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An evaluation on the motivation of employees in the logistics sector during the COVID-19 pandemic process

Lojistik sektöründe COVID-19 sürecinde çalışan motivasyonunununa yönelik bir değerlendirme

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ABSTRACT

This study aims to reveal both the motivation sources of employees in extraordinary conditions (such as COVID-19) and the type of motivational sources that are dependent on individual and environmental conditions. Within the framework of the aim of the study, quantitative research was conducted. The universe of the study is logistics companies in the TİMS 2020 report, with a sample consisting of 343 employees from various positions and professions. Data were obtained by questionnaire method. The questionnaire consist of a socio-demographic information form contains individual, work-related, and COVID-19 experience questions and the six-dimensional motivation at work scale. According to analysis findings, the 6-dimensional motivation scale was represented by 5 dimensions (as a result of CFA analysis), and introjected motivation was eliminated. Identified regulation levels of employees were calculated at quite high levels, while amotivation levels were quite low. As a result of the difference tests, material and social external regulations are differentiated according to personal differences. Amotivation is affected by position. In addition, parallel with the previous findings, while controlled motivation was open to these effects, autonomous motivation was not affected by environmental conditions and personal characteristics. Details are discussed in the relevant section.

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ÖZ

Bu çalışma, hem olağandışı koşullarda (COVID-19 gibi) çalışanların motivasyon kaynaklarını hem de bireysel ve çevresel koşullara bağlı olan motivasyon kaynaklarının türünü ortaya koymayı amaçlamaktadır. Araştırmanın amacı çerçevesinde nicel araştırma yapılmıştır. Araştırmanın evrenini TİMS 2020 raporunda yer alan lojistik şirketlerinden çeşitli pozisyon ve mesleklerde 343 çalışan oluşturmaktadır. Veriler anket yöntemi ile elde edilmiştir. Anket, bireysel, işle ilgili ve COVID-19 deneyim sorularını içeren bir sosyo-demografik bilgi formu ve altı boyutlu iş motivasyonu ölçeğinden oluşmaktadır. Analiz bulgularına göre 6 boyutlu motivasyon ölçeği 5 boyut ile temsil edilmiş (DFA analizi sonucunda) ve içe yansıtılan mo-

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tivasyon ortadan kaldırılmıştır. Çalışanların belirlenen regülasyon seviyeleri oldukça yüksek seviyelerde hesaplanmış, motivasyonsuzluk seviyeleri ise oldukça düşük bulunmuştur. Fark testleri sonucunda kişisel farklılıklara göre maddi ve sosyal dış düzenlemeler farklılaşmaktadır. Motive olamama ise pozisyonundan etkilenmektedir. Ayrıca önceki bulgulara paralel olarak kontrollü motivasyon bu etkilere açıkken, otonom motivasyon çevresel koşullardan ve kişisel özelliklerden etkilenmemiştir. Detaylar ilgili bölümde tartışılmıştır.

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## INTRODUCTION

It is observed that the COVID-19 pandemic process is experienced differently by each sector, with the importance of some industries increasing during this process. Thus, the logistics sector has become one of the sectors with critical importance in this sense. Predominantly, studies in national and international literature have focused on the economic processes of the logistic sector (Akçacı & Çınaroğlu, 2020; Singh et al., 2020). While some local studies (Nguyen, 2022) and some international benchmarks (Atayah et al., 2021) focus on the financial performance of logistics companies, others consider innovation (Klein et al., 2022) and technology (Gupta & Singh 2021) as success factors, stressing its importance in the industry. The sudden gravity of the logistics sector, and the increase in the logistics needs of companies, have been frequently discussed in the literature as an organizational, institutional, and global issue. Traditionally, studies in organizational behavior literature focus on how employees (at the individual level) meet this extraordinary process that disparately affects sectors and institutions. These studies present theoretical and empirical findings that support changes occurring in employees' well-being, commitment, and performance (Aditama & Riyanto, 2020; Carnevale & Hatak, 2020; Chanana, 2021).

Managing employee motivation is presumed to be an essential tool in terms of managing desired outcomes (such as performance, attendance, and commitment) for employees, as stated by leading theorists such as Herzberg (1959) and McGregor (1960). However, there have been few studies focused on multiple factors occurring during the COVID-19 pandemic process: the effect of the changes in work conditions, and the effect on the behavioral processes of the employees, particularly on motivation. One study on motivation by Wolor (2020) focused on the qualitative approach, and the issues related to employee motivation. Based on Maslow's hierarchy, he offered suggestions about working from home and working shifts to meet safety and security needs. In another study carried out during the pandemic process, the effect of internal and external motivation and self-efficacy on employee performance was evaluated. It has been concluded that extrinsic motivation, one of the motivation types, is a determinant of performance (Nilasari et al., 2021). However, studies on pandemics neither do contain any in-depth findings on motivational sources nor focus on the sectoral differences in this scope.

