

The Effects of Job Rotation Practices on Motivation: A Research on Managers in the Automotive Organizations

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Abstract: Job rotation is a job design approach widely used by many companies at various hierarchical levels. By adopting the human structure of the company with technical processes, job rotation is the consequence of effort and determination. In Turkey it can be said that it is companies with a majority of foreign capital who have successfully applied this technique with the aim of *improving workers performance*. To reach this goal the first condition is to ensure that job rotation practices generate the expected effect on an employee's *motivation*. From this angle, decreasing monotony, preparing the employee for management, defining the most productive job/position and increasing the level of knowledge and skills are the functions by which the said motivational effect will be achieved. Consequently this study aimed to test the established hypothesis expressed as '*job rotation practices have a positive effect on motivation*'. In this context, the research results verified that job rotation applications effect motivation.

Keywords: Job design, Job rotation, Motivation, Employee performance, Job enlargement

JEL Classification: M50, M54

İş Rotasyonu Uygulamalarının Motivasyon Üzerine Etkileri: Otomotiv İşletmelerinde Görev Yapan Yöneticiler Üzerinde Bir Araştırma

Özet: İş rotasyonu, birçok firmanın çeşitli hiyerarşik seviyelerde uyguladığı yaygın bir iş dizaynı yaklaşımıdır. Rotasyon, firmaların beşeri yapıyı, teknik süreçler ile uyumlaştırma çabasının ve kararlılığının bir sonucudur. Türkiye'de çoğunlukla yabancı sermaye ağırlıklı firmaların başarı sağladığı tekniğin, *çalışan performansını artırma* amacına hizmet ettiğini söylemek mümkündür. Bu amaca ulaşabilmenin ilk koşulu, iş rotasyonu uygulamalarının öncelikle çalışan *motivasyonunda* beklenen etkiyi yaratmasını temin etmektir. Bu açıdan rotasyon, monotonluğu azaltma, çalışanı yöneticiliğe hazırlama, en yüksek verimi sağlayacak işi-pozisyonu tespit etme, sosyal iletişimi artırma, bilgi-beceri seviyesini yükseltme fonksiyonları aracılığı ile sözkonusu motivasyonel etkiyi sağlayacaktır. Dolayısıyla bu makale, "*iş rotasyonu uygulamaları, motivasyonu olumlu yönde etkilemektedir.*" biçimindeki yerleşik kuramsal söylemi test etmeyi amaçlamaktadır. Bu bağlamda, araştırma verileri iş rotasyonu uygulamalarının motivasyon üzerinde etkili olduğu sonucunu doğrulamaktadır.

Anahtar Kelimeler: İş dizaynı, İş rotasyonu, Motivasyon, Çalışan performansı, İş genişletme

JEL Sınıflandırması: M50, M54

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1. Introduction

At work, in a human-focussed approach, the human oriented process designs have shown its importance as much as the technical issues, from a productivity aspect. Several human-focussed applications such as increasing motivation at work, improving workers' physical working conditions, obtaining job security, and increasing job satisfaction, increasing quality and productivity, decreasing costs to become competitive are increasing its importance by the day (O'Connor et al, 1980, p. 250).

Within the natural development process of work, maybe human-centred problems exceed technical problems and even the cost of investment in personal has gone beyond the point of technical investment. Job analysis, training, performance measurement, re-organisation projects, re-engineering studies and especially applications related to job design which support this approach have an important place among human resources applications (Campion et al, 2005, p. 368).

Job design related applications began to take shape with a scientific management approach in the 1900s. The study of management scientists such as Taylor and Gilbreth on the subject of job design became the foundation stone for scientific management. Models related to job design able to be classified as job rotation, job enlargement, job enrichment, job engineering, quality of worklife, social information processing approach and job characteristics approach developed by Hackman and Oldman in 1976 (Kiggundu, 1981, p. 502; Valentine and Gotkin, 2000, p. 118) have extremely important effects on increasing the productivity of human resources (Garg and Rastogi, 2006, p. 574). It is predicted that job satisfaction and productivity will be highest when both job enlargement and job enrichment are jointly applied to redesigning work systems. (Chung and Ross, 1977, p. 114)

From a conceptual perspective, job design is defined as determining the specific job content, the methods used at work and the relationships between jobs to correspond the firm's technological and organisational, and the employees' social and personal expectations (Gallagher and Einhorn, 1976, p. 359). In accordance with this definition, it is stated that a well-designed and defined job increase employees job satisfaction, increases motivation, decreases workplace-related stress, encourage learning efforts (Lantz and Brav, 2007, p. 270) and is therefore have a positive effect on employees' performance (Garg and Rastogi, 2006, p. 575).

