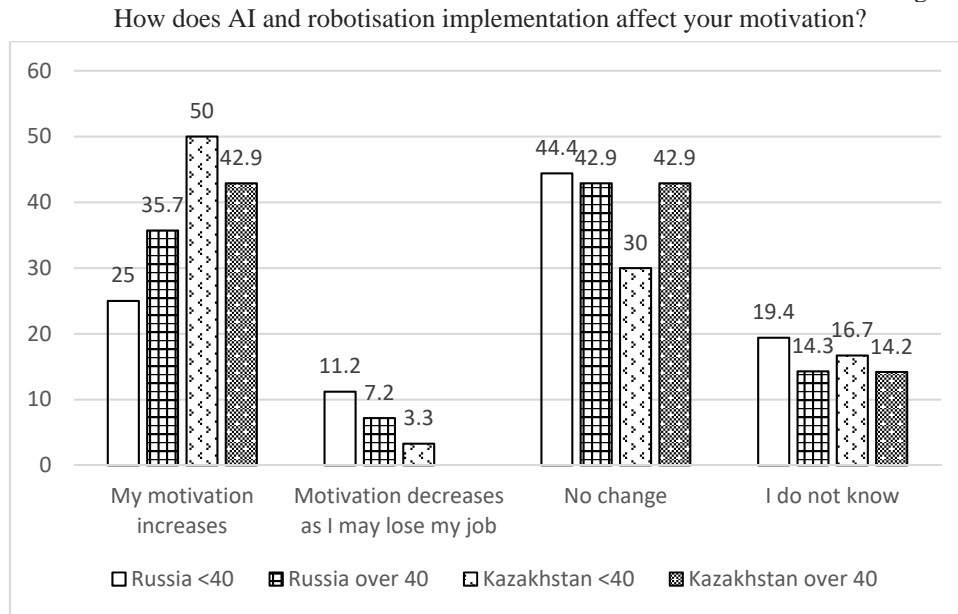
Figure 6

What is your impression of the effects of the implementation of AI and robotisation in the bank?



We also studied the effects of AI and robots' implementation on the motivation of the respondents (Figure 7). The Kazakhstani respondents show a higher positive effect for the two age groups compared to their Russian colleagues (50% vs 25% for those under 40, and 42.9% vs 35.7% for those over 40 years old). The Chi-square p-value for Kazakhstan ( $p = 0.248$ ) and for Russia ( $p = 0.303$ ) show that there are no statistically significant differences in the answers of the Kazakhstani and Russian respondents. We hypothesise that these significant differences could be explained with cross-cultural analysis, and this will be our task for the next stage of the research.

Figure 7



Thus, the analysis of the results of the research above confirmed Hypothesis 2. The age of respondents affects the interpretation of the effects of AI implementation on work motivation in the banking sector in Kazakhstan and Russia. Interestingly, the respondents above 40 are more convinced that the implementation of AI and robotisation in the banking sector leads to positive results (Figure 6).