Accordingly, this study is primarily intended to contribute to the literature in two ways: evaluating the differences in motivational sources of employees of leading companies in the logistic sector, and to investigate the effects of individual, work-related, and environmental changes. Findings can contribute to understanding the source of differences in motivation and providing necessary measures to protect/increase motivation. These findings aim to contribute not only to the literature but also to practitioners, especially in management and human resources activities. The effect of the employees' experiences (regarding the COVID-19 pandemic process on the employee's motivation for work) is important for organizations in terms of managing employee incentives in extraordinary situations. For the purpose of the study, the literature review section, in which we discuss the theoretical framework below, will form the first part of the study. In the next section, the methodology section, where we discuss the sample, measurement tools, and procedure of the study, is given. The analysis and findings section, which summarizes data analysis and related information, is designed as the third section of the study. In the last part, the study is completed with the interpretation of the findings in the light of academic studies, their contributions to the academy and their limitations, inferences for practitioners in the sector, and specific suggestions for human resources practices.

## LITERATURE REVIEW

Motivation theories are a concept that has been shaped by the contributions of many theorists and studying in the organizational field. In one of the most well-known theories, Maslow (1954) explains the hierarchy of needs, contributing the idea that motivation is based on a certain hierarchy. And Herzberg's (1959) two-factor theory brought the boundaries of the concepts of motivation and satisfaction at work by defining the motivating and hygiene factors in the organization. In addition, McGregor (1960) presents two models of employee motivation with typology X and Y. As well, theories, such as Vroom's (1964) expectancy-valence theory, are an important basis for intrinsic and extrinsic motivation, which will be studied much later, and Porter and Lawler's (1968) motivation model- one of the first studies in this sense.

Additionally, cognitive evaluation theory started to become a frequently applied theory in the organizational field in the 1970s, however, the theory's popularity decreased due

to its explanatory nature about the reduction that extrinsic rewards have on the effectiveness of intrinsic rewards. And due to the inadequacy of the distinction between extrinsic and intrinsic motivation and the difficulties encountered in adapting this structure to organizational life. In the following years, self-determination theory, whose explanation and implementation seem more effective, is seen to be a theory that better forms a basis for today's organizational behavior (Gagné & Deci, 2005). Self-determination theory offers a multidimensional structure that includes autonomous and controlled forms. If the autonomous motivation of the employees is high, the employee focuses on the fact that the job is fun and intriguing, and thus, they work for pleasure and job satisfaction. On the other hand, employees with high controlled motivation tend to make an effort towards the outcomes of the work. That is, they work to seek recognition, reward, and avoid punishment. Intrinsic motivation is an example of autonomous motivation. From this perspective, while autonomous motivation is an important determinant of the individual's output, controlled motivation appears to be a comparatively ineffective resource compared (Gagné & Deci, 2005; Dysvik & Kuvaas 2013; Gagne et al., 2015). In addition, while self-determination theory puts forward the assumption that human beings have intrinsic motivation by nature, it has been stated that inhibiting people's natural behaviors or their interactions with the social environment can disrupt this structure (Deci & Ryan 2008). According to the self-determination theory, external and introjected regulations are forms of controlled motivation, and identified regulation and intrinsic motivation are autonomous, with amotivation separate from all (Deci & Ryan, 2000).

In his study with the forms of controlled and autonomous, Gagné & Deci (2005) described six types of motivation. Accordingly, a lack of motivation is named as amotivation and described as an absence of intentional regulation. The second dimension was defined as external regulation, an indicator of direct controlled motivation that is described as contingencies of reward and punishment. Gange et al. (2015) differentiated external motivation into two sub-types of motivation: social external regulation & material external regulation. The third dimension, introjected regulation, is a moderately controlled motivation that describes self-worth as contingent on performance and ego-involvement. Another dimension, identified regulation, involves a moderately autonomous motivation, and focuses on the importance of goals, values, and regulations. The fifth dimension, integrated regulation, is defined as autonomous motivation. It is more strongly defined than the previous dimension based on coherence among goals, values, and regulation. However, this dimension did not occur in their study in 2015 (details in Gange et al., 2015). If someone has a high integrated regulation, that behavior becomes an integral part of who they are, so that they can find motivation for uninteresting activities, which are part of their duty (Gagné & Deci, 2005). This is also an important component for work-life activities,

mostly uninteresting but serve as an accomplishment. Lastly intrinsic motivation is defined as the sixth dimension, which is the most desirable level of motivation. It means inherently autonomous motivation, finding interest and enjoyment in the task.

