Investigation of School 'Administrators' Assumptions Regarding Management Practices Based on X-Y Theory

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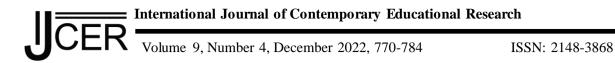[2]Ataturk University, 0000-0001-5676-1827

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Abstract

The main goal of this research is to develop a measurement tool that will determine the beliefs that guide school administrators' practices based on X and Y theory and the relationships between of level of these beliefs and other variables that school administrators use in management practices. The theory was tested with the scale developed in the research. Furthermore, the levels of school administrators' beliefs, which are assumed to guide their practices based on X and Y theory, were revealed in the research using data obtained during the scale development study; it was determined whether the demographic variables of school administrators differed according to the subscale (X and Y subscale) scores. Relational and causal comparison strategies were used in this quantitatively constructed investigation. Research data were collected from three sample groups in the Erzurum sample. It has been determined that there is a significant difference in the X theory subscale score in favour of school administrators working in primary schools. The study concluded that, based on X-Y theory, the assumptions of school administrators that shape management practices could be determined by the School Administrators' Beliefs in the Nature of Human Scale.

Keywords: 'McGregor's theory, Classical management theories, Human relations approach, X-Y theories, Belief in human nature

Introduction

Human resources are a school's most valuable asset. The question of how to manage the existing human resources to achieve the school's goals is one of the ancient questions of management science. Because when the history of organizations is examined, it is seen that human beings as social beings constantly gain new meanings, identities, goals, roles, and skills. Therefore, management science has developed new perspectives on the human problem in every period. Accordingly, while the science of management examined people based on work, organization, and processes in some periods, in other periods, needs, relations, systems, environment, technology, etc. analyzed on the basis. As a result, management science is constantly reviewing and examining the answers to the question of how to manage human resources. Some facts stay unchanged even while the content of the answer to the question is continually changing and evolving. One of them is the fact that the assumptions of the rulers towards the ruled direct the management practices.

Seeing this fact, Douglas McGregor researched how to make the most of human resources. McGregor (1970) argued that the human aspect of the organization is a single whole and that the existing theoretical assumptions about the supervision of human resources in organizations determine the entire character of the organization. At this point, he stated that the question will be asked top managers, ""What are your assumptions (implicit or explicitly express) about managing people most effectively"?", would give clues. According to McGregor (1970), behind any managerial decision or action lie surprisingly common assumptions about the nature and behaviour of people. Assumptions about human resource management control indicate an organization's character (Daneshfard, & Rad, 2020). In that case, knowing what assumptions school administrators have about human nature, which will accelerate the construction process of the schools desired by today's information society, can facilitate the processes of raising, selecting, employing, and retaining administrators.

In this context, X and Y theory has inspired many managerial and organizational behaviour and leadership theories. Despite the importance, it has been overlooked that the theory reflects basic individual differences in attitudes that guide leadership behaviours. This theory is often limited as a special management practice examined at the organizational level. Despite its impact and potential utility, few studies test the validity of this theory

(Kopelman, Prottas, & Falk, 2009, Pine, 2018). Based on McGregor's X and Y theory, some attempts have been made in different countries to make some measurements in organizations (Miles, 1964; Neuliep, 1987; Jones and Pfeiffer, 1972; Fiman, 1973; Michaelsen, 1973; Spautz, 1975; Teleometrics International Inc., 1995; Neuliep 1996). After that, Kopelman, Prottas, and Davis (2008) developed a four-item measurement tool based on this theory. Finally, Kopelman, Prottas, and Falk (2009; 2012) developed attitude and behaviour scales since previous measuring attempts lacked sufficient data on validity and reliability and were only used for commercial purposes. It has been observed that the developed scale has been used in some studies (Gürbüz, Şahin, Köksal, 2014; Sullivan, 2017; Pine, 2018). These studies assume that the assumptions on which theory X is based are the exact opposite of theory Y. For example, X theory items were reversed from items created using the X and Y theory assumptions, and a single score type (Y theory score) was created. The total score of the scale or the mean of the scale are the values that make it easy to judge the items that test a similar hypothesis. On the other hand, calculating the mean or total score of the scale items containing independent, opposite, or different hypotheses may lead to misinterpretation of the findings. This may make the findings obtained with these scales controversial. Thus, according to McGregor (1970), the basic organizational principles derived from the X theory (managing and controlling through the use of authority) and the basic organizational principles derived from the Y theory (creating conditions that allow employees to achieve their goals by directing their efforts toward the organization's success) have many different meanings in terms of human resource management. Assuming theory Y to be the exact opposite of theory X can lead to simplification and misunderstanding of theories.

For example, according to McGregor (1970), if employees are lazy and apathetic, avoid cooperating, are unwilling to take responsibility, and are incompatible, theory Y states that the reasons for this lie in managers' organization methods and supervision. Theory Y emphasizes the conditions created by the manager, not the nature of the human being. According to this viewpoint, management's role is to direct and organize human and substance resources so that a business achieves its goals. It is the management's responsibility to provide opportunities for the development of employees, to release their potential by creating conditions where people can use their efforts to achieve organizational goals (Gannon & Boguszak, 2013). This does not make the two theories opposed, but instead differentiates them. In this context, the theoretical structure of the X and Y theories on which the scale developed within the scope of the research is based has been examined with this understanding. Furthermore, it was seen that the scales developed in the literature were directed toward attitudes and behaviours rather than directly addressing the administrators' beliefs about the X and Y theory assumptions.

When the studies conducted in Turkey are examined, there is a study conducted by Aydın (2012) to reveal the research performance of academicians based on the X, Y, and Z theories. However, there was not enough information about the validity and reliability of the measurement tool in the study. The Management Approaches Scale developed by Usta (2017) was developed for the best management problematic based on a chaotic and positivist management approach. Considering the focus of the current research, it can be said that it has quite a different approach from this research. The scale developed by Tanrıöğen (2018) based on the X and Y theory to determine the management philosophies of school principals according to teacher perception (as cited in Ayral, 2020) is far from revealing beliefs about human nature based on school principals' perceptions. However, the comments made by teachers in determining the administrators' human-oriented presumptions may cause illusions. Instead, it is thought that administrators' self-reports of their beliefs will yield more accurate results. In Sabancı's (2008) quantitative study on the beliefs of school administrators in Turkey about human nature, sufficient evidence could not be found regarding the validity studies of the scale used.