There are many studies published in related literature investigating the relationship between job design and employees' motivation. The common points of these studies is that the application of job design has a positive effect on the specifics of job performance, like motivation, flexibility, job satisfaction (Huang, 1999, p. 79), self-control, and skill development. The relevant studies are shown in Table 1.

Table 1. The Effects of Job Design Applications on Employees' Performance: The Related Researchs and Findings

Researcher	Date of Research	Findings
Heckman et al.	1975	Job enrichment increases motivation and job satisfaction.
Loher et al.	1985	There is a relationship between job design and job satisfaction, which becomes more important at times when a need for development is more strongly felt.
Fried & Ferris	1987	Studies carried out using the job characteristics model developed by Fried and Ferris reached the conclusion that generally job design studies were effective in increasing motivation, job performance and levels of productivity.
Griffin	1989	Job design activities create significant changes in employees and increases employees' sensitivity to change.
Adler	1991	Arrangements which provide job autonomy and skill variety increase job satisfaction and motivation.
Renn & Vandenberg	1995	Job design implementation has a positive effect on both directly and indirectly at a personal level and on the output of the work.
Sokoya	2000	Rotation has a place among known factors of job satisfaction.
Bassey	2002	Skill acquisition, job clarity, job autonomy, feedback, job security and reward system are all factors which increase employee motivation.
Morrison et al.	2005	Job designs obtaining greater autonomy provide the opportunity for development and is a way for skill utilization.
Love & Edwards	2005	With the help of job design, more control on job related issues increase productivity.

Source: Garg, P. & Rastogi, R. (2006). New Model For Job Design: Motivating Employees Performance. *Journal of Management Development*, 25(6), 572-587.

As previously stated, there are several approaches to job design, so because of the width of the topic and the range of approaches, this study is only focused on the possible effects of *job rotation* on motivation.

2. Job Rotation and Motivation

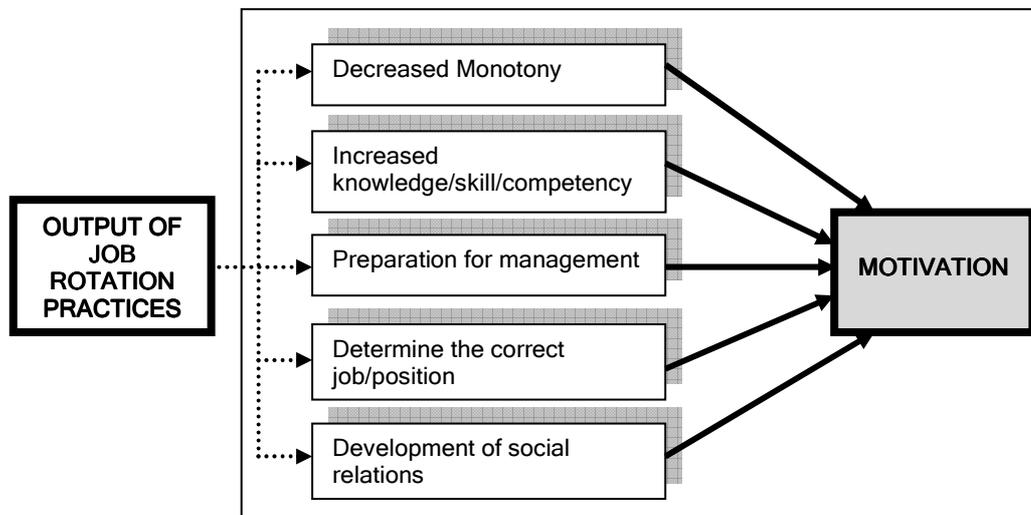
Rotation can be defined as *working at different tasks or in different positions for set periods of time*¹ (Jorgensen et al, 2005, p. 1723) in a planned way using lateral transfers aiming to allow employees to gain a range of knowledge, skills and competencies and is also seen as an on-the-job training technique (Gomez and Lorente, 2004, p. 241; Karadimas and Papastamatiou, 2000, p. 39), and as such is known to have an effect on employee motivation (Huang, 1999, p. 75).

The topic of job rotation, mostly considered in human resource literature, has come to be accepted as an effective method of developing skills and providing motivation. Although employees moving from one task to another for set periods is based on a simple logic, the value to the employees is considerably high. Job rotation, especially when focussed on '*functional flexibility*' is an important technique (Friedrich and Kabst, 1998, p. 504). In this scope, when creating a workforce profile with functional flexibility, it is an important tool in the re-designing of tasks. In short there

are many benefits for increasing motivation and productivity (Gannon and Brainin, 1971, p. 143), decreasing monotony, creating training opportunities, laying the foundations for senior management positions, supporting career development, easing adaptation to change and decreasing stress (Jorgensen et al, 2005, p. 1723).