Therefore, a hierarchy has been established from the absence of motivation to the most efficient source of motivation. When assessed through self-determination, amotivation is lacking in self-determination; intrinsic motivation is self-determined; and other categories are self-determined in varying degrees. Gagné & Deci (2005) indicate that autonomous motivation and controlled motivation are both intentional and opposite to amotivation. Moreover, management and human resource activities affect autonomous motivation through psychological needs, when compared to controlled motivation (Gagné & Deci, 2005). Even if it is not as strong as autonomous motivation, controlled motivation forms are also meaningful in terms of an organizations' arrangements for work or work outcomes, in particular because the presence of motivation increases positive results with individual and organizational outcomes (Deci & Ryan 2008).

In the light of the literature above, the research question is clear: "How is the motivation level of the logistics sector employees during the COVID-19 pandemic and how has it been affected by their personal experiences?" In this context, it will be evaluated whether the employees differ according to their motivation sources in terms of gender, age, positions at work, occupational status, working styles, the potential risks of COVID-19, and finally, whether COVID-19 has been experienced personally or by the household.

## METHOD

The research design of the study is a quantitative study, and the data for the research question will be obtained by the survey method using cluster sampling. In terms of representing the universe of the work to be done at the individual level, the logistics companies that are ranked in service exports in the TIMS 2020 report constitute the cluster. Respondent characteristics have been defined in order to include the segment with high employee representation in the logistics sector. The target group is white-collar employees aged between 23–65 who have at least 1 year of experience in the logistics sector. Since multiple analyzes will be applied, and it is necessary to represent the categories with 30 or more participants in each category, it is aimed at reaching 10 times the number of questions and employees (Sekaran, 2003). And, since the socio-demographic information form (SDIF) in the questionnaire contains 11 items, and the motivation scale includes 19 items; accordingly, the evaluation form consists of 30 items. So, a sufficient sample needs approximately 300 employees and 343 valid data that were obtained for the study.

Ethics approval was obtained with the decision of the Istanbul Medipol University Social Sciences Scientific

Research Ethics Committee, dated 08.06.2021 (decision number:46). The data were collected in the fall of 2021, the questionnaire containing the CONSENT text was hand-delivered to the institutions that agreed to participate.

### Measures

The first part of the questionnaire consists of 11 questions about the demographic features and work-related information. As well, the questions about the COVID-19 experiences -and related question-s have been prepared by the researcher. The second part of the questionnaire form, “the motivation at work scale,” consists of 19 questions and six dimensions. “Why do you or would you put efforts into your current job?” is the correlated stem and sample item noted: “Because I have fun doing my job.” Scale is developed by Gagné et al. (2010) in a four-dimensional version, and in 2014, they reached a 6-dimensional structure, applying forms in 7 different languages from 9 countries and obtaining valid and reliable results with different connections and work outputs. Its adaptation to Turkish culture was carried out by Çivilidağ and Şekercioğlu (2017). As a result of the EFA, the factor loads of the items varied between 0.855 and 0.529 and represented the six dimensions. As a result of the CFA, the fit indexes of the model gave significant results (except for the 19th item; in particular the t values were significant. Cronbach’s alpha values vary between 0.72 and 0.80. Compared to traditional motivational scales and their previ-

ous versions, Gagné et al. (2015) was evaluated as a very powerful scale with psychometric features and comprehensive motivational content (Howard et al., 2016). The six dimensions of the motivation scale in the study focus on different sources of motivation, and in Turkish form they are named as follows: (1) amotivation, (2) social external regulation, (3) identified regulation, (4) intrinsic motivation, (5) material external regulation and (6) introjected regulation.

### ANALYSIS AND FINDINGS

Using an SPSS package program for data analysis, the differences between the motivation sources of the employees and the general findings about the motivation levels will be evaluated with the mean values, and the hypotheses will be tested through the MANOVA difference tests (to be performed in SPSS Statistics 25.0).

#### Descriptive Findings

Table 1 summarizes the work and life conditions and COVID-19 experiences of participants beside demographic properties. Related categories and percentages are given below.

The ages of the participants ranged from 23 to 58 years old (mean= 34.62). And the majority of the participants were male (62.1%) with about half working within the managerial level. Organizational tenure ranges from 1 to 30 years. As it is