In Turkey, the lack of a scale developed to determine school principals' opinions about human nature based on the X and Y theory limits the studies that can be done on the issue, the contributions to the theory and the benefit from the theory. Furthermore, the lack of sufficient information about the validity and reliability of some measurement tools in studies conducted in other countries, the measurement of both theories by transforming them into a single score type in some studies, and the fact that the scales developed in these studies do not reveal data on X and Y belief levels have been identified as a literature problem. Today, however, the response to the question of what the administrators' presumptions about people can help clarify various problems with school life, school psychology, management procedures, organizational behavior, and leadership. For this reason, there is a need for a more reliable and valid alternative measurement tool that can provide a solution to this problem. In answer to this need, this study aims to develop a measurement tool that will reveal the belief levels of school administrators about human nature, by the theory whose assumptions have been stated above. Knowing the beliefs and attitudes about people in advance is considered important in predicting the behaviours that will emerge and correcting unwanted behaviours (Çöllü & Öztürk, 2006). The scale established in this context is regarded as beneficial in forecasting administrator conduct toward the school community and rectifying undesired administrator actions.

As stated above, due to the limited number of research, it is unknown to what extent school administrators' beliefs about human nature, which are claimed to guide management activities, are in Turkey. Revealing the belief levels of school administrators about human nature based on the X and Y theory will prepare a suitable ground for understanding and transforming management approaches. For this reason, determining the level of belief of school administrators towards human nature is the second aim of this study.

According to McGregor's X and Y theory, managers' assumptions about human nature tend to be self-actualizing, and the assumptions of these two theories are opposite to each other (Kopelman, Prottas, & Falk, 2009). According to Sabuncuoğlu and Tüz (2016), the Y theory developed by McGregor defines the human being as the opposite of the X theory, prone to acquire responsible and mature behaviours. As stated in many studies, is theory Y the opposite of theory X? The answers to this question will contribute to a better understanding of these theories. Based on such a requirement, as the third aim of this study, the hypothesis that the scores obtained from the two subscales developed separately based on the X and Y theory have a strong inverse relationship was tested.

In Turkey, no statistical data has been discovered that assesses school administrators' perceptions based on demographic variables such as gender, age, seniority, duty type, and school type, using a belief scale to the nature of people based on the X and Y theory. It is thought that revealing the findings on the subject will make important contributions to the relevant literature. The final aim of this study is to reveal whether the scores of school administrators from the belief scale about the nature of people differ according to the demographic variables expressed.

The research aims to develop a scale based on X and Y theories in the sample of school administrators, to determine the possible relationship between the belief levels of school administrators based on the two theories by determining their belief levels in human nature. It also reveals whether these beliefs differ according to some demographic variables. For this purpose, answers to the following questions were sought;

1. Can scientific evidence be presented for the construct validity and reliability of a measurement tool based on X and Y theory in the sample of school administrators?
2. What is the level of school administrators' beliefs based on the X and Y theory?
3. Is there a statistically significant relationship between the scores obtained from the subscales developed for each theory in a measurement tool developed based on X and Y theories in the sample of school administrators? What is the direction and level of the possible relationship?
4. Do school administrators' beliefs about human nature differ in a statistically significant way according to their demographic variables?

Method

Research Model

The quantitative research method was used in the realization of this study. The study used relational and causal-comparative research designs to develop the scale and to reveal whether the obtained scores differ according to demographic variables. The likert type scale development method was used in this study. In the development of the scale, Rensis Likert's (1932) "scaling with rating sums" model (Tezbaşaran, 2008), which is claimed to be more economical than other approaches, was preferred. In the relational design, the relationships between two or more variables and the degree of these relationships are revealed. The degree of the relationship emerging in this design and whether the variables predict each other are determined (Creswell, 2012). Correlation determines the direction and size of the linear relationship between two variables (Tabachnick & Fidell, 2015). The causal-comparative design is a research approach that tries to explain the differences in the experiences of the groups by examining them. This design, as in experimental research, tries to understand whether some independent variables make a difference in the dependent variable by comparing the groups. Unlike the experimental design, the independent variable has already emerged, or it is unethical to manipulate the independent variable (Lodico, Spaulding & Voegtle, 2006; Gay, Mills & Airasian, 2016).

Selection of the Sample

A simple random sampling method was used in sample selection. The research data were collected through the online communication network created by the national education directorates. Volunteering criterion was used in the selection of the participants. The research participant group consists of school administrators (school principal, chief assistant of school principal, assistant principal) working in Erzurum. Several studies were carried out gradually with two different participant groups in this context. The main application of the scale development was

carried out with the first participant group. The scale developed with the second participant group was tested by confirmatory factor analysis. Finally, with the data of the third participant group consisting of the participants of both groups, it was determined whether the X and Y theory scores differed according to the demographic variables of the school administrators.

Table 1. Demographic information of the participants

Specification	1. Group (n)	2. Group (n)	3. Group (n)
Gender	190	121	311
Woman	35	23	58
Man	155	98	253
Task Type			
School principal	110	84	194
Chief assistant of the school principal	5	5	10
Assistant of the school principal	75	32	107
Educational Status			
Associate Degree	2	-	2
'Bachelor's Degree	165	108	273
MSc	23	13	36
PhD	-	-	-
Age			
20-30	29	60	89
31-40	55	39	94
41-50	56	18	74
51-60	41	3	44
61 +	9	1	10
MoNE Seniority			
1-5	22	58	80
6-10	33	35	68
11-15	32	11	43
16-20	25	6	31
21+	78	11	89
School Principal Seniority			
1-5	84	91	175
6-10	43	22	65
11-15	21	2	23
16-20	17	6	23
21+	25	-	25
School Type			
Pre-school	22	3	25
Primary school	67	46	113
Secondary school	47	49	96
High school	54	23	77

When Table 1 is examined, it is seen that there is some information about each participant group regarding gender, task type, educational status, age range, and the type of school where they work. The scale, which was applied voluntarily, was opened to the access of school administrators working in the public sector, and the scales answered in the context of the scale's suitability for factor analysis were accepted as samples. When the distribution of the answered scales to the districts is examined, the 1st participant group consists of 190 school administrators working in the central districts of Erzurum, Palandöken (26.3%), Aziziye (32.6%) and Yakutiye (41.1%). The second participant group comprises 121 school administrators working in other districts (52.1% Tekman, 22.3% Pasinler, 16.5% Tortum, and 9.1% other districts) except for the central districts of Erzurum. 3. The participant group consists of a combination of both groups (311 school administrators).