To measure the degree of effect of rotation on motivation, the conceptual framework shown in Figure 1 was used in this study. In the model, five different independent variables (reduction in monotony, increase in knowledge, skill, competency, preparation for management, choice of correct work position and development of social relations) and one dependent variable (motivation) were used to indicate theoretically that there is an effect of job rotation on motivation. The suggested effect is then tested in the results section of the study.

Figure 1. The Conceptual Framework of the Study



2.1. Monotony

When looked at in its entirety, from the angle of employees undergoing rotation the most important associated advantage of differentiation at work is the prevention of monotony and loss of motivation (Azizi et al, 2009, p. 2). Job rotation has found wide acceptance as a means of reducing monotony (Gannon et al, 1972, p. 447). Moving from one position to another for set periods results in mobility, new skills, a new working environment, new social dialogue, new experiences, new professional fields, removes the employee from going through the same motions for long periods of time, and increases morale and motivation (Adomi, 2006, p. 66). Going away from psychologically negative effected job/position provide relief and decrease stress (Xie and Johns, 1995, p. 1303; Aryanezhad et al, 2009, p. 195). In simple, shaped with certain boundries jobs giving low or no autonomy, employees are more exposed to stress and monotony arising from the structure or the content of the work, and this is known to be a cause of job dissatisfaction (Abdel-Halim, 1981, p. 261). Implemented to minimize monotony, rotation and the resultant increase in employee motivation leads to personal development, higher quality work output, a lower rate of absenteeism and a higher level of job acceptance (Umstot and Mitchell, 1978, p. 868).

While on the one hand rotation decreases monotony and negative reflections, it can on the other hand prevent specialisation. The major criticism of this technique is at the point where it prevents specialisation for a specific job. Although employees

acquire a general perspective of a company or production, they are prevented from gaining specialist depth by moving to different jobs at set periods of time (Efil, 2005, p. 51). It has been stated that rotation technique can negatively affect the person and the performance level of the work in areas where specialisation is required (Susan, 1996, p. 86).

2.2. Increasing Knowledge, Skill and Competency

Rotation can also be seen as an on-the-job training technique supporting the principle of 'learning by practical experience' (Ho et al, 2009, p. 118). The research performed by Eriksson and Ortega (2006) indicated that job rotation applications support both employee learning and the employer learning. It is a training means of facilitating the acquisition of skills to make the work productive. By working in more than one department or section at set intervals and learning by actually doing the work oneself, makes it easier to acquire the knowledge and skills related to many functional areas of the organisation (Bennett, 2003, p. 8; Eguchi, 2005, p. 189). Job rotation makes people in different functional areas more connected. It also provides individuals with a better knowledge of the other parts of the business. Hence the greater job rotation, the more consensus is created between workers, which influences the interpretation of information and provides a mechanism for organizational learning. (Weerd-NederHof et al, 2002, p. 322). In this perspective, the learning is affected in two dimensions, by periods in various departments with the routine procedural processes and also the accumulation of the employee's personal experience in the related departments. In comparison with other learning methods, training by rotation allows for better development of knowledge, skills and competencies, and provide opportunities to be applied at work. This supports the creation of an infrastructure for the employee with higher motivation and performance (Ortega, 2001, p. 1362).

Correct implementation of job rotation should provide for the employee to be able to see various stages of the production proces as a whole (Adomi, 2006, p. 67). That is, rotation facilitates the learning of all aspects of the business, all products and services, sales and deliveries, even extending to after-sales service. Therefore the employee has the opportunity to see how the efforts of his own department and the quality of his own production affect other departments and processes, to know the working conditions and management techniques of other departments, to know details of the terminology used in various technical processes at company level, and to be aware of the potential effects of both external and internal forces on the company as a whole (eg. from the aspect of customers, suppliers and shareholders).

By taking a general view of the scale of the company, the employee's accumulation of technical knowledge and skills and his command of the work, increases. When a person is aware of what type of problems a potential mistake can create further down the line, he will try to minimize the mistake and make a greater effort to continually improve his work. This means that in this condition the person will be high motivated and the work will be more productive (Huang, 1999, p. 75).

Job rotation is particularly the product of Japanese companies' employment policies to ensure the acquisition of knowledge and skills which will help employees adapt to changes in technology (Whittington, 2004, p. 595). When it comes to changes in technology, moving from one job to another is the correct course of action to be taken to enable employees to acquire the skills to facilitate the integration of new technological progresses. This mobility increases the value of the employees in labour

market, as it removes the uncertainty of which skills will be acquired for future demand in related branches of industry. The highest attributes gained by job rotation for the employees are to have both supply job security and also the opportunity to find work easily in the labour market in the possible event of leaving work. Job security generates motivation (Mourdoukoutas and Roy, 1994, p. 58).