**Table 1.** Participants Socio-Demographic Information

Variable	Category	Valid Percentage (%)
Gender	(1) Female	37.9
	(2) Male	62.1
Age	(1) 18-25	15.7
	(2) 26-35	39.9
	(3) 36-45	33.4
	(4) 46 and above	10.9
Position	(1) Expert / white collar	55.6
	(2) Low-level-manager	12.1
	(3) Medium-level-manager	21.9
	(4) Top-level manager	10.4
Working Type	(1) Hybrid working	3.8
	(2) Long time working	4.1
	(3) Short time working	6.8
	(4) Leave / unpaid	1.8
	(5) On-site working	69.8
	(6) Remote working	13.6
Organizational Tenure	(1) 1 year	16.9
	(2) >1-5	38.8
	(3) >5-10	25.7
	(4) >11	18.6
COVID-19 Experience	(1) Yes	62
	(2) No	38
Household Risk Groups (above 60 years old, children / chronic illnesses)	(1) Yes	57.7
	(2) No	42.3

seen in Table 1, the descriptive analysis findings, the working type of respondents is primarily on-site (69.8%). In addition to these, the participants were also asked about the working types of their family member: 49.1% of them do not have any other employees at home, 32.2% of them have no change in their working style, and the remaining (18.7%) live with family members who have some changes in their working style (such as remote and short time working). In addition, 10.2% live alone, while 38% live with another adult(s). The people living with the rest of the participants are at risk (4.2%), over 60 (9.6%) and with children (38%).

### Validity and Reliability Analysis

In order to estimate the validity and reliability scores of the motivation scale dimensions, IBM AMOS 26 has been used. Confirmatory factor analysis (CFA) was performed using the maximum likelihood method, and reliability was tested with construct reliability instead of traditional coefficient alphas, as suggested for multidimensional scales (Hair et al., 2006). Indicator reliability is tested with confirmatory factor analysis, and as a result of the first analysis, factor loadings of all items were calculated above the value of 0.60 (except 17th item). After the relevant item was removed, it was determined that the model fit values were above the acceptance limits, and the reliability coefficients of the factors were calculated with composite reliability (CR) with a coefficient

above 0.70 for all dimensions.

However, the findings on convergent and discriminant validity were not achieved for the first model since it was observed that  $CR > AVE$  for all dimensions, but the AVE values, for more than one dimension were below 0.50. Additionally, for some dimensions, the AVE square root values were calculated at less than the inter-construct correlation value. Accordingly, the calculations were repeated by removing the problematic items one by one (according to modification indices), and when the appropriate validity coefficients were reached, it was concluded that the material external regulation dimension was represented by 2 items and the introjected dimension was completely eliminated.

And as a result, the scale was represented by 5 dimensions instead of 6 dimensions. For the last measurement model fitness indexes are summarized in the Table 2 and the reliability and validity values and factor loading are given in Table 3. In the analysis tables of the study, the variables Intrinsic motivation (IA), Social external regulation (SER), Identified regulation (IR), Amotivation (AM), Material external regulation (MER) will be expressed with abbreviations.

### Normality Tests

The descriptive statistics of the dimensions of the motivation scale, which is the dependent variable of the study, are summarized in Table 4. Accordingly, while identified

**Table 2.** Model Fitness Indexes

Name of Category	Name of Index	Value of the Model	Level of Acceptance	Source
Absolute Fit	RMSEA	0.062	<0.08	Browne & Cudeck, 1993
	CFI	0.950	>0.90	Bentler, 1990
Incremental Fit	TLI	0.932	>0.90	Bentler & Bonnet, 1980
	NFI	0.916	>0.90	Bollen, 1989
Parsimonious Fit	ChiSq/df	2.314	<5.0	Marsh & Hocevar, 1985

**Table 3.** Factor Loadings and Validity Analysis

	Item	Factor Loading	CR	AVE	MSV	MaxR(H)	1	2	3	4	5
IA (1)	2	0.612	0.795	0.568	0.527	0.821	0.753				
	4	0.831									
	6	0.798									
SER (2)	7	0.695	0.818	0.602	0.426	0.829	0.110	0.776			
	9	0.815									
	11	0.811									
IR (3)	8	0.668	0.771	0.531	0.527	0.786	0.726***	0.160*	0.728		
	10	0.809									
	12	0.700									
AM (4)	1	0.712	0.801	0.573	0.139	0.805	-0.184**	0.223**	-0.373***	0.757	
	3	0.762									
	5	0.795									
MER (5)	13	0.756	0.733	0.579	0.426	0.733	0.153*	0.653***	0.185*	0.055	0.761
	15	0.766									

\* $p < 0.050$ , \*\* $p < 0.010$ , \*\*\* $p < 0.001$ .

**Table 4.** Descriptive Scores of the Motivation Scale

	IM	SER	IR	AM	MER
Mean	3.8413	3.0455	4.6124	1.6319	3.5976
Median	4.0000	3.0000	4.8333	1.0000	3.5000
Mode	4.33a	1.00	5.00	1.00	5.00
Skewness	-0.489	0.011	-0.902	1.738	-0.242
Std. Error of Skewness	0.133	0.133	0.133	0.133	0.133
Kurtosis	-0.496	-0.864	0.625	2.845	-0.913
Std. Error of Kurtosis	0.266	0.265	0.265	0.265	0.265

regulation levels have the highest scores, amotivation shows the lowest average values. Therefore, it is concluded that the motivation of the participants is high, especially with the identified regulation. From the table below, it is understood that the relevant scale does not have a normal distribution to a large extent. In the next step, non-parametric tests, Mann-Withney U, and Kruskal-Wallis tests will be used to evaluate motivation according to personal differences.