Data Collection Tools

The data collection tool used in the research was developed in the current study. The first part of the data collection tool, which consists of two parts, was prepared to reach the demographic information of school administrators. The second part was prepared to reveal the belief levels about human nature based on the X and Y theory. The scale was developed in a 5-point Likert-type scale, with Strongly Agree (5 / 4.20-5.00), Agree (4 / 3.40-4.19), Undecided (3 / 2.60-3.39), Disagree (2 / 1.80-2.59), Strongly Disagree (1 / 1.00-1.79) options are available.
To reveal the perceptions of school administrators, all stages of the development of the belief scale for human nature and the results of the psychometric measurement of the measurement tool are expressed under the heading of findings. Research data were collected electronically in 2 months due to the pandemic. The data collection tool was applied with the permission of Atatürk University Institute of Educational Sciences, Ethics Committee of Educational Sciences, dated 26/11/2020. Written explanations were given to the participants about the purpose of the research, voluntary participation, and the use of data for scientific purposes only. The administrators, who approved the voluntary participation, filled out the data collection tool, which was structured anonymously, and electronically.

Data Analysis

The data obtained from the school administrators were first examined in terms of missing values, minimum and maximum values, and extreme values. As a result of the examination, it was understood that there was no missing data, the minimum and maximum scores were in the range of 1-5 points, and the Z scores ranged between -3 and +3. For item discrimination coefficients, item scale score correlation and item analysis based on the difference between lower and upper group averages were performed. Empirical evidence was tried to be presented by applying EFA and CFA for the scale's construct validity. AVE (Average variance extracted) coefficients were calculated to reveal the similarity between the items, and CR (Composite/construct reliability) coefficients were calculated to reveal the combined validity of the factors. 'Cronbach's alpha coefficient was used to analyze the internal consistency coefficient of the scale. Skewness and Kurtosis values were calculated by performing Kolmogorov-Smirnov and Shapiro-Wilk Analyzes to provide evidence regarding the distribution characteristics of the scale. T-Test and One-Way Analysis of Variance were used to determine whether school administrators' beliefs about human nature differ according to demographic variables. Pearson Correlation Analysis was performed to reveal the relationship between the scale sub-factors.

Findings

In this section, there are scale development processes, exploratory and confirmatory factor analyses, parametric test results based on scale data whose validity and the sub-problems of the research have tested reliability.

Research Findings on the Development of the Belief Scale for Human Nature

The findings regarding the stages and processes followed in the scale development process are expressed in this section.

Creating an item pool and pre-implementing

For the scale designed to be developed, a literature review was conducted, and the theoretical foundations of the scale were determined. The literature review examined measurement tools developed based on X and Y theory in Turkey and other countries. Due to the limited number of domestic studies on the creation of the item pool, the book "The Human Relations Aspect of the Organization" by McGregor (1970), the representative of the X and Y theory, was used. Also, the scales developed abroad were used (Miles, 1964; Fiman, 1973; Michaelsen, 1973; Spautz, 1975; Teleometrics International Inc, 1995; Kopelman, Prottas, & Davis, 2008; Kopelman, Prottas, & Falk, 2009; Kopelman, Prottas & Falk, 2012). While creating the item pool, the following assumptions of Mcgregor were used. These assumptions are expressed under the headings of theories X and Y:

Theory X: Traditional Management and Audit View

> *1. The average human being has an inherent dislike of work and will avoid it if he can.*
> *2. Because of this human characteristic of dislike of work, most people must be coerced, controlled, directed, threatened with punishment to get them to put forth adequate effort towards the achievement of organizational objectives.*

3. The average human being prefers to be directed, wishes to avoid responsibility, has relatively little ambition, and wants security above all.

Assumptions of Theory Y

1. The expenditure of physical and mental effort and work is as natural as play or rest.
2. External control and the threat of punishment are not the only means of bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.
3. Commitment to objectives is a function of the rewards associated with their achievement.
4. The average human being learns, under proper conditions, not only to accept but to seek responsibility
5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in solving organizational problems is wide, not narrowly, distributed in the population.
6. Under the conditions of modern industrial life, the intellectual potentials of the average human being and only partially utilized.

The created item pool was delivered to three experts in the field of educational administration, and their evaluations were taken in line with the content validity and purpose of the research. The scale, of which necessary corrections were made in line with expert opinions, was applied to a group of 10 managers. Taking into account the problems discovered during the application, response time, and incomprehensible elements, the trial application scale was modified as required. Afterward, the main application of the draft scale consisting of 29 items was carried out on a school administrator group consisting of 190 people. First, the item scale score correlations were examined, and the discrimination coefficients of the scale items were determined. M2., M3., M6., M7., M10., M11., M12., M13., M14., M17., M19., M21., M25., M26., whose item discrimination coefficient is less than 0.4, M29. Factor analysis was performed by removing items from the scale.

Main Scale Application and Exploratory Factor Analysis Results

First, the Kaiser-Meyer-Olkin Sample Adequacy Measurement (KMO value) was found to be 0.819 in the analysis applied to a sample group of 190 people to reveal whether the data structure was suitable for the factor analysis. This value shows that the obtained data matrix is suitable for factor analysis and factor creation (Büyüköztürk, 2011). When the results obtained from the Barlett analysis are examined, it is seen that the chi-square value is significant at the 0.01 significance level. It was understood that this result met the multivariate normality assumption of the research data (Cokluk, Şekercioğlu & Büyüköztürk, 2012; Seçer, 2013). In this case, factor analysis was continued.
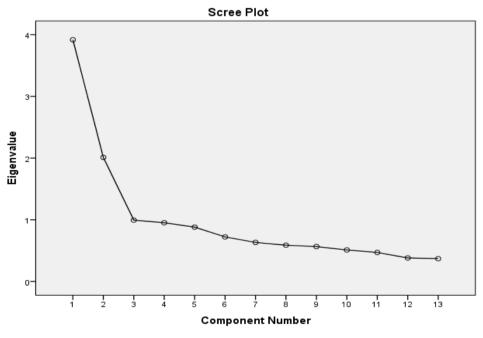
After the exploratory factor analysis by applying the varimax rotation technique, a three-factor structure proposal was reached with eigenvalues of 3.932, 2.082, and 1.129. Since the factors are thought to be independent of each other, the varimax rotation technique was preferred (DeVellis, 2017). When the rotated factor loads were examined, it was seen that the factor loads of all items, except M28, were gathered in two-factor structures as predicted by the theoretical basis. The factor load of the item M28 was .090, in the first factor, .198 in the second factor, and .763 in the third factor, which consisted of a single item. Considering that the load value in the first two factors was very low and the third factor consisted of only one item, it was decided to exclude this item from the exploratory factor analysis. Finally, the EFA findings regarding the 13-item two-factor structure are presented below:

