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The Machiavellian Leadership: Scale Validity and Reliability Study

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This study aims to develop a valid and reliable instrument, the Machiavellian Leadership Scale (MLS), designed to assess the extent to which educational leaders exhibit Machiavellian characteristics. In the research, the survey model was preferred in accordance with the objective of scale development. The scale has a structure that can be applied in all organizations. The sample of the research consists of administrators working in public and private schools in Istanbul. In the scale development process, first Exploratory Factor Analysis (EFA) and then Confirmatory Factor Analysis (CFA) were conducted within the scope of validity evaluation. EFA was conducted with 214 participants and CFA with 256 participants. As a result of the analyses, a scale consisting of four dimensions and 20 items was obtained. The sub-dimensions of the scale were named as protection, manipulation, strategic planning and power. Based on the results, the scale demonstrated a high level of internal consistency, indicating strong reliability. Additionally, the items showed significant discriminatory power in distinguishing between different levels of leadership behavior. These findings suggest that the Machiavellian Leadership Scale is a valid and reliable tool for assessing educational leadership within organizational settings. This result shows that the scale items have a high performance in terms of reliability and validity. As a result, it was decided that the scale was credible and consistent, and the scale was named as Machiavellian Leadership Scale (MLS).

Introduction

The concept of Machiavellianism first emerged in Niccolò Machiavelli's works in the 16th century and was developed to explain individuals' efforts to gain superiority through power, strategy and manipulation (Machiavelli, 1988). Over time, this concept has been investigated in a wide range of fields from individual personality structures to organizational behaviors (Christie & Geis, 1970). In the organizational context, Machiavellian individuals are defined with characteristics such as high manipulation tendency, strategic thinking, low empathy and interest orientation (Paulhus & Williams, 2002).

In the literature, there are various scales developed to measure Machiavellianism. The most

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well-known of these is the Mach-IV scale developed by Christie and Geis (1970). Later, the multidimensional Machiavellianism Scale developed by Dahling et al. (2009) focused on dimensions such as manipulation, moral laxity and strategic calculation. However, these scales are mostly geared towards assessing individual personality constructs and are not specific to leadership or leadership contexts. In this context, the main original contribution of the current study is the development of the Machiavellian Leadership Scale (MLS), which assesses the Machiavellian characteristics of leaders in the leadership process with a multidimensional structure. The developed scale fills an important gap in the literature by addressing not only individual characteristics but also concrete leadership behaviors in the organizational context in four sub-dimensions: strategic planning, power, protection and manipulation.

In organizations, managers with Machiavellian tendencies can be competitive, highly suspicious and distrustful of others, and can perform very well for their own objectives (Basto, Fernandes & Duarte, 2024). Studies emphasize hat the occurrence of Machiavellian individuals in managerial positions in organizations negatively affects other employees (Leithwood, Harris & Hopkins, 2020; Matthews ve ark., 2022; Paulhus & Williams, 2002). On the other hand, some researchers claim that Machiavellianism has positive effects and can be a necessary tool for managerial success (Chatterjee & Hambrick, 2011; Genau ve ark., 2021; Kessler et al., 2010; Srivastava, Raina & Madan, 2024). Conversely, existing research shows similarly controversial and different findings for Machiavellian individuals who are not in managerial positions (O'Boyle et al., 2012). In this respect, it is necessary for more studies examining Machiavellianism in both managerial and non-managerial employees (Kessler et al., 2010; Harms & Spain, 2015).

It is evident that many successful leaders in contemporary times exhibit traits often associated with Machiavellianism (Bitonti, Funiciello & Mariotti; 2025; Davis, 2023; Galie & Bopst, 2006; Scott & Zaretsky, 2013). While this might seem concerning at first, the practical advantages of such traits in navigating the complexities of the modern world cannot be overlooked (Üstün & Ersolak, 2020). Machiavelli's pragmatism stems from his emphasis on what works in practice rather than what is theoretically ideal (Cohen & Morse, 2014; Davis, 2023). Individuals who exhibit Machiavellian traits can also have many positive effects from an organizational perspective (Dahling, Whitaker & Levy, 2009; Davis, 2023; Ricks & Fraedrich, 1999). Although Machiavellian leaders may exhibit manipulative tendencies, they are successful in social environments and organizational structures (Eker, 2020; Paulhus & Williams, 2002). They often rise to prominent guidance tasks and secure significant financial benefits (Lindley, 2018; Spurk et al., 2016). Studies suggest that the organizational achievement of Machiavellian individuals is closely tied to their expertise in managing perceptions and exerting influence over others (Song et al., 2025). In this relationship, as individuals' Machiavellian score increases, their self-promotion skills also increase (Bolino & Turnley, 2003). At high levels of Machiavellianism, although there is a decrease in overall managerial ratings, including the organizational factor, sales volume increases in the competitive market in which the organization operates (Ricks & Fraedrich, 1999). In terms of communication, which is important in achieving organizational goals, modern political communication seems to be an inherently Machiavellian activity (Harris, Lock, & Rees, 2000).

Although there are general scales of Machiavellianism in the existing literature, these scales generally not specialize in the guidance context (O'Boyle, Forsyth, Banks, & McDaniel, 2012). Machiavellian scales commonly used in the literature (e.g., Christie & Geis, 1970; Dahling et al., 2009) assess general dispositions of individuals but fail to measure behavioral characteristics specific to the leadership context. While these scales focus on individual

attitudes such as manipulation, moral laxity, and interest seeking, they do not cover multidimensional leadership actions of leaders such as strategic planning, use of power, and protective behavior. The Machiavellian Leadership Scale (MLS) developed in this study aims to fill this gap and offers a new and functional contribution to the literature with its four sub-dimensions structured specifically for the leadership context. A scale to be developed in this context will make an important contribution to the leadership studies literature and shed light on a dimension that is often overlooked in leadership studies. Since the general Machiavellianism scales in the literature do not sufficiently focus on the leadership context, this study is a scale development research that aims to develop a multidimensional and unique measurement tool that can evaluate the Machiavellian characteristics of leaders. The purpose of this study is to develop a reliable and consistent scale to measure Machiavellian leadership traits and to analyze the effects of these traits in the context of educational leadership in more depth. Such a scale will not only be an academic research tool but will also be of practical value for practitioners in educational settings, enabling school leaders and administrators to evaluate and improve their own behavior. Within the scope of this objective, the following research questions will be addressed:

(1) What is the construct, content, and face validity of the scale developed to measure Machiavellian leadership behaviors in the context of educational leadership?
(2) Does the factor structure of the scale present a consistent and valid integrity in educational leadership contexts?
(3) Are the discrimination and internal consistency of the developed scale items reliable?
(4) Do the subscales of the scale successfully represent different aspects of educational leaders in the school leadership process?

Method

The objective of this research is to design a reliable and valid assessment instrument for assessing the level of demonstrating Machiavellian guidance characteristics. In this direction, the steps of developing an item pool and gathering expert feedback, conducting a pre-application and examining the scale properties were followed (Carpenter, 2018; Büyüköztürk et al., 2020). In this study, the concept of 'leadership' is considered as a leadership characteristic that represents the organizational leadership behaviors of educational administrators, different from the profession of psychological counseling or school leadership. In the literature, it is seen that leaders are defined as those who not only give orders but also guide their employees and pave the way in strategic decision-making processes. In this sense, leadership encompasses the functions of leadership such as counseling, strategic support and guidance. For this reason, the sample used in the research consists of school or institution administrators. The purpose of developing the scale is to present a multidimensional tool that can evaluate the Machiavellian attitudes of administrators in these leadership processes. Machiavellian leaders may often use leadership not as a development tool, but as a means of strategic direction, gaining benefits, or preserving power. The scale is intended to analyze this approach.