#### Difference Tests / Mann- Withney U

The two-category variables in the study (gender, household risk groups and COVID experiences) were tested with Mann-Withney U test, and the findings are summarized in the following. When the differences based on gender are examined, it is seen that both of the extrinsic motivation dimensions are distinctive. For other types of motivation, gender is not decisive. Accordingly, it is seen that both material external regulation and social external regulation levels of men are higher than women. Analysis results are given in Table 5 and Table 6.

It has been tested whether the participants' infected with COVID-19 is a determinant of motivation for work, and the findings show that the work motivation of the people who experience COVID-19 is lower than material external regulation levels. In terms of other motivation types, the participants do not show a statistically significant difference. The findings are summarized in Table 7 and Table 8.

Another of the environmental factors tested during the COVID-19 process is whether the household consists of individuals who pose a risk for COVID-19. Accordingly, family members over the age of 60, those with chronic diseases, and those living with their children were consid-

**Table 5.** Gender Ranks

Gender	Female (1)/Male (2)	N	Mean Rank	Sum of Ranks
IM	1	124	175.97	21820.00
	2	210	162.50	34125.00
SER	1	128	153.11	19597.50
	2	209	178.73	37355.50
IR	1	128	173.33	22186.50
	2	210	167.16	35104.50
AM	1	127	176.39	22401.50
	2	209	163.71	34214.50
MER	1	128	152.05	19462.00
	2	210	180.14	37829.00

ered as risky households, while those living alone or with another adult were considered as risk-free households. As seen in Table 9 and Table 10, the findings show that both material external regulation and social external regulation motivations are lower in risky groups. In other words, their motivation for work compared to other participants is less related to social and material regulation.

#### Difference Tests / Kruskal Wallis

In order to test whether three or more dimensional variables indicate a statistically significant difference, according to motivation types, analyzes were made with the Kruskal Wallis test. While the Kruskal Wallis test results determined whether there were significant differences between the dimensions, Mann Withney U analyzes were performed for the relevant dimensions in order to test which dimensions were significantly different. Significant results are summarized in Table 19. As can be seen in Table 11 and Table 12, age categories are determinative for material external regu-

**Table 6.** Test Statistics of Gender

	IM	SER	IR	AM	MER
Mann-Whitney U	11970.000	11341.500	12949.500	12269.500	11206.000
Wilcoxon W	34125.000	19597.500	35104.500	34214.500	19462.000
Z	-1.236	-2.353	-0.566	-1.259	-2.578
Asymp. Sig. (2-tailed)	0.217	0.019	0.571	0.208	0.010

**Table 7.** COVID-19 Experience Ranks

COVID-19 Exp.	Yes (1) / No (2)	N	Mean Rank	Sum of Ranks
IM	2	206	160.19	33000.00
	1	127	178.04	22611.00
SER	2	208	171.11	35590.50
	1	128	164.26	21025.50
IR	2	209	168.92	35304.50
	1	128	169.13	21648.50
AM	2	208	162.65	33830.50
	1	127	176.77	22449.50
MER	2	209	181.69	37972.50
	1	128	148.29	18980.50

**Table 9.** Household Risk Groups Ranks

	Risky household (1)/ No-risky household (2)	N	Mean Rank	Sum of Ranks
IM	2	126	147.96	18642.50
	1	171	149.77	25610.50
SER	2	127	166.17	21103.00
	1	173	139.00	24047.00
IR	2	127	143.69	18248.50
	1	173	155.50	26901.50
AM	2	125	146.60	18325.00
	1	173	151.60	26226.00
MER	2	127	169.39	21512.00
	1	173	136.64	23638.00

lation- one of the motivation types.

Mean rank values show that the highest score is higher for the youngest group (18-25 years), while this value decreases until the second (26-35) and third age group (36-45), while the fourth age group (46 and above) indicates that it has risen again. In other words, it can be said that the work motivation of the youngest and oldest groups is mostly material. Paired tests (Mann Withney U, Table 19) conducted to evaluate whether these differences were statistically significant showed that the difference between the first and second age groups and the first and third age groups was significant. It shows that the material external regulation is higher for the first age group than for the second and third age groups, and there is no significant difference between the other groups.

Work-related differences are also taken into consideration: position, working type, and organizational tenure are evaluated in the scope of motivational differences. In Table 13 and Table 14, findings related to the position in the company are represented.