Table 2 shows the rates of explaining the variance of the items in the common factor together. The 9th item was the lowest to explain the common variance with 35%; Item 11, on the other hand, has the highest rate of explaining the common variance with 60%. It is seen that the common variances of the items explained by the factors are greater than 0.10 (Cokluk, Şekercioğlu, Büyüköztürk, 2012). When Table 2 is examined, it is seen that the factor load values of the scale items are between 0.579 and 0.714. There is widespread acceptance in the literature that item factor loads should be higher than 0.30 (Şencan, 2005; Tavşancıl, 2006). The contribution of the two suggested factors to the variance is 45,604%. The contribution of each factor to the total variance is important in deciding the number of factors (Cokluk, Şekercioğlu & Büyüköztürk, 2012). The contribution of the first factor, which was developed based on the X theory, to the total variance was 30.13%; The contribution of the second factor, developed based on the Y theory, to the variance is 15.47%. The total explained variance of the scale is 45.604%. In the literature, it is accepted that the explained variances of the scales developed in the social sciences are between 40% and 60% (Scherer et al., 1988; cited in Tavşancıl, 2006).

Table 2. Results of exploratory factor analysis

Theory X Subscale Items		Common Variance	Factor Loads
1. Most employees strive towards organizational goals through external monitoring and threats (X, Assumption 2).		.380	.607
2. Most employees avoid taking responsibility (X, Assumption 3).		.478	.691
4. Most employees are lazy; they don't want to work (X, Assumption 1).		.494	.579
6. Employees need external control and pressure to work towards organizational goals (X, Assumption 2).		.529	.609
8. Most employees have lack of ambition (X, Assumption 3).		.407	.638
10. Most employees have a natural tendency for being managed rather than managing (X, Assumption 3).		.370	.591
11. Most employees will get away from work if they can find a way (X, Assumption 1).		.601	.714
Theory Y Subscale Items			
3. Employees who are devoted to the organization's mission manage and regulate themselves in the workplace (Y, Assumption 2).		.446	.653
5. If the conditions are right, employees will be willing to accept responsibility in the organization (Y, Assumption 4)		.474	.684
7. Imagination, which is common among employees, can be utilized in solving organizational problems (Y, Assumption 5).		.481	.684
9. In organizations, 'people's talents can be utilized much more (Y, Assumption 6).		.345	.583
12. Employees commit to organizational goals that respond to self-actualization needs (Y, Assumption 3)		.447	.667
13. Work is not something that most employees are born hating (Y, Assumption 1).		.476	.654
Theory X Eigenvalue	3.917	Explained Variance	30.13
Theory Y Eigenvalue	2.011	Explained Variance	15.47
Total Variance Explained			45.604

Finally, the Scree Plot was examined to decide on the factor number of the scale.

Figure 1. Scree Plot graph after EFA

When Figure 1 is examined, the components descending vertically from the y-axis to the x-axis form a horizontal line after the third point and continue by a plateau. The contribution of the components after the third point to the common variance is low and very close to each other. Based on these findings, it can be stated that the factor number of the scale is two. The factors were named Theory X Subscale and Theory Y Subscale. 1.,2.,4.,6.,8.,10.,11. Items X theory, 3.,5.,7.,9.,12.,13. The items are included in the Theory Y subscale.
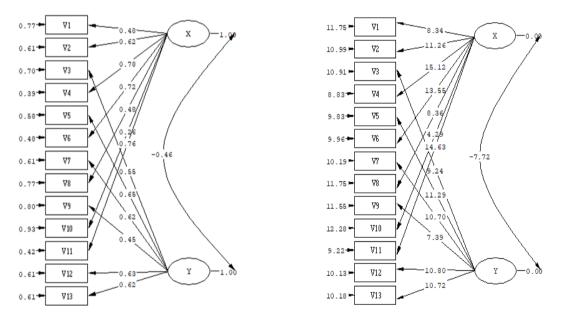
Confirmatory Factor Analysis Results

The developed 13-item scale was applied to the second sample group, and the normal distribution of the obtained data was examined before the confirmatory factor analysis. Table 3 shows the normal distribution test results of the scale data of each sample group.

Table 3. Findings regarding the conformity of the X and Y theory-based subscale data to the normal distribution curve

Gr.	Sub-scale	Kolmogorov-Smirnov			Shapiro-Wilk			Skewness	Kurtosis
		Stat.	df	p	Stat.	df	p		
1.	X	.087	190	.001	.991	190	.267	-.131	-.089
	Y	.093	190	.000	.968	190	.000	-.103	-.594
2.	X	.084	121	.035	.983	121	.119	.167	-.546
	Y	.104	121	.003	.966	121	.004	-.319	-.437
3.	X	.057	311	.016	.992	311	.097	.024	-.268
	Y	.082	311	.000	.974	311	.000	-.229	-.445

When Table 3 is examined, it is seen that the X Theory data distribution in all group applications fully meets the normality assumption only in the Shapiro-Wilk analysis. On the other hand, it is not sufficient to look at the result of this test to decide whether the distribution is close to normal (Seçer, 2013). For this reason, the findings regarding the skewness and kurtosis values of the variables were also examined. It is seen that Skewness and Kurtosis values are between -1,+1 values in all applications seen in the table. According to Büyüköztürk (2011) and Çokluk, Şekercioğlu, and Büyüköztürk (2012), the fact that the skewness and kurtosis coefficient remain within the limits of -1,+1 indicates that the distribution does not deviate excessively from the normal.

Confirmatory Factor Analysis (CFA) was applied to test the construct validity of the data whose normal distribution was tested. The results of the CFA analysis for the two-factor model are shown in Figure 2.

Figure 2. T-value and factor loads obtained as a result of CFA for the two-factor model

Table 4 shows the CFA findings of the scale data of each participant group.