Research Model

This research utilized the descriptive survey model to develop the Machiavellian Leadership Scale. The descriptive survey model is a research approach designed to portray the current status of a group, event, individuals, or objects within a specific timeframe, reflecting them as they are (Büyüköztürk, 2012; Karasar, 2012). This model is particularly suitable for the development of a scale intended to assess Machiavellian guidance traits, as it not only captures the existing conditions but also supports the scale's validity and reliability. By

employing this model, the research ensures that the scale is constructed on a robust scientific foundation, tested on a broad participant group, and capable of delivering dependable findings.

Study Group

The population for this research comprised 29,312 educational administrators employed in public and private schools in Istanbul during the 2023-2024 academic year. Simple random sampling method was used to select a representative sample from this large population, ensuring that each individual has an equal opportunity to be chosen, thereby improving the applicability of the findings to a broader population (Karasar, 2012).

In this research, the sample size was planned to accommodate two types of statistical analyses. For Exploratory Factor Analysis (EFA), which identifies the scale's factor structure, data from 214 participants were used. For Confirmatory Factor Analysis (CFA), which verifies the accuracy of the factor structure, data from 256 participants were analyzed. Given that CFA typically requires a larger sample, the size was increased accordingly. Both analysis processes were conducted in a planned manner with different samples in order to increase the validity of the scale and to ensure independent testing conditions. This robust sampling process establishes a strong foundation for assessing the scale's construct validity and reliability.

The inclusion of participants from a diverse array of public and private schools across Istanbul strengthens the generalizability of the findings. Efforts were made to ensure variability in factors such as organizational type, tenure, and guidance experience among participants. Furthermore, a larger sample contributes to more reliable and stable findings in factor evaluation (Tabachnick & Fidell, 2007).

Table 1 Frequency Table of Participants

	Groups	Frequency	Percentage	Percent Total %
Gender	Women	152	59.4 %	59.4 %
	Man	104	40.6 %	100.0 %
	Total	256	100%	100%
School Level	Preschool	27	10.5 %	10.5 %
	Primary School	52	20.3 %	30.9 %
	Middle School	110	43.0 %	73.8 %
	High School	58	22.7 %	96.5 %
	Other	9	3.5 %	100.0 %
	Total	256	100%	100%
Management Role	Manager	51	19.9 %	19.9 %
	Assistant Manager	131	51.2 %	71.1 %
	Subject Coordinator	74	28.9 %	100.0 %
	Total	256	100%	100%
Manager Seniority	1-5 years	93	36.3 %	36.3 %
	6-10 years	80	31.3 %	67.6 %
	11-15 years	36	14.1 %	81.6 %
	16-20 years	22	8.6 %	90.2 %
	21 years and above	25	9.8 %	100.0 %
	Total	256	100%	100%
Type of School	Goverment	200	78.1 %	78.1 %
	Private	56	21.9 %	100.0 %
	Total	256	100%	100%

Data Collection Tool

The scale development process was structured in line with the scale development principles in the literature (Büyüköztürk et al., 2020; Carpenter, 2018). In this context, firstly, the basic conceptual components of the Machiavellian leadership phenomenon were determined, and the items were written based on the four main dimensions that the scale was intended to measure: Manipulation, Strategic Planning, Protection and Use of Power.

In the first stage of the item development process, national and international literature was reviewed and behavioral indicators representing these four dimensions were thematically classified. For each dimension, 20-25 item suggestions were created and an item pool of 90 items in total was prepared. During the item writing process, special attention was paid to item writing principles such as clarity, unambiguity, concreteness, observability and measurability.

The draft items were submitted to expert opinion for content validity study. At this stage, a total of 13 experts were consulted. The expert group included 10 field experts working in the fields of educational sciences, measurement and evaluation, leadership and leadership, 2 language experts who evaluated the scale in terms of conceptual accuracy and consistency of expression, and 1 Turkish language expert who evaluated the items in terms of grammar, simplicity of expression and comprehensibility. As a result of these evaluations: 49 items were eliminated, 18 items were revised according to expert opinions, and a pre-application form consisting of 41 items was prepared.

In this process, qualitative (expert opinions) and quantitative (CVI rates) methods were used together to increase the conceptual validity and representativeness of the scale. This holistic approach ensured that the scale had high validity at both the content and theoretical levels.

Analyzing the Data

In this research, comprehensive statistical analyses were to examine the effect of the research construct validity and reliability of the scale. The scale development process involved conducting Exploratory Factor Analysis (EFA) to explore the data's factor structure, followed by Confirmatory Factor Analysis (CFA) to validate the structure. Statistical software packages were employed for data evaluation.

Initially, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were performed to confirm the data's suitability for factor evaluation. A KMO value exceeding 0.80 confirmed that the sample was suitable for factor evaluation, while Bartlett's test ($p < .001$) confirmed significant correlations among the variables. Based on these findings, EFA was conducted to identify the factor structure, utilizing the varimax rotation method to enhance the clarity of the factor separation. Factor loadings of 0.30 and above were considered acceptable.

Subsequently, CFA was employed to validate the factor structure derived from the EFA. Various fit indices were examined to assess the model's goodness-of-fit, including chi-square ($\chi^2/df \leq 3$), RMSEA (values below 0.08), CFI and TLI (values of 0.90 or above for a good fit), and SRMR (values under 0.08). Factor loadings exceeding 0.50 were deemed significant, further supporting the scale's construct validity.

The reliability of the scale was assessed through the Cronbach's Alpha internal consistency coefficient. A Cronbach's Alpha value above 0.70 for both the overall scale and its sub-dimensions demonstrated the scale's reliability. Additionally, an independent samples t-test was

performed between the upper and lower 27% groups to evaluate item discrimination. The findings revealed that the items notably distinguished between the two groups ($p < .001$).

To verify the assumption of normality, kurtosis and skewness values were examined, with values ranging between -1 and +1 indicating a normal distribution. Outliers were identified using boxplot visualizations and the Mahalanobis distance method, and a clean dataset was established by removing the outliers.

These analyses collectively affirmed the construct validity and reliability of the scale. The findings verified that the scale is a strong and dependable assessment instrument, appropriate for both theoretical research and practical use.

Findings

The research is presented in two groups: findings related to validity and findings related to reliability.

Findings Related to Validity

Exploratory Factor Analysis (EFA)

On the data collected for the Machiavellian Leadership Scale (MLS), firstly, procedures were carried out to determine whether the normality assumption was met and whether the sample size was suitable for factorization.

As a result of data collection, 216 participants were reached. In the analyses, Boxplot was performed and 2 data with extreme values were removed and a range of +1 -1 was obtained in the kurtosis skewness values of all items with 214 participant data. Thus, normal distribution was achieved in the data (George & Mallery, 2020). Then, according to the findings of Bartlett Sphericity test and Kaiser-Meyer-Olkin (KMO) test; it was understood that Bartlett (Chi-Square) (4810.252) and Kaiser-Meyer-Olkin (.879) values met the multivariate normality assumption, and the sample size was appropriate for factorization (Çokluk et al., 2012). Thus, the EFA process was initiated.

