Testing the Psychometric Features of the Academic Intellectual Leadership Scale in a University Environment[*]

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Abstract

The purpose of this research is to develop a scale for measuring the level of academics' intellectual leadership, test the scale by examining the influence of their personal and institutional characteristics, and then investigate the relationship of academic intellectual leadership (AIL) to communication, climate, and managerial flexibility regarding scholarly practices in universities. The pilot version was applied to 359 faculty members, then validity and reliability studies were carried out on it. According to exploratory analysis, the scale has a five-factor structure which explains 64.83% of the variance for AIL. This factorial structure was also tested through confirmatory analysis using the secondary data set of 504 faculty members from different universities, which confirmed the five-factor structure. In addition, the alpha reliability coefficient was found to be .91. These results prove that the scale is a valid and reliable data collection instrument for measuring academics' intellectual leadership. Moreover, there are significant differences in faculty members' AIL in terms of gender, title, field of discipline, and establishment date of their universities. Furthermore, their AIL has significant correlations to communication, climate, and flexibility with managerial practice. Therefore, faculty members' AIL level can be enhanced within a more collegiate organizational climate in universities by implementing various communication mediums and operating different managerial practices to support academics' activities.

Keywords: Academic • Faculty • Leadership • Intellectual leadership • Academic intellectual leadership

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Leadership is a term which has been discussed for quite some time, and it indicates different meanings in various management approaches. In accordance with these approaches, there are many different leadership definitions in the literature in terms of individual features, leadership behaviors, interaction models, role relations, perceptions of and impressions on followers, goals and responsibilities, and specifications of the organizational culture. For instance, leadership has been described as "the ability to deliver people to success with minimum conflict and strongest collaboration (Munson, 1921); the art of convincing people to do whatever you want (Bundel, 1930); being able to display many awe-inspiring individual features (Kilbourne, 1935); the process of influencing a group to form and implement aims (Stogdill, 1950); the art of influencing people mentally, physically, and emotionally (Copeland, 1969); managing the rational and well thought-out actions which constitute organizations, such as its aim, culture, strategy, essential identity, and critical processes (Sullivan & Harper, 1996); and the process of affecting people to strive to reach an aim with all of their potential and desire (Gallagher, 1997)" (as cited in Erçetin, 2000, pp. 4–11). As a combination of these definitions, it can be stated that leadership is the ability to inspire people to avoid individualized consideration and motivate them towards collective efforts to accomplish shared objectives (Bass & Bass, 2008).

Leadership discourses historically started with the "Great Man" approach, and then continued with three main theories, traits (1930s-1940s), behaviorist (1940s-1950s) and situational (1960s). The essence of these main theories is that leadership is an innate characteristic in traits theory, the effectiveness of a leader is related to a leader's actions in behaviorist theory, and in situational theory conditions influence effective leadership (Northouse, 2007). Furthermore, recent organizational structures, formed day-by-day in different ways due to changing conditions, have caused new leadership types to develop. These leadership types generally emphasize innovation, future objectives, norms and values, team-oriented tasks, the sharing of power and responsibilities, and also personal, professional and spiritual development. The most prominent types of leadership are transformational, visionary, cultural, spiritual, ethical, servant, learning, team, and distributed. Many of them focus on a single person's leadership, so leadership literature generally has been dominated by studies about formal managers' leadership roles. Likewise, studies

related to leadership in higher education have been mostly concerned with the characteristics and role behaviors of senior administrators like presidents, vice-chancellors, rectors, deans, and heads of departments (Bolden, Petrov, & Gosling, 2009).

Unlike the studies related to leadership types which focus on one person's leadership, distributed leadership studies highlight working together with different people, sometimes as a leader and sometimes as a follower, so leadership should be performed by a group of people together, and particular leadership functions can be carried out by different members at different times (Çelik, 2013). Distributed leadership in the context of higher education is based on three main premises: (*i*) leadership is a joint product of members in organizations and is shaped by their interactions, (*ii*) leadership does not have precise boundaries and it extends beyond the institution, and (*iii*) the varieties of expertise, knowledge, and skills which form leadership capacities in organizations are provided by most of the stakeholders (Bolden et al., 2009). These premises emphasize the collaborative leadership activities of individuals based on their experiences, knowledge, and skills for contributing to leadership capacity in universities. Therefore, the leadership of academics becomes much more valuable in satisfying the expectations and demands of the internal and external stakeholders of higher education institutions (Bolden, Gosling, & O'Brien, 2014).

Additionally, contemporary changes in higher education such as technological advancement, mass education, globalization, privatization, corporatization, and managerialism have brought academics new leadership duties such as generating alternative resources, becoming more cosmopolitan, creating new networks with government and industry, expanding their research, teaching agendas with interdisciplinary activities, representing their disciplines and institutions internally and externally, in addition to being knowledge producers and public intellectuals in their traditional roles (Macfarlane, 2007; H. Yılmaz, 2007). Macfarlane (2011) identified the behaviors, actions, and activities performed by academics in fulfilling these duties as intellectual leadership with six dimensions. Macfarlane (2012) also emphasized that academic freedom (being a critic and an advocate) and the duties of professorial leadership (being a mentor, guardian, enabler, and ambassador) are two sides of the same coin; they are the roots of Academic Intellectual Leadership (AIL).

On the other hand, some news stories in Turkish media such as *Professor Passing Time Just for Salary*, *Insufficient Academics for Their Students*

and *Plagiarism Suicide* raise many serious questions in different parts of the community about the fulfillment of academics' leadership duties. In this regard, a data collection instrument for measuring academics' intellectual leadership using self-evaluations is required in order to investigate the accuracy of these negative perceptions about academics in the community. Upon reviewing the literature, however, the researcher could only access one questionnaire developed by H. Yılmaz (2007) for measuring the intellectual leadership of academic administrators in Turkish universities, and just the reliability of this questionnaire, not its validity, was examined. In another study, Aypay (2001) developed a scale for measuring faculty's role performance in US universities by evaluating faculty activities regarding publishing articles and books, reviews and interdisciplinary works, publications for society, services to local organizations, lectures in local organizations, service to academia, service to society, application of knowledge, service to the institution, developing new courses, as well as teaching and course preparation. In addition, Evans, Homer, and Rayner (2013) investigated the academic leadership of professors in a project across the UK by using an online questionnaire composed of 40 items using Likert-type scales to explore the level of benefit that the leadership behaviors of professors had on non-professorial academics, researchers, and teachers. Macfarlane (2011) also used an online questionnaire in his study with UK professors to compare the priorities of professors regarding their leadership behaviors and preferential expectations of universities from professors.

Given the above information, there is no data collection tool which has had its validity and reliability examined in the reviewed literature for measuring AIL behaviors. In this regard, the purpose of this research is to develop a valid and reliable scale for evaluating academics' intellectual leadership. The researcher benefited from the dimensions of AIL as defined by Macfarlane (2011; 2012) during the development process of this scale. Thus, elaborating on AIL and its dimensions can be helpful in understanding the theoretical framework of the scale.