2.3. Development of Managerial Skills

The job rotation applications are significant not only for production workers but also for employees considered as manager candidates. In US and Japanese firms, qualified workers who are expected to be promoted as managers are required to have a broad view of the entire firm. The workers have experienced various production segments by rotating through different jobs, effectively learning many aspects of the company as a manager point of view (Eguchi, 2005, p. 190). Rotation influences motivation and the direction of career development. The role adopted by rotation in career management and the points that trigger motivation can be summarised under these headings (Campion et al, 1994, p. 1519-1520).

- To have progressive career steps it is necessary to have a serious level of experience and the employee can gain this experience by rotation technique,
- Rotation creates energy and change on the career path for the employee,
- New knowledge and skills presented by new and different jobs and departments, provide enhancing performance in the current position, qualifications and candidature for the next career step,
- On-the-job training by means of rotation achieves more effective results in comparison with outdoor training or orientation programmes and gives more support to career development than other training methods.

In these circumstances, rotation develops an employee's management skills towards career goals.

In a company which take the employees views, suggestions and criticisms into account in the design of all processes, job rotation facilitate the acquisition of managerial decisions. In other words, it becomes feasible to make a more effective contribution to all managerial level decisions by the knowledge and experience gained from various duties in several departments and from a good understanding of all the production processes. Feeling important to the company and having the perception of making decisions related to the future of the company increases the level of organizational commitment and has a positive effect on motivation (Gallagher and Einhorn, 1976, p. 361-362).

Rotation technique increases an employee's problem-solving capability from a management angle (Kuijjer et al, 1999, p. 1168). Understanding and dealing with a new job, a new department, new staff and new work processes brings many problems. This may be because in a different department working with different managers it may be necessary to change the approach to staff problems and may be at that time to abandon the routinely used methods. The fact that every new problem brings new solutions and ways of dealing with them generally creates a wide viewpoint related to the possible sources of problems in the company. Especially in production process, rotation generates effective results created by a flexible workforce ready to deal with unexpected situations (Allwood and Lee, 2004, p. 868). Not only for technical problems, but job rotation also provides the competency to solve problems related to human factors and develop managerial effectiveness.

2.4. Social Interaction

Working with many people at different time periods, develop human relations and support internal and external communication among departments. Rotation gives several cues about how to establish communication with people with different behavioural characteristics. Employees who are closer to each other in a social context will be able to resolve any problems which may arise during technical processes more easily. This makes it feasible for the workplace to be more peaceful and work to be carried out with high motivation (Morris, 1956, p. 269).

Despite this, when rotation necessitates a geographic change there can be unwanted will effect employee's social and family life negatively. Many international firms deploy their employees to various countries where they have factories in the same way that rotation might be applied in different regions of the same country. In order to learn and be successful for the period of the rotation, greater effort is required for work as it is new and different. The workload increases as the employee needs to apply more time to new and more complex work, which means that social life suffers. If the rotation necessitates a geographic change, (a temporary posting to another factory or a temporary overseas posting in an international company) then the employee and family together need to move, bringing the upheaval of new social circles, new employment for a spouse, new schools for the children etc. (Ofner, 1987, p. 38). These changes wrought to the employee's social and living conditions by geographic rotation can also increase stress with the various difficulties of the change. Although this may be temporary, from the employee's point of view it is an important but possibly unwanted disruption in social life, may have negative effect on the level of motivation (Morris, 1956, p. 270).

2.5. Determining The Correct Job / Position

A firm can observe the performance of each worker within job rotation and then assign the worker to the most appropriate job as determined by that worker's skills and characteristics (Eguchi, 2005, p. 190). When performing poor performance in a particular job over a particular period of time, rotation is a valuable tool in determining in which department or position would be more productive. If the data from a time period shows an employee to have low productivity, by the systematic moving on to other work, job rotation allows for easier definition of units or departments where high performance could be displayed (Jaturanonda et al, 2006, p. 1836). In other words, if an employee is in an unsuccessful situation and the performance data support this lack of success, one of the first precautions which can be taken so as not to lose the employee, is to transfer them to a different job and thus prevent the drop in performance. In this way the employee can be placed in the most productive job or position. Working in a comfortable job with an overlapping of knowledge and skill levels has a positive effect on motivation (Adomi, 2006, p. 67).