The lower limit of factor loading for EFA was taken as .30. Comrey and Lee (2013) suggest that factor loadings above .71 should be considered as excellent, .63-.71 as very good, .55-.63 as good, .45-.55 as fair and .32-.45 as poor. Principal Component Analysis was first performed to calculate the total variance values of the variables and to minimize the variables explaining the data (Şencan, 2005; Yurdabakan & Çüm, 2017). During the item extraction process, the significance of the relationships between the items was examined according to the significance values observed in the Correlation Matrix. As a result of this examination, 1 item with the lowest significant relationship with other items was eliminated from the scale. Then, the items that were not included under any factor, the items included under three factors, the items included under two factors and the items for which the difference between the loading values was observed to be less than .10 were selected. The Rotated Components Matrix Table was analyzed to identify these items. As a result of this process, 13 items were eliminated from the scale. Bartlett's Sphericity and Kaiser-Meyer-Olkin (KMO) tests were repeated on the remaining items and data; Bartlett's (Chi-Square) (4810.252) and Kaiser-Meyer-Olkin (.879) were found. According to the findings, it was understood that the procedures could be continued.

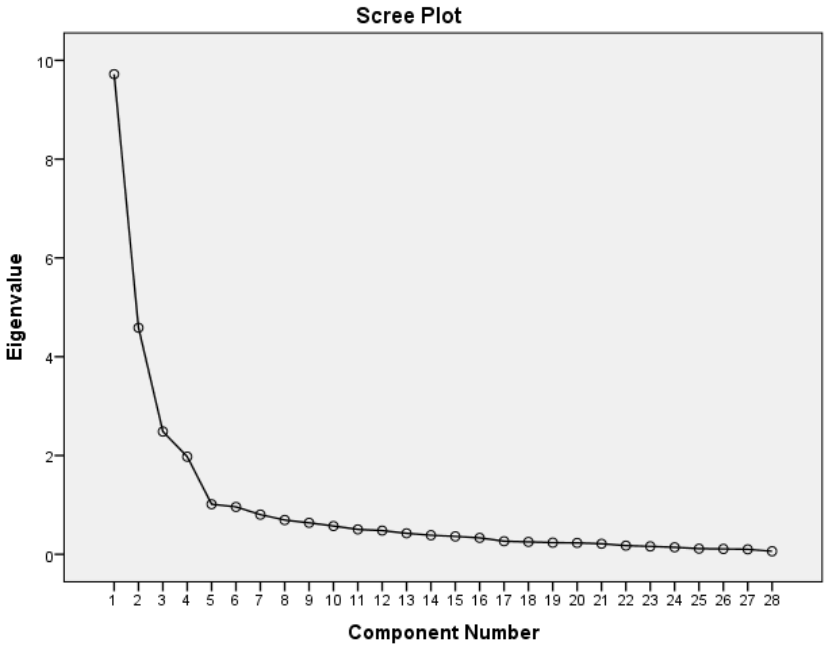

Figure 1. Slope accumulation graph

At the stage of determining the number of factors, the Slope Accumulation Graph was first analyzed (Figure 1.) According to the Slope Accumulation Graph, after the fourth factor, the difference between the eigenvalues decreased and the slope started to disappear. This indicates that the scale has four factors.

In the graph above, the slope decreases sharply after the 4th factor. Factors 1, 2, 3 and 4 contribute notably to the total variance with high eigenvalues. However, the decline in eigenvalues decreases notably for factor 5 and onwards and the slope becomes almost flat. This indicates that factors beyond factor 5 do not notably contribute to the total variance. The first 4 factors explain most of the total variance and make a significant contribution However, the eigenvalues of the factors beyond the 4th factor decline, reducing their contribution to the total variance. This shows that other factors are ineffective in explaining the change in the data set.

Table 2 Table of Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loads
Variable	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total
Strategic Planning	9.721	34.716	34.716	9.721	34.716	34.716	7.096
Protection	4.586	16.377	51.094	4.586	16.377	51.094	5.243
Manipulation	2.485	8.873	59.967	2.485	8.873	59.967	7.154
Power	1.975	7.055	67.022	1.975	7.055	67.022	5.014

According to the data obtained (Table 1.), It was concluded that the scale has a four-factor structure. The eigenvalues of the first four factors exceed 1 and account for 67.022% of the total variance. This ratio shows that the scale has sufficient explanatory power by explaining a large portion of the total variance. The Strategic Planning factor accounts for 34.716% of the total variance, the other three factors contribute 16.377%, 8.873% and 7.055% respectively. It is possible to say that these variance values are sufficient for scale development (Scherer et al., 1988). The four factors obtained were named according to the behavioral reflections of Machiavellian personality traits in the leadership context in the literature. The first factor is named "Manipulation" as it represents the leader's interest-oriented manipulation behaviors. The second factor was named as "Strategic Planning" referring to the leader's development of long-term plans and strategic behaviors. The third factor was named "Protection", reflecting the leader's tendencies to protect and secure his/her position. The last factor was labeled "Use of Power" as it represents the leader's use of authority. This naming process was based on both the results of the content analysis and the theoretical framework established by the relevant literature.

Table 3 Rotated Component Matrix Table

Item	Strategic Planning (%34.716)	Protection (%16.377)	Manipulation (%8.873)	Power (%7.055)
M38	.843			
M39	.832			
M37	.826			
M36	.825			
M40	.804			
M35	.793			
M16		.893		
M17		.874		
M15		.848		
M18		.770		
M19		.710		
M24		.628		
M25		.580		
M22		.566		
M30			.914	
M31			.905	
M32			.873	
M29			.871	
M4			.799	
M3			.638	
M28			.571	
M8				.770
M11				.729
M9				.678
M12				.643
M7				.630
M26				.496

The Rotated Component Matrix Table (Table 2.) was used to decide which items were grouped under which factor. Although there was overlap in some items in the table, since the difference in the loading value between the two factors was greater than .10, These items were retained in the scale and assigned to the factor with the higher loading value. According to the findings, M36. M37. M39. M38. M35. M40. M21 under the first factor was named Strategic Planning, M16. M17. M15. M18. M19. M24. M25. M22 under the second factor was named Protective, M30. M31. M32. M29. M4. M3. M28 Manipulation and finally the fourth factor was named M8. M11. M9. M7. M12. M26 Power and the scale was finalized.

Exploratory Factor Analysis (EFA) was conducted using the SPSS 26 package program to reveal the factor structure of the scale. In the first analysis, a preliminary form of 41 items was applied and the KMO value was .89 and Bartlett's test was significant ($p < .001$), indicating that the data set was suitable for factor analysis. As a result of EFA, 5 items with factor loadings below .30, 4 items with high cross-loading on more than one factor and 4 items with item-total correlation below .20 were excluded from the analysis. Thus, a total of 13 items were eliminated, and the factor structure was clarified. As a result of EFA, a four-factor structure consisting of 28 items emerged. This structure is consistent with the dimensions of manipulation, strategic planning, protection and use of power identified in the theoretical framework. The total variance explained ratio was 68.4%, which is sufficient for the construct validity of the scale.

Confirmatory Factor Analysis (CFA)

CFA was conducted to test the accuracy of the factor structures determined by EFA (Byrne, 2012). In the CFA evaluation conducted on the items that continued to be analyzed as a result of EFA, items M28, M24, M3, M18, M25, M22, M19, M21 with factor loadings below .40 were removed from the scale. At this stage, chi-square and fit indices were taken into consideration.

Chi-square value is generally significant in studies with large samples (Barret, 2007). In this case, the CMIN/df value obtained by dividing the chi-square value by the degrees of freedom is examined. A value below 2 indicates perfect fit, below 3 indicates good fit, and below 5 or 5 indicates acceptable fit (Şimşek, 2007; Kline, 2011; Çokluk et al., 2012).