Academic Intellectual Leadership

The word "intellectual" indicates a wise and critical person who tends to the ideational and mental activities for leading social development and community welfare by his/her ability to use ideas and knowledge from his/her own field and for influencing debates from inside and outside

of his/her field (H. Yılmaz, 2007, p. 4). In ancient times, philosophers were mostly accepted as intellectuals who produced knowledge, developed ways of thinking, trained students, and enlightened the public. After major religions arose, the clergy, especially Christian priests, became influential as intellectuals who educated children and guided people according to religious approaches (Conroy, 2000). Many madrasahs, as pioneers of higher education institutions, were then established by former Islamic civilizations during the 10th century, such as Daru'l-Hikme in 1004 by Abbasids and Nizamiye Madrasah in 1067 by Seljuks the Great; education in these institutions was provided by teachers called müderris, the equivalent to modern-day professors (H. Yılmaz, 2007). After the impact of madrasahs on western culture, Bologna University, the oldest university in the world, was established in 1088, and other medieval universities like Oxford, Modena, Paris Sorbonne, and Cambridge were established after (Makdisi, 1981).

After the establishment of these universities, scientists, artists, and other intellectuals found opportunities to continue their studies in universities and use academic products for raising people's awareness and educating new generations, thus effectuating the core of academia as a suitable area for many intellectuals (H. Yılmaz, 2007). During the age of enlightenment, academics, the knowledge producers in universities, continued to use scientific knowledge to inform people about the universe, the world, art, education, economics, and so forth, despite heavy pressures from religious institutions (Conroy, 2000). Not just producing new knowledge, academics as public intellectuals frequently used their scholarly results to contribute to many social and economic events like human rights, children's welfare, educational policies, equality issues, racism, climate change, food quality, standardization of information and communication technology (ICT), higher education finance, micro-credits, workers rights, and more since the early 1900s (Macfarlane, 2012). Furthermore, contemporary changes in the area of higher education such as mass education, globalization, international students, privatization, managerialism, technological advancement, corporatization, and entrepreneurialism (Gizir, 2014; Teichler, Arimoto, & Cummings, 2013; Welch, 2005) have given rise to new standards for the professoriate.

During a National Conference of University Professors (UK-Based NCUP, 1991, as cited in Macfarlane, 2012, pp. 52–53), the standards of the professoriate were specified as *established chairs*,

personal chairs, *academic standing*, *research and scholarship*, *teaching*, *acquisition of resources*, *powers of communication*, *services to the wider university community,* and *services outside the university*. Tight (2002), in accord with these professorial standards, defined nine major roles for the professoriate: *being a role model*, *helping other colleagues to develop*, *income generation*, *influencing public debate*, *influencing the work and direction of the university*, *leadership in research*, *leadership in teaching*, *representing the department in the university*, and *upholding the standards of scholarship*. Finally, Macfarlane (2011) identified the behaviors of professors for fulfilling these roles as professorial intellectual leadership, and combined these behaviors into six dimensions: *Role Model*, *Mentor*, *Advocate*, *Guardian*, *Acquisitor,* and *Ambassador*.

Role Model: This dimension covers some personal characteristics such as *popular, committed, helping, patient and responsible*, virtues such as *strategic thinker, creative, true fighter, honest and co-operative,* and scholarly attributes such as *expert, global, influential, recognized and respected;* all of which have several associations with other dimensions (Macfarlane & Chan, 2014, pp. 6–9). According to one of the interviewed professors in Macfarlane's study (2012, p. 92), role model behaviors of academics include "academic and administrative expertise, fund raising and mentoring young staff, facilitating the research of older staff, establishing national and international collaborations as well as obtaining funding for this, and providing earned income for the university," in addition to effective publications with intellectually provoking ideas for establishing a prestigious scholarly reputation. The scope of role model also covers challenging others to create a transformation in the understanding of their discipline and broadly about society; influencing others through personal virtues and leading them to success; performing services that contribute to the development of students, colleagues, research fields, higher education institutions, and society; and coping with difficulties in academic and personal life such as economical, racial, sexual, religious, or ideological obstacles (Macfarlane, 2012; Macfarlane & Chan, 2014; Özdemir, Ünsal, Yüksel, & Cemaloğlu, 2010).

Mentor: The dimension of mentor indicates contributing to the development of less experienced colleagues by guiding and facilitating their scholarly activities, and nurturing their potential through collaborative studies (Evans et al., 2013; Macfarlane, 2011). According to Macfarlane (2012, p. 93), "good mentorship involves helping people realize their own potential and putting their personal interests above those of the organization they are currently working for". Therefore, to gain experience in becoming independent intellectuals, less experienced colleagues as well as postgraduate students should be mentored by advisors on funding applications for their projects and research, encouraging them if they have been refused publication or research proposals, co-authoring research articles, giving feedback about their scholarly products and teaching-learning practices, taking on responsibilities in fellowship activities, actively establishing connections with pioneering academics in their disciplines, discussing their intellectual ideas, leading the formation of research teams through participation, creating co-advisor opportunities for interactions between students and junior colleagues in postgraduate studies, and guiding them in forming long-term career plans (Macfarlane, 2011, 2012).

Advocate: Macfarlane (2012, p. 86) states that "the professor as advocate might seek to promote understanding and acceptance of alternative theoretical paradigm in their discipline […] the professor as advocate might be more of a public activist campaigning for changes in public policy". Thus, advocate means to develop a vision or alternative ways of changing the existent conditions in academia and to serve the community by using disciplinary knowledge, ideas, theories, models and arguments (Macfarlane, 2012; Macfarlane & Chan, 2014; Welch, 2005). In this regard, besides serving institutions with their disciplinary expertise and experiences, an academic as advocate should influence public debates by transferring knowledge, ideas, and suggestions to people via local, national, and even international publications, radio and television programs, or internet broadcast facilities; they should participate in social campaigns related to their scholarly interests by adapting theoretical understandings of their discipline to eliminate conflicts in the community (Aypay, 2001; Macfarlane, 2012; H. Yılmaz, 2007).

Guardian (Steward): Being a guardian means to keep up academic values and standards in scholarly platforms and to contribute to the development of scientific fields in new directions through unprejudiced peer-reviewed activities (Macfarlane, 2012). Academics carry out their guardian roles mostly with gate-keeping duties such as editing or peer-reviewing in books and journals, assessing research grant proposals as a panelist, and chairing

sessions in academic events and pro-bono activities like examining doctoral candidates during the dissertation period, reviewing colleagues' studies, taking responsibilities in disciplinary committees and contributing to commissions on university-wide research-assessment (Austin & McDaniels, 2006; Bolden et al., 2014; Macfarlane, 2011). As a natural process, when academics become more experienced and well-known in their field, their guardianship role starts to increase with new positions on different editorial boards, scientific committees, and research councils in addition to promoting academic titles (Aypay, 2001; Macfarlane, 2012).

Acquisitor (Enabler): The dimension of acquisitor implies that senior academics have to acquire research grants, research & development (R&D) agreements, patents and copyrights, alternative resources, and other commercial opportunities as an indispensable part of the reality of corporatized, business-oriented, contemporary universities (Macfarlane, 2011; O'Meara, 2005; Welch, 2005). Moreover, being an acquisitor includes financially supporting young researchers, junior colleagues, and their research initiatives by coordinating and leading project teams to obtain research funds (Aypay, 2001; Evans et al., 2013; Macfarlane & Chan, 2014). Furthermore, senior academics are important figures in establishing communication channels between younger researchers, effective faculties, and academic leaders in their discipline both inside and outside of their institutions using personal connections and also introducing students, generally postgraduate ones, and less experienced colleagues to academic platforms and networks such as research collaborations, journals, conferences, colloquiums, seminars, or lectures as co-investigators, co-authors, co-presenters or guest speakers (Austin & McDaniels, 2006; Macfarlane, 2012).