The position is defined in four categories [(1) Expert / white collar, (2) Low-level-manager, (3) Medium-level-manager and (4) Top-level manager]. Findings indicate significant differences in material external regulation, social external regulation, and amotivation. When examining the source of difference as summarized in Table 19, non-managerial employees, and medium-level managers (generally department managers) differentiate according to social external regulation, whereas non-managerial employees have higher scores for social external motivation.

Interestingly, other positions are not significantly different due to motivation. When examining the findings related to material external regulation, top managerial level managers differ from other positions in accordance with the lowest score (Table 19). And finally, a statistically significant antecedent for amotivation and non-managerial employees is found to have a higher amotivation than medium-level and top-level managers, but still, not different from low-level managers. However, low-level managers have statistically higher amotivation than medium-level managers, and other dimensions have no statistically significant differences.

And when considering the working type as an effective factor on work motivation, participants were asked to define their working type and 6 different working types composed from their definitions: (1) Hybrid working, (2) Long time working, (3) Short time working, (4) Leave / unpaid, (5) On-site working and (6) Remote working. Kruskal Wallis analysis findings indicate no significant difference in accordance with the working type in any work motivation dimension. Findings are represented in Table 15 and Table 16.

And lastly, organizational tenure is evaluated in the scope of work motivation; participants are categorized into four groups: the first group consists of participants who are working one year in the company; the second group worked between 1 and 5 years; the third is 5 to 10 years; and the last group worked for more than 11 years. Summarily, only material external regulation types of motivation were found to have a significant difference, according to organizational tenure (Table 18). Additionally, when checking the mean ranks in Table 17, as organizational tenure increases, ma-

**Table 8.** Test Statistics of COVID Experience

	IM	SER	IR	AM	MER
Mann-Whitney U	11679.000	12769.500	13359.500	12094.500	10724.500
Wilcoxon W	33000.000	21025.500	35304.500	33830.500	18980.500
Z	-1.649	-0.630	-0.019	-1.406	-3.072
Asymp. Sig. (2-tailed)	0.099	0.529	0.985	0.160	0.002

**Table 10.** Test Statistics of Household Risk Groups

	IM	SER	IR	AM	MER
Mann-Whitney U	10641.500	8996.000	10120.500	10450.000	8587.000
Wilcoxon W	18642.500	24047.000	18248.500	18325.000	23638.000
Z	-0.180	-2.691	-1.172	-0.532	-3.251
Asymp. Sig. (2-tailed)	0.857	0.007	0.241	0.595	0.001

**Table 11.** Age Ranks

	Age Category Codes	N	Mean Rank
IM	1	53	171.71
	2	134	154.98
	3	110	171.80
	4	37	194.03
SER	1	53	197.33
	2	134	162.66
	3	113	163.58
	4	37	167.92
IR	1	53	147.87
	2	135	168.61
	3	113	170.66
	4	37	200.18
AM	1	53	168.58
	2	133	178.31
	3	113	165.15
	4	37	143.34
MER	1	53	207.42
	2	135	167.29
	3	113	157.02
	4	37	161.34

terial external regulation decreases. However, the findings of Mann Withney U test (Table 19), in which the variables were evaluated in pairs, show that the fourth group differs from all other groups, material motivation is low in the others. In addition, the difference between the first group and the third group is statistically significant. However, the differences between the first and second groups, and the second and third groups, which represent close periods, are statistically insignificant.

The results of the dual Mann Withney U test for significant findings in the Kruskal Wallis tests, as referenced in the text above, are summarized below. Only meaningful

results are included for easy reading.

The results of the study, summarized in the analysis and findings section, will be discussed in detail in the fifth section below, and will be evaluated in the context of its contributions to the literature and recommendations to practitioners.

## CONCLUSION, DISCUSSION, AND IMPLICATIONS

As explained in the literature section, the study aimed to investigate the work motivation sources according to the personal experiences of the employees in the COVID-19 pandemic process. It is thought that the findings of the study make important contributions to both the literature and the practitioners.