Table 4. Findings concerning the CFA applied to the belief in human nature scale

	N	Sb	AGFI	GFI	NNFI	CFI	SRMR	RMSEA	X²/df	G/Sb	AVE	CR
1.G*	190	XY	0.85	0.90	0.91	0.93	0.078	0.080	2.20	1.G/X	0.338	0.773
2.G*	121	XY	0.84	0.89	0.94	0.95	0.088	0.067	1.53	2.G/X	0.442	0.830
3.G*	311	XY	0.90	0.93	0.94	0.95	0.065	0.064	2.26	3.G/X	0.374	0.793
G= Group, Sb: Subscale, AVE: Average Variance Extracted,										1.G/Y	0.369	0.801
CR: Composite/construct reliability, X: Theory X subscale										2.G/Y	0.350	0.757
Y: Theory Y subscale										3.G/Y	0,338	0,751

Çelik and Yılmaz (2016) AGFI above 0.90, GFI above 0.85; Özdamar (2016) χ2/sd is less than 5, CFI is over 0.90, RMSEA is less than 0.1, RMR is less than 5; Bayram (2016), on the other hand, stated that the model has acceptable fit indices when the NNFI is above 0.90 and the SRMR is below 0.10. Using the criteria stated above, the model demonstrated acceptable fit indices in all three sample groups in Table 4.. AGFI and GFI were low in the 2nd study group because of the low number of managers in this group. These indexes are very sensitive to the number of samples (Mulaik, James, Van Alstine, Bennett, Lind, Stilwell, 1989). CR gives clues about the factor's construct reliability, namely convergent validity, using the factor loadings and error variances of the items in the same factor. In this study, since the findings related to CR in all groups and subscales were higher than 0.7, it gives positive clues about construct reliability in both factors. On the other hand, AVE is a criterion that reveals the similarities between the items representing the latent structure, that is, the factor, and it should be above 0.5 (Gürbüz, 2019). In this study, it is seen that the three groups do not fully meet this criterion. However, Fornell and Larcker (1981) stated that the convergent validity of the constructed construct is still sufficient when the average variance extracted (AVE) is less than 0.5. Still, the composite reliability (CR) is higher than 0.6. In this case, it can be said that the convergent validity of both scales is sufficient. The CR value must be greater than the AVE value for the finally validated model to be conjoint valid. This condition was met in all subscale groups (Gürbüz, 2019).

Reliability analysis results of the developed scale

For the scale's reliability, the internal consistency of the items was examined with the alpha method, and the Cronbach Alpha coefficient was calculated. The scale's reliability was also tested by split-half analysis, and the Spearman-Brown coefficient was calculated for each factor. The results of the reliability analysis of the final scale regarding the factors and the t-Test results regarding the difference between the 27% lower and upper group averages are shown in Table 5.

Table 5. Item scale score correlation and lower upper group means difference item analysis findings

Rank No	İtem No	n	Item Scale Score Correlation	n1+n2	Difference between Lower and Upper Group Means t-Test Results	Cronbach α	Spearman r_s
Subscale (Theory X)						.775	.722
1	1	190	.647**	102	-11.646**		
2	2	190	.659**	102	-9.274**		
3	4	190	.676**	102	-11.257**		
4	6	190	.702**	102	-12.115**		
5	8	190	.606**	102	-7.745**		
6	10	190	.517**	102	-6.418**		
7	11	190	.752**	102	-14.988**		
Subscale Theory Y)						.750	.702
8	3	190	.669**	102	-11.249**		
9	5	190	.675**	102	-11.031**		
10	7	190	.664**	102	-10.533**		
11	9	190	.598**	102	-10.034**		
12	12	190	.690**	102	-12.190**		
13	13	190	.708**	102	-12.884**		

**p<0.01

According to Table 5, the item-total score correlation coefficients of the theory X subscale range from .517 to .752, and the theory of Y subscale is between .598 and .708. The correlation coefficients in both scales are significant at p<0.01 and are found to be positive. Items with a low correlation with the scale score should be removed from the scale as they contribute little to the characteristic to be measured (Tezbaşaran, 2008). This is not the case when the correlation coefficients of the items with the scale score are considered. According to the item analysis findings based on the difference between the upper and lower group averages of both subscales, it is seen that the difference between the lower and upper group averages is significant at the p<0.01 significance level. In item analysis based on the difference of means, if the sub-group mean of the items is significantly lower than the upper-group mean, this item should be included in the scale (Tezbaşaran, 2008). The lower and upper group averages of all items differed significantly. In this case, it is understood that no item should be removed from the scale. The internal consistency coefficient ('Cronbach's alpha) of the subscales of the X and Y theory was found to be .775 and .750, respectively.

Findings regarding the level of beliefs of school administrators based on X and Y theory

In line with the second sub-problem, the belief levels of school administrators regarding the nature of employees in terms of X and Y theory are determined and presented in Table 6.

Table 6. Belief levels of school administrators on the nature of human by groups

X Theory Factor Items	1. Gr		2. Gr		3. Gr	
	$\bar{x}$	Sd	$\bar{x}$	Sd	$\bar{x}$	Sd
1. Most employees strive towards organizational goals through external monitoring and threats.	2.80	1.26	3.18	1.41	2.95	1.33
2. Most employees avoid taking responsibility.	3.41	1.15	2.79	1.43	3.17	1.30
4. Most employees are lazy; they don't want to work.	2.36	1.15	2.33	1.31	2.35	1.21
6. Employees need external control and pressure to work towards organizational goals.	2.64	1.16	2.90	1.35	2.74	1.24
8. Most employees have lack of ambition.	3.28	1.02	3.24	1.08	3.27	1.04
10. Most employees have a natural tendency for being managed rather than managing.	3.14	1.00	3.28	1.24	3.19	1.10
11. Most employees will get away from work if they can find a way.	2.95	1.13	2.77	1.30	2.88	1.20
Theory X Arithmetic Mean	2.94		2.93		2.93	
Theory Y Factor Items						
3. Employees who are devoted to the organization's mission manage and regulate themselves in the workplace.	4.16	.811	4.13	1.00	4.15	.891
5. If the conditions are right, employees will be willing to accept responsibility in the organization.	4.03	.819	4.17	.862	4.09	.837
7. Imagination, which is common among employees, can be utilized in solving organizational problems.	3.80	.866	3.76	1.01	3.78	.926
9. In organizations, 'people's talents can be utilized much more.	4.28	.745	4.19	.802	4.25	.768
12. Employees commit to organizational goals that respond to self-actualization needs.	3.94	.791	3.78	.932	3.88	.851
13. Work is not something that most employees are born hating.	4.00	.973	3.77	1.07	3.91	1.01
Theory Y Arithmetic Mean	4.04		3.97		4.01	

When Table 6 is examined, it is seen that the school administrators agreed with the assumptions of the theory X at a moderate level ($\bar{X}$:2.94, $\bar{X}$:2.93, $\bar{X}$:2.93) in all three study groups. In contrast, the assumptions of the theory Y were close to a high level ($\bar{X}$:4.04, $\bar{X}$:3.97, $\bar{X}$:4.01).

Examining the Relationship Between Scale Scores Based on X and Y Theory

In the context of the third sub-problem of the research, the relationship between the sub-scales of the measurement tool developed based on X-Y Theory was examined and the findings related to the analysis made in the SPSS 22 program are shown in Table 7.