Ambassador: The dimension of ambassador emphasizes the representation of higher education institutions and their interests by academics on local, national, and even international platforms (Macfarlane, 2011; H. Yılmaz, 2007). When academics become more well-known figures in academia nationally and internationally, they can provide greater contribution to the reputation of their institutions (Macfarlane, 2012; Welch, 2005). Examples of activities which promote an academic's own reputation while representing their disciplines and institutions can be participation in international foundations related to their expertise and interest; joining research collaborations with foreign universities; working with non-governmental organizations (NGOs); providing consultation to commercial enterprises; accepting duties on national and international disciplinary boards, commissions, and school boards; leading the organization of academic events such as congresses, colloquiums, and seminars; attending conferences as keynote speakers; making international visits to collaborate with foreign colleagues; writing about social issues in popular press such as journals, magazines, and newspapers; sitting in on radio or television programs to inform the public about their area of expertise; and winning prestigious awards or prizes (Aypay, 2001; Macfarlane & Chan, 2014; O'Meara, 2005).

Methodology

This research was designed as a scale-development study for detecting and evaluating faculty members' AIL behaviors within the dimensions proposed by Macfarlane (2011). The factorial structure of the Academic Intellectual Leadership Scale (AILS) was explored using validity analysis and the availability of the scale for re-use was examined using reliability analysis. The results of these analyses are presented below. In addition, the factorial structure of the scale was tested against a secondary data set from a different sample by confirmatory analysis during the researcher's PhD study, which examined the relations between faculty members' AIL levels and their various professional and institutional characteristics.

Population and Sample

Faculty members as academics with teaching, research and service duties were included in the target population of the research. Therefore, the study group of this scale-development research was composed of 359 faculty members working in various disciplines from 29 Turkish public universities with different establishment dates (see Table 1). The secondary set of data related to this scale was comprised of the responses of 504 faculty members from other 46 universities: 179 females and 324 males; 178 assistant professors, 141 associate professors, and 173 professors; 229 professors from applied sciences, 47 from art & humanities, 65 from natural sciences, and 151 from social sciences; 235 professors were from universities established before 1992, 165 were from universities established between 1992 and 2005, and 101 were from universities established after 2005.

Table 1
Distribution of Faculties According to Their Personal & Institutional Characteristics

Gender	Female	Male		
	120 (33.4%)	238 (66.3%)		
Academic Title	*Assist. Prof.*	*Assoc. Prof.*	*Prof.*	
	126 (35.1%)	99 (27.6%)	120 (33.4%)	
Discipline	*Applied Sciences*	*Art & Humanities*	*Natural Sciences*	*Social Sciences*
	150 (41.8%)	48 (13.4%)	68 (18.9%)	86 (24%)
Establishment Dates of Universities	*Pre-1992*	*1992-2005*	*Post-2005*	
	189 (52.6%)	105 (29.2%)	60 (16.7%)	

Scale Development

The scale was developed based on the framework of six dimensions for professorial intellectual leadership as per Macfarlane (2011). Three experts from Canakkale Onsekiz Mart University (COMU) in Turkey, one of whom is a faculty member of the Foreign Language Education Department, another is a faculty member of the Educational Administration and Supervision Department who had lived in the USA for many years, and the third who is a faculty member of the Turkish Language Education Department, gave their opinion, and from their opinions, these dimensions, with the Turkish form provided in parentheses, were defined as *Role Model (Model Olma)*, *Mentor (Rehber Olma)*, *Advocate (Savunucu Olma)*, *Guardian (Gözetici Olma)*, *Acquisitor (Kazandırıcı Olma)* and *Ambassador (Temsilci Olma)*. An item pool containing 235 items was first generated from the related literature (Aypay, 2001; Evans et al., 2013; Macfarlane, 2011, 2012; Macfarlane & Chan, 2014; Teichler et al., 2013; Tight, 2002; Welch, 2005; H. Yılmaz, 2007). This version of the AIL questionnaire was examined by 3 academics from the Educational Administration and Supervision Department, COMU. Several adjustments were then made by the exclusion or combination of some questions according to the suggestions of these experts. After this process, the second version of the questionnaire, composed of 131 items, was sent to 52 Turkish faculty members from different disciplines and universities via e-mail in order to gather expert opinions. Seven of them (four from the field of Educational Administration and Supervision, two from Medical and Health Sciences, and one from Fine Arts) sent their replies including their suggestions about items, and a third version of the questionnaire was then written with 95 items. This version was presented to three academics studying Educational Sciences at COMU, and per their instructions, the final version of the questionnaire was then composed of 72 items (12 items for each dimension) having content and face validities. The items in the pilot version of the scale

were arranged using a 5-point Likert-type scale where 1=never, 2=rarely, 3=sometimes, 4=often and 5=always, for the purpose of examining faculty members' AIL self-evaluation.

Data Collection

For the first step, the researcher accessed 33,898 faculty members' contact information including their e-mail addresses from ARBIS (Researcher Information System) interface on the TUBITAK (The Scientific and Technological Research Council of Turkey) website (http://www.arbis.tubitak.gov. tr). Their e-mail addresses were then categorized according to the establishment date (pre-1992, 1992-2005, and post-2005) and the location of the universities in terms of Turkey's geographical regions (Aegean, Black Sea, Central Anatolia, East Anatolia, Marmara, Mediterranean, and Southeast Anatolia). Based on these categories, the researcher selected 29 universities with different locations and establishment dates. After this process, the pilot version of the scale was arranged as an online questionnaire, and the link to this questionnaire was sent to 8,864 faculty members from the 29 universities. The pilot AIL questionnaire was properly filled by 359 faculty members (4.05%), and their responses were included in the data set of the pilot application for performing validity and reliability analyses on the scale.

Data Analysis

During data analysis, the researcher used SPSS 21.0 for descriptive, differential and correlational analyses, and Exploratory Factor Analysis (EFA), and AMOS 20.0 for Confirmatory Factor Analysis (CFA). At first, the data sets for each item in the pilot form were examined through visual inspection of the histograms, normal Q-Q plots, box plots, and Skewness and Kurtosis values to assess their distribution, an interval of ±2 being the criterion for normal distribution (Can, 2014), and the

researcher analyzed item-total correlations where an item-total correlation of $r \geq .20$ is considered acceptable for the item to be included in the EFA (Çokluk, Şekercioğlu, & Büyüköztürk, 2014). The structural validity of the scale was then explored via EFA using the Principal Component and Varimax Rotation methods; the reliability of the scales and their factors were assessed using Cronbach's Alpha technique where an α-coefficient value of .60 or higher is considered evidence of reliability (Kılıç-Çakmak, Çebi, & Kan, 2014). For the next step, the distinctiveness of each item was analyzed to determine the items' discrimination power using the t-test on the upper and lower 27%.