### Effect of Covid-19 on Work Motivation

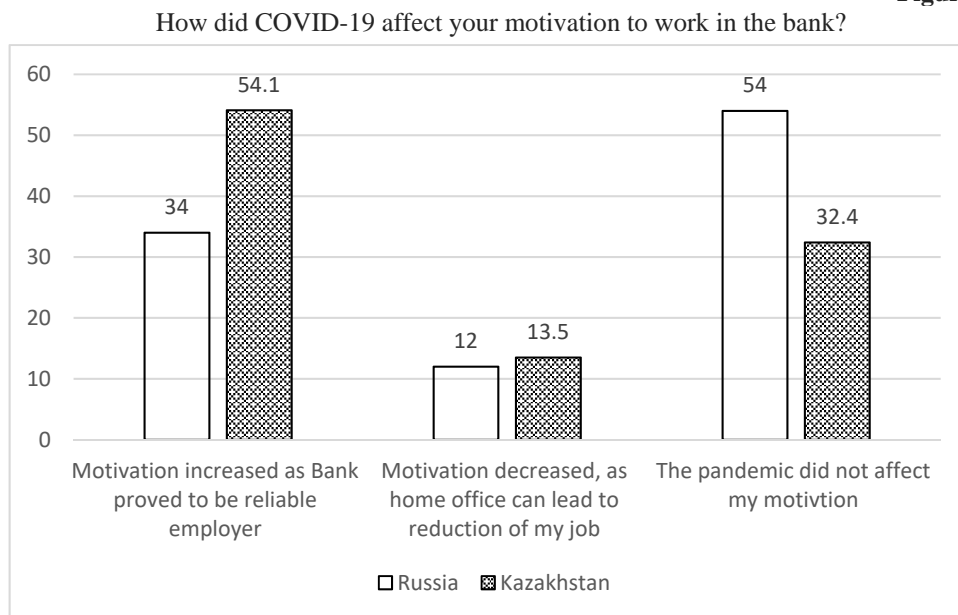
The effect of Covid-19 on work motivation was also studied. We did this with the aim to find out if the changes in the banking sector (e.g., AI, robotisation) were linked to the changes to home-office and do the bank employees report significant effects on their motivation. A survey of 2000 workers, for example, found that remote (home-office) work makes the employees better organised and feel more trusted by their organisations (Brown, 2021). Wang, Weaver & Revels (2021) discuss the issue of burnout as an effect of overload. Such an overload has not been reported in the case of banking, but as a factor which can affect work motivation, it is also a point to consider.

On the other side, it could be expected that the combination of home-office with AI implementation might produce negative effects based on the risk of losing a job in the bank. In our research, the Kazakhstani respondents report 54.1% increase in their work motivation as a result of protecting the job positions in the pandemic development, which lead to the many closing of businesses, vs 34% for their Russian colleagues. About 54% of the Russian

*Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

and 32.4% of the Kazakhstani respondents did not change their attitude. Together there is about 90% positive attitude, which is probably based on the feeling that the bank is a very reliable employer during the pandemic times (Figure 8). The p-value of the Chi-square test ( $p=0.009$ ), which is significant at  $p < .01$ , shows that there are no significant statistical differences between the answers of the respondents in the two countries.

**Figure 8**



## Conclusions

The dynamic changes in the banking industry as a result of the AI application and robotisation lead to substantial organisational changes and redefining the roles of bank employees. This, of course, has an impact on bank employees' work motivation.

The research was done based on the results from a non-probability survey of the opinions of bank employees in Russia and Kazakhstan, all of age above 18, conducted in the two countries in the period November 2020 – February 2021.

We stated 2 working hypotheses in our research, namely:

H1: The intensive implementation of AI in the banking sector positively affects the work motivation of bank employees in Russia and Kazakhstan.

H2: The age of the employees matters for appreciation of the AI implementation, as younger employees 18-40 are more positive compared to older employees beyond 40.

Hypothesis 1 is confirmed. While the high weight of the financial stimuli in the work motivation was expected, it was very important to find out that the non-material motivation

factors play significant importance as well (Figure 2). There is a big difference between the two countries regarding work satisfaction (94% for the Russian respondents), while the other factors are of similar importance, all except the bank's image being above 50%. This corresponds to the Equity theory (e.g., Mullins, Christy, 2007; Baldoni, 2005; Mangena, 2021).

Hypothesis 2 is confirmed regarding the difference in the opinions and motivation of the two age groups (under 40 and above 40 years of age), but not in regard to the appreciation of the changes by the two age groups. For example, it was expected that the younger respondents would consider more positive the AI implementation helping to improve bank operations, while it turned out that the elderly colleagues had a more positive attitude (Figure 6). There are differences between the age groups in the two countries regarding their personal motivation (Figure 7). The differences between Russia and Kazakhstan are significant and this will require a special cross-cultural analysis to be done to explain what causes them.

A similar point can be raised regarding the effect of Covid-19 on work motivation. There is a significant difference between the percent of increased motivation in Kazakhstan (54.1%) vs 34% in Russia (Figure 8). a cross-cultural analysis will be needed to explain the difference.

Altogether, the findings show that with the exception of the cases discussed above (Figure 6, 7 and 8), there are no significant statistical differences between the answers of the respondents in the two neighbouring countries. Most of them find the implementation of AI and robotisation as a positive factor, which either affects their work motivation positively, or they think it does not concern them at all (Figures 6 and 7). The effect of the pandemic is different in the two countries, as the Kazakhstani respondents declare a significantly higher increase in their work motivation as a result of valuing higher the importance of the bank as a stable employer in such difficult times, compared to the Russian respondents (Figure 8).

The sample size of respondents from the two countries is obviously not too big. Still, considering the p-values of Chi-square analysis, we can claim that the results of the survey have statistical value and an analysis of much larger samples will probably not differ much from the results shown above, e.g., to lead to significant statistical differences. We believe that the findings of this research can be used to improve work motivation management in the banking sector, as well as in other sectors of the economy, where the AI and robotisation implementation is taking place in the recent years.

In the future, the research has to include samples from other countries in Asia and possibly Europe and concentrate on finding if there are significant statistical differences based on the cultural factors.

## References

- Adams, J. S. (1963). Towards an understanding of inequity. *The Journal of Abnormal and Social Psychology*, 67(5), 422–436. <https://doi.org/10.1037/h0040968>.
- Baldoni, J. (2005), *Great Motivation Secrets of Great Leaders*, McGraw Hill.
- Baumann, N., Kazén, M., & Quirin, M. & S. L. Koole (2017). Why people do the things they do: Building on Julius Kuhl's contributions to the psychology of motivation and volition. Göttingen/Seattle: Hogrefe. Available at: [https://www.researchgate.net/profile/Nicola-Baumann-2/publication/318877017\\_How\\_do\\_we\\_know\\_if\\_you\\_know\\_yourself\\_Measures\\_causes\\_and\\_consequen](https://www.researchgate.net/profile/Nicola-Baumann-2/publication/318877017_How_do_we_know_if_you_know_yourself_Measures_causes_and_consequen)

Blagoev, V., Shustova, E., Protas, N. (2022). *Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

- ces\_of\_self-access/links/5984906caca27266ad9a219a/How-do-we-know-if-you-know-yourself-Measures-causes-and-consequences-of-self-access.pdf [Accessed 2 March 2021].
- Bernard, H. R. (2011). *Research Methods in Anthropology: Qualitative and Quantitative Approaches* (5th ed.). Lanham: AltaMira Press.
- Brown, J. (2021). Flexible working makes employees feel more trusted, poll finds. *People Management*, CIPD, 8 October, 101858 (peoplemanagement.co.uk)
- Bryman, A. & Bell, E. (2015). *Business Research Methods* (4th ed.). New York City: Oxford University Press.
- Burns, A.C. & Bush, R.F. (2014). *Marketing Research*, 7<sup>th</sup> ed., Pearson.
- Cherry, K. (2020), Differences of Extrinsic and Intrinsic Motivation, Available at: <https://www.verywellmind.com/differences-between-extrinsic-and-intrinsic-motivation-2795384>. [Accessed on 20.04.2021].
- Cherry, K. (2021). What Motivation Theory Can Tell Us About Human Behavior, Verywell Mind, Updated on April 17, 2021, Available at: <https://www.verywellmind.com/theories-of-motivation-2795720>. [Accessed on 10.05.2022].
- Cherry, K. (2022). Extrinsic vs Intrinsic Motivation: What's the Difference?, Verywell Mind, Updated on May 23, 2022, Available at: <https://www.verywellmind.com/differences-between-extrinsic-and-intrinsic-motivation-2795384>. [Accessed on 6.06.2022].
- Chiat, L. C., & Panatik, S. A. (2019). Perceptions of Employee Turnover Intention by Herzberg's Motivation-Hygiene Theory: A Systematic Literature Review. *Journal of Research in Psychology*, 1(2), 10-15. <https://doi.org/10.31580/jrp.v1i2.949>.
- Chopra, K. (2019). "Indian shopper motivation to use artificial intelligence: Generating Vroom's expectancy theory of motivation using grounded theory approach", *International Journal of Retail & Distribution Management*, Vol. 47 No. 3, pp. 331-347. <https://doi.org/10.1108/IJRDM-11-2018-0251>.
- Crowther, D. & Lancaster, G. (2012). *Research Methods*, Routledge, ISBN 1136368604, 9781136368608
- Deci, EL & Ryan, R.M. (1985). "The general causality orientations scale: Self-determination in personality", *Journal of research in personality*, Volume 19, Issue 2, June 1985, Pages 109-134.
- Dibb, S., Simkin, L., Pride, W. M. & Ferrell, O. C. (2016). *Marketing: Concepts and Strategies*, European Edition 5th Edition, Cengage Learning EMEA.
- Dittrich, J.E. and Carrell M.R. (1979). Organisational equity perceptions, employee job satisfaction, and departmental absence and turnover rates, *Organizational Behavior and Human Performance*, Volume 24, Issue 1, August 1979, Pages 29-40, [https://doi.org/10.1016/0030-5073\(79\)90013-8](https://doi.org/10.1016/0030-5073(79)90013-8).
- Ewen, R. B., Smith, P. C., & Hulin, C. L. (1966). An empirical test of the Herzberg two-factor theory. *Journal of Applied Psychology*, 50(6), 544-550. <https://doi.org/10.1037/h0024042>.
- Gawel, Joseph E. (1996), "Herzberg's Theory of Motivation and Maslow's Hierarchy of Needs," *Practical Assessment, Research, and Evaluation*: Vol. 5, Article 11. DOI: <https://doi.org/10.7275/31qy-ea53> Retrieved 10.03.2021 from: <https://scholarworks.umass.edu/pare/vol5/iss1/11>.
- Giancola, F.L. (2010), *Examining the Job Itself as a Source of Employee Motivation, Compensation & Benefits Review*, SAGE, December 30, 2010, Volume: 43 issue: 1, page(s): 23-29, <https://doi.org/10.1177/0886368710390493>.
- George, J. M., & Jones, G. R. (2012), *Understanding and Managing Organisational Behavior*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Herzberg, F., Mausner, B., Snyderman, & B.B. (1959), *The motivation to work*. New York: Wiley.
- Herzberg, F. (2003), *One more time: how do you motivate employees?* *The Harvard Business Review*, ISBN-13.978-1-4-4221-2599-1.
- Hofstede, G. (1991), *Cultures and Organisations: Software of the Mind*. McGraw-Hill.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010), *Cultures and Organisations: Software of the Mind* (3rd ed.). McGraw-Hill USA.
- House, R. J., & Wigdor, L. A. (1967). Herzberg's dual factor theory of job satisfaction and motivation: A review of the evidence and a criticism. *Journal of Personnel Psychology*, 20, 369-390.
- Huseman, R. C., Hatfield, J. D., & Miles, E. W. (1987). A new perspective on equity theory: The equity sensitivity construct. *The Academy of Management Review*, 12(2), 222-234. <https://doi.org/10.2307/258531>.
- Itri, J.N., Bruno, M.A., Lalwani, N., Munden, R.F. & Tappouni, R. (2019). The Incentive Dilemma: Intrinsic Motivation and Workplace Performance, *Journal of the American College of Radiology*, Volume 16, Issue 9, Part A, September 2019, Pages 1130-1131, Available at: <https://www.projectguru.in/measure-customer-satisfaction-loyalty/> [Accessed on 10.06.2022].
- Kuhl, J., Quirin, M., & Koole, S. (2020), *The Functional Architecture of Human Motivation: Personality Systems Interactions Theory*. In A. J. Elliot (Ed.), *Advances in Motivation Science* (Vol. 7). Cambridge: Elsevier