In a report in 1994 by Osterman of a study carried out in 1992 in EU and OECD countries, it was reported that in 26% of the companies in the study more than half the employees were engaged in rotation. Continuing the previous study, a 1998 report, again by Osterman, of a 1997 study showed that in 24% of companies with more than 50 employees and in 12% of the remaining companies, all the employees were engaged in rotation. Adding to this, a study by Champion et al in 1999 in OECD countries presented data verifying that rotation improves and develops human resources processes. (Ortega, 2001, p. 1361). Another study by Osterman in 1994 of 694 American companies stated that rotation techniques were used in 43% of these companies (Burke and Moore, 2000, p. 127)

A long-term study revealing probable long-term positive results concluded that job rotation, most successfully applied by Japanese companies, can be understood as a long-term employment and employee-focussed management technique. Thus, the job rotation as a management strategy improving motivation and performance are explained thereby indicating to management the need for change and development in the company (Coşgel and Miceli, 1999, p. 303).

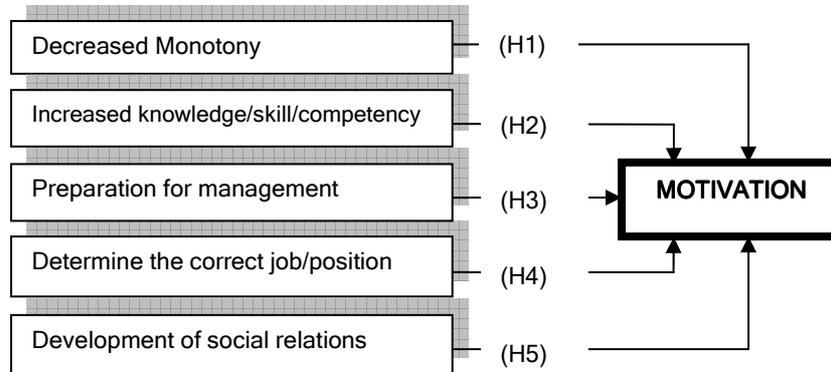
3. Method

This study aimed to explain the effects on motivation of rotation practices using these five independent variables:

- Decreasing monotony
- Increasing knowledge, skills and competency
- Determining the correct job /position
- Preparation for management
- Development of social relations

The conclusion reached from literature review is that decreased monotony, increased knowledge/skill/competency, preparation for management, determine the correct job/position and development of social relations as a result of job rotation applications have a positive influence on motivation. Therefore, in this study, the overall research framework is built on this perspective shown in Figure 2 and the hypothesis related to the research is written below.

Figure 2: The Overall Research Framework



Hypothesis 1: Decreased monotony as a result of job rotation applications has a positive effect on motivation.

Hypothesis 2: Increased knowledge/skill/competency as a result of job rotation applications has a positive effect on motivation.

Hypothesis 3: Preparation for management as a result of job rotation applications has a positive effect on motivation.

Hypothesis 4: Determine the correct job/position as a result of job rotation applications has a positive effect on motivation.

Hypothesis 5: Development of social relations as a result of job rotation applications has a positive effect on motivation.

The study data was collected by means of questionnaire and face-to-face interviews. Firstly, the Human Resources Manager of each company was interviewed separately. At these interviews the details of the rotation system used in the company were discussed and the target group for the study (managers) was determined from an examination of the company organisation structure. An explanatory text was written in the context of the aim of questionnaire and given to the managers taking part in the study. The dates for the application of the questionnaire and its return were mutually agreed.

Multiple linear regression analysis has been used to determine the effects of job rotation practices on motivation. The relationship between independent variables and dependent variables tested by this analysis. In this framework, the percentage of the dependent variable (motivation) can be seen to be explained by the independent variables included in the model. In this study, the 'Enter Method' was preferred.

To measure the statements given by the respondents in the study, a 5-point Likert scale was used (strongly disagree (1) - strongly agree(5)). The data obtained was analysed by SPSS 13.0 statistical program.

A pilot study comprising the analysis of 40 questionnaires was conducted to determine the validity and reliability of the means of measurement used in the research.

Firstly the reliability of the measurements used were analysed. In this context, the Cronbach alpha coefficient of the measurement was determined as 0.89. This result implies that the measurement has a high level reliability coefficient. Also, in the context of the data obtained, corroborative factor analysis was performed with the aim of testing the validity of the *measurement power* or other stated means of measurement. The corroborative factor analysis was performed with the aim of testing whether the *consistency* of the specified measurement model was statistically significant or not (Yurdugül, 2000, p. 155). Corroborative factor analysis, being different from factor analyses using traditional methods, was used to test the verification of a factorial structure previously specified by a researcher.

When evaluating the appropriacy of the model there are different goodness-of-fit tests with statistical functions which can be used. In the analysis, goodness of fit index (GFI), adjusted goodness of fit index (AGFI), standardized root mean square result (RMR), root mean square error of approximation (RMSEA), and Bentler Comparative Fit Index (CFI), are considered. When determining the measurement power of the model in question, the above-mentioned indices are expected to have certain fitness values. These values are shown in Table 2 (Erdoğan et al, 2007, p. 11).