After exploring the validity of the scale, the relations between dimensions were detected using Bivariate Correlation Analysis on the secondary data set where a value of $r \geq .30$ between factors is accepted as a precondition for CFA in order to determine the suitability of the factorial structure for CFA (Hair, Black, Babin, & Anderson, 2010). The factorial structure of the scale was then tested using CFA on the secondary data set collected during the researcher's PhD study, and *Chi-Square (χ^2)* with *p = .000, Chi-Square/Degree of Freedom (χ^2/df) < 5, Goodness of Fit Index (GFI) > .90, Adjusted Goodness of Fit Index (AGFI) > .90, Comparative Fit Index (CFI) > .90 and Root Mean Square Error of Approximation (RMSEA) < .08* were used as model fit indexes (Hair et al., 2010). After confirmation of the factorial structure for the AILS, the researcher performed t- and F-tests on the secondary data set to examine the differences among faculty members' AIL in terms of their personal and institutional features and correlation analysis to explore the relations between faculty members' AIL and their perceptions about organizational communication, organizational climate, and managerial flexibility regarding scholarly practices in universities. After all these were completed, analysis results related to the scale development and the examination of faculty members' AIL levels were presented as the next part of the research.

Findings

Findings Related to Validity

Before testing the factor structure of the scale, a check was performed to see if there was a sufficient number of respondents for factor analysis, and 359 respondents within the data set of the pilot AILS were found to be sufficient for proceeding with the EFA since 72 items x 5=360 and according to the general rule, "there should be at least 5 subjects per variable and a total of no fewer than 100 subjects"

(Bryman & Cramer, 1990, as cited in Cohen, Manion, & Morrison, 2007, p. 563). For the next step, normal distributions for items were examined through the Skewness and Kurtosis parameters, which were found between the interval of ±2 thus indicating normal distribution; only one item, #31, did not show normal distribution so it was excluded from analysis. Item-total correlations were then detected between .370 and .725, and these correlations showed enough item-total correlations for EFA (Çokluk et al., 2014). After satisfying the preconditions of EFA, the structural validity of AILS was checked with respect to the 71 items.

The adequacy of sampling and data-set suitability for all groups regarding EFA were assessed in this first step using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity (BTS). According to Kılıç-Çakmak et al. (2014), KMO should be greater than .50 and χ^2 in BTS should produce a significant result with $p \leq .05$ as pre-conditions for performing EFA. For this scale, the KMO value was .92 and BTS (χ^2 = 3042.48, $p = .00$) showed a significant result. The researcher, based on the findings from KMO and BTS, decided that the data set from the pilot AILS was suitable for performing EFA. EFA was then performed using the Principal Component and Varimax Rotation techniques, and all items with a factor loading under .50 and all items having joint factor loadings in two factors with a difference under .10 were excluded from the scale (Çokluk et al., 2014). After this step of the EFA, factor loadings and common factor variances for each item were found, as presented in Table 2.

As shown in Table 2, each factor consists of four items according to Macfarlane's (2011) framework for academics' intellectual leadership. However, in accordance with the results in Table 2, it was observed that all 11 items (#31 having been excluded) which had been formed for the dimension of role model were scattered into other dimensions; from that, the five-dimensional structure for AILS was discovered. To explain this situation, the related studies were examined again, and role model was reassessed to include several common behaviors with other dimensions (Macfarlane, 2011, 2012) and it covered many personal characteristics of academics (Macfarlane, 2012; Macfarlane & Chan, 2014). Hence, the dispersion of items from the dimension of role model into other dimensions was comprehended as a potential outcome of the research. In conclusion, the scale has a five-factor structure within 20 items, factor loadings are

Table 2
Factor Loading Values and Common Factor Variances

Item No	Factor 1: Ambassador	Factor 2: Mentor	Factor 3: Acquisitor	Factor 4: Guardian	Factor 5: Advocate	Common Factor Variance
Item 30	**.746**	.095	.207	-.043	.114	.624
Item 18	**.723**	.139	.090	.018	.136	.569
Item 66	**.702**	.159	.132	.235	.225	.642
Item 54	**.590**	.129	.159	.367	.203	.566
Item 26	.144	**.798**	.070	.028	.147	.685
Item 20	.162	**.713**	.173	.193	.031	.603
Item 14	.087	**.664**	.339	.122	.038	.580
Item 38	.121	**.661**	.093	.275	.271	.609
Item 11	.036	.098	**.848**	.120	.134	.762
Item 17	.075	.201	**.760**	.260	.129	.708
Item 5	.393	.206	**.685**	.081	.008	.673
Item 23	.403	.191	**.656**	.150	.121	.666
Item 40	-.042	-.042	.249	**.741**	.081	.621
Item 64	.166	.456	.042	**.657**	.113	.682
Item 58	.180	.302	.143	**.641**	.151	.578
Item 70	.401	.338	.192	**.553**	.138	.637
Item 33	-.078	.388	.118	-.064	**.732**	.710
Item 39	.411	.014	.085	.203	**.684**	.686
Item 45	.369	.124	.263	.210	**.662**	.702
Item 51	.436	.063	.018	.250	**.636**	.662
Eigen Value	7.360	1.811	1.562	1.184	1.049	-
Variance Explained	15.19%	14.04%	13.30%	11.40%	10.89%	-
Total Variance Explained			64.83%			

between .553 and .848, and it can explain 64.83% of the variance for AIL.

Table 3
Correlation Coefficients among AIL and Its Dimensions

Dimensions	1	1.1	1.2	1.3	1.4	1.5
1. *AIL*	1					
1.1 Ambassador	.76**	1				
1.2 Mentor	.78**	.37**	1			
1.3 Acquisitor	.79**	.49**	.51**	1		
1.4 Guardian	.80**	.47**	.70**	.56**	1	
1.5 Advocate	.80**	.61**	.50**	.49**	.51**	1

** $p \leq .01$.

After exploring the validity of the scale, the researcher checked the relations among dimensions of the AIL by analyzing the secondary data set which was comprised of the responses from 504 faculty members (see Table 3). According to the results in Table 3, the correlations among AIL and its dimensions were significant, with $p \leq .01$, and r varying between .31 and .80. These correlational coefficients were accepted as sufficient for testing the theoretical model which was formed in accordance with the factorial structure of the scale (Hair et al., 2010), and CFA was then performed for analysis of the structural model in AILS (see Figure 1). The model fit indexes were found to be $\chi^2 = 520.158$, $p = .000$, $\chi^2/df = 3.292$, *GFI* = .904, *AGFI* = .872, *CFI* = .910, and *RMSEA* = .068, with standardized regression weights between .49 and .81, which indicates a moderate fit level.