Table 7. Findings related to correlation between X and Y theory subscales

	N	Correlation between Theory X and Theory Y subscales	p
1. Group	190	-.195	0. 007
2. Group	121	-.239	0.008
3. Group	311	-.291	0.000

**p<0.01

Pearson Correlation Analysis was applied to reveal the possible correlation coefficient between the subscales developed based on the X and Y theory assumptions. As a result of the analysis, it was found that there were low, negative, statistically significant relationships between the X and Y theory subscales in all three study groups was found (p<0.01).

Examining the Beliefs of School Administrators on Human Nature in Terms of Some Variables

Within the scope of the last sub-problem of the study, a T-test and One-Way Analysis of Variance was applied to reveal whether the Subscales of the Belief in the Nature of Human Scale differ according to the demographic variables of school administrators. The findings are presented in the tables below.

Table 8. One-Way analysis of variance findings on whether school administrators' beliefs about human nature differ according to school type

Variables	School Type	n	$\overline{X}$	Sd	F	p	Difference
X Theory	Pre-school (A)	25	21.52	5.88	5.663	.001*	B-A*
	Primary Sch. (B)	113	18.87	5.05			B-C**
	Secon. Sch. (C)	96	21.61	5.95			B-D**
	High Sch. (D)	77	21.48	5.43			
		Sum of Sq.	Sd.	Mean Sq.	F	p	
Y Theory	Between groups	50.801	3	16.934	1.356	.256	-
	Within group	3835.025	307	12.492			
	Total	3885.826	310				

**p< 0.01, *p<0.05

As a result of a one-way analysis of variance applied to reveal whether school administrators' beliefs about human nature differ according to school type, X theory scores differed statistically (p<0.01, F:5.66). In contrast, Y theory scores did not differ (p>0.05, F: 1,356). Since the group variances were homogeneous, the LCD test was applied to reveal the difference between school types. According to the results of the LCD test, primary school administrators' X theory score averages ($\overline{X}$:18.87) were found to be statistically significantly lower than preschool ($\overline{X}$:21.52), secondary school ($\overline{X}$:21.61) and high school ($\overline{X}$:21.48) averages.

Table 9. Findings regarding whether the beliefs of school administrators about human nature statistically differentiated according to the variable of task type

Variable	Task Type	N	Mean	sd	t	p
X Theory	School Principal	194	20.17	5.74	-1.778	.076
	School Prin. Assist.	107	21.38	5.51		
Y Theory	School Principal	194	24.36	3.53	1.563	.119
	School Prin. Assist.	107	23.70	3.45		

*p<0.05

As a result of the t-Test performed according to Table 9, it was found that school administrators' X theory and Y theory scores did not differ statistically according to the task type variable (p>0.05).

Although the findings show no significant difference in the X and Y theory scores of the school administrators according to the task types, the t scores are close to the level of significance. When the arithmetic averages are examined, it is seen that the beliefs of the assistant directors about human nature are more negative than those of the school principals (theory X subscale scores are higher), and their beliefs about the theory Y have a lower average than those of the school principals.

The seniority of school administrators in the Ministry of National Education (X theory p>0.05, F: .981, Y theory p>0.05, F: 1.001), seniority in the administrator (X theory p>0.05, F: .840, Y theory p>0.05), F: .877), an education level (X theory p>0.05, F: 1.833, Y theory p>0.05, F: 2.214), age (X theory p>0.05, F: .809, Y theory p>0.05, F: .634), the number of teachers in their schools (X theory p>0.05, F: .760, Y theory p>0.05, F: .828), gender (X theory p>0.05, t: -.424, Y theory p>0.05, t: -.376), the levels of belief in human nature did not differ.

Results and Discussion

This study aims to create a measurement tool that will expose school administrators' beliefs about human nature, based on McGregor's X and Y theory assumptions, that can provide convincing evidence for its validity and reliability. Using the measurement tool developed afterward, the belief levels of school administrators about human nature and whether these belief levels differ according to some demographic variables were revealed. The relationship between the scores obtained from the X and Y theory subscales was also determined in the study.
As a result of the exploratory factor analysis of the developed scale items, it was understood that the scree plot analyzed was gathered around two factors with an eigenvalue higher than 1 and explaining almost half of the scale variance, as designed. The fact that there is a large difference between the lowest eigenvalue of the scale accepted as a factor of 2.011 and the next eigenvalue of 0.994 confirms the two-factor structure reached. Confirmatory factor analysis and composite reliability (CR) confirmed the factor structures of the developed subscales. In the first factor of the scale, there are 7 items based on McGregor's (1970) X theory assumptions, and in the second factor, there are 6 items based on Y theory assumptions. It can be said that the item numbers are balanced in terms of representing the factors.

Item-total score correlations, sub-upper group mean difference analysis, 'Cronbach's Alpha reliability coefficients provide satisfactory evidence for the reliability of the developed measurement tool. On a 5-point Likert scale, the lowest value obtained from the X factor is 7, with a maximum value of 35; the lowest value obtained from the Y component is 6, with a maximum value of 30. In light of all these findings, it was concluded that scientifically persuasive evidence could be presented about the construct validity and reliability of a measurement tool based on X and Y theory in a sample of school administrators, which was in line with the research's first question.
By the study's second question, the belief levels of school administrators in the study groups on human nature were determined within the scope of the research. Accordingly, it was found that the mean scores based on the theory of X assumptions of the first and second sample groups participating in the research were near to each other ($\overline{X}$:2.94, $\overline{X}$:2.93) and moderate. It is seen that the mean scores based on the Y theory assumptions of both study groups are similar, close to the high level ($\overline{X}$:4.04, $\overline{X}$:3.97). According to a study by Sabancı (2008), the mean of school principals' beliefs about human nature, determined by a 4 Likert-type scale, was found to be $\overline{X}$: 2.68 for theory X and $\overline{X}$: 2.77 for theory Y.

Taş (2011) found that, according to teachers' and principals' perspectives, school principals' management philosophies are mostly based on the Y theory assumption. In a study done by Ayral (2020), according to teacher views, school principals' X theory means were close to the middle level ($\overline{X}$:2.87), while their Y theory means were close to the high level ($\overline{X}$:3.70). While teachers' perceptions of the X theory were similar to the current study, school administrators' perceptions of the Y theory were found to be higher in the current study. The research findings expressed are in parallel with the findings of this study. Based on previous studies, it can be stated that the perception of the Y theory among school administrators has improved. Administrators can combine individual and organizational goals; it may be stated in this context. Administrators with an attitude based on the assumptions of theory Y aim to encourage creativity and innovation, minimize control, make the work attractive and meet the needs of employees at a high level to give more freedom to their employees (Drucker, 2008; cited in Daneshfard & Rad, 2020).