Fit indices were developed to eliminate the limitations and biases that may arise as a result of the chi-square test (Barret, 2007). The fit values to be examined for these indices were determined. AGFI and GFI values are between 0-1; .95 and above is considered as perfect fit and .90 and above is considered as good fit (Sumer, 2000; Tabachnick & Fidell, 2007; Schumacker & Lomax, 2010). Baumgartner and Homburg (1996) stated that GFI and AGFI values above 0.80 are acceptable. Similarly, Doll, Xia, and Torkzadeh (1994) also considered GFI and AGFI values above 0.80 to be sufficient. CFI value is between 0-1; .95 and above is considered as perfect fit and .90 and above is considered as good fit (Hu & Bentler, 1999; Sümer, 2000). The RMSEA value is expected to be close to 0 (zero). A value of .05 or less means good fit, and a value between .05 and .08 means acceptable fit (Kline, 2011; Çelik & Yılmaz, 2013). RMR and SRMR values between 0-1, .05 or less is interpreted as perfect fit, and a value between .05 and .08 is interpreted as acceptable fit (Sumer, 2000; Tabachnick & Fidell, 2007; Schumacker & Lomax, 2010; Kline, 2011). However, modification indices (MI) were examined to provide a better fit of the model. As a result of the analysis, a high level of error covariance was found between three items. Two of these items were under the same dimension (e.g. manipulation) and contained very similar statements in terms of content. Therefore, it was decided to associate error terms between these semantically close items under the same factor. After this modification, an improvement was observed in the fit indices and the RMSEA value increased to .056 and CFI to .93. Modifications were only applied on theoretically significant relationships that did not violate factor integrity; cross-factor loadings or inter-factor modification suggestions were not accepted. The proposed modification values on the 20-item structure of the Machiavellian Leadership Scale are given below (Table 3.). Considering the suggestions, modifications were made between E16-E20 and E17-E20.

Table 4 Modification Indices

	M.I.	Par Change		M.I.	Par Change

e28	<-->	F3	5.036	.057	e18	<-->	e19	8.751	.027
e27	<-->	F3	11.474	-.107	e17	<-->	e27	9.279	-.091
e27	<-->	F2	10.716	.238	e17	<-->	e20	34.382	.110
e26	<-->	F2	17.595	-.258	e17	<-->	e18	10.227	-.041
e25	<-->	F3	7.036	.053	e16	<-->	F2	6.804	.105
e25	<-->	F2	4.802	-.101	e16	<-->	e21	9.972	-.043
e25	<-->	e27	4.892	-.078	e16	<-->	e20	71.455	.167
e25	<-->	e26	5.327	.069	e13	<-->	e28	5.033	-.095
e24	<-->	F2	5.958	.145	e11	<-->	e13	7.855	.108
e24	<-->	e27	15.988	.183	e10	<-->	e12	11.967	-.092
e23	<-->	F4	6.493	.097	e10	<-->	e11	17.859	.095
e23	<-->	F3	7.437	-.089	e9	<-->	e12	31.403	.165
e23	<-->	F1	4.432	-.093	e9	<-->	e11	21.931	-.117
e21	<-->	F2	4.548	-.067	e3	<-->	e20	6.456	.060
e20	<-->	F2	8.316	.133	e3	<-->	e16	18.632	.089
e20	<-->	e23	11.534	-.126	e2	<-->	e20	4.018	.031
e20	<-->	e21	8.242	-.044	e1	<-->	e20	9.405	-.041
e19	<-->	e20	12.789	-.048	e1	<-->	e19	4.354	.017
e18	<-->	e21	4.637	.023	e1	<-->	e12	5.449	.042
e18	<-->	e20	12.233	-.054					

According to the evaluation findings by considering the modifications proposed under the same sub-dimension; the ratio of the chi-square value of the proposed model to the degrees of freedom (2.241) indicates a good fit. When the fit indices were examined, it was seen that RMSEA value (.070) was an acceptable fit, GFI value (.878) was an acceptable fit, AGFI value (.841) was an acceptable fit, CFI value (.949) was very close to perfect fit, and IFI value (.950) was very close to perfect fit. According to the findings of the evaluation, the factor structures revealed by EFA were confirmed by CFA. The fit indices before and after modification are given in Table 4. The fit indices were evaluated in the table according to accepted reference ranges (Schermelleh-Engel- Moosbrugger, 2003).

Table 5 Model Fit Summary

	Value Before Modification	Value After Modification	Excellent/Very Good Fit	Good/Acceptable Compliance	Compliance
CMIN/DF	3.019	2.24	$0 \leq x^2/sd \leq 2$	$2 \leq x^2/sd \leq 3$	Good Fit
CFI	0.916	0.95	$0.97 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.97$	Good Fit
IFI	0.917	0.95	$0.95 \leq IFI \leq 1.00$	$0.90 \leq IFI \leq 0.95$	Very Good Fit
TLI	0.903	0.94	$0.95 \leq TLI \leq 1.00$	$0.90 \leq TLI \leq 0.95$	Good Fit
RMSEA	0.089	0.07	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	Good Fit

This model obtained as a result of Confirmatory Factor Analysis (CFA) shows that the scale has a four-factor structure. The standardized solution values on the arrows from the factors to the items indicate the degree to which each item loads on the relevant factor. The fact that the majority of these values are 0.50 and above indicates that the items strongly represent the factors and the construct validity of the scale is high. Factor loadings close to 1 indicate that the item contributes to the factor at a high level, while loadings below 0.30 may indicate a weakness in this relationship. The correlation values between the factors in the measurement model indicate that these factors are interrelated but independent constructs. For example, correlation values between 0.30-0.70 indicate that the factors represent different dimensions of the scale

but there are significant relationships between these dimensions.