Table 2. Recommended Goodness-of-fit Values and Standard Measurements for the Model

Goodness-of-fit measurements	Goodness-of-fit values	Acceptable goodness-of-fit values
RMSEA	0.00<RMSEA<0.05	0.05<RMSEA<0.10
SRMR	0.00<SRMR<0.05	0.05<SRMR<0.10
GFI	0.95<GFI<1.00	0.90<GFI<0.95
AGFI	0.90<AGFI<1.00	0.85<AGFI<0.90
CFI	0.95<CFI<1.00	0.90<CFI<0.95

Table 3. Corroborative Factor Analysis Results

Statements	Mean	Standard Deviation
The application of rotation according to my performance increases my motivation.	3.62	0.85
The application of rotation according to my performance reduces the monotony experienced in my work.	3.62	0.88
The application of rotation according to my performance increases my knowledge, skills and competencies.	3.74	0.83
The application of rotation according to my performance supports my preparation for higher level management.	3.72	0.83
The application of rotation according to my performance facilitates the determination of in which job I can be more productive.	3.57	0.88
The application of rotation according to my performance develops my social relationships.	3.58	0.90
GFI: 0.85 AGFI: 0.73 CFI: 0.87 SRMR: 0.07 RMSEA: 0.10 ($\alpha = 0.91$)		

When the goodness of fit values in Table 3 are compared with the data in Table 2, the measurement power of the measure being used is at an acceptable level to determine the relationship between motivation and rotation, in other words, it can be seen that there is the desired level of validity.

4. Sample

The mass of the research was formed from manufacture organizations in automotive sector.

The sample was selected by *deliberate sampling* method from the main mass. The need for deliberate sampling to be included in the study when determining the sample was depending on the researcher judgement. The sample in this method was selected by the researcher, and also the researcher decided the sample size was sufficient or not during the period of data collection (Yükselen, 2000). At this point, the companies from which the study sample were formed were made aware of the following circumstances:

1. The company included in the study should be a manufacturer in the automotive sector²,
2. The company included in the study should be a large-scale company,
3. The managers targeted in the study should have completed at least 2 periods of job rotation,

Within the framework of all these 3 conditions being met, a total of 206 managers from 6 large-scale companies were included in the research.

The position, seniority, age, gender and educational profile of the participants included in the research were determined. Evaluating the participant profile from the aspect of position, 12.14% were manager/ assistant manager, 20.39% were department head, 29.61% were supervisor/specialist, 10.19% line manager, 8.74% unit head and 16.02% engineer. As each firm showed different managerial job titles, the management positions to be taken within the concept of the research were specified individually by looking at the organisation structure.

The length of time worked at the firm by the managers in the research was determined as 33.50% 1-5 years, 27.18% 6-10 years, 17.96% 11-15 years, 10.68% 16 years or more.

The age distribution of the participants was determined as 5.34% below 25 years, 27.18% 26-30 years, 47.57% 31-40 years, 10.68% 41-50 years and 3.4% 51 years and older. Thus it can be said that the majority of the participants (74.75%) were aged between 26-40 years.

An examination of the gender distribution showed that the majority of the participants (81.55%) were male, whereas 16.50% were female.

Finally, the educational level of the managers in question was specified. According to the data obtained, 71.84% of the participants had a university degree and 10.19% had a degree at master or doctorate level. On the other hand 17.97% of the participants were seen to have an educational level of high school or middle school. The level of educational level being high supports the view that the questionnaires were completed in a relatively more knowledgeable manner.

5. Limitations

As a result of the interviews with the Human Resources Managers, the decision was taken that only the managerial positions in sampling organizations should be included in the research. It was also determined from those interviews that blue collar or office personnel job rotations had been conducted in a limited or ineffective way, therefore the study was only applied to managers to obtain satisfactory data.

6. Findings

To measure the effects of job rotation practices on motivation within organisations, five independent variables and one dependent variable were considered. To examine the dimensions of rotation, five independent variables (Decreasing monotony, increasing knowledge, skills and competency, determining the correct job /position, preparation for management, and development of social relations) and one dependent variable (motivation) were analysed by multiple linear regression analysis and the findings shown below were reached.

Table 4. Correlation Analysis Results

Pearson Correlation N=196 Sig=.000 (1-tailed)	Mean	St. Dev.	1	2	3	4	5	6
Motivation	3.61	0.85	1.000					
Decrease in monotony	3.62	0.88	0.769	1.000				
Increase in knowledge/ skills/competency	3.73	0.83	0.748	0.791	1.000			
Preparation for management	3.71	0.83	0.573	0.579	0.703	1.000		
Determine correct job/position	3.59	0.87	0.639	0.637	0.650	0.634	1.000	
Development of social relations	3.57	0.90	0.625	0.552	0.636	0.558	0.620	1.000

$\alpha = 0.01$ significance level - all correlation coefficients are significant.