One of the findings of the study regards the validity and reliability of the motivation scale, a scale based on Motivation at work Gagné et al. (2014) and the Turkish adaptation of Çivilidağ and Şekercioğlu (2017), a scale represented by 6 dimensions. The Motivation scale generally has a structure in which distinctive dimensions are presented on the theoretical plane, but problems in the separation of dimensions are frequently reported in practice. In this study, as a result of the CFA analysis, the introjected motivation from the dimensions could not be represented as a result of the validity and reliability studies, and consequently, the scale reached a valid and reliable structure with five dimensions. In the study, the dimension was eliminated in the discriminant and convergent validity phases. A partially internalized separation from external motivation and as Howard et al. (2017) stated, that this dimension is located between external motivation and identified regulation. Similarly, Van den Broeck et al. (2021) stated in their meta-analytic studies that while the belief that one should do something was identified with the expectation of reward or punishment, the dimensions of introjected regulation and often external motivation were collected in a single factor. Findings of the study also show that the participants in the sample

**Table 12.** Test Statistics of Age Categories

	IM	SER	IR	AM	MER
Kruskal-Wallis H	5.401	5.447	6.347	4.678	10.268
df	3	3	3	3	3
Asymp. Sig.	0.145	0.142	0.096	0.197	0.016



**Table 13.** Position Ranks

	Position Category Codes	N	Mean Rank
IM	1	185	167.25
	2	41	149.94
	3	74	176.37
	4	34	170.71
SER	1	188	183.37
	2	41	170.74
	3	73	138.11
	4	35	154.20
IR	1	188	160.74
	2	41	165.74
	3	74	180.84
	4	35	196.97
AM	1	187	181.98
	2	41	176.20
	3	73	143.05
	4	35	140.51
MER	1	188	175.43
	2	41	182.56
	3	74	169.49
	4	35	122.39

had problems with discrimination, but inconsistent results in the literature show that new studies on both motivation dimensions and cultural adaptation should continue.

In addition, this study is important in terms of evaluating the motivation sources of employees on a sectoral basis during the COVID-19 pandemic period. Since the amotivation levels of the employees are quite low, this finding, coupled with the key motivation source, the identified regulation, shows that there is a respondent profile that acts parallel with the goals and values. In addition, identified regulation also offers a more self-determined structure as it involves commitment and attribution to tasks as compared to other types of motivation (Deci & Ryan, 2000). Still, the classical assumption in the literature is that intrinsic motivation gives better results than identified regulation in employee-oriented outcomes. Yet, self-determination working theorists (e.g., Gagné & Deci, 2005) stated that this view is true for well-being, but for performance, identified regulation is more effective in mobilizing workers, especially when things get stressful and boring. In this respect, the

**Table 15.** Working Type Ranks

	Working Type Category Codes	N	Mean Rank
IM	1	13	115.23
	2	13	148.38
	3	23	176.98
	4	6	125.25
	5	233	169.59
	6	46	177.85
SER	1	13	168.23
	2	14	178.93
	3	22	174.25
	4	6	122.00
	5	236	176.12
	6	46	133.27
IR	1	13	112.42
	2	14	155.79
	3	23	188.46
	4	6	104.17
	5	236	171.05
	6	46	180.89
AM	1	13	165.92
	2	14	235.57
	3	23	164.17
	4	6	209.75
	5	235	165.96
	6	45	158.34
MER	1	13	122.54
	2	14	151.07
	3	23	202.04
	4	6	174.17
	5	236	170.62
	6	46	165.76

fact that they can continue to work in extraordinary conditions, in accordance with the nature of the findings of the study, supported the idea that socio-demographic variables did not show a statistically significant difference for intrinsic motivation and identified regulation.

Studies investigating motivation with its multidimensional structure have largely focused on the relationship between motivation types and individual and organizational outcomes. In addition, previous studies indicate that gen-

**Table 14.** Test Statistics of Position

	IM	SER	IR	AM	MER
Kruskal-Wallis H	2.033	12.350	5.401	13.867	9.670
df	3	3	3	3	3
Asymp. Sig.	0.566	0.006	0.145	0.003	0.022

**Table 16.** Test Statistics of Working Type

	IM	SER	IR	AM	MER
Kruskal-Wallis H	6.370	9.129	9.053	9.967	6.234
df	5	5	5	5	5
Asymp. Sig.	0.272	0.104	0.107	0.076	0.284

**Table 17.** Organizational Tenure Ranks

	Organizational Tenure Category Codes	N	Mean Rank
IM	1	57	187.94
	2	129	161.51
	3	86	166.07
	4	62	163.15
SER	1	57	183.63
	2	130	177.20
	3	87	166.47
	4	63	142.33
IR	1	57	164.00
	2	131	166.29
	3	87	175.56
	4	63	172.79
AM	1	57	165.96
	2	130	166.80
	3	86	177.34
	4	63	162.25
MER	1	57	198.43
	2	131	181.65
	3	87	161.80
	4	63	128.71

der, position, and organizational tenure are determinative qualities in terms of motivation sources (e.g., Deal et al., 2013). In this study, antecedents have been focused on in terms of reflecting periodic characteristics, and it has been determined that extrinsic motivation elements are affected by both personal and work-related issues. Despite these findings, most information found in the literature is either insufficient or inconsistent when comparing the relationship between the results and socio-demographic findings, and the frameworks about what motivates are decisive.