Findings Related to Reliability and Item Analysis

Item-total correlations were first calculated to determine whether each item in the scale can or cannot measure the behavior which the item wants to measure, and how much each item is qualified to specify the discrimination of people in terms of the behavior measured by that item. The researcher then examined the reliability of the scale using Cronbach's Alpha to measure internal consistency, and the Independent *t*-test to examine the significance of the difference between the lower and upper 27% of the item scores of the groups. Item-total correlations for all items in the scale, *t*-test results for determining the discrimination power of each item by comparing the lower and upper group scores in the sample, and Cronbach's Alpha for each dimension are given in Table 4.
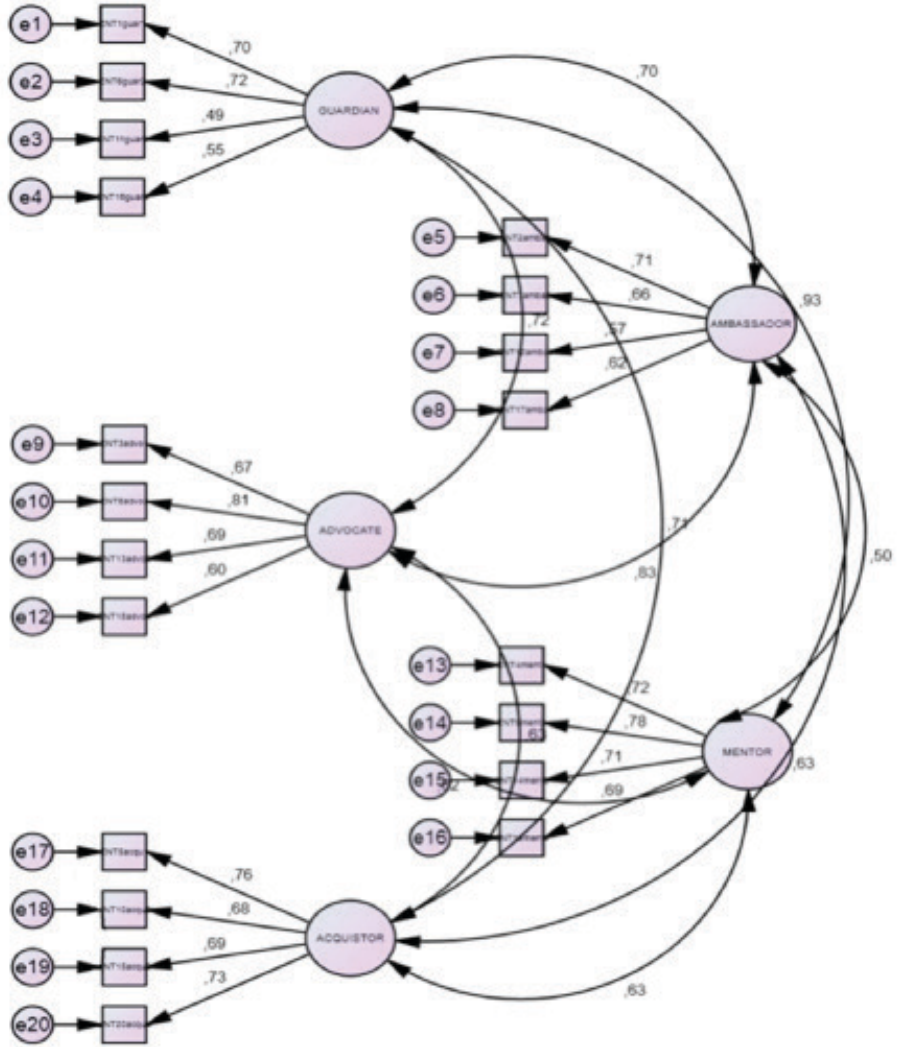
Figure 1: CFA Results of AILS, based on the secondary data set composed of 504 faculty members' responses in the final application of the scale.

As can be seen from Table 4, Cronbach's Alpha for ambassador is .78; for mentor, .78; for acquisitor, .84; for guardian, .76; and for advocate, .78. Overall, Cronbach's Alpha for the entire scale was .91 regarding the pilot application of the scale. Reliability analysis for the scale was performed again using the secondary data set from the final application in the researcher's PhD study, and Cronbach's Alpha was .91 for the whole scale; .73 for ambassador; .82 for mentor; .79 for acquisitor; .74 for guardian; and .79 for advocate. All these findings show that the scale and its dimensions are highly reliable as evidenced

by its general reliability acceptance of α ≥ .70 (Hair et al., 2010). In addition, item-total correlations (*r*) for the items in ambassador are between .49 and .63; in mentor, between .48 and .56; in acquisitor, *r* is between .48 and .64; in guardian, between .35 and .67; and in advocate, *r* is between .40 and .67. According to Nunnally and Bernstein (1994, as cited in Kılıç-Çakmak et al., 2014, p. 761), item-total correlations of *r* ≥ .30 are evidence for the validity of items in the scale. In this regard, all items in the scale can contribute to measuring the specifics which is the aim of the scale. Furthermore, according to

Table 4
Item-Total Correlations, Cronbach's Alpha for the Items and t-test Values for the upper and lower 27% of the Group Scores

Dimensions and Items	Kurtosis	Skewness	Item-Total Correlations	α If Item Deleted	t
Ambassador (α = .78)	-.72	-.18	-	-	-
Item 30	-1.08	.18	.50	.90	-47.61*
Item 18	-1.08	-.07	.49	.90	-44.40*
Item 66	-.79	-.46	.63	.90	-40.54*
Item 54	-1.03	-.28	.61	.90	-50.04*
Mentor (α = .78)	1.29	-1.08	-	-	-
Item 26	1.10	-1.10	.48	.90	-27.55*
Item 20	2.00	-1.34	.52	.90	-20.62*
Item 14	1.54	-1.36	.50	.90	-22.29*
Item 38	-.51	-.54	.56	.90	-35.19*
Acquisitor (α = .84)	-.73	-.32	-	-	-
Item 11	-.69	-.65	.48	.90	-39.28*
Item 17	-.45	-.69	.57	.90	-37.99*
Item 5	-1.04	-.14	.58	.90	-45.12*
Item 23	-1.13	.03	.64	.90	-49.91*
Guardian (α = .76)	.53	-.92	-	-	-
Item 40	2.25	-1.58	.35	.91	-20.03*
Item 64	.08	-.81	.56	.90	-36.34*
Item 58	1.17	-1.13	.55	.90	-24.81*
Item 70	-.30	-.65	.67	.90	-37.66*
Advocate (α = .78)	-.58	-.30	-	-	-
Item 33	-.90	-.44	.40	.91	-46.30*
Item 39	-1.08	-.14	.56	.90	-49.55*
Item 45	-.81	-.42	.67	.90	-39.51*
Item 51	-.98	.18	.56	.90	-44.61*

* $p \le .05$.

the results from the *t*-test, there are very extensive differences between each item's mean for the lower and upper groups. These differences are significant at $p \le .05$ level with *t* values between -50.04 and -20.03. Based on these results, it can be affirmed that all items in the scale distinguish people who display the behaviors from these items.