Table 5. Multiple Linear Regression Analysis Results

	R ²	Adjusted R ²	F Value (Anova)	Beta	t value	p value	D.W. Test
Job Rotation	0.689	0.677	59.086 (p=0.000)*	0.257	1.452	0.148	1.759
Decrease in Monotony	-	-	-	0.378	5.599	0.000*	-
Increase in knowledge/skills/ competency	-	-	-	0.222	2.693	0.008*	-
Preparation for management	-	-	-	-0.018	-0.285	0.776	-
Determine correct job/position	-	-	-	0.119	1.969	0.050	-
Development of social relations	-	-	-	0.130	2.316	0.022*	-

* p < 0.05

In the results section, firstly the multiple linear regression analysis basic hypotheses were tested. Thus, it was firstly defined as to whether the study model (Figure 1) was a good model or not. In this scope, when the correlation analysis results were examined, there being no correlation coefficient values of 0.80 and above verified that there were no multiple correlation problem in the model. On the other hand, the D.W. test (1.759) indicated no auto-correlation in the model, whereas the Anova result (F= 59.086 p<0.05) pointed the model to be significant as a whole. When the defined spesificity factor were examined (R²=0.689), the result was arrived at that the dependent variable was explained by 68% of the independent variables included in the model. In this framework, all the data indicated that the model created was a good model and the analysis basic hypotheses were substantiated.

The possible effects of job rotation practices on motivation and the degree of these effects can be seen in Table 3 from the t values. When the significance coefficients of existing parameters were examined, it was found that the decrease in monotony related to job rotation practices increase motivation (t = 5.599 p<0.05). This finding supports the hypothesis that job rotation provides a decrease in monotony and this triggers motivation in a positive way.

On the other hand, an increase in knowledge, skills and competence related to job rotation practices was found to have a positive effect on motivation (t=2.693 p<0.05). During a rotation period, working in different departments and in different positions is of benefit in gaining various competencies at all levels of the company. One significance of the development of the competencies is that the work being performed can be done technically more easily, so fewer skill-based problems arise. A lower level of competency problems ensures work with higher motivation.

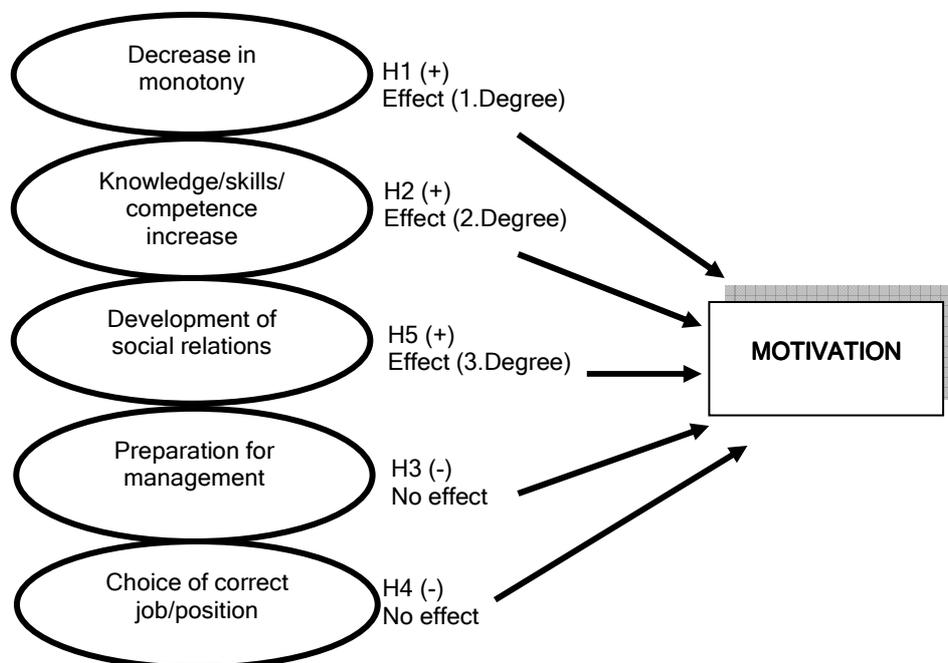
When the topic is evaluated from the aspect of social relations, it can be understood from the analysis results that a development of social relations related to job rotation practices has a positive effect on motivation (t=2.316 p<0.05). Person working in more than one department on rotation have the opportunity to make contact and develop social dialogue with other employees. When the social context within management is considered to develop interpersonal relationships, the opportunity presents itself for a happier working environment and this increases motivation.