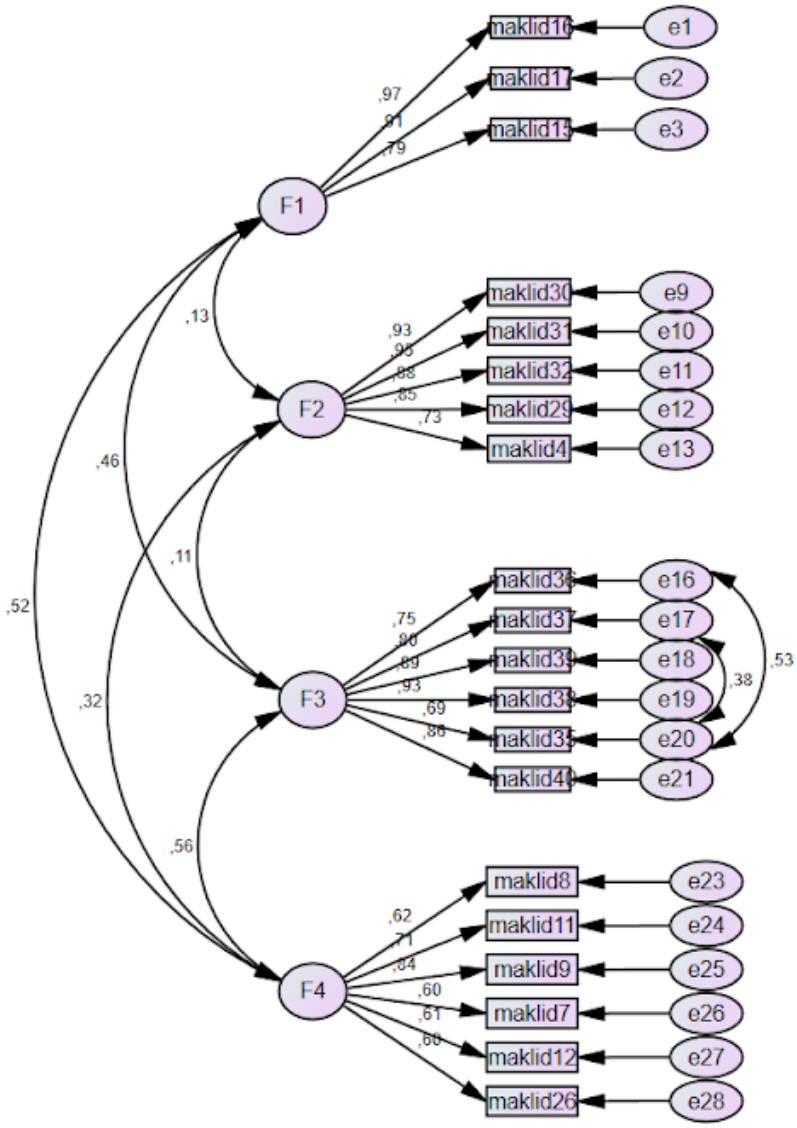

Figure 2. Confirmatory Factor Analysis (CFA) findings

The model given in Figure 2, obtained as a result of Confirmatory Factor Analysis (CFA), shows that the scale has a four-factor structure and the relationship between the items and these factors. The standard solution values (factor loadings) express the degree of loading of the items on the relevant factors and these values are generally above 0.50, which is a strong relationship level. Since the factor loadings do not fall below 0.30 (Tabachnick & Fidell, 2007), it can be said that the items represent each factor in a meaningful way. This is a strong indicator supporting the construct validity of the scale. For example, the high loadings of items such as M16, M17 and M15 on factor F1 indicate that this factor is well represented by the relevant items.

Low to moderate correlations between factors indicate that the factors are independent but related constructs. Correlations in this range indicate that the factors are not independent and represent different dimensions (Kline, 2011). Items with low error terms indicate that the relevant factors are well represented and the overall fit of the model is satisfactory (Byrne,

2012). However, in some cases, error terms are linked, indicating that the related items are highly correlated with each other or measure the same concept. These links were applied to improve the fit indices of the model (Schumacker & Lomax, 2016). Links were made between error terms under the same factor. The overall fit of this model is supported by the fact that the standard solution values, error terms and correlations between factors are within the recommended limits. The loading values of the items on the factors are strong, the error terms are low and the correlations between the factors are significant. This shows that the four-factor structure of the scale is credible and consistent. The model fit conforms to the criteria expected in CFA and reveals that the measurement model successfully confirms the theory-based construct (Hu & Bentler, 1999). These findings show that the construct validity of the scale is high, and the items successfully represent the factors. The factors formed as a result of the validity analyses and the items under these factors are given in the table below.

Table 6 Table of Factors and Items of Machiavellian Leadership Scale

Factor	Items
Protection	M15. M16. M17
Manipulation	M30. M31. M32. M29. M4
Strategic Planning	M36. M37. M39. M38. M35. M40.
Power	M8. M11. M9. M7. M12. M26

Findings Related to Reliability

To determine the reliability of the scale, Cronbach Alpha internal consistency coefficient was determined, and the findings are as follows presented in Table 5. When Table 5. is examined, it is seen that the reliability is at a high level in terms of both sub-dimensions and the overall scale (Özdamar, 2016).

Table 7 Cronbach Alpha Reliability Coefficients of Machiavellian Leadership Scale

Machiavellian Leadership Scale	Cronbach's Alpha Internal Consistency Coefficients
Protection	.923
Strategic Planning	.924
Manipulation	.911
Power	.813
General	.912

In order to determine the item discrimination of the items in the scale, a comparison was made between the upper and lower 27% groups. Independent t-test was used to find out whether there was a significant difference between the arithmetic averages (Büyüköztürk et al., 2018).

Table 8 Independent T Test Results Regarding the Difference of Lower-Upper 27% Groups

		Levene's Test for Equality Variances		oft-test for Equality of Means						
Item	Assumption	F	p	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
M15	Eq. var. ass.	35.579	.000	8.259	114	.000	1.2586	.1524	.9567	1.5605
	Eq. var. not ass.			8.259	71.689	.000	1.2586	.1524	.9548	1.5624
M16	Eq. var. ass.	24.039	.000	9.279	114	.000	1.2069	.1301	.9492	1.4646
	Eq. var. not ass.			9.279	76.218	.000	1.2069	.1301	.9479	1.4659
M17	Eq. var. ass.	34.771	.000	9.814	114	.000	1.2931	.1318	1.0321	1.5541
	Eq. var. not ass.			9.814	77.274	.000	1.2931	.1318	1.0307	1.5555
M4	Eq. var. ass.	112.816	.000	6.200	114	.000	1.5000	.2420	1.0207	1.9793

	Eq. var. not ass.			6.200	72.834	.000	1.5000	.2420	1.0178	1.9822
M29	Eq. var. ass.	61.247	.000	7.499	114	.000	1.8448	.2460	1.3575	2.3322
	Eq. var. not ass.			7.499	85.609	.000	1.8448	.2460	1.3557	2.3339
M30	Eq. var. ass.	92.634	.000	6.713	114	.000	1.6034	.2389	1.1302	2.0766
	Eq. var. not ass.			6.713	76.023	.000	1.6034	.2389	1.1277	2.0792
M31	Eq. var. ass.	130.058	.000	5.844	114	.000	1.4483	.2478	.9573	1.9392
	Eq. var. not ass.			5.844	73.820	.000	1.4483	.2478	.9545	1.9421
M32	Eq. var. ass.	81.314	.000	5.949	114	.000	1.4483	.2434	.9660	1.9305
	Eq. var. not ass.			5.949	81.165	.000	1.4483	.2434	.9639	1.9326
M35	Eq. var. ass.	4.100	.045	10.314	114	.000	1.1379	.1103	.9194	1.3565
	Eq. var. not ass.			10.314	112.768	.000	1.1379	.1103	.9193	1.3565
M36	Eq. var. ass.	10.799	.001	9.941	114	.000	1.1207	.1127	.8974	1.3440
	Eq. var. not ass.			9.941	98.326	.000	1.1207	.1127	.8970	1.3444
M37	Eq. var. ass.	6.797	.010	10.584	114	.000	1.1034	.1043	.8969	1.3100
	Eq. var. not ass.			10.584	100.990	.000	1.1034	.1043	.8966	1.3103
M38	Eq. var. ass.	15.327	.000	9.682	114	.000	1.1207	.1157	.8914	1.3500
	Eq. var. not ass.			9.682	81.881	.000	1.1207	.1157	.8904	1.3510
M39	Eq. var. ass.	17.156	.000	9.465	114	.000	1.1034	.1166	.8725	1.3344
	Eq. var. not ass.			9.465	83.585	.000	1.1034	.1166	.8716	1.3353
M40	Eq. var. ass.	1.880	.173	8.353	114	.000	.8793	.1053	.6708	1.0879
	Eq. var. not ass.			8.353	97.988	.000	.8793	.1053	.6704	1.0882
M7	Eq. var. ass.	11.171	.001	6.517	114	.000	.9828	.1508	.6840	1.2815
	Eq. var. not ass.			6.517	95.248	.000	.9828	.1508	.6834	1.2821
M8	Eq. var. ass.	.217	.642	6.562	114	.000	1.3276	.2023	.9268	1.7284
	Eq. var. not ass.			6.562	113.030	.000	1.3276	.2023	.9268	1.7284
M9	Eq. var. ass.	7.936	.006	11.197	114	.000	1.4655	.1309	1.2062	1.7248
	Eq. var. not ass.			11.197	100.677	.000	1.4655	.1309	1.2059	1.7252
M11	Eq. var. ass.	.047	.829	9.461	114	.000	1.4138	.1494	1.1178	1.7098
	Eq. var. not ass.			9.461	113.857	.000	1.4138	.1494	1.1178	1.7098
M12	Eq. var. ass.	2.718	.102	8.074	114	.000	1.4655	.1815	1.1060	1.8251
	Eq. var. not ass.			8.074	108.391	.000	1.4655	.1815	1.1058	1.8253
M26	Eq. var. ass.	.167	.683	7.883	114	.000	1.0862	.1378	.8132	1.3592
	Eq. var. not ass.			7.883	113.894	.000	1.0862	.1378	.8132	1.3592
Toplam	Eq. var. ass.	22.228	.000	18.620	114	.000	25.8103	1.38613	23.06443	28.5562
	Eq. var. not ass.			18.620	97.865	.000	25.8103	1.38613	23.05956	28.5611

Note. This is how the abbreviations in the table are used: Eq. var. ass.: Equal variation is assumed, Eq. var. not ass.: Equal variation is not assumed

When Table 6. is examined, it is seen that the scale items are significant between the lowest and highest groups by 27% ($p<.001$), the reliability level of the items is high and the items show the expected level of discrimination.

Conclusion

This study presents a valid and reliable measurement tool capable of evaluating Machiavellian leadership tendencies specific to leadership processes in the context of educational organizations from a multidimensional perspective. Despite the prevalence of individually-oriented Machiavellianism scales in the literature, the absence of a framework for systematically measuring leadership behaviors at the organizational level constituted the primary rationale for this research. The Machiavellian Leadership Scale (MLS), developed throughout the research process, is structured around four core dimensions: Manipulation, Strategic Planning, Protection, and Use of Power. The scale demonstrates a high level of explanatory power, and its structural integrity and internal consistency were verified through statistical analyses (Exploratory Factor Analysis and Confirmatory Factor Analysis).

Empirical findings reveal that leaders in organizational contexts exhibit complex behavioral patterns shaped not only by individual tendencies but also by strategic, protective, and authoritarian orientations. Particularly, the dimensions of manipulation and use of power indicate a tendency among leaders to develop interest-based strategies, while strategic planning and protection dimensions offer significant insights into leadership preferences that are status-driven and oriented toward long-term outcomes. This multidimensional structure enables the analysis of both the "dark" and the "functional" facets of Machiavellian leadership within a unified framework.

Moreover, the items included in the scale demonstrate high discriminatory power, making the tool functional as a self-assessment instrument for educational administrators to evaluate their own leadership behaviors. However, considering that Machiavellian attitudes may be perceived negatively in social settings, the potential effect of social desirability should be taken into account. Future research is encouraged to mitigate this limitation by employing multi-source data collection strategies (e.g., 360-degree feedback).

In conclusion, this research addresses a significant gap at both theoretical and methodological levels by proposing an innovative measurement model that enables the evaluation of strategic, ethical, and power-related dimensions of leadership behaviors in the field of education. Future studies should examine the applicability of this scale in diverse cultural contexts and investigate the relationships between MLS and variables such as organizational commitment, burnout, and job satisfaction to assess its broader impact on leadership outcomes. Additionally, one of the key implications of this study for policymakers and school leaders is the necessity of managing Machiavellian leadership strategies within a balanced framework of functionality and ethics.

Discussion

This study introduces the Machiavellian Leadership Scale (MLS), an original measurement tool designed to assess Machiavellian tendencies in leadership processes within educational organizations through a multidimensional lens. While existing literature predominantly relies on individual-based Machiavellianism scales, there remains a significant gap in evaluating how these tendencies manifest in leadership behaviors at the organizational level. Grounded in the classical approach of Christie and Geis (1970) and the dark triad personality theory proposed by Paulhus and Williams (2002), this research offers both a theoretical and empirical framework for analyzing leadership along four key dimensions: Manipulation, Strategic Planning, Protection, and Use of Power.

Findings demonstrate that leadership is shaped not solely by personality traits but also by organizational strategies and contextual factors. Leaders with high scores in manipulation and power dimensions tend to construct self-serving strategies by adapting organizational dynamics to their advantage. This reflects a leadership orientation grounded not only in moral reasoning but also in status preservation and interest maximization (O'Boyle et al., 2012).

The four-dimensional structure of the MLS enables a holistic analysis of leadership behaviors. For instance, the Strategic Planning dimension evaluates leaders' alignment with long-term goals, while the Protection dimension reflects defensive attitudes toward maintaining hierarchical status. Thus, the scale allows for the investigation of not only "dark" traits, but also how these traits are legitimized through organizational rationality (Bolino & Turnley, 2003).

Exploratory and confirmatory factor analyses confirmed the statistical robustness and theoretical consistency of the four-factor model. High factor loadings and significant item

discrimination indices validate the scale's reliability and construct validity. In this regard, MLS serves not only as a tool for academic research but also as a practical assessment instrument for educational leaders and policymakers.

One of the distinguishing features of the MLS is its potential to assess the intersection between leadership behavior and organizational culture. Hofstede (2001) highlights the impact of cultural dimensions on leadership practices, particularly in hierarchical and collectivist societies such as Turkey. In such contexts, leadership frequently manifests in power-centered and protective forms. Supporting this, Engin and Pals (2018) emphasize how patriarchal values and religious conservatism reinforce these norms. The MLS provides a functional framework for evaluating the influence of these cultural factors on leadership behavior.

Importantly, the presence of manipulative or authoritarian tendencies does not always lead to negative outcomes. In certain organizational contexts, particularly during periods of crisis, such behaviors may contribute to decision-making efficiency and increased productivity (Chatterjee & Hambrick, 2011; Srivastava et al., 2024). Hence, the MLS should be employed not merely to expose unethical behaviors but also to capture the functional aspects of Machiavellian leadership.

The self-assessment format of the scale may be subject to social desirability bias, as participants might underreport behaviors deemed socially undesirable. Future research should consider triangulating data through 360-degree feedback, observation, or interview methods. Moreover, validating the scale across various institutional settings (e.g., private schools, universities, public agencies) would enhance its applicability and generalizability.

This study also indirectly reveals the gendered nature of leadership practices. Research by Valentine (2018) and Triandis (1995) emphasizes how leadership roles intersect with societal gender norms. Specifically, dimensions such as power and protection align with traditionally masculine leadership styles and provide insights into how leadership is integrated with dominant masculinity constructs. In this sense, the MLS offers analytical utility for critical feminist leadership perspectives.

In conclusion, the MLS represents not only a novel measurement tool but also a conceptual call to view leadership as an organizational, cultural, and strategic phenomenon that extends beyond individual dispositions. It provides a meaningful basis for analyzing the tension between ethics and interests, values and strategy within educational institutions. Future studies should investigate the MLS's relationship with variables such as organizational commitment, burnout, job satisfaction, and ethical climate, thereby offering deeper insight into the outcomes of Machiavellian leadership practices.

Limitations and Recommendations

The Machiavellian Leadership Scale (MLS), developed within the scope of this study, was developed to measure the strategic aspects of leadership behaviors that intersect Machiavellian tendencies in the leadership process. Traditional Machiavellianism scales in the existing literature mostly focus on individual personality traits; however, they are limited in measuring the contextual reflections of leadership behaviors, especially tactical decision-making mechanisms in the leadership process. Therefore, MLS offers a unique measurement framework that integrates organizational leadership with strategic manipulation, use of power, and protection motivations. In this context, it should be considered as a functional complement

rather than an alternative to other existing Machiavellianism scales for both practitioners and researchers.