Findings Related to Secondary Usage of AILS in terms of Faculty's Personal and Institutional Features

After developing the AILS scale, the researcher used the scale in his PhD study to collect secondary data related to faculty members' AIL. The secondary data set was then analyzed to investigate their AIL level and

Table 5
The Level of Faculty's AIL and the Differences in terms of Their Personal and Institutional Features

Dimension	$\overline{X}$ **	Sd	Gender 1=Male, 2=Female			Academic Title 1=Prof, 2=Assoc Prof, 3=Assist Prof			Discipline 1=App Sci, 2=Arts&Hum, 3=Nat Sci, 4=Soc Sci			The Establishment Dates of Universities 1=Pre-1992, 2=1992-2005, 3=Post-2005		
			t	p	Dif.	F	p	Dif.	F	p	Dif.	F	p	Dif.
AIL	3.24	.71	-.76	.45		8.93	.00*	2<1 3<1	2.89	.04*	1<4	1.76	.17	
Ambassador	2.96	.92	-.69	.49		1.86	.16		2.86	.04*	-	2.04	.13	
Mentor	3.54	.89	2.14	.03*	1<2	7.11	.00*	3<1	3.39	.02*	1<4	1.29	.28	
Acquisitor	3.10	.98	.76	.45		6.18	.00*	3<1	2.78	.04*	2<3	3.37	.04*	2<1
Guardian	3.76	.75	1.41	.16		7.44	.00**	3<1	3.80	.01*	1<4 2<4	.48	.62	
Advocate	2.83	.99	.23	.82		7.89	.00**	2<1 3<1	6.04	.00*	1<4 3<4	4.39	.01*	2<3

(*n* = 504) * $p \le .05$; ** 1.00-1.79 = Very Low; 1.80-2.59 = Low; 2.60-3.39 = Medium; 3.40-4.19 = High; 4.20-5.00 = Very High.

the differences in levels in terms of gender, academic title and discipline, and the establishment date of their universities. The results of descriptive analysis and t- and F-tests are presented below in Table 5.

According to the findings in Table 5, faculty members' AIL behaviors are generally at a medium level ($\overline{X}$ = 3.24; sd = .71). In addition, their AIL behaviors regarding ambassador ($\overline{X}$ = 2.96; sd = .92), acquisitor ($\overline{X}$ = 3.10; sd = .98) and advocate ($\overline{X}$ = 2.83; sd = .99) are at a medium level while their AIL behaviors regarding mentor ($\overline{X}$ = 3.54; sd = .89) and guardian ($\overline{X}$ = 3.76; sd = .75) are at a high level. Furthermore, there are some significant differences among faculty members' AIL level in terms of the following. With gender, mentor favors female faculty members (t = 2.14; p = .03). In academic title, AIL in general favors professors (F = 8.93; p = .00). Mentor (F = 7.11; p = .00), acquisitor (F = 6.18; p = .00), guardian (F = 7.44; p = .00), and advocate (F = 7.89; p = .00) all favor professors again. In discipline, AIL generally (F = 2.89; p = .04) favors faculty members from the social sciences; ambassador (F = 2.86; p = .00), *Mentor* (F = 3.39; p = .02), guardian (F = 3.80; p = .01), and advocate (F = 6.04; p = .00) favors faculty members from the social sciences again; acquisitor (F = 2.78; p = .04) favors faculty members from the natural sciences. The establishment dates of universities regarding acquisitor (F = 3.37; p = .04) favors faculty from pre-1992 universities; and faculty from post-2005 universities are favored regarding advocate (F = 4.39; p = .01).

In addition to the data about faculty members' AIL levels, the researcher during his PhD study collected data related to faculty members' perceptions on communication, climate, and academic support practices of university management by using organizational communication scale developed by E. Yılmaz (2007), the organizational climate scale found in Kılınç-Ergülen's (2011) study, and the managerial flexibility regarding scholarly practices scale developed by Uslu (2015). The researcher then performed correlation analysis in order to explore the relationship of faculty members' AIL levels to communication, climate, and managerial practice flexibility in universities. To highlight the relations among these variables, the results of the correlation analysis are presented in Table 6.

The findings in Table 6 show that there are significant relations among communication, climate, and managerial practice flexibility in universities within all dimensions when compared to faculty members' AIL. All relations between faculty members' AIL and communication, climate, and managerial practice

flexibility in universities are positive and significant at $p \leq .01$. These correlations are significant at r = .29 for organizational communication and AIL (.14 ≥ r ≥ .35 for AIL dimensions), at r = .32 for organizational climate and AIL (.15 ≥ r ≥ .39 for AIL dimensions), and at r = .34 for managerial flexibility regarding scholarly practices and AIL (.16 ≥ r ≥ .37 for AIL dimensions).

Table 6
Correlations among Faculty Members' AIL and Communication, Climate, and Managerial Flexibility Regarding Scholarly Practices in Universities

Variables	1	2	3
1. Organizational Communication	1		
2. Organizational Climate	.82*	1	
3. Managerial Flexibility Regarding Scholarly Practices	.75*	.71*	1
4. Academic Intellectual Leadership	.29*	.32*	.34*
4.1 Ambassador	.35*	.39*	.37*
4.2 Mentor	.14*	.15*	.16*
4.3 Acquisitor	.22*	.28*	.28*
4.4 Guardian	.19*	.21*	.27*
4.5 Advocate	.21*	.21*	.24*

(n = 504) * $p \leq .01$.

Discussion and Conclusion

The literature on leadership in higher education generally focuses on the academic leadership of universities' top managers such as presidents, vice-chancellors, rectors, deputy vice-chancellors, vice-rectors, deans, and heads of departments. By contrast, there is a limited number of studies related to academics' informal leadership behaviors. Among these limited studies, the researcher could not access any valid or reliable data collection tool for measuring the displayed level of academics' intellectual leadership behaviors. Therefore, the researcher developed the AILS for the self-assessment of academics regarding their intellectual leadership. The AILS was developed based on Macfarlane's (2011) six-dimensional framework. However, AILS consists of five sub-dimensions because of how items related to role model spread into other dimensions. The dimension of role model has several associations with other dimensions and covers many personal characteristics as well as scholarly actions (Macfarlane, 2011, 2012; Macfarlane & Chan, 2014), thus, the diffusion of items from role model into other dimensions was not an unexpected outcome of the research. As a result, the AILS is composed of the dimensions of ambassador, mentor, acquisitor, guardian, and advocate.

The dimension of ambassador covers several behaviors such as combining career days with school visits, attending national ceremonies voluntarily, representing one's institution on social mediums, and leading the organization of national or international events. Mentor consists of academic behaviors such as directing junior academics towards their strengths, giving examples of successful academics to motivate younger colleagues, encouraging less experienced scholars not to give up on their studies, and giving feedback to less-experienced academics related to their progress. Acquisitor comprises items related to financial support for one's students, one's material contributions to the studies of younger colleagues, procuring finances and resources in universities by gaining research funds and commercial agreements, and one's leadership in wider research teams to actualize extensive budget projects. Guardian is composed of different behaviors such as participating in reviewer mechanisms related to scholarly studies, evaluating academic fruits of one's colleagues, publishing new knowledge production techniques, and disseminating the major principles of one's discipline to the broader professional community. Advocate contains some social-based actions such as pressing for the rights of socially oppressed groups in the community; participating in social bodies related to one's scholarly area of expertise; cooperating in local, national, and international formations to solve social issues; and disseminating one's ideas on social phenomenon through different media channels.

