

## Article

# The Effect of Authentic Leadership of Deans and Directors on Sustainable Organizational Commitment at Universities: Mediated by Organizational Culture and Trust

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**Abstract:** This study aimed to analyze the relationship between deans and directors of Korean universities on the organizational commitment of university professors, and the mediating effects of organizational culture and organizational trust. A survey was conducted with full-time professors at 20 universities; 387 responses were analyzed. Structural equation modeling was performed using a two-step approach to achieve the research purpose, and the mediating effects were tested using phantom variables. The analysis revealed that the authentic leadership of deans and directors significantly and positively affected organizational trust, culture, and commitment, with trust being a more important mediator than culture. This study is significant in that most previous studies on university leadership have focused on the university president, the top-level policymaker, and used measurement tools designed for business organizations. Conversely, this study focused on deans and directors, the middle managers at universities, and adapted existing diagnostic tools for universities in Korea with horizontal organizational structures based on academic experience. In Korea, there is currently an emphasis on university reform, evaluation, and financial support. Thus, the importance of deans and directors as the key administrative workforce and enablers in creating a healthy organizational culture is in the spotlight. The results suggest the urgent necessity for investment in leadership training for these positions.

**Keywords:** university deans and directors; authentic leadership; organizational trust; organizational culture; organizational commitment



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## 1. Introduction

A university is a higher education institution characterized by a bureaucratic organizational structure. It is a professional bureaucracy with a horizontal structure featuring a large faculty group that leads the educational and research activities at the core of the operation, with minimal gap between the educators and upper management [1]. The university organizational system features the coexistence of faculty, who lead education and research with the students, and university deans and directors, who serve as the organization's engine. Therefore, this system is complex and unique from other organizational structures. Considering these organizational characteristics, drawing sustained organizational commitment from professors that can lead to change in the university can be difficult.

Currently, many universities in Korea are experiencing a crisis of survival and facing various threats from the shifting sociopolitical and geopolitical landscape in recent years. Many higher education institutions are confronting challenges, such as declining enrollment and student populations, ultimately leading to the rapid collapse of local colleges [2]. These challenges are more prevalent in provincial areas, as Korea's shrinking population has resulted in institutions becoming more concentrated in metropolitan areas. Furthermore, Korean universities are struggling for internal solidarity and commitment from members who are leaving the organization. Organizational commitment refers to whether an employee wishes to continue working for an organization [3].

Systematic cooperation and commitment among individuals or groups constituting an organization are imperative to realizing an organization's primary goals. Organizational commitment in universities promotes the stable operation of the organization, especially in today's uncertain and competitive environment, and it can enhance members' efforts and altruistic tendencies to achieve organizational goals. This is considered significant for the overall growth and development of the university system. Cooperation between individuals and groups is near impossible without effective leadership in place. Leadership in universities is a critical element in forming individual or group behavior and demonstrating optimal behavior for the entire organization's performance [4]. It is believed that leadership with accountability and authenticity can elicit trust among members of the organization and lead to organizational development and sustainability by creating a positive organizational culture. A trustworthy organizational culture increases commitment and satisfaction among members and, thus, affects organizational behavior committed to achieving the organization's goals [5]. A culture of trust formed in a school organization also reduces uncertainty in relationships among members and enhances job commitment and achievement at an individual level [6].

The context of a university organization is characterized as a horizontal organizational structure based on academic expertise. Most previous studies on university leadership have focused on the leadership of the university president, who is the top-level policy-maker [2,7,8], and have addressed transformational and transactional leadership [9,10]. Conversely, this study focused on the authentic leadership of deans and directors, who serve as middle managers in universities. This is because, currently in Korea, there is an emphasis on university reform, university evaluation, and financial support. Thus, the role and importance of deans and directors as the key administrative workforce within a university's organizational structure are receiving more attention than ever before [11]. Moreover, the role of deans and directors as supporters of the president (the top leadership) is important for creating a healthy organizational culture and inducing organizational trust and commitment among university professors. Additionally, in a rapidly changing and unpredictable period, the core leadership value of authenticity is key to organizational environments.

Therefore, this study examined how the leadership of university deans and directors influences the process of inducing organizational commitment among Korean university professors and whether organizational culture and trust mediate this process. Organizational commitment will be sustainable when professors, who are important members of the university, respect the leadership of administrators. Professors who trust the university can focus on teaching and research. Thus, the organizational commitment of university professors can drive the development and sustainability of higher education. This article is divided into four sections. In Section 2, the research hypotheses are established from a literature review on authentic leadership, organizational commitment, organizational culture, and organizational trust. In Section 3, the research model is proposed based on this analysis. In Section 4, the results of the study are briefly summarized, and policy recommendations are proposed by comparing them with the results of the literature analysis. In Section 5, the results are synthesized focusing on the research purpose, and future research suggestions are proposed.

## 2. Literature Review and Hypothesis

What are the necessary factors for the sustainable development of higher education? As the world begins to become progressively interdependent and globalized, the role of higher education in sustainable development will undoubtedly take higher importance [12]. There may be many influencing factors, but in this study, it was determined that the dedication of university organization members is imperative. One of the significant variables influencing organizational commitment is leadership, and the role of the deans and directors as middle managers is critical. The dependent variable in this study was organizational commitment, and the main independent variables were true leadership, organizational culture, and organizational trust. This study examined the relationships between them

through a literature analysis, and the definition and components of each variable were defined based on previous studies. Thereafter, based on the relationship between each variable, the research hypotheses were established, and a research model was proposed.

### *2.1. Authentic Leadership in Universities*

Leadership in universities can be classified into several types according to member subjects, departments, and organizational structures. The top leadership within a university is generally the president, followed by the vice president and university deans, directors, and chairs. The university deans and directors should lead the university's growth and development by providing administrative assistance to the president. An outstanding university should maintain enough human and material resources, both in quantity and quality (resource-based conception), preserve a high reputation in society (reputation-based conception), and demonstrate talent development as a higher education institution [13].

A university comprises a group of specialists with a high level of autonomy, has varying and nuanced organizational goals, and has the characteristics of a loosely coupled system [14]. Therefore, a university's organizational system may differ from the leadership exercised in general organizations. Considering these university characteristics, this study focused on the concept of authentic leadership. Scholarly and practitioner interest in the topic of authentic leadership has grown dramatically over the past two decades [15]. Authentic leadership refers to leadership in which firm values and principles based on a leader's self-awareness are genuinely revealed, influencing members of the organization through transparent relationships [16]. An authentic leader convinces rational colleagues based on values and beliefs with confidence, hope, optimism, resilience, transparency, morality, and ethics [17]. Authentic leadership is also defined as "a pattern of leader behavior that draws upon and promotes both positive psychological capacities and ethical climate to foster greater self-awareness, internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers" [18].

In other words, this form of leadership entails the perception of strengths and weaknesses through self-reflection, making decisions based on moral values, and reflects transparent communication with members regarding the vision and its meaning [19]. Thus, members can naturally trust the leader's actions and communicate smoothly. Through interaction and affective transmission in this continuous process, an authentic leader creates a work environment that encourages members to possess more affective commitment. Considering the topic and purpose of this study, the leadership of university deans and directors should be authentic.

### *2.2. Organizational Trust*

Trust implies that relationships are interactive and interpersonal; it refers to the belief or judgment that one person will act in a way that is helpful to the other, with good intentions, or at least will not cause any harm [5]. The concept of trust also includes the willingness to comply with the actions and intentions of others who are part of an agreed-upon belief system and the willingness to take risks or accept deficiencies that arise in uncertain situations [20]. Having a culture of trust within an organization indicates that the members voluntarily trust and willingly follow each other and that there is a shared value and norm of risk-taking within the process.

Cook and Wall classified trust according to the hierarchy within an organization into a vertical structure of trust formed in superior–subordinate relationships, a lateral structure of trust formed within the horizontal relationships between colleagues, and institutional trust formed by the relationship between members of the organization and the manager or the organization's administration [5]. Kiffin-Petersen and Cordery classified trust as trust in management and trust in coworkers [21]. Organizational trust in their study is reflected as something impersonal, contrary to trust between people or a feeling of confidence and support for the organization as an institution. In other words, it refers to the

faith members hold regarding organizational factors such as the organization's openness, fairness, and consistency.

### 2.3. Organizational Culture

Organizational culture is the level of understanding that members of the organization share with each other (ideas, language, emotions, behavior patterns, etc.) [22]. It is a specific pattern of basic beliefs devised, discovered, and developed by the organization in the process of adapting to the external environment and integrating internal activities; moreover, these beliefs are accepted as valid by the members over a long period [23].

A university has an organizational ethos and culture affected by its founding ideology, mission, resource levels and sources of income, organizational structure, interactions among its members, and collective behavior [24]. National/public and private universities in Korea differ in terms of the founders, commanders, supervisors, organizational system, presidential election methods, and organizational culture [25]. However, overall, university organizations possess nuanced goals, a client-centered mission, specialized members, varying decision-making processes, and sensitivity to the surrounding sociopolitical landscapes [26]. Bae et al. conducted interviews with former university presidents while studying university president leadership [2]. The presidents they interviewed claimed that professors tended to be indifferent toward organizational issues they thought were unrelated to them and expressed dissatisfaction regarding rapid changes within the organization [2]. The interviewees also stated that although professors may show insensitivity or resistance to change, they are also committed to the university's development once they are convinced or motivated otherwise [27]. As such, universities have unique social characteristics different from the culture of conventional social and business organizations.

Considering these characteristics of a university's organizational culture, this study adopted the classification of organizational culture by Quinn and McGrath [28]. They explained the different value factors regarding organizational effectiveness and classified organizational culture into consensual, developmental, rational, and hierarchical cultures [28]. Consensual culture considers human relationships as the greatest core value and emphasizes coordination, integration, and flexibility within internal organizations. Developmental culture emphasizes organizational change and flexibility and focuses on the ability of organizational members to adapt to the external environment. A rational culture emphasizes productivity to pursue and achieve an organization's established goals and performance. Finally, a hierarchical culture emphasizes formal orders, norms, rules, and stability with a focus on the logic of internal organizations.

### 2.4. Organizational Commitment

Organizational commitment is a major factor that can identify organizational performance and is considered an important construct in organizational behavior. Organizational commitment is the emotional attachment that members have toward an organization. It is conceptualized as acceptance of and a shared belief in the organizational goals, efforts, and passions and the will to remain affiliated with the organization. Organizational commitment among university professors implies the extent to which professors integrate themselves within the university organization [29]. Members with high organizational commitment fully exhibit an attitude of being committed to the organization by performing their roles. Moreover, organizational commitment is a key factor that determines whether members work enthusiastically to achieve long-term organizational goals [30]. The success of an institute and the well-being of its employees, employee work engagement, and efficacy are all dependent on organizational commitment [31].

Organizational commitment in a university may also result in the will to trust and remain in the university from a place of pride or attachment to the institution, a feeling of shared values, expectations for professional development or personal achievement. Organizational commitment to the university is reflected in a desire to remain at the university through pride or attachment to the university, shared values, expectations for

professional development or personal achievement, and a sense of duty or loyalty to the university and a sense of duty or loyalty to the university [32]. Mowday et al. classified commitment into calculative (the relationship between rewards and costs for achieving organizational values and goals among members of an organization), behavioral (specific behaviors of members that achieve organizational goals), and affective commitment (the level of value identification between the organization and members) [33]. The researchers considered affective commitment as organizational commitment in the true sense [33]. Similarly, another study defined the concept of organizational commitment as the attitude of committing to the goal attainment and purpose of the university organization and classified this into affective, continuance, and normative commitment among university professors [34].

### 2.5. Relationships between Factors

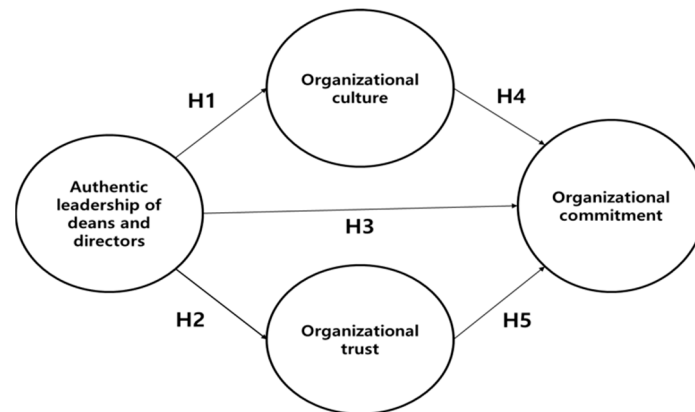
Authentic leadership, a major independent variable in this study, affects job satisfaction, organizational adaptation, commitment, and efficacy at the individual level and organizational culture, performance, climate, trust, and collective efficacy at the organizational level [32,35,36]. Previous studies have reported that authentic leadership has a direct positive effect on organizational commitment [37] and that a school's organizational culture completely mediates this relationship [38]. In a Philippine study with 150 college teacher respondents, the authentic leadership of deans had a significant effect on teachers' organizational commitment to higher education [39]. Further, authentic leadership had a direct positive effect on school organizational culture [40] and trust among members of the organization [41]. The relationship between genuine self-improvement and trust from peers was negative and significant when working for less genuine leaders [42]. Among the types of organizational culture, consensual culture and developmental culture had a positive effect on organizational commitment and job satisfaction [43,44], while rational culture had a negative effect on organizational commitment [44].

An analysis of previous studies showed that the relationship between organizational culture, organizational trust, and organizational commitment, which have an important influence on relationships with authentic leadership, were examined. However, very few studies have analyzed the structural relationship between them, and none have focused on university organizations. In this study, it was considered imperative to establish and analyze the relationship between authentic leadership, organizational culture, organizational trust, and organizational commitment in a structural model with consideration of the characteristics of the university organization, a loosely connected academic community [1,14], and the current crisis confronting Korean universities [2].

Prior studies have also focused on organizational culture and trust as important mediating variables in the relationship between leadership and organizational commitment. Previous studies on leadership and organizational culture have shown that leadership has a significant effect on organizational culture to the extent that it changes the organizational culture based on leadership type [45]. In other words, although a manager's leadership is part of a personal value system, it may have a significant impact on organizational culture—the organization's collective value system—depending on the type of leadership exercised [28]. Additionally, organizational trust is mentioned as an important mediator variable, because it enables positive interactions between the organization and its members. Previous research has also indicated that a culture of trust increases organizational or job commitment and satisfaction among members and affects organizational behavior committed to achieving organizational goals [5]. A culture of trust formed within the school system also played a role in reducing uncertainty in relationships among members and promoting job commitment and achievement at the individual level [6].

Based on the literature review, this study aimed to structurally analyze how the authentic leadership of university deans and directors, who serve as middle managers, affect the organizational commitment of professors, mediated by organizational culture and trust, considering the specificity of the university's organizational structure and culture. To this

end, the following research hypotheses were formulated: (H1) Authentic leadership has a positive effect on organizational culture. (H2) Authentic leadership has a positive effect on organizational trust. (H3) Authentic leadership has a positive effect on organizational commitment. (H4) Organizational culture has a positive effect on organizational commitment. (H5) Organizational trust has a positive effect on organizational commitment. (H6) Organizational trust has a positive mediating effect on the relationship between authentic leadership and organizational commitment. (H7) Organizational culture has a positive mediating effect on the relationship between authentic leadership and organizational commitment. Figure 1 depicts the research model formed based on these hypotheses (H1–H5).



**Figure 1.** Research model.

### 3. Methods

#### 3.1. Data Collection and Sampling

To analyze how the leadership of university deans and directors at Korean universities affects the organizational commitment of professors mediated by organizational culture and trust, this study conducted purposive sampling by classifying four-year universities in Korea by location. The participants of this study were full-time university professors working in four-year universities in Korea at the time of conducting the research. This study selected only full-time professors at four-year universities as participants, as they are more likely to be promoted as university deans and directors.

The universities in the study were classified by location into five districts (metropolitan areas, etc.) based on the administrative districts in Korea. A total of 20 universities were selected from 202 four-year universities in Korea, four from each district, considering the establishment type (i.e., national/public or private universities) and size of the university (i.e., small, medium, and large). Participants included 5285 professors from 20 universities, and quota sampling (i.e., location, type of establishment, and size of university) was conducted through two expert advisory meetings. Based on the three criteria, the ratio of subjects to be analyzed per university was determined, and the number of personnel was allocated to each college. In the second step, at the college level, approximately 10% of the total number of people was selected as the final sample using simple random sampling.

Next, emails were sent individually to professors whose email addresses were disclosed on the university's website (2 March 2022–22 March 2022). The intent and purpose of the survey were explained in the email, and consent to participate in the survey was obtained before proceeding. This research was approved by the Institutional Review Board of Kosin University in Korea immediately upon starting the research. The participants who provided consent responded to an online questionnaire they accessed through a URL. The questionnaire was created in such a way that respondents were required to answer all questions before progressing using Google Forms.

The questionnaire was sent to approximately 521 professors at 20 different four-year universities, and a total of 387 (74.3%) responded. Of these, 63.6% were male and 36.4% were female, reflecting the general gender ratio of Korean university professors

at 6.6:3.4 [46]. Further, 79% of the participants were in their 40s (37.7%) and 50s (41.3%). In terms of position, 54.3% were tenured professors, and the ratios of those who had experience as university deans and directors (39.5%) and those who had no administrative experience (38.8%) were similar. Regarding establishment type, 40.1% were national/public universities, and 59.9% were private universities. Moreover, 12.4% were small universities with fewer than 10,000 enrolled students, 19.1% were medium-scale universities with 10,000 to fewer than 20,000 enrolled students, and 68.5% were large-scale universities with at least 20,000 enrolled students. Table 1 presents the demographic characteristics of the sample.

**Table 1.** Sample demographics (N = 387).

Characteristics	Percentage (%)	
Gender	Male	63.6
	Female	36.4
Age	30s	8.8
	40s	37.7
	50s	41.3
	60s	12.1
Position	Assistant Professor	24.5
	Associate Professor	21.2
	Tenured Professor	54.3
Administrator Experience	Yes	39.5
	No	38.8
	Missing	21.7
Establishment Type	National/Public	40.1
	Private	59.9
Size of University	Small-Scale	12.4
	Medium-Scale	19.1
	Large-Scale	68.5

### 3.2. Research Variables and Measurement

This study adopted a diagnostic tool based on previous studies for each latent variable to analyze how the university administrator leadership of Korean universities affects the organizational commitment of professors mediated by organizational culture and trust. Regarding the variables of administrator leadership, this study used a research tool developed by Kang and Kim that contains items that define the leadership of secondary school principals including organizational trust and effectiveness [47]. All items were adapted to focus on university deans and directors and were revised through the consultation and guidance of three university professors who specialize in educational administration and higher education. The revised tool comprised 16 items, categorized under four subvariables: relational transparency, internalized moral perspective, balanced processing of information, and self-awareness.

For organizational culture, this study selected items from the study by Choi, who analyzed organizational culture and job engagement among university deans and directors [48]. The tool in their study that measured university organizational culture comprised 16 items, categorized under four subvariables: consensual, developmental, rational, and hierarchical culture. For organizational trust, the items were derived from a study by Jang, who analyzed organizational effectiveness among female professors at sports colleges in China [49]. The tool to measure organizational trust comprised seven items, classified under two subvariables: organizational and personal trust. For organizational commitment,

items were taken from a study by Kim, who analyzed the relationship between university organizational culture and organizational commitment [50]. There was a total of 14 items for organizational commitment, classified into three subvariables: affective, continuance, and normative commitment.

After selection, in the first round of revisions, these items were assessed for their suitability for the intent and purpose of this study, followed by the second round of revisions by a group of experts (i.e., three professors of higher education). Later, a third round of revisions was conducted after a pilot test on 83 university professors; thereafter, the main survey was conducted on four-year university professors nationwide. The validity of this analytical tool was established by a confirmatory factor analysis of the structural equation model, and the reliability was assessed for each key latent variable. The results of the confirmatory factor analysis indicated that all items belonged to the latent variables (Section 4.2). Furthermore, Cronbach's alpha ( $\alpha$ ) coefficients demonstrated high reliability with  $\alpha > 0.80$ . Table 2 presents the variables, measurement items, scale, and Cronbach's  $\alpha$ .

**Table 2.** Variables and measurement items.

Variable	Item	Cronbach's $\alpha$
Authentic Leadership of Deans and Directors	1. Accurate communication skills (Leadership 1)	0.955
	2. Honestly admitting mistakes (Leadership 2)	
	3. Smoothly communicating with members (Leadership 3)	
	4. Honest conversations regarding difficult facts (Leadership 4)	
	5. Being honest in expressing one's feelings (Leadership 5)	
	6. Acting according to one's beliefs (Leadership 6)	
	7. Making decisions based on one's core values (Leadership 7)	
	8. Respecting the core values of members (Leadership 8)	
	9. Strictly applying regulations and code of ethics (Leadership 9)	
	10. Respecting dissenting opinions (Leadership 10)	
	11. Making decisions after thoroughly reviewing relevant data (Leadership 11)	
	12. Listening to diverse opinions (Leadership 12)	
	13. Promoting exchanges inside and outside the campus (Leadership 13)	
	14. Being aware of the reputation of one's abilities (Leadership 14)	
	15. Being aware of when to express opinions on important issues (Leadership 15)	
	16. Being aware of the influence one's behavior or statements have on others (Leadership 16)	
Organizational Trust	1. Efforts to provide fair treatment (Trust 1)	0.929
	2. Belief in wise decisions (Trust 2)	
	3. Efficient HR, finance, and organizational management (Trust 3)	
	4. Interest and support for professors (Trust 4)	
	5. Promoting cooperation among departments (Trust 5)	
	6. Trusting and relying on what the university is doing (Trust 6)	
	7. Agreeing with the university's management guidelines (Trust 7)	



Table 2. Cont.

Variable	Item	Cronbach's $\alpha$
Organizational Culture	1. Emphasizing affinity and participation (Culture 1)	0.898
	2. Valuing competency development of members (Culture 2)	
	3. Valuing the group's morale and cohesion (Culture 3)	
	4. Cooperation and high trust (Culture 4)	
	5. Emphasizing creativity, adaptability, and innovation (Culture 5)	
	6. Valuing growth and acquisition of resources (Culture 6)	
	7. Valuing the intuition and insight of members (Culture 7)	
	8. Emphasizing an enterprising spirit (Culture 8)	
	9. Valuing productivity and efficiency (Culture 9)	
	10. Emphasizing planning and goal setting (Culture 10)	
	11. Performance-based evaluation (Culture 11)	
	12. Goal-oriented actions (Culture 12)	
	13. Valuing safety and consistency (Culture 13)	
	14. Emphasizing documentation, accountability, and information management (Culture 14)	
	15. Strictly complying with rules and regulations (Culture 15)	
	16. Emphasizing leadership and control (Culture 16)	
Organizational Commitment	1. I am proud to be a member of our university. (Commitment 1)	0.943
	2. I take pride in our university. (Commitment 2)	
	3. I relate to our university's goals and values. (Commitment 3)	
	4. I feel affection for our university and its members. (Commitment 4)	
	5. I recommend others to join our university. (Commitment 5)	
	6. Our university has considerable potential for development. (Commitment 6)	
	7. It helps me achieve what I want. (Commitment 7)	
	8. I would gain more from staying at this university than transferring. (Commitment 8)	
	9. It might be my loss to transfer to another university right now. (Commitment 9)	
	10. I am committed to our university. (Commitment 10)	
	11. I will work hard at our university. (Commitment 11)	
	12. I want to do something that would help the university. (Commitment 12)	
	13. I do not think it is right to leave our university. (Commitment 13)	
	14. I will stay at our university. (Commitment 14)	

Scale: 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree.

### 3.3. Methods

The collected data were analyzed using SPSS 21.0 for Windows and AMOS 21.0. First, descriptive statistics and reliability analyses were performed on the demographic characteristics of the subjects to check the normality, reliability, and multicollinearity of the measurement variables. Second, confirmatory factor analysis was performed according to

a two-step approach to estimate the structural equation model was performed according to the two-step approach proposed by Anderson and Gerbing to estimate the structural equation model [51]. Third, bootstrapping was performed to verify the mediating effects of the final model, and the phantom model approach was used to verify the statistical significance of the individual mediated effects. As the accuracy of bootstrapping increases with the number of estimates, the number of estimates was set to 10,000. The fitness of the structural equation model was verified using the maximum likelihood method. Chi-square ( $\chi^2$ ), root mean square error of approximation (RMSEA) (for the absolute fit index), normed fit index (NFI), Tucker–Lewis index (TLI), and the comparative fit index (CFI) (for the incremental fit index) were applied. The acceptability of the model was evaluated based on the suggested cut-off values of 0.90 or higher for CFI and TLI [52,53] and 0.06 or lower for RMSEA [54].

## 4. Results

### 4.1. Descriptive Statistics

The skewness and kurtosis of each variable were examined to confirm the normality of the data. The absolute values of both the skewness and kurtosis of all variables were less than three and eight, respectively (Table 3). This satisfied the conditions of normal distribution [55]. Thereafter, this study used the maximum likelihood as the parameter estimation method and the bootstrapping approach for both the confirmatory factor analysis and structural equation modeling.

**Table 3.** Descriptive statistics.

Variable	Sub Variable	Item	M	SD	Skewness	Kurtosis
Authentic Leadership of Deans and Directors	Relational Transparency	Leadership 1	3.37	0.849	−0.327	−0.016
		Leadership 2	2.87	0.926	0.014	−0.432
		Leadership 3	3.17	0.935	−0.237	−0.367
		Leadership 4	2.85	0.969	0.161	−0.385
		Leadership 5	2.93	0.910	−0.022	−0.274
	Internalized Moral Perspective	Leadership 6	3.14	0.910	−0.088	−0.336
		Leadership 7	3.17	0.922	−0.140	−0.490
		Leadership 8	2.96	0.925	0.008	−0.293
	Balanced Processing of Information	Leadership 9	3.37	0.894	−0.256	0.038
		Leadership 10	3.07	0.944	−0.116	−0.408
		Leadership 11	3.34	0.868	−0.331	−0.115
		Leadership 12	3.19	0.917	−0.195	−0.296
	Self-Awareness	Leadership 13	3.24	0.909	−0.312	−0.194
		Leadership 14	3.01	0.819	0.033	0.171
		Leadership 15	3.14	0.842	−0.237	−0.115
		Leadership 16	3.32	0.801	−0.417	0.113
Organizational Trust	Organizational Trust	Trust 1	3.53	0.908	−0.574	0.227
		Trust 3	3.18	0.927	−0.180	−0.389
		Trust 4	2.98	0.926	0.095	−0.071
		Trust 5	3.18	0.865	−0.111	−0.082
	Personal Trust	Trust 2	3.54	0.864	−0.625	0.247
		Trust 6	3.26	0.855	−0.173	0.030
		Trust 7	3.25	0.832	−0.232	0.137

Table 3. Cont.

Variable	Sub Variable	Item	M	SD	Skewness	Kurtosis
Organizational Culture	Consensual Culture	Culture 1	3.52	0.812	−0.144	−0.186
		Culture 2	3.59	0.887	−0.314	−0.212
		Culture 3	3.34	0.888	−0.154	−0.430
		Culture 4	3.27	0.876	−0.063	−0.308
	Developmental Culture	Culture 5	3.59	0.918	−0.333	−0.359
		Culture 6	3.69	0.852	−0.400	−0.024
		Culture 7	3.17	0.906	−0.028	−0.109
		Culture 8	3.33	0.966	−0.154	−0.442
	Rational Culture	Culture 9	3.62	0.856	−0.403	0.136
		Culture 10	3.68	0.805	−0.501	0.179
		Culture 11	3.91	0.842	−0.821	1.010
		Culture 12	3.69	0.816	−0.459	0.370
	Hierarchical Culture	Culture 13	3.45	0.884	−0.234	−0.262
		Culture 14	3.54	0.916	−0.159	−0.431
		Culture 15	3.63	0.911	−0.505	0.170
		Culture 16	3.43	0.903	−0.176	−0.179
Organizational Commitment	Affective Commitment	Commitment 1	3.83	0.847	−0.533	0.324
		Commitment 2	3.88	0.827	−0.511	0.274
		Commitment 3	3.69	0.876	−0.473	−0.083
		Commitment 4	3.86	0.858	−0.568	0.182
		Commitment 5	3.81	0.877	−0.487	0.070
	Continuance Commitment	Commitment 6	3.71	0.908	−0.456	0.034
		Commitment 7	3.61	0.913	−0.400	−0.109
		Commitment 8	3.73	0.982	−0.555	−0.133
		Commitment 9	3.68	0.976	−0.393	−0.394
	Normative Commitment	Commitment 10	3.88	0.868	−0.557	−0.010
		Commitment 11	3.96	0.810	−0.659	0.795
		Commitment 12	3.87	0.897	−0.887	0.980
		Commitment 13	3.05	1.171	−0.081	−0.850
		Commitment 14	3.39	1.092	−0.324	−0.531

#### 4.2. Confirmatory Factor Analysis and Structural Equation Modeling

Confirmatory factor analysis was performed by constructing latent variables using 13 subvariables (Table 4). All factor models were tested with the structural equation modeling program AMOS 21.0 (chi-square: 262.554; degrees of freedom: 59; normed fit index (NFI): 0.936; CFI: 0.949; TLI: 0.933; RMSEA: 0.065). Based on these indices, the conceptual model exhibited a good fit for the data. Factor loadings were above 0.50 for all subfactors and were statistically significant. The average variance extracted (AVE) ranged from 0.51 to 0.86 and, thus, met the standard (>0.50), and the construct reliability (CR) ranged from 0.94 to 0.97 and, thus, met the standard (>0.70), securing convergent validity.

**Table 4.** Confirmatory factor analysis.

Path	B	$\beta$	SE	CR	<i>p</i>	AVE	CR		
Leadership 1 ← Leadership	1	0.870							
Leadership 2 ← Leadership	1.158	0.883	0.049	23.785	***	0.75	0.97		
Leadership 3 ← Leadership	0.993	0.811	0.049	20.369	***				
Leadership 4 ← Leadership	1.126	0.896	0.046	24.44	***				
Trust 1 ← Trust	1	0.915							
Trust 2 ← Trust	0.998	0.941	0.032	30.962	***	0.86	0.96		
Culture 1 ← Culture	1	0.824							
Culture 2 ← Culture	1.145	0.874	0.059	19.415	***				
Culture 3 ← Culture	0.612	0.572	0.056	10.877	***				
Culture 4 ← Culture	0.627	0.583	0.062	10.145	***	0.51	0.94		
Commitment1 ← Commitment	1	0.887							
Commitment2 ← Commitment	1.064	0.875	0.046	22.896	***			0.72	0.95
Commitment3 ← Commitment	0.97	0.793	0.050	19.438	***				

\*\*\*  $p < 0.001$ . Leadership, authentic leadership of deans and directors; Trust, organizational trust; Culture, organizational culture; Commitment, organizational commitment; SE, standard error; CR, critical ratio; CR, construct reliability; AVE, average variance extracted.

Table 5 displays the results of the structural equation model analysis performed to examine the pathways among authentic leadership of deans and directors, organizational trust, organizational culture, and organizational commitment. The fit of the structural equation model was robust (chi-square: 343.975; degrees of freedom: 60; NFI: 0.916; CFI: 0.929; TLI: 0.908; RMSEA: 0.067).

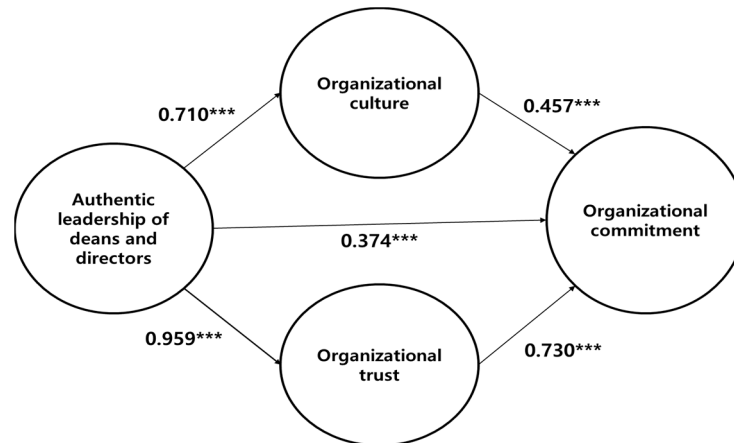
**Table 5.** Structural equation model analysis.

Hypothesis	Path	B	$\beta$	SE	CR	<i>p</i>
H1	Organizational Culture ← Authentic Leadership of Deans and Directors	0.710	0.768	0.050	14.290	***
H2	Organizational Trust ← Authentic Leadership of Deans and Directors	0.959	0.831	0.052	18.349	***
H3	Organizational Commitment ← Authentic Leadership of Deans and Directors	0.374	0.367	0.106	3.546	***
H4	Organizational Commitment ← Organizational Culture	0.457	0.415	0.080	5.718	***
H5	Organizational Commitment ← Organizational Trust	0.730	0.827	0.075	9.780	***

\*\*\*  $p < 0.001$ . SE, standard error; CR, critical ratio.

The structural equation model analysis results are as follows (Figure 2): First, authentic leadership of deans and directors significantly and positively affected organizational trust, culture, and commitment. Authentic leadership of the deans and directors had the highest coefficient value on organizational trust. However, the coefficient value of the effect of authentic leadership of the deans and directors on organizational commitment was found to be very low compared to the effect on organizational culture and organizational trust. Second, organizational culture significantly and positively affected organizational commitment. The coefficient value of organizational culture on organizational commitment was found to be low. Third, organizational trust significantly and positively affected organizational commitment. Therefore, organizational commitment

was influenced by the authentic leadership of deans and directors, organizational trust, and organizational culture. Organizational trust was the highest among the coefficients of influence on organizational commitment.



**Figure 2.** Results of the structural equation modeling analysis. \*\*\*  $p < 0.001$ .

#### 4.3. Testing for Mediating Effects Using Phantom Variables

In models that involve mediation effects, AMOS 21.0 provides bootstrap estimates, SE, and confidence intervals only for total indirect effects (the sum of all specific indirect effects) [56]. Therefore, the phantom model approach, which provides the above information for specific indirect effects, was also employed [57,58]. The phantom model enables researchers to conduct robust tests on specific mediation hypotheses based on bootstrap procedures within a conventional covariance structure framework [59]. This study created four phantom variables, introduced in the two paths: First, two phantom variables were created between the authentic leadership of deans and directors and organizational culture. Second, two other phantom variables were created between the authentic leadership of deans and directors and organizational trust.

Table 6 presents the results of the mediating effects of the two personal factors—organizational trust and organizational culture—on the relationship between the authentic leadership of deans and directors and organizational commitment. The possible paths were found to be statistically significant. First, organizational trust had significant and positive mediating effects on organizational commitment (indirect effect: 0.730,  $p < 0.05$ ). Second, organizational culture had significant and positive mediating effects on organizational commitment (indirect effect: 0.457,  $p < 0.05$ ). In conclusion, organizational trust and organizