

# Job Rotation and Work Motivation: Will it improve Employee Performance?

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**Abstract:** As part of job design program, job rotation is more focused on creating new atmosphere for employees. The employees have diverse abilities as well as skills which impact on motivation for doing their duty. The research was conducted at a cigarette company that developed machine-rolled kretek cigarette technology. The company has rotated employee jobs in production and packaging. The research was conducted by conducting interviews and observations in the company. The results showed that job rotation did not have a significant effect on employee performance. However, job rotation has a positive and significant effect on work motivation. Work motivation also has a positive and significant effect on employee performance. The managerial implication of the study showed that employees' performance will improve with the good job rotation preparation. Information about the job rotation should be given in the beginning in order to provide employees' opportunities for developing their passion as well as build effective two way communication.

**Keywords:** job rotation, work motivation, employee performance

## 1. Introduction

A good organization that grows and develops will focus on human resources to carry out their functions optimally, especially in dealing with the dynamics of environmental changes that occur (Martínez-León, Olmedo-Cifuentes, & Ramón-Llorens, 2018). (Martínez-León, Olmedo-Cifuentes, & Ramón-Llorens, 2018) states that the technical, theoretical, conceptual, and moral capabilities of organizational or company actors at all levels of work are needed. The company must be able to prepare its human resources to be able to follow developments and technological demands in accordance with the wishes needed by the company. Human resources play the most important and potential role for the

success of a company because human resources are the determinants of company activities both planning, organizing, and making decisions (Qamari, Dewayani, & Ferdinand, 2019). The company's ability to manage its resources will greatly determine

the company's success, because it contributes towards achieving organizational goals effectively and efficiently. Employees who have good performance will greatly support the smooth implementation of their duties and responsibilities. Employees can perform well if they have high motivation so that they can do their job better, compared to employees who are not motivated to work. Motivation is something that cannot be ignored because employees' knowledge, skills, expertise, and commitment must be activated before effective performance can be achieved in an organization (Ejere, 2010).

A decrease in employee motivation and commitment to work quality can be the main cause of decreased productivity. The thing that needs to be considered in dealing with this problem is the flexibility in work management, which can help to understand employees' abilities and recognize the diversity of needs that can motivate them. The application of work flexibility will keep employees motivated and they will feel attached to the work they are doing. They will assume that all the challenges they face in

their work will help them achieve their goals, their absenteeism rate will decrease, and they will show good performance (Hitka et al., 2019; Hitka et al., 2019)

Because of the close relationship between motivation and performance, companies will take various ways in order to improve employee performance, for example by providing motivation to these employees. One way to increase employee motivation is to do job rotation. This job rotation is part of a work design program that is focused on work design to create a way in which employees can work without feeling bored due to certain repetitive tasks (Maleki, 2019). Job rotation creates job diversity for employees and allows them to change jobs periodically, by moving them from one task to another. With job rotation, employees can use their interests and skills at work, especially in determining the right job position. Implementing job rotations in groups is a good way to educate employees and to foster their development in learning (Jamal, 2019).

Eriksson and Ortega (2006) one of the advantages of job rotation is its ability to increase work motivation. Employees who are rotated will prefer to perform various types of work than they are only specialized in handling one specific job. With their increasing interest in carrying out the work and tasks assigned to them, this will have a positive impact on performance.

This research was conducted in the cigarette industry which develops machine-rolled kretek cigarette technology. Technological developments encourage companies to modernize their operations. This certainly encourages the company to rearrange the composition of its employees. Job rotation is an alternative solution. Through job rotation, employees will be able to have increased and equal skills (Digiesi, Facchini, Mossa, & Mummolo, 2018). A part from that, the company also has the flexibility and conduciveness. This is because all employees have had the same duties and responsibilities.

Eriksson and Ortega (2006) have also argued that job rotation is a natural thing in the company. However, in reality, pros and cons

often arise when the job rotation will be implemented. This is certainly interesting to research by looking at employee motivation when the rotation is carried out.

## 2.Literature Review and Hypotheses

### 2.1. Job Rotation and Work Motivation

Job rotation is the process of periodically moving individuals from one work role to another, which is known as a technique for maximizing organizational efficiency and effectiveness (Digiesi et al., 2018)(Digiesi et al., 2018). Rotations are generally carried out for a certain period of time after the recruitment of employees for the purpose of orientation and proper job placement (Yu & Zhang, 2020).

Santos, da Silva, Baldassarre, and de Magalhães (2017) conveyed that the advantages of job rotation will be able to reduce boredom, increase motivation through making variations to employee activities, and help employees better understand how their work contributes to the organization. In addition, this rotation can provide indirect benefits for the organization itself (Rodriguez & Barrero, 2017). The benefits that can be obtained include an increase in employee skills so that it gives management more flexibility in planning jobs, adapting to changes, and filling vacancies. A part from the advantages that have been described above, this job rotation also has its drawbacks. Training costs can be increased and productivity reduced by moving a worker to a new position when efficiency at the previous job results in organizational savings. Job rotation also increases distraction as work group members have to adjust to new hires. In addition, supervisors should spend more time answering questions and supervising the work of employees who have recently rotated.

Job rotation is a form of career development, which is usually applied to employees who are still relatively new compared to employees who have been in a company for a long time. Company executives usually use rotations to find good employees and motivate their performance, or they see a benefit from the rotation of

employees who rotate compared to employees who do not rotate (Yu & Zhang, 2020).

However, Santos et al. (2017) stated that job rotation in addition to providing some added value can also cause certain losses. If job rotation is not designed properly, it can increase stress on employees. The implementation of this job rotation can then cause chaos in the work group (Rodriguez & Barrero, 2017). Dhanraj and Parumasur (2014) also added that the implementation of job rotation can have a negative impact on job satisfaction and motivation. The existence of rotation makes it difficult for employees to develop special skills and they do not have enough time in one position to accept job challenges. In addition, job rotation can also reduce productivity and increase workload both in divisions that are left by employees and in new divisions.

From the results of research conducted by (Rodriguez & Barrero, 2017), the application of job rotation does not increase work motivation both in companies with employees who have long worked, and in companies that have a flat organizational hierarchy and the possibility of a small promotion. While (Dickhout, MacLean, & Dickerson, 2018) stated that the implementation of job rotation can lead to several problems such as an increase in workload and a decrease in productivity for rotating employees and other employees. This disrupts the workflow process and relies on short-term solutions to fix existing problems. Another problem that may arise with implementing rotation relates to the time it takes for employees to learn a new job, and the mistakes that employees may make when learning a new job. Based on the description above, hypothesis one can be formulated as follows:

$H_1$  : *Job rotation has a positive effect on work motivation*

## **2.2 Work Motivation and Employee Performance**

There are many reasons for employees to want to work. Ju (2020) states that through motivation then intensity, direction, and persistence of an individual to achieve his

goals will be easily achieved. There are three aspects related to motivation, namely intensity, direction and persistence (Ngai, Cheung, Yuan, & Lin, 2016; Strauss, Parker, & O'Shea, 2017; Taguchi, 2015). Through intensity, a person will try harder. High intensity can lead to better work performance. Meanwhile, persistence is more related to a person's ability to maintain his business. Employees who have work motivation will be able to survive better in achieving their goals (Palm, Seubert, & Glaser, 2019).

Fugar (2007) argued that according to motivator-hygiene theory. Employee working conditions are strongly influenced by satisfaction and dissatisfaction factors. Employees will feel satisfied if they are able to achieve, there is recognition of themselves, have a job that is attractive to them, get responsibility, and have the opportunity to develop their careers (Kim, 2006). But on the other side Manolopoulos (2008) stated that there are several factors that can cause employee dissatisfaction, including company policies that are deemed to be detrimental to him, inappropriate supervision, uncomfortable working conditions, inappropriate wages and unsupportive places. Herzberg emphasizes the factors that are related to the work itself or with the results that result from it (such as promotion opportunities, opportunities for self-development, recognition, responsibility, and achievement). These are characteristics that individuals find intrinsically useful (Robbins & Judge, 2016).

Many studies on motivation state that a person's motivation is strongly influenced by three basic needs, namely need for achievement, need for power, and need for affiliation (Hoffarth, 2020; Knauss et al., 2020; McClelland, 1965). Basically, everyone has their own basic needs and motivations that drive them to behave. These motives describe potential behavior and influence a person's behavior only when the environmental conditions and situation conditions are appropriate. Each motive is directed to fulfill the satisfaction desired by each individual (Chai, Teoh, Razaob, &

Kadar, 2017). Motivation to carry out a certain task also depends on the suitability of the award that has been given for carrying out a similar task (Palm et al., 2019). Motivation is also influenced by the beliefs believed by the individual, through which through direct effort, specific targets can be realized. This can be expressed as Effort (E) which will affect Performance (P) which will later affect Outcome (O). The success of the performance in carrying out a job will affect the desired output. Research shows that the higher the ratio of a person's EP and PO scores, the greater the motivation that that person has. In other words, the more someone wants the results they want to achieve, the greater the effort shown and the higher the resulting performance (Ryan & Berbegal-Mirabent, 2016). Some of the results of research conducted by (Chai et al., 2017; Ju, 2020; Strauss et al., 2017) shows a positive influence of work motivation on performance. Based on the description above, two hypotheses can be formulated as follows:

*H<sub>2</sub> : Work motivation has a positive effect on employee performance*

### 2.3 Job Rotation and Employee Performance

Job rotation enables employees to develop their relationships, skills and knowledge (Leider, Boschman, Frings-Dresen, & van der Molen, 2015). Various suspected problems that arise have been able to be resolved by themselves after the job rotation is carried out. This condition will certainly create a more comfortable and calm working atmosphere, so that employees are more motivated (Linggiallo, Riadi, Hariyadi, & Adhimursandi, 2021).

Performance is a combination of ability and motivation functions (Jabeen & Rahim, 2021). Through both, it can be seen the differences in the productivity of the employees. Employee abilities are very important for organizational development (Ghobadi & D'Ambra, 2013). The real ability of employees is a combination of intelligence, training and experience so far (Fong, Men, Luo, & Jia, 2018).

So that in the end, employee performance is also influenced by motivation (Borst, Kruijen, Lako, & de Vries, 2019). The characteristic that distinguishes the behavior of a motivated person is the orientation of the goals he has set. Motivation provides an energy boost and then dictates the behavior to act and achieve some predetermined goal.

The results of further research regarding job rotation and performance are also indicated by (Digiesi et al., 2018; Kaymaz, 2010; Maleki, 2019). According to his research, it shows that job rotation can motivate employees to carry out their jobs. There is a positive influence on employees after job rotation (Michalos, Makris, & Chryssolouris, 2013; Moussavi, Zare, Mahdjoub, & Grunder, 2019). Based on the description above, the following three hypotheses can be formulated:

*H<sub>3</sub>: Job rotation matters positive on employee performance*

*H<sub>4</sub>: Work Motivation mediates the effect of Work Rotation on Performance*

### 3. Research methods

This research was conducted at a cigarette company that develops machine-rolled kretek cigarette technology. The data used are polymer data. The sample of respondents in this study were employees in the production and packaging section who had experienced job rotation. By using the Structural Equation Model analysis, the number of samples used was 130 respondents. Given that not many employees have done job rotation.

The research model used in this study is shown in Figure 1.

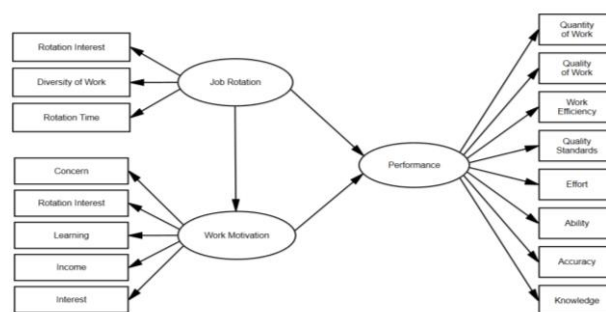


Figure 1. Conceptual Model

### 4. Results

The results showed that standardized Loading Factor ( $\lambda$ ) each indicator and construct in the structural model the effect of job rotation and work motivation on performance can be seen in Table 1

Table 1: Standardized Estimates of Full Structural Model

			Estimate	SE	CR	P
Motivation	<	Rotation	0.662	0.186	3.67	**
Performance	<	Rotation	0.256	0.134	1.91	0.055
Performance	<	Motivation	0.613	0.146	4.18	**
Rotation Interest	<	Rotation	1			
Diversity of Work	<	Rotation	1.116	0.231	4.82	**
Rotation Time	<	Rotation	1.288	0.288	4.48	**
Interest	<	Motivation	1			
Income	<	Motivation	1.186	0.180	6.58	**
Learning	<	Motivation	0.912	0.158	5.76	**
Rotation Interest	<	Motivation	0.600	0.162	3.70	**
Concern	<	Motivation	0.880	0.179	4.92	**
Quantity of Work	<	Performance	1			
Quality of Work	<	Performance	1.196	0.165	7.23	**
Work Efficiency	<	Performance	1.147	0.162	7.09	**
Quality Standards	<	Performance	0.517	0.162	3.18	0.001
Effort	<	Performance	0.560	0.153	3.66	**

	--	mance	9	16	48	*
	-			3	8	
Ability	<	Perfor	0.870	0.154	5.63	**
	--	mance		4	4	*
	-					
Accuracy	<	Perfor	0.828	0.158	5.22	**
	--	mance		8	7	*
	-					
Knowledge	<	Perfor	0.912	0.170	5.36	**
	--	mance		0	8	*
	-					

Table 1 showed the direct effect and the indirect effect of the job rotation variable on the performance variable. The effect of the job rotation variable on the performance variable is 0.256 with a significance of 0.55 (positive and not significant at 95% confidence interval). While the indirect effect is the multiplication of the influence of the job rotation variable on the Performance variable and the influence of the Work Motivation variable on the Performance variable or in the table above is  $0.662 \times 0.613 = 0.406$ . Because the indirect effect is greater than the direct effect, it can be said that there is a mediating role in this model, or in other words, work motivation is an intervening/moderating variable on the relationship between job rotation and performance.

The critical value of the mediating function can be calculated by dividing the indirect effect by the standard error of the mediation function  $(0.662 \times 0.613) / (0.180 \times 0.146) = 15.442$ .

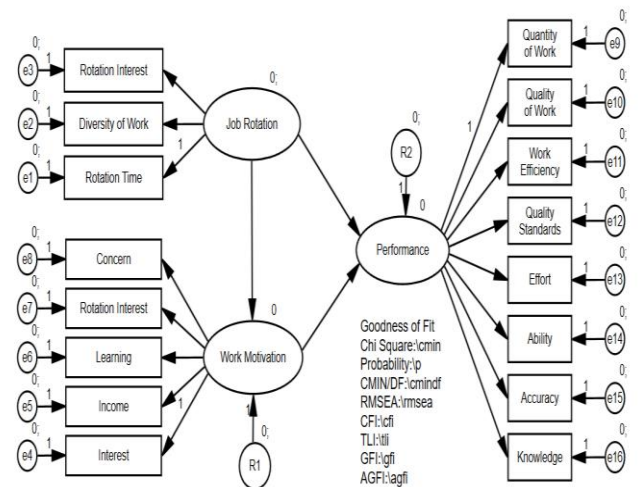


Figure 2. Full Model of Relationship between Job rotation, Work Motivation and Performance

Model suitability test (goodness of fit) structural model effect of job rotation and work motivation on performance can be seen in Table 2.

Table 2. Goodness of Fit Indices Structural Model Effect of Job Rotation and Work Motivation on Performance

Goodness of Fit	Cut-off Value	Test results
X <sup>2</sup> - Chi Square	Expected small	185,027
Sig - Probability	≤ 0.05	0.000
CMIN/DF	≤ 2	1,835
RMSEA	≤ 0.08	0.075
TLI	≥ 0.90	.856
NFI	≥ 0.90	.829
GFI	≥ 0.90	-
AGFI	≥ 0.90	-

The results of calculation and evaluation of goodness of fit indices indicate that the model developed has a good and marginal degree of suitability.

Moreover, based on the results of the Full Structural Model test effect of job rotation and work motivation on performance obtained the Estimate values as seen in Table 3.

Table 3: Summary of Structural Model Testing and Moderation Models

		Estimate	SE	CR	P	Information
Motivation	< - - - - -	0.662	0.180	3,676	**	Positive Significance
Performance	< - - - - -	0.256	0.134	1,916	0.055	Positive Not Significant
Performance	< - - - - -	0.613	0.146	4,187	**	Positive Significance
Moderation of Work Motivation on the Effect of Job Rotation on Performance	Rotation → Motivation → Performance	0.406	0.026	15.442	**	Full Mediate

Hypothesis 1 states that job rotation has a positive effect on work motivation. Based on the results of the analysis in the table above, it can be proven that Job Rotation has a positive influence on work motivation of 0.662 with a Critical Ratio (C.R) of 3.676 with a significance value (pvalue) of 0.000. Thus hypothesis 1 which states that job rotation has a positive effect on work motivation is statistically accepted. Job rotation has a positive and significant influence on work motivation. At a certain level, the greater the opportunity given to employees to obtain job rotation, the greater the employee's work motivation.

Hypothesis 2 states that work motivation has a positive effect on performance. Based on the results of the analysis in the table above, it can be proven that work motivation has a positive effect on performance of 0.613 with a Critical Ratio of 4.187 with a significance value (pvalue) of 0.000. Thus hypothesis 2 which states that work motivation has a positive effect on work motivation is statistically accepted. Work motivation has a positive and significant effect on performance. The higher the work motivation shown by the employee, the better the employee's performance is.

Hypothesis 3 states that job rotation has a positive effect on performance. Based on the results of the analysis in the table above, it can be seen that Job Rotation has a positive effect on performance of 0.256 with a Critical Ratio of 1.916 with a significance value (p-value) of 0.055. Thus hypothesis 3 which states that work motivation has a positive effect on work motivation is statistically not supported by the 95% confidence interval. However, work motivation has a positive and significant effect on the 95% confidence interval. Job rotation has a positive effect on performance but not significant at the 95% confidence interval with a 5% degree of error, however job rotation has a positive and significant effect on the 90% degree of confidence and the degree of error of 10%. Job rotation at a certain level can increase employee performance.

Hypothesis 4 states that work motivation mediates the effect of job rotation on

performance. Based on the results of the analysis in the table above, it can be concluded that work motivation mediates the effect of work rotation which is known from the indirect effect which is the multiplication of the influence of the job rotation variable on the performance variable and the influence of the work motivation variable on the performance variable or in the table above is  $0.662 \times 0.613 = 0.406$ , with a critical value of 15.442 with a pvalue of 0.000. Because the indirect effect is greater than the direct effect, it can be said that there is a mediating role in this model, or in other words, work motivation is an moderating variable on the relationship between job rotation and performance. Work motivation mediates the effect of job rotation on performance with full mediated, because the direct effect of job rotation on performance is not significant. If the direct effect of job rotation on Performance is significant, then the mediation is called semi mediated.

## 6. Conclusion

The findings show that there needs to be synchronization and harmonization in making decisions. Especially the decision when it comes to job rotation. Although the concept of job rotation is able to contribute to improving employee performance, everyone has different passions, knowledge and skills. Employees at a certain level will find it difficult when they have to learn to adjust to new things. It can even have an impact on employee performance when the rotation is done.

Therefore, in order to improve employee performance, research results indicate that work motivation is necessary. This motivation is very important, because organizations deal with employees who have different backgrounds and knowledge. Through a process of good work motivation will produce a good employee performance output as well. In the work motivation process, the organization is able to give confidence to employees that job rotation will not affect the income they will receive. So that employees feel comfortable and calm while working, even though there is a job rotation. Likewise with the understanding that there is a learning

process that will be obtained by employees when rotating. The understanding meant more certainly leads to self-development after getting the opportunity in his job rotation.

However, this research still has limitations, because it is still being tested on operational employees in the production and packaging section. So there needs to be further research with a more developed model and more varied levels of respondents. So as to be able to produce a better concept.

## References

- [1]. Borst, R. T., Kruyen, P. M., Lako, C. J., & de Vries, M. S. (2019). The Attitudinal, Behavioral, and Performance Outcomes of Work Engagement: A Comparative Meta-Analysis Across the Public, Semipublic, and Private Sector. *Review of Public Personnel Administration*, 40(4), 613-640.
- [2]. Chai, S. C., Teoh, R. F., Razaob, N. A., & Kadar, M. (2017). Work Motivation among Occupational Therapy Graduates in Malaysia. *Hong Kong J Occup Ther*, 30(1), 42-48.
- [3]. Dhanraj, D., & Parumasur, S. B. (2014). Employee perceptions of job characteristics and challenges of job rotation. *Corporate Ownership and Control*, 12(1).
- [4]. Dickhout, K. D., MacLean, K. F., & Dickerson, C. R. (2018). The influence of job rotation and task order on muscle responses in females. *International Journal of Industrial Ergonomics*, 68, 15-24.
- [5]. Digiesi, S. D., Facchini, F., Mossa, G., & Mummolo, G. (2018). Minimizing and Balancing Ergonomic Risk of Workers of an Assembly Line by Job Rotation: a MINLP Model. *International Journal of Industrial*

- Engineering and Management*, 9(3), 129-138.
- [6]. Ejere, E. I. (2010). A note on job performance and motivational techniques. *Interdisciplinary Journal Of Contemporary Research In Business*.
- [7]. Eriksson, T., & Ortega, J. (2006). The adoption of job rotation: Testing the theories. *Ilr Review*, 59(4), 653-666.
- [8]. Fong, P. S. W., Men, C., Luo, J., & Jia, R. (2018). Knowledge hiding and team creativity: the contingent role of task interdependence. *Management Decision*, 56(2), 329-343.
- [9]. Fugar, F. D. (2007). Frederick Herzberg's motivation-hygiene theory revisited: The concept and its applicability to clergy (A study of fulltime stipendiary clergy of the global evangelical church, Ghana. *Journal of Science and Technology (Ghana)*, 27(1), 119-130.
- [10]. Ghobadi, S., & D'Ambra, J. (2013). Modeling High-Quality Knowledge Sharing in cross-functional software development teams. *Information Processing & Management*, 49(1), 138-157.
- [11]. Hitka, M., Kucharčíková, A., Štarchoň, P., Balážová, Ž., Lukáč, M., & Stacho, Z. (2019). Knowledge and Human Capital as Sustainable Competitive Advantage in Human Resource Management. *Sustainability*, 11(18), 4985.
- [12]. Hoffarth, M. J. (2020). From achievement to power: David C. McClelland, McBer & Company, and the business of the Thematic Apperception Test (TAT), 1962–1985. *Journal of the History of the Behavioral Sciences*, 56(3), 153-168.
- [13]. Jabeen, R., & Rahim, N. (2021). Exploring the effects of despotic leadership on employee engagement, employee trust and task performance. *Management Science Letters*, 223-232.
- [14]. Jamal, A. A. M. (2019). Work Turnover and Its Impact on the Quality of Productivity in the Industrial Sector. *Research in World Economy*, 10(4).
- [15]. Ju, C. (2020). Work motivation of safety professionals: A person-centred approach. *Safety Science*, 127.
- [16]. Kaymaz, K. (2010). The effects of job rotation practices on motivation: A research on managers in the automotive organizations. *Business and economics research journal*, 1(3), 69-85.
- [17]. Kim, D. (2006). Employee Motivation: " Just Ask Your Employees".
- [18]. Knauss, Z. T., Filipovic, M., Smith, K. A., Queener, M. M., Lubera, J. A., Bolden-Hall, N. M., . . . Cromwell, H. C. (2020). Effort-reward balance and work motivation in rats: Effects of context and order of experience. *Behav Processes*, 104239.
- [19]. Leider, P. C., Boschman, J. S., Frings-Dresen, M. H., & van der Molen, H. F. (2015). When is job rotation perceived useful and easy to use to prevent work-related musculoskeletal complaints? *Appl Ergon*, 51, 205-210.
- [20]. Linggiallo, H. D., Riadi, S. S., Hariyadi, S., & Adhimursandi, D. (2021). The effect of predictor variables on employee engagement and organizational commitment and employee performance. *Management Science Letters*, 31-40.
- [21]. Maleki, M. (2019). Solving a multi-objective model of job rotation minimizing the chemical exposure and cost by particle swarm optimization. *International Journal of Engineering Business Management*, 11.
- [22]. Manolopoulos, D. (2008). An evaluation of employee motivation in the extended public sector in Greece. *Employee Relations*.
- [23]. Martínez-León, I. M., Olmedo-Cifuentes, I., & Ramón-Llorens, M. C. (2018). Work, personal and cultural



- factors in engineers' management of their career satisfaction. *Journal of Engineering and Technology Management*, 47, 22-36.
- [24]. McClelland, D. C. (1965). Toward a theory of motive acquisition. *American psychologist*, 20(5), 321.
- [25]. Michalos, G., Makris, S., & Chryssolouris, G. (2013). The effect of job rotation during assembly on the quality of final product. *CIRP Journal of Manufacturing Science and Technology*, 6(3), 187-197.
- [26]. Moussavi, S. E., Zare, M., Mahdjoub, M., & Grunder, O. (2019). Balancing high operator's workload through a new job rotation approach: Application to an automotive assembly line. *International Journal of Industrial Ergonomics*, 71, 136-144.
- [27]. Ngai, S. S.-y., Cheung, C.-k., Yuan, R., & Lin, S. (2016). Work motivation of unemployed youths: Moderating effects of financial dependence on parents. *Children and Youth Services Review*, 71, 157-165.
- [28]. Palm, E., Seubert, C., & Glaser, J. (2019). Understanding Employee Motivation for Work-to-Nonwork Integration Behavior: a Reasoned Action Approach. *J Bus Psychol*, 35(5), 683-696.
- [29]. Qamari, I. N., Dewayani, J., & Ferdinand, A. T. (2019). Strategic Human Resources Roles and Knowledge Sharing: How do enhancing Organizational Innovation? *QUALITY Access to Success*, 20(168), 8.
- [30]. Robbins, S. P., & Judge, T. A. (2016). *Organizational Behavior* 17th Edition. England. In: Pearson Education Limited.
- [31]. Rodriguez, A. C., & Barrero, L. H. (2017). Job rotation: Effects on muscular activity variability. *Appl Ergon*, 60, 83-92.
- [32]. Ryan, J. C., & Berbegal-Mirabent, J. (2016). Motivational recipes and research performance: A fuzzy set analysis of the motivational profile of high performing research scientists. *Journal of Business Research*, 69(11), 5299-5304.
- [33]. Santos, R. E. S., da Silva, F. Q. B., Baldassarre, M. T., & de Magalhães, C. V. C. (2017). Benefits and limitations of project-to-project job rotation in software organizations: A synthesis of evidence. *Information and Software Technology*, 89, 78-96.
- [34]. Strauss, K., Parker, S. K., & O'Shea, D. (2017). When does proactivity have a cost? Motivation at work moderates the effects of proactive work behavior on employee job strain. *Journal of Vocational Behavior*, 100, 15-26.
- [35]. Taguchi, Y. (2015). Factors Forming Work Motivation in Japan. *Procedia Manufacturing*, 3, 717-722. doi:10.1016/j.promfg.2015.07.314
- [36]. Yu, J., & Zhang, J. (2020). A market design approach to job rotation. *Games and Economic Behavior*, 120, 180-192.