However, within the scope of this research into rotation practices, contrary to expectations it was proven that preparation for higher management did not generate the expected motivational effect. This can be explained in several ways. The likelihood that department managers did not give sufficient support to the employees on rotation to acquire management skills should be taken into consideration. The department manager supporting the development of management skills in the employee on rotation and ensuring that all the unit managers make the time to do this, has arisen as an important requirement. Planning the job rotation practices around the whole organization and rotate persons to different departments support the managerial skill acquisition.

In the same way, this research did not verify the hypothesis that job rotation facilitates the determination of more productive job or position for the person and that this determination increases motivation ($t=1.969$ $p<0.05$). From this aspect, when rotation decisions are being taken, persons' ideas and suggestions should be sought, decisions should be taken together, and the rotation plan should be acceptable.

When the order of importance was examined according to the variables which increase motivation, the most important independent variable increasing motivation was found to be the *decrease in monotony* variable (0.378). Then respectively, increase in knowledge, skills and competence (0.222) and development of social relations (0.130) were other independent variables found to have importance for the increase in motivation. The hypothesis test results and degree of importance of the variables is shown in Figure 3.

Figure 3. Hypothesis Test Results and the Degree of the Effect of Independent Variables on Motivation



7. Conclusion and Suggestions

The research results support the theory that job rotation practices have a positive effect on motivation. A decrease in monotony, an increase in knowledge, skills and competence and development of social relations in job rotation practices were determined as having a positive effect on motivation.

From this aspect, we can easily express that job rotation applications decrease boredom and moving from one department to another increase morale and cause motivation. This is also a result in doing different tasks and contributing in different processes. Job rotation practices in another way increase personal competencies as said before. Taking responsibilities in more than one unit increase technical, managerial knowledge and skills. Improving personal background in order to be successful when doing the job motivate human and also encourage continual improvement. Enough knowledge and skill will make more easy to solve routine problems in specific jobs, develop usual methods in doing jobs and this make managers be more productive and motivated in different working conditions.

Last, social interactions which reflect human perspective is the most important catalytor in job rotation practices. As proved in Hawthorne Research, human is a social presence in organizations. So without social communication, human could not be thought productive. During the socialization process, job rotation technique take an important role and encourage social interaction among departments. From this perspective, the companies included in research manage to emphasize social gains as a function of job rotation technique. Socialization therefore develop both formal and informal dialogs and this motivate people during the daily works. If this subject assessed around cultural values, it can be said that Turkish collectivist cultural structure effect deeply human behavior in organizations.

It was also shown however, that in rotation practices the expected positive contribution to motivation was not seen from the aspect of preparation for management and determination of correct job/position. From all the independent variables, it was found that the *function of decreasing monotony* of job rotation practices was the most important variable on motivation.

It is possible to derive two possibilities as to why the above stated variables of preparation for management and determination of correct job/position did not generate a motivational effect.

Possibility One: The company may have made mistakes in its application of job rotation and those mistakes prevented the person benefitting from the system.

Possibility Two: May be the job rotation practices has reached the desired level of success but the results or applications do not motivate person. In this situation it should be considered that there may be unexpected several reasons for the drop in motivation and several interviews may be necessary to ascertain the reasons.

From the data obtained from the research, it is possible to make various suggestions to increase the effect of job rotation practices on preparation for management and correct choice of job/position.

- Rotation decisions should be made by the employees opinions and taken together and thus the rotation decision will be accepted more easily. When the employee embarks on the path of rotation willingly and consciously, he will share the responsibility at the point of development of management skills.

- Spending limited time periods in different departments is of use to be able to see the breadth of the whole company to be organized. Thus to develop management competencies it will be an opportunity to see the whole company.
- It is necessary for the current managers of the relevant departments to support the development of the managerial skills of the person on rotation and for all managers in the company to ensure that they make time for this.
- It is necessary for the department manager to closely monitor the person on rotation and to make the effort to correctly evaluate their performance in the relevant department to be able to determine a job/position of higher productivity within the organization.

The future research will be built on investigating why the two independent variable (preparation for management and determining the correct job/position) have no effect on motivation, the possible reasons and solutions.

¹ Rotation techniques can be applied in different ways. A study carried out by McDonald in 2002 on companies operating in the American midwest found that the 'hour' stated by employees was time slices on which rotation was based. In another study by Henderson in 1992 some companies applied rotation as moving from work requiring low physical effort to work requiring high physical effort.

² In the selection of the automotive sector as the basic application area, among the determining factors were that in Turkey human resources practices in the automotive sector are more successful, human resource departments have been established at a higher level and development of the human element has been attributed more importance in this sector than other sectors.

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