However, the study has some limitations. First of all, the sample is limited to educational administrators working in Istanbul. This limits the generalizability of the scale for different geographical regions and cultural contexts. In addition, the scale was applied only to individuals in leadership positions and did not include other levels within the organization. The fact that the data was collected through self-report was considered as a limitation that may create social desirability bias.

Beyond these limitations, it is recommended that operational justifications for the content validity of the scale be further emphasized.

The suggested roadmap for future research is as follows:

MLS should be applied in different sectors (e.g. health, finance, public administration) and cultural contexts, and cross-cultural comparative validity studies should be conducted.

Longitudinal studies and test-retest analyses should be conducted for the long-term stability of the scale.

Its predictive validity should be strengthened by predicting its relationship with different leadership types (e.g. autocratic, transformational, democratic leadership) through regression models.

Multi-source data collection strategies (e.g. 360° performance feedback) should be proposed to reduce the social desirability effect.

For practitioners, the MLS is an important self-assessment tool that allows leaders to analyze their leadership strategies and recognize their strengths and areas for improvement. It can be applied before and after trainings to create a development program and can also be used by human resources departments for strategic task allocation.

In conclusion, MLS is a unique and multidimensional measurement tool that both fills the theoretical gaps in the literature and has practical implications. It would be a justified choice for researchers and practitioners to prefer this tool in contextual leadership analyses.

Declarations

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Conflict of Interest: The authors declare that there is no conflict of interest in the preparation of this article.

Informed Consent: All participants were informed about the objective and procedures of the study and participated voluntarily. Written informed consent was taken from the participants.

Data availability: The data used in this research are anonymized and protected for academic research objectives only. In case of data request, limited access can be provided with the consent of the authors.

Referencess

Adair, J. E. (2006). *Leadership and motivation: The fifty-fifty rule and the eight key principles of motivating others*. Kogan Page Publishers.

Alcorn, D. S. (1997). *The dynamics of effective guidance: Learning from Nehemiah*. Baker Books.

Alkayış, A. (2020). *Pragmatism and education: John Dewey's approach to education*. Bingöl University Press.

Avolio, B. J., & Bass, B. M. (2004). *Manual for the multifactor guidance questionnaire*. Mind Garden.

Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual differences*, *42*(5), 815-824.

Bass, B. M., & Riggio, R. E. (2006). *Transformational guidance*. Lawrence Erlbaum Associates.

Basto, R., Fernandes, J., & Duarte, P. (2024). Strategic decision-making and the role of Machiavellian leadership in corporate settings. *Journal of Organizational Studies, 29*(2), 143-165.

Baumgartner, H., & Homburg, C. (1996). Applications of structural equation modeling in marketing and consumer research: A review. International Journal of Research in Marketing, 13(2), 139-161.

Becker, J. A., & Dan O'Hair, H. (2007). Machiavellians' motives in organizational citizenship behavior. *Journal of Applied Communication Research*, *35*(3), 246-267.

Belschak, F. D., den Hartog, D. N., & Kalshoven, K. (2015). Leading Machiavellians: How to translate Machiavellians' selfishness into pro-organizational behavior? Journal of Management, 41(7), 1934-1956.

Bitonti, A., Funiciello, A., & Mariotti, C. (2025). Charismatic Leadership and Machiavelli. In *Machiavelli, Marketing and Management* (pp. 101-114). Routledge.

Boddy, C. R. (2017). Psychopathic leadership a case study of a corporate psychopath CEO. *Journal of Business Ethics*, *145*(1), 141-156.

Bolino, M. C., & Turnley, W. H. (2003). *More than one way to make an impression: Exploring profiles of impression management. Journal of Management, 29*(2), 141-160.

Bush, T. (2003). *Theories of educational guidance and management* (3rd ed.). Sage Publications.

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2020). *Bilimsel araştırma yöntemleri (27th ed.) [in Turkish].* Pegem Akademi.

Byrne, B. M. (2012). *Structural equation modeling with Mplus: Basic concepts, applications, and programming.* Routledge.

Canbolat, M. A., & Karagöz, H. (2023). Örgütsel değişime açıklığın iş becerikliliğine etkisinde algılanan kapsayıcı liderliğin aracılık etkisi: Bankacılık sektöründe bir araştırma [in Turkish]. *Uluslararası Yönetim İktisat ve İşletme Dergisi, 19*(4), 953-973.

Carpenter, S. (2018). Ten steps in scale development and reporting: A guide for researchers. *Communication Methods and Measures, 12*(1), 25-44.

Çelik, H., & Yılmaz, V. (2013). LISREL 9.1 ile yapısal eşitlik modellemesi [Structural equation modeling with LISREL 9.1]. *Anı Publishing*.

Chatterjee, A., & Hambrick, D. C. (2011). Executive personality, capability cues, and risk taking: How narcissistic CEOs react to their successes and stumbles. *Administrative Science Quarterly, 56*(2), 202-237.

Christie, R., & Geis, F. (1970). *Studies in Machiavellianism*. Academic Press.

Cohen, T. R., & Morse, L. (2014). *Moral character: What it is and what it does. Research in Organizational Behavior, 34*, 43–61.

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2012). *Multivariate statistics for social sciences: Applications of SPSS and LISREL* (Vol. 2). Pegem Academy Publishing.

Culver, R., Bergman, C., Carson, P., & Holden, T. (2024). The role of Machiavellianism in strategic leadership and decision-making processes. *International Journal of Leadership Studies, 41*(1), 55-78.

Dahling, J. J., Whitaker, B. G., & Levy, P. E. (2009). The development and validation of a Machiavellian personality scale. *Journal of Management, 35*(2), 219-257.

Davis, E. A. (2023). A new perspective on Machiavellian leadership. *Political Research Quarterly*, *76*(4), 1805-1813.

Demirel, F. (2023). Truth and ethics in the context of pragmatism and education [in Turkish]. *Education and Society in the 21st Century, 12*(35), 593–608.

Doll, W. J., Xia, W., & Torkzadeh, G. (1994). A confirmatory factor evaluation of the end-user computing satisfaction instrument. *MIS Quarterly, 18*(4), 453-461.

Eker, S. (2020). The effect of Machiavellian attitude on academic achievement in higher education. *Journal of Educational Leadership and Policy, 5*(2), 78-95.

Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The Dark Triad of personality: A 10-year review. *Social and Personality Psychology Compass, 7*(3), 199-216.

Galie, P. J., & Bopst, C. (2006). Machiavelli & modern business: Realist thought in contemporary corporate leadership manuals. *Journal of Business Ethics*, *65*, 235-250.

Genau, H. A., Blickle, G., Schütte, N., & Meurs, J. A. (2021). Machiavellian leader effectiveness: The moderating role of political skill. *Journal of Personnel Psychology, 21*(1), 1–10.

George, D., & Mallery, P. (2020). *IBM SPSS statistics 27 step by step: A simple guide and reference.* Routledge.

Harms, P. D., & Spain, S. M. (2015). The dark side of guidance: Balancing personal well-being and organizational outcomes. *Organizational Dynamics, 44*(4), 235-242.

Harris, P., Lock, A., & Rees, P. (2000). Machiavellian marketing: The development of a political marketing perspective. *Journal of Marketing Management, 16*(3), 243-264.

House, R. J. (1977). *A theory of charismatic guidance. In J. G. Hunt & L. L. Larson (Eds.), Leadership: The cutting edge (pp. 189-207)*. Southern Illinois University Press.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure evaluation: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

Hughes, J., Kornberger, M., MacKay, B., O'Brien, P., & Reddy, S. (2023). Organisational strategy and its implications for strategic studies: *A review article. Journal of Strategic Studies, 46*(2), 427-450. https://doi.org/10.1080/01402390.2021.1994950

Jones, D. N., & Paulhus, D. L. (2009). *Machiavellianism. In M. R. Leary & R. H. H. Hoyle (Eds.), Handbook of individual differences in social behavior (pp. 93-108).* Guilford Press.

Kara, A. (2016). *Liderlik ve yönetim: Kurumsal yaklaşımlar [Leadership and management: Corporate approaches*]. Nobel Pub.

Kessler, S. R., Bandelli, A. C., Spector, P. E., Borman, W. C., & Nelson, C. E. (2010). The dark side of personality at work. *Personnel Psychology, 63*(1), 79-120.

Kline, R. B. (2011). *Principles and practice of structural equation modeling (3rd ed.).* Guilford Press.

Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School Leadership & Management, 40*(1), 5-22. https://doi.org/10.1080/13632434.2019.1596077

Lindley, J. K. (2018). Are unexplained financial rewards for snakes in suits? A labor market evaluation of the Dark Triad of personality. *British Journal of Industrial Relations, 56*(4), 770-797.

Machiavelli, N. (1988). *The prince (Q. Skinner & R. Price, Eds. & Trans.).* Cambridge University Press. (Original work published 1513)

Matthews, M. J., Kelemen, T. K., Matthews, S. H., & Matthews, J. M. (2022). The Machiavellian organization: A multilevel model to understand decision making in organizations. *Group & Organization Management*, *47*(2), 413-439.

O'Boyle Jr, E. H., Pollack, J. M., & Rutherford, M. W. (2012). Exploring the relationship between family involvement and firms' financial performance: A meta-evaluation of main and moderator effects. *Journal of Business Venturing, 27*(1), 1-18. https://doi.org/10.1016/j.jbusvent.2011.09.002

O'Boyle, E. H., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. (2012). A meta-evaluation of the Dark Triad and work behavior: A social exchange perspective. *Journal of Applied Psychology, 97*(3), 557-579.

Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality, 36*(6), 556-563. https://doi.org/10.1016/S0092-6566(02)00505-6

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly, 1*(2), 107-142.

Ricks, J. M., & Fraedrich, J. P. (1999). The paradox of Machiavellianism: Can Machiavellianism produce sales while reducing managerial ratings? *Journal of Business Ethics, 20*(3), 197–205.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of psychological research online*, *8*(2), 23-74.

Schumacker, R. E., & Lomax, R. G. (2016). *A beginner's guide to structural equation modelling (4th ed.)*. Routledge.

Scott, J. T., & Zaretsky, R. (2013). Why machiavelli Still matters. *New York Times*, *9*, A31.

Şencan, H. (2005). *Sosyal ve davranışsal ölçümlerde güvenilirlik ve geçerlilik [Reliability and validity in social and behavioral measurements].* Seçkin Pub.

Skinner, Q. (1981). *Machiavelli.* Oxford University Press.

Smith, S. F., & Lilienfeld, S. O. (2013). Psychopathy in the workplace: The knowns and unknowns. *Aggression and Violent Behavior*, *18*(2), 204-218.

Song, S., Chen, X., Xu, X., Jiang, W., Wang, W. & Shi, Y. (2025). Between facilitation and hindrance: linking CEO Machiavellianism, top management team collective

organizational engagement and new ventures performance. *Chinese Management Studies, 19*(3), 456-478.

Spurk, D., Keller, A. C., & Hirschi, A. (2016). Do bad guys get ahead or fall behind? Relationships of the Dark Triad of personality with objective and subjective career success. *Social Psychology and Personality Science, 7*(2), 113-121.

Srivastava, S., Raina, R., & Madan, P. (2024). The positive aspects of Machiavellian leadership: Impact on employee engagement and organizational effectiveness. *Journal of Organizational Effectiveness, 11*(2), 77-99.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed.*). Pearson Education.

Ugoani, J. (2024). Political behavior and strategic influence of Machiavellian leaders in business organizations. *Journal of Political and Business Studies, 17*(3), 233-256.

Uppal, N. (2021). How Machiavellianism reveals impression management motives: The role of social intelligence and networking ability. *Personality and Individual Differences, 168*, 110314.

Üstün, B., & Ersolak, T. (2020). Makyavelizmin iş yeri nezaketsizliği üzerindeki etkileri: Bankacılık sektörü örneği [The effects of Machiavellianism on workplace incivility: The banking sector example]. *İş Ahlakı Dergisi [Journal of Business Ethics], 13*(3), 54-72.

Whitehead, K. (2024). *The strategic advantages of Machiavellian leadership in crisis management and decision-making*. London School of Economics Theses Collection.

Wilson, D. S., Near, D., & Miller, R. R. (1996). Machiavellianism: A synthesis of the evolutionary and psychological literatures. *Psychological Bulletin, 119*(2), 285–299.

Yukl, G. (2013). Leadership in organizations (8th ed.). Pearson.

Yurdabakan, İ., & Çüm, S. (2017). Scale development through factor analysis. *Education and Science, 42*(190), 1–15.

Appendices

1. Machiavellian Leadership Scale

1. Başarılı olmak için etik dışı davranmaktan çekinmem.	1	2	3	4	5
2. Çatışma çözme becerisini liderlik otoritesini güçlendiren önemli bir unsur olarak görürüm.	1	2	3	4	5
3. Karar alma süreçlerinde otoritemi, ekip üyelerini doğruluğuna inandığım yöne yönlendirmek için kullanırım.	1	2	3	4	5
4. Vizyonumu ekibime aktararak liderlik otoritemi pekiştiririm.	1	2	3	4	5
5. Bir lider olarak örgütteki etkimde otorite ve gücümün büyük rolü vardır.	1	2	3	4	5
6. Performansı değerlendirmenin liderlik otoritemi artırmak için önemli bir araç olduğunu düşünürüm.	1	2	3	4	5
7. Örgüt içindeki fiziksel güvenliği sağlamak için önlemler alırım.	1	2	3	4	5
8. Örgüt içindeki psikolojik güvenliği sağlamak için önlemler alırım.	1	2	3	4	5
9. Örgüt içindeki duygusal güvenliği sağlamak için önlemler alırım.	1	2	3	4	5
10. Aldığım kararların uygulanması için örgüt üyelerini ikna etmeye gayret ederim.	1	2	3	4	5
11. İnandığım durumlarda başkalarını ikna etmek için gerçeği yanlı şekilde sunarım.	1	2	3	4	5
12. İnandığım durumlarda ekip arkadaşlarımı yönlendirmek için örtük tehditler kullanırım.	1	2	3	4	5
13. Kariyerimde ilerlemek için başkalarının zayıf yönlerinden faydalanabilirim.	1	2	3	4	5
14. Liderlik pozisyonumu güçlendirmek için gereken her yolu kullanırım.	1	2	3	4	5
15. Stratejik planımı şekillendirirken örgütün güçlü ve zayıf yönlerini analiz ederek fırsatları belirlerim.	1	2	3	4	5
16. Stratejik planımı şekillendirirken örgütün güçlü ve zayıf yönlerini analiz ederek riskleri belirlerim.	1	2	3	4	5
17. Stratejik planlama sürecinde örgütün misyonunu ve vizyonunu dikkate alarak hedefler belirler ve bu hedeflere odaklanırım.	1	2	3	4	5
18. Stratejik planlarımı örgütün uzun vadeli büyüme hedefleriyle uyumlu hâle getiririm.	1	2	3	4	5
19. Stratejik planlarımı örgütün sürdürülebilirlik hedefleriyle uyumlu hâle getiririm.	1	2	3	4	5
20. Stratejik hedefler belirlerken çevresel faktörleri dikkate alırım.	1	2	3	4	5