The moderate level of beliefs based on theory X assumptions is not desirable in educational institutions. Because of the negative beliefs about human nature, the controlling attitudes of the managers and their pessimism in their relations may cause their subordinates to have an obedient tendency. This situation may cause employees to try to do the job to the letter as stated to them without questioning it to please their managers. Since the management attitude based on the assumptions of the theory X carries the belief that the employees will be treated with the same attitude, oppressive control mechanisms may take place in the management processes. This circumstance

may hinder the school's innovation and development activities. Education's most precious asset is creativity. A reduction in educators' creativity can result in the worst-case scenario.In most institutions, the order is considered important at the expense of inhibiting creativity. This may make it difficult for the institution to respond creatively to changing environmental needs (Mattaliano, 1982). While school administrators' belief in human nature based on X theory is moderate, it will be difficult for them to create school conditions that will allow employees to manage themselves by connecting them to the school's goals based on Y theory. In their research, Almeida, Caetano, Duarte (2018) found that organizations emphasizing the Y theory offer an organizational culture that is sensitive to changes in the organizational environment; therefore, they adapt to the adaptive culture structure.

When the findings regarding the third sub-problem of the study were examined, it was seen that there was a low level of negative correlation between the sub-scales of the belief in human nature (X and Y sub-scales). This finding supports the idea that theory Y assumptions are not the opposite of theory X assumptions. Based on these findings, the Y theory does not have the opposite beliefs of the X theory; instead, it can be said that it emphasizes the belief that experiences and environmental conditions shape human nature. For example, while theory X asserts that "A normal person prefers to be governed, wants to avoid responsibility, and has little ambition", theory Y does not suggest that "A normal person prefers to lead, tries to take responsibility". Instead, theory Y emphasizes the conditions and experiences of the individual. Therefore, the relevant assumption of theory Y is that ""Under favorable conditions, the ordinary person learns not only to accept but also to seek responsibility"". The emphasis on conditions is on the experience of employees. The contribution of school administrators in the formation of experiences is shaped according to the environment (school culture, school climate, versatile communication, supporting teachers, participation in the decision-making process, safe environment, etc.). In that case, theory Y is not that most people are naturally willing to take responsibility; it argues that employees' responsibility-taking behaviours depend mainly on their experiences and adaptive organizational conditions.

According to yet another example, theory X asserts that a normal person prefers to be governed. In contrast, theory Y asserts that "People use ways of self-direction and control while serving the purposes to which they are attached". In other words, theory Y states that topeople to govern themselves by committing to the organization's goals. This shows that Theory Y assumptions are not the exact opposite of theory X assumptions but a different approach from theory X. It is thought that the perception of these two theories in the literature as the opposite of each other (Madero-Gomez and Rodríguez –Delgado, 2018; Sullivan, 2017) is a misconception. Based on this misconception, accepting X and Y theory as the pioneer of two opposing management styles that lead to autocratic and democratic leadership behaviours may be effective (Sullivan, 2017). This situation makes the validity of the scales developed with the thought that the assumptions of the two theories are opposite to each other controversial. When the idea that X and Y theories are not exactly opposite of each other is accepted, the content of the behaviour set needed in the current conditions to manage employees with different characteristics in organizations will be more enriched regardless of the managers' beliefs in human nature. In other words, people in organizations may have different personalities that respond to X theory assumptions rather than Y theory (Touma, 2021).

In the study, it was examined whether the beliefs of school administrators about the nature of humans differ according to demographic variables. According to the research results, it was understood that the perceptions of school administrators differ according to the type of school they work in the scores obtained from the sub-scale based on the theory X assumptions.

Preschool, middle, and high school administrators have higher beliefs about X theory than primary school administrators. This finding shows that the beliefs of school administrators working in primary schools about human nature are less pessimistic than those working in pre-school, secondary, and high schools. On the other hand, school administrators' beliefs about Y theory do not differ according to school types. In this context, it can be said that the theory of Y assumptions is more widely accepted, regardless of school type, with the adoption of the contemporary management approach.

Although it was seen that the effect of school administrators' task type on X and Y theory scores was not statistically significant, t values were very close to the 0.05 significance level. Therefore, the difference between the arithmetic means is interpreted. Since the assistant principals mostly act as a bridge between the school principal and the teachers in executing the management processes and operating organizational structure, it is thought that their beliefs about human nature are more negative than the school principals. It is thought that the problems experienced in the school regarding fulfilling the duties negatively affect the beliefs of the assistant principals who are in direct communication with the teachers.

It has been understood that the seniority of school administrators in the Ministry of National Education, their gender, administrative seniority, educational background, age, and the number of teachers in the schools they

work in do not affect the X and Y theory scores. In Sabancı's (2008) study, school principals' beliefs about human nature did not differ according to their experience. Considering that human beliefs gain strong stability over time, it may be possible to develop resistance to variables such as educational status, gender, seniority, age, and size of the target audience. Because school administrators in Turkey are trained on the job, the tendency to continue to the apparent, recognized, existing, and established school management style may facilitate sharing X, and Y views and attitudes regardless of seniority, gender, age, or educational status.

Recommendations

On the basis of the research findings, it is suggested that the Y theory's tenets be incorporated into the management processes of schools, where the human aspect takes precedence over the institutional aspect. Using the scale developed within the scope of this study, the relationship between school administrators' beliefs about the nature of humans and various phenomena and factors, such as school culture, climate, organizational commitment, job satisfaction, and personality traits, can be investigated. In addition, because the scale developed for this study was developed in Turkish, it is recommended that validity and reliability tests be repeated when adapting it to other cultures.

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Author (s) Contribution Rate

Conflicts of Interest
Authors declare that they have no conflict of interest.

Ethical Approval
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References

Almeida, F. A. S., Caetano, K. T. M., & Duarte, M. (2018). The approach McGregor's X and Y theory associated with the adaptive or non-adaptive culture construct of Kotter and Heskett: An empirical study in Goiás, Brazil.

Ayral, T. (2020). *Okul müdürlerinin yönetim felsefeleri ile okulların şeffaflık düzeyleri arasındaki ilişki* [Master's thesis]. Pamukkale University, Denizli.

Aydin, O. T. (2012). The impact of theory X, theory Y and theory Z on research performance: An empirical study from a Turkish University. *International Journal of Advances in Management and Economics*, *1*(5), 24-30.