After finally determining content of the AILS, the validity and reliability analyses were carried out using the data set composed of the responses of 359 faculty members in the study group of the pilot application. The results of these analyses proved that the AILS is highly reliable in terms of both general structural validity and the dimensions explained above. The items on the AILS, according to item analysis, can contribute to measuring the behaviors within AIL, and each of them can discriminate between people who display a behavior from one item or another. In addition, in order to discover the sufficiency of the relations between factors in the theoretical model of the AILS, the factorial structure of AILS was tested using CFA on the secondary data set which was composed of the responses of 504 faculty members in the sample of the researcher's PhD research; significant regression weights for items from the model were found. Moreover, the model fit indexes of the CFA demonstrate that AILS has a good fit between its data and structure in the factorial model.

Despite there not being any other intellectual leadership scale in the reviewed literature, the researcher accessed several studies related to the roles and behaviors of academics within intellectual leadership. For example, Macfarlane (2011) compared professors' prioritization of their intellectual leadership behaviors to the priority of their institutions by generating rankings for these leadership behaviors based on data from his online questionnaire. Moreover, Macfarlane and Chan (2014) defined academics' personal characteristics and scholarly attributes within these dimensions by analyzing obituaries of academics from Times Higher Education. In his book, *Intellectual Leadership in Higher Education: Renewing the Role of the University Professor*, Macfarlane (2012) elaborated on all the types of intellectual leadership behaviors of professors, but he did not try to measure AIL in either his book or in his other studies. Evans et al. (2013) also measured the satisfaction of junior academics with their professors' leadership using a 40-item online questionnaire in UK universities, and they found that 26.9% of the sample indicated their experiences related to professorial leadership were at an *excellent* or *exemplary* level while 35.4% stated their experiences related to the academic leadership of professors at an *unsatisfactory* level. Aypay (2001), in his USA-wide PhD study, also examined faculty members' role performance with their professional activities, professional publications, and other professional functions using the scale he developed based on Ernest L. Boyer's four domains of scholarship: teaching, discovery, integration and application. In addition, H. Yılmaz (2007), using a 73-item questionnaire, evaluated only the intellectual leadership of academic administrators in Turkish universities such as rectors, vice-rectors, deans, heads of departments, and graduate school managers in terms of giving lectures, making publications, being a public voice and being a global opinion organizer.

According to the studies mentioned above, there are several data collection instruments for evaluating academics' professional role behaviors, but aside from the AILS, there is no scale for measuring academics' intellectual leadership behaviors. As a valid and reliable data collection tool, the AILS was also used in the secondary application in the researcher's PhD study in order to examine the displayed level of these behaviors and the effects of some personal characteristics and institutional specifications of faculty members on their AIL level. According to the findings, Turkish faculty members give priority to the

behaviors of guardianship and mentorship which contribute to advancing their discipline in ways such as keeping up standards in the areas of their profession and science and helping colleagues with their academic development; the behaviors within other dimensions of academic intellectual leadership cannot be displayed at the expected level by faculty members. Similarly, Macfarlane (2011) found that helping other colleagues to develop, showing leadership in research, being a role model, upholding the standards of scholarship, and influencing the work and direction of the university were 5 prior roles according to UK professors. Evans et al. (2013) also found that 93.7% of respondents among non-professorial academics expected high-level academic leadership from professors (especially through advising younger colleagues and helping them develop professionally in order to build a successful career). Based on these results, it can be claimed that similar to the general tendency in other countries, Turkish faculty focus mainly on scholarly performance within their disciplines because tenure criteria in Turkey are based only on academics publication records (Aypay, 2015; Çetinsaya, 2014; O'Meara, 2005). They also give importance to supervising student studies because it helps with academic promotions, especially at a professoriate level (H. Yılmaz, 2007). Therefore, to increase a faculty member's AIL, university management may provide room for the behaviors within institutional representations, community engagements, and financial contributions within the academic promotion and reward systems; also criteria for reaching tenure may be re-arranged to contain participation in projects, contributions to solutions of social issues, attending national and international academic events, being members of committees, and disciplinary gate-keeping activities apart from their scholarly publications.

The researcher also found that there are some differences among the displayed level of faculty members' AIL in terms of gender, academic title, discipline, and their university's establishment date, but could not reference other studies because of the lack of interest in those studies related to faculty members' personal and institutional features in the reviewed studies. The findings related to their gender show that female Turkish faculty members display greater effort at helping the professional development of their less experienced colleagues through their stronger motivator, emphatic and emotional characteristics. In addition, professors with the highest seniority have had many more opportunities to serve in their discipline,

institution, and community during their long careers by using their scientific expertise to contribute to the professional development of their junior colleagues, to keeping up standards in their discipline, to gain different research support, and to improve social wellness. Moreover, faculty members from the social sciences endeavor to develop their more subjective disciplines through gate-keeping activities, conveying professional values to more novice academics, and by benefitting from their knowledge for finding solutions to social problems; on the other hand, faculty from natural sciences give the majority of their attention to gaining funds for their projects which are carried out with younger academics. Furthermore, faculty members who work in universities founded prior to 1992, display more intellectual behaviors in acquiring different funds and resources for the large scale studies that are carried out by wide research groups thanks to the developed research facilities in their former universities. Faculty from post-2005 universities make greater effort for intellectual leadership behaviors within the dimension of advocate in order to contribute to the development of the local community and social life in relatively small cities. In line with these results, university management can institute several practices in order to elevate organizational development by augmenting the academic intellectual leadership behaviors of all faculty members from various disciplines. These practices can include official leadership trainings, faculty mentorship programs, co-advisory systems, larger travel funds for younger faculty members, giving priority to less experienced faculty in exchange programs, creating inducement project opportunities for novice faculty members, commissioning all kinds of faculty members for administrative duties, and encouraging faculty members from product-oriented disciplines to contribute to real-life affairs using their expertise.

Lastly, the researcher investigated the relationship of faculty members' AIL levels with communication, climate and managerial flexibility regarding scholarly practices in universities. A strong positive relationship among these variables was found. This result concludes that the quality of communication, positivity of climate, and variety of academic support practices operated by university management deeply influence faculty members' job satisfaction, commitment, feelings of trust towards university managers, cooperation with one's colleagues as well as providing motivation and improving individual performance and scholarly productivity. All of these lead to a higher displayed level of AIL behaviors

within all dimensions for faculty members. Therefore, faculty members' AIL can be enhanced within a more collegial organizational climate by operating various communications mediums like academic discussion groups related to a variety of topics, different institutional peer-review bodies, interdisciplinary seminars and workshops, regular disciplinary academic meetings, social activities (such as teas, lunches, and celebration parties), and institutional sports competitions. Moreover, to support faculty's activities within AIL behaviors, university managers can execute different institutional practices such as initiating faculty development programs, performing official mentoring programs, forming interdisciplinary post-graduate programs, establishing institutional scholarly journals, providing physical space, ICT and secretarial support for disciplinary associations, forming stable funds for inviting overseas scholars, setting up search software to access suitable external funds, integrating an ethical application system within intranet platforms, arranging seminars and workshops on project management, creating academic formations related to social topics on institutional environment, generating institutional opportunities on social media platforms for attending public campaigns, leading the organization of national or international academic and social events at universities, as well as establishing a media advisory unit to develop relations with external visual and printed media channels.

In short, AILS's psychometric features prove that this scale is a valid and reliable data collection tool for measuring the level of academics' intellectual leadership behaviors. AILS is also useful for examining the relationship between AIL behaviors and academics' personal and organizational features. However, it is necessary to re-test the validity and reliability of this scale in order to investigate the suitability for long-term usage in further studies to discover the influences of various personal, professional, and organizational variables on academics' intellectual leadership in different study groups.

Acknowledgement

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Appendix A

Academic Intellectual Leadership Scale (in Turkish)

Bir akademisyen olarak;
aşağıda belirtilenleri gerçekleştirme sıklığınızı belirtiniz.

[1=Hiçbir zaman ← → 5=Her zaman]

AKADEMİK ENTELEKTÜEL LİDERLİK ÖLÇEĞİ	1	2	3	4	5
30. *(Temsilci Olma)* Kariyer günleri, tanıtım fuarları, okul ziyaretleri, vb. etkinliklerde üniversiteyi tanıtma					
26. *(Rehber Olma)* Deneyimi az olan meslektaşlarımı, kendilerinin güçlü ve zayıf taraflarını keşfetmeye yönlendirme					
11. *(Kazandırıcı Olma)* Yürütücüsü olduğum projeler veya etkinlikler ile öğrencilerin bursiyer, yardımcı personel, vb. yollarla finansal olarak desteklenmesini sağlama					
40. *(Gözetici Olma)* Uzmanlık alanım kapsamındaki yayın, proje, etkinlik vb. çalışmalara yönelik farklı değerlendirme uygulamalarında (editör, hakem, panelist, danışman, vb.) gönüllü olarak yer alma					
33. *(Savunucu Olma)* Çalışmalarımda toplumsal baskıya maruz kalan kesimlerin haklarını dile getirme					
18. *(Temsilci Olma)* Önemli günler için yapılan yerel veya ulusal törenlere (kutlama, anma, yürüyüş, vb.) kurumu temsilen gönüllü olarak katılma					
20. *(Rehber Olma)* Deneyimi az olan meslektaşlarıma örnek olması amacıyla, çalışma alanımdaki diğer akademisyenlerin başarılarını dile getirme					
17. *(Kazandırıcı Olma)* Yürütücüsü olduğum projeler veya etkinlikler ile deneyimi az olan meslektaşlarımın danışman, araştırmacı, eğitici personel, vb. yollarla finansal olarak desteklenmesini sağlama					
64. *(Gözetici Olma)* Meslektaşlarımın eğitsel veya akademik çalışmalarına yönelik değerlendirmelerde bulunma					
39. *(Savunucu Olma)* Çalışma alanımla ilişkili toplumsal oluşumlarda (STKlar, dernekler, basın-yayın organları, vb.) aktif olarak yer alma					
66. *(Temsilci Olma)* Kamusal veya sosyal ortamlarda üniversiteyi tanıtma					
14. *(Rehber Olma)* Proje, yayın, etkinlik, vb. başvurularının reddedilmesi durumunda deneyimi az olan meslektaşlarımı vazgeçmemeleri için cesaretlendirme					
5. *(Kazandırıcı Olma)* Araştırma fonları, kontratlar, kaynaklar ve diğer ticari olanakları üniversiteye kazandıracak çalışmalar yapma					
58. *(Gözetici Olma)* Çalışma alanımın bilgi üretme yöntemlerine katkı sağlayıcı yayınlar yapma					
45. *(Savunucu Olma)* Çalışma alanım kapsamındaki toplumsal sorunların çözümü için farklı aktörlerle (yerel yönetimler, meslek kuruluşları, ajanslar, vb.) işbirliği yapma					
54. *(Temsilci Olma)* Üniversitenin bilinirliğine katkı sağlayan ulusal veya uluslararası etkinlikler (konferanslar, uluslararası ağlar, araştırma işbirlikleri, vb.) düzenlemesine öncülük etme					
38. *(Rehber Olma)* Olumsuz olsa da deneyimi az olan meslektaşlarımın akademik gelişimlerine ilişkin geri bildirimde bulunma					
23. *(Kazandırıcı Olma)* Üniversiteye finansal katkı sağlayacak projeleri gerçekleştirebilmek için geniş katılımlı araştırma ekipleri oluşturma					
70. *(Gözetici Olma)* Mesleki paylaşımlar (akademik topluluklar, komiteler, çalışma değerlendirmeleri, bilimsel etkinlikler, vb.) yoluyla çalışma alanımın temel ilkelerini daha geniş bir alana yayma					
51. *(Savunucu Olma)* Çalışma alanım kapsamındaki toplumsal konulara ilişkin görüşlerimi, farklı medya kanallarını (gazete, dergi, radyo, tv, sosyal medya, vb.) kullanarak kamuya aktarma					

Appendix B

Academic Intellectual Leadership Scale (in English)

Please, as an academic, consider yourself,
and then indicate your displayed frequency of the behaviors stated below.

[1=Never ← → 5=Always]

ACADEMIC INTELLECTUAL LEADERSHIP SCALE *	1	2	3	4	5
30. *(Ambassador)* To present my university in activities such as career days, publicity fairs, school visits, etc.					
26. *(Mentor)* To direct my less experienced colleagues to discover their strengths and weaknesses on their own					
11. *(Acquisitor)* To provide financial support to my students as bursars, auxiliary staff, etc. via the projects or activities I coordinate					
40. *(Guardian)* To take part voluntarily in different reviewer mechanisms (editor, referee, panelist, counselor, etc.) regarding publications, projects, activities, etc. within my discipline					
33. *(Advocate)* To voice the rights of communities exposed to social pressure in my studies					
18. *(Ambassador)* To attend voluntarily, as a representative of my university, in local or national ceremonies (celebration, commemoration, rally, etc.)					
20. *(Mentor)* To mention the successes of academics from my discipline as examples for my less experienced colleagues					
17. *(Acquisitor)* To provide financial support to my less experienced colleagues as consultant, researcher, trainer, etc. via the projects or activities I coordinate					
64. *(Guardian)* To make evaluations of my colleagues' educational or academic studies					
39. *(Advocate)* To take an active role in social formations (NGOs, associations, unions, press-broadcast units, etc.) related to my study areas					
66. *(Ambassador)* To present my university in public or on social mediums					
14. *(Mentor)* To encourage my less experienced colleagues to not give up, when their project, publication or activity applications are rejected					
5. *(Acquisitor)* To conduct studies which bring in research funds, contracts, resources or other commercial opportunities to my university					
58. *(Guardian)* To publish papers which contribute to methods of knowledge production in my discipline					
45. *(Advocate)* To collaborate with different actors (local authorities, professional associations, agencies, etc.) for solutions to social issues within my study areas					
54. *(Ambassador)* To lead the organization of national or international activities (conferences, international networks, research collaborations, etc.) which contribute to the reputation of my university					
38. *(Mentor)* To give feedback related to the academic development of my less experienced colleagues even if it is unfavorable					
23. *(Acquisitor)* To form research teams with wide participation for actualizing projects which provide financial contributions to my university					
70. *(Guardian)* To spread the fundamental principles of my discipline in broader areas via professional gatherings (academic unions, committees, study evaluations, scientific activities, etc.)					
51. *(Advocate)* To deliver my opinions related to social issues within my study areas by using different media channels (newspaper, magazine, radio/tv, social media, etc.)					

* This scale was translated into English by the researcher, but the English form of the scale has not been used yet.