While social external regulation indicates significant differences in gender, household risk, and position vari-

ables, material external regulation is much more affected by socio-demographic differences. There are significant statistical findings for all variables except working type. In this case, it was seen that the way of working was not an important determinant for motivation sources. Additionally, amotivation differs only by position.

When we examine the findings in more detail, men are significantly more motivated in terms of both social and material external regulation. In the past studies, motivation and gender relationship vary according to the subject of motivation (Ray et al., 2003; Kovalčikienė, 2015). However, some studies focusing on the reason for the effort to work, such as Makki and Abid, (2017) state that extrinsic motivation does not differentiate according to gender. However, others such as Graves et al., (2013) have determined that women have a lower external motivation in parallel with these findings. When evaluated in terms of gender roles, the findings seem significant, but supporting data with a more in-depth method (such as an interview) can contribute to the literature in explaining the relationship between gender and motivation sources.

In addition, household risk status is significant for both types of external regulation, while those living with risky family members have lower external motivation. Only material external regulation levels of individuals with COVID-19 experience differ significantly from others, indicating that non-work situational difficulties affect employees negatively, in line with the theoretical definitions of external motivation.

Significant results were obtained for both types of motivation for the position. Non-managerial employees (compared to middle managers) have higher levels of social external regulation. However, the results differ slightly in terms of material external regulation. Top-level managers have lower material motivation than all other levels. Deal et al., (2013) similarly stated in their study that the external motivation of low-level managers is higher. However, in the related study, unlike the findings of this study, the autonomous motivation levels of the upper level were also found to be high. In addition, when the age groups were

**Table 18.** Test Statistics of Organizational Tenure

	IM	SER	IR	AM	MER
Kruskal-Wallis H	3.216	7.042	0.737	1.239	18.750
df	3	3	3	3	3
Asymp. Sig.	0.359	0.071	0.864	0.744	0.000

**Table 19.** Mann Withney U scores for significant Kruskal Wallis Tests

Category	IM	IR	SER	AM	MER
Age	-	-	-	-	MR1: 110.83 -MR2: 88.09 p= 0.009 MR1: 100.82 -MR3: 75.38 p= 0.001
Position	-	MR1:140.96-MR3: 105.36 p=0.001		MR1: 138.74 -MR3: 109.39 p=0.002 MR1: 115.86-MR4: 88.20 p=0.012 MR2: 65.26-MR3: 53.14 p=0.034	MR1: 117.30 -MR4: 83.56 p=0.004 MR2: 44.55 -MR4: 31.41 p=0.009 MR3: 60.48 -MR4: 43.41 p=0.008
Org. Tenure	-	-	-	-	MR1: 82.39 -MR3: 66.02 p= 0.021 MR1: 72.54-MR4: 49.61 p= 0.000 MR2: 107.16-MR4: 77.40 p= 0.001 MR3: 82.60 -MR4: 65.69 p= 0.018
Working Type	-	-	-	-	-

MR: Mean Rank, p= Asymp. Sig. (2-tailed) 1,2,3 and 4 are category codes (details in Table 1).

compared, only significant differences were found in terms of material external regulation: the segment up to the age of 25 had higher scores than the age range of 26-45 years. Findings related to external motivation can be explained by differences in motivation in Maslow's hierarchy of needs. The material return is more important at younger ages and at the lower levels of income. Similarly, the acquisition of social identity is also more likely to be met with an acquired status at later ages and positions. In addition, the findings of the study show that, in general, for lower-level positions, amotivation levels are higher. It can be justified by the fact that management takes responsibility for others and is the motivator.

Organizational tenure differs only in terms of material external regulation. Similar to the position, those with the highest tenure were found to have the lowest level of material motivation. Han et al (2019) stated in their studies that there is no significant correlation between external motivation and tenure, but the continuation of similar studies is important in terms of increasing consistency.

The findings prove that studies on motivation antecedents should be increased in order to increase the theoretically expected differences and the theoretical power of the results. In addition, with more comprehensive models, concrete outputs (such as performance), and intangible outputs, including employee happiness and the holistic evaluation of differences at individual, situational, and

organizational levels will make significant contributions to both the literature and practitioners.

As experienced during the pandemic process, it is important for organizations to use motivation tools as an important instrument to maintain performance and increase sustainability in unexpected conditions and to reconsider existing motivation tools. Although intrinsic motivation is always the most popular type of motivation, this study presented findings highlighting identified regulation. Identified regulation, which is more open to development with both human resources practices, leadership models, and organizational culture, begs the question, "How can it be increased?" This requires answering the question both in organizational practices and in future studies. Finally, it is recommended that practitioners offer both material and non-material instruments, a driving force for employees, and take into account individual differences rather than offering uniform motivational tools.

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