Bayram, N. (2016). *Yapısal eşitlik modellemesine giriş AMOS uygulamaları*. Ezgi.

Büyüköztürk, Ş. (2011). *Sosyal bilimler için veri analizi el kitabı* (17. bs.). Pegem.

Creswell John, W. (2012). *Planning, conducting and evaluating quantitative and qualitative research*. Lincoln: University of Nebraska Daulat Purnama.

Çelik, H.E. & Yılmaz, V. (2016). *LISREL 9.1 ile Yapısal Eşitlik Modellemesi(3.Baskı)*. Anı.

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2012). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları* (Vol. 2). Pegem.

Çöllü, E. F., & Öztürk, Y. E. (2006). Örgütlerde inançlar-tutumlar tutumların ölçüm yöntemleri ve uygulama örnekleri bu yöntemlerin değerlendirilmesi. *Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi*, *9*(1-2), 373-404.

De Almeida, F. A. S., Caetano, K. T. M. & Duarte, M. (n.d). Approach of McGregor's X and Y theory associated with the adaptive or non-adaptive culture construct of Kotter and Heskett: An Empirical Study in Goiás, Brazil.

DeVellis, R. F. (2017).*Ölçek geliştirme* (T. Totan, Çev.). Nobel.

Drucker, P.(2008). *The practice of management.* Harper and Brothers.

Daneshfard, K., & Rad, S. S. (2020). Philosophical analysis of theory x and y. *Journal of Management and Accounting Studies*, *8*(2), 44-48.

Fiman, B.G. (1973). An investigation of the relationships among supervisory attitudes, behaviours, and outputs: an examination of 'McGregor's Theory Y, *Personnel Psychology, 26*(1), 95-105.

Fornell, C., & Larcker, DF (1981). Ölçülemez değişkenli yapısal denklem modellerinin değerlendirilmesi ve ölçüm hatası. *Pazarlama Araştırması Dergisi*, *18* (1), 39-50.

Gannon, D., & Boguszak, A. (2013). Douglas 'McGregor's theory x and theory y. *CRIS-Bulletin of the Centre for Research and Interdisciplinary Study*, *2*, 85-93.

Gay, L.R., Mills, G.E., & Airasian, P. (2006). *Educational Research: Competencies for Analysis And Application. (8th ed.)*. Prentice-Hall.

Gürbüz, S. (2019). *Amos ile yapısal eşitlik modellemesi*. Seçkin.

Jones, J. E., & Pfeiffer, J. W. (1972). Supervisory attitudes: The X-Y Scale. In J. W. Pfeiffer & J. E. Jones (Eds.), The 1972 Annual Handbook for Group Facilitators (pp. 65-68). University Associates.

Özdamar, K. (2016). *Ölçek ve test geliştirme yapısal eşitlik modellemesi*. Nisan Kitabevi

Kopelman, R. E., Prottas, D. J., & Davis, A. L. (2008). Douglas McGregor's Theory X and Y: Toward a construct-valid measure. *Journal of Managerial Issues*, *20*(2), 255-271.

Kopelman, R. E., Prottas, D. J., & Falk, D. W. (2009). Construct validation of a theory X/Y behaviour scale. *Leadership & Organization Development Journal*, *31*(2), 120–135.

Lodico, M.G., Spaulding, D.T., & Voegtle, K.H. (2006). *Methods in Educational Research: From Theory to Practice*. John Wiley & Sons.

Madero-Gómez, S. M., & Rodríguez-Delgado, D. R. (2018). Relación entre las teorías X y Y de McGregor, las formas de retribuir y la satisfacción de las personas en su trabajo. *Ciencia UAT*, *13*(1), 95-107.

Mattaliano, A. P. (1982). Theory X or Theory Y-What Is Your Style?. *NASSP Bulletin*, *66*(456), 37-40.

McGregor, D. (1970). *Örgütün insan ilişkileri yönü* (Çev. Doğan Energin). Orta Doğu Teknik Üniversitesi.

Michaelsen, L.K. (1973), '"Leader orientation, leader behaviour, group effectiveness and situational favorability: an empirical extension of the contingency model"', Organizational Behavior and Human Performance, *9* (2), 226-45.

Miles, R. E. (1964). Conflicting elements in managerial ideologies. *Industrial Relations, 4*(1), 77-91.

Mulaik S. A., James L. R., Van Alstine J., Bennett N., Lind S., & Stilwell C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*. *105*(3):430–445. http://dx.doi.org/10.1037/0033-2909.105.3.430.

Neuliep, J. W. (1987). The influence of Theory X and Theory Y management styles on the selection of compliance-gaining strategies. *Communication Research Reports*, *4*, 14-19.

Neuliep, J. W. (1996). The influence of Theory X and Y management style on the perception of ethical behaviour in organizations. *Journal of Social Behavior and Personality*, *11*, 301-311.

Pine, H. (2018). *The relationship between the big five personality traits and theory X and Y: An exploratory study* [Doctoral dissertation]. University of Adelaide, School of Psychology.

Sabanci, A. (2008). School principals' assumptions about human nature: Implications for leadership in Turkey. *Educational Management Administration & Leadership*, *36*(4), 511-529.

Sabuncuoğlu, Z., & Tüz, M. (2016). *Örgütsel davranış* (6. Baskı). Alfa Aktüel Yayınları.

Seçer, İ. (2013). *SPSS ve LISREL ile pratik veri analizi*. Anı.

Spautz, M.E. (1975). A new scale for Theories X and Y. *Australian Journal of Psychology, 27*(2), 127-41.

Sullivan, J. S. (2017). *The relationship between Mcgregor's Leadership theory and happiness among higher educational leaders*. Florida Atlantic University.

Tabacnhinch, B. G., & Fidell, L. S. (2015). *Çok değişkenli istatistiklerin kullanımı* (M. Baloğlu, Çev.).Nobel.

Taş, S. (2011). Management philosophies of primary school principals. *Education*, *131*(3), 565-580.

Teleometrics International, Inc (1995). *Managerial philosophy scale*. Teleometrics International, Waco, TX.

Tezbaşaran, A.(2008). Likert tipi ölçek hazırlama kılavuzu, *Türk Psikologlar Derneği*,

Touma, J. (2021). Theories X and Y in combination for effective change during economic crisis. *Journal of Human Resource and Sustainability Studies*, *9*(01), 20-29.

Usta, M. (2017). Yönetim anlayışları ölçeğinin geliştirilmesi. *Mukaddime*, 8(2), 267-285. http://dx.doi.org/10.19059/mukaddime.341450