- (in press). [researchgate.net/profile/Markus-Quirin/publication/340829837\\_The\\_Functional\\_Architecture\\_of\\_Human\\_Motivation\\_Personality\\_Systems\\_Interactions\\_Theory/links/5ea02006299bf13079b20d48/The-Functional-Architecture-of-Human-Motivation-Personality-Systems-Interactions-Theory.pdf](https://www.researchgate.net/profile/Markus-Quirin/publication/340829837_The_Functional_Architecture_of_Human_Motivation_Personality_Systems_Interactions_Theory/links/5ea02006299bf13079b20d48/The-Functional-Architecture-of-Human-Motivation-Personality-Systems-Interactions-Theory.pdf) [Accessed on 6.3.2021].
- Kumar, N. (1998). *A Genesis of Behavioral Science*, Gyan Publishing House, ND, ISBN: 81-212-0566-2.
- Kuvaas B, Buch R, Weibel A, Dysvik A, Nerstad CGL (2017). Do intrinsic and extrinsic motivation relate differently to employee outcomes? *Journal of Economic Psychology*, 61, p.244-258. doi:10.1016/j.joep.2017.05.004.
- Lawler, E. (1970). Job attitudes and employee motivation: Theory, research, and practice. *Personnel Psychology*, 23(2), 223-237. [Stelloherzber.pdf](#).
- Locke, E. A., & Bryan, J. F. (1966). The effects of goal-setting, rule learning, and knowledge of score on performance. *American Journal of Psychology*.
- Locke, E. A., & Somers, R. L. (1987). "The effects of goal emphasis on performance on a complex task", *Journal of Management Studies*.
- Locke, E., & Latham, G. (2004). What should we do about motivation theory? Six recommendations for the twenty-first century. *Academy of Management Review*.
- Mac, B. and Sockel, H. (2001). A Confirmatory Factor Analysis of IS Employee Motivation and Retention. *Information & Management*, 38, 265-276.
- Maidani, E. A. (1991). Comparative study of Herzberg's two-factor theory of job satisfaction among public and private sectors, *Public Personnel Management*, 20 (4), 441 – 448.
- Mangena, D. (2021). Drive Theory Of Motivation Explained (With Examples), *Lifhack*, 16 August 2021, Available at: <https://www.lifhack.org/909486/drive-theory-of-motivation>. [Accessed on 6.06.2022].
- Minkov, M. (2013). *Cross-Cultural Analysis*, Sage Publications.
- Minkov, M., Blagoev, V., & Hofstede, G. (2013). The boundaries of culture: Do questions about societal norms reveal cultural differences? *Journal of Cross-Cultural Psychology*, 44(7), 1094–1106. <https://doi.org/10.1177/0022022112466942>.
- Minkov, M. (2017). "A revision of Hofstede's model of national culture: old evidence and new data from 56 countries", *Cross Cultural & Strategic Management*, Vol. 25 No. 2, pp. 231-256. <https://doi.org/10.1108/CCSM-03-2017-0033>.
- Minkov, M. (2018). "A revision of Hofstede's model of national culture: old evidence and new data from 56 countries", *Cross Cultural & Strategic Management*, Vol. 25 No. 2, pp. 231-256. <https://doi.org/10.1108/CCSM-03-2017-0033>.
- Minkov, M., Dutt, P., Schachner, P., Jandosova, J., Khassenbekov, Y., Morales, O. & Blagoev, V. (2019), "What would people do with their money if they were rich? A search for Hofstede dimensions across 52 countries", *Cross Cultural & Strategic Management*, Vol.26, Issue 1, ISSN: 2059-5794.
- Minkov, M., Kaasa, A. (2021). A Test of the Revised Minkov-Hofstede Model of Culture: Mirror Images of Subjective and Objective Culture across Nations and the 50 US States, *Cross-Cultural Research*, 55 (2-3), 230-281.
- Mullins, L. J., & Christy, G. (2011), *Essentials of Organisational Behaviour*. Prentice Hall.
- Munir, M. (2022). How can you improve intrinsic motivation? CIPHR, Available at: <https://www.ciphr.com/advice/how-can-you-improve-intrinsic-motivation/#:~:text=Intrinsic%20motivation%20involves%20employees%20achieving,turn%2C%20grant%20workers%20greater%20autonomy>. [Accessed on 10.06.2022].
- Oracle.com. (2021), *Retail Consumer Research – 2020 Report* | Oracle. [online] Available at: <https://www.oracle.com/industries/retail/research/consumer-research/> [Accessed on 18 March 2021].
- Robbins, SP (2003). *Organisational Behavior*, 10<sup>th</sup> ed., Upper Saddle River, N.J., Prentice Hall, ISBN: 0131202030
- Ryan, G. (2018). Introduction to positivism, interpretivism and critical theory. *Nurse Researcher*. 25. 14-20. 10.7748/nr.2018.e1466.
- Ryan, J.C. (2016). Old knowledge for new impacts: Equity theory and workforce nationalisation, *Journal of Business Research*, Volume 69, Issue 5, May 2016, p. 1587-1592, <https://doi.org/10.1016/j.jbusres>.
- Ryan R.M. & Deci, EL (2000). "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being", *American Psychologist*, 55(1):68-78, DOI: 10.1037/0003-066X.55.1.68.
- Saunders, M., Lewis, P., Thornhill, A., (2009). *Research Methods for Business Students 5th Edition*, Retrieved on 10<sup>th</sup> April, 2021 at (1) (PDF) *Research Methods for Business Students 5th Edition* | Marco Gull – Academia.edu.
- Shmailan, A.S.B. (2015). *Issues in Business Management and Economics Vol.4 (1)*, pp. 1-8, January 2016 Available online at <http://www.journalissues.org/IBME/> <http://dx.doi.org/10.15739/IBME.16.001>.

*Blagoev, V., Shustova, E., Protas, N. (2022). Work Motivation of Bank Employees in Case of Implementing AI and Robots in the Bank Activities: Comparative Analysis of Russia and Kazakhstan.*

---

- Simons, T. & C.A. Enz (2006), Motivating hotel employees, CORNELL Hotel and Restaurant Administration Quarterly, Retrieved on 20.09.2021 from [https://ecommons.cornell.edu/bitstream/handle/1813/71937/Enz75\\_Motivating\\_hotel\\_employees.pdf?sequence=1&isAllowed=y](https://ecommons.cornell.edu/bitstream/handle/1813/71937/Enz75_Motivating_hotel_employees.pdf?sequence=1&isAllowed=y).
- Song, L., Wang, Y., & Wei, J. (2007), "Revisiting motivation preference within the Chinese context: An empirical study". Chinese Management Studies, 1(1), 25-41. doi:10.1108/17506140710735445.
- Sprigghr (2020). Extrinsic & Intrinsic Motivation Examples – What's the Difference? <https://sprigghr.com/blog/hr-professionals/extrinsic-intrinsic-motivation-examples-whats-the-difference/>.
- Sun, J., Yoo, S., Park, J., & Hayati, B. (2019). Indulgence versus restraint: The moderating role of cultural differences on the relationship between corporate social performance and corporate financial performance. Journal of Global Marketing, 32(2), 83–92. <https://doi.org/10.1080/08911762.2018.1464236>.
- Tan, T. H. & Waheed, A. (2011). Herzberg's motivation-hygiene theory and job satisfaction in the Malaysian retail sector: the mediating effect of love of money, Asian Academy of Management Journal, Vol. 16, No. 1 (15 January 2011): pp. 73-94.
- Trochim, W.M.K. (2006), Research methods knowledge base. Retrieved on 10.04. 2021 from <http://www.socialresearchmethods.net>
- Vroom, V. (1964), Work and Motivation, John Wiley.
- Wang, S.S., Weaver, J.S. & Revels, J.W. (2021). Provocative thoughts from COVID-19: physician-centric solutions to physician burnout, Clinical imaging, Vol.78, October 2021, p. 184-186.
- Wilcove, G. L. (1978), "The ERG model: Expansion and application to Navy personnel". Journal of Vocational Behavior, 13(3), 305-316. doi: 10.1016/0001-8791(78)90057-X, ELJ\_Vol5No1\_Caulton\_pp2-8.pdf.
- Woolley, K., & Fishbach, A. (2018). It's about time: Earlier rewards increase intrinsic motivation. Journal of Personality and Social Psychology, 114(6), 877–890. <https://doi.org/10.1037/pspa0000116>.
- Young, M; Varpio, L.; Uijtdehaage, S.; Paradis, E., (2020), The Spectrum of Inductive and Deductive Research Approaches Using Quantitative and Qualitative Data, Academic Medicine: July 2020 – Volume 95 – Issue 7 – p 1122doi: 10.1097/ACM.0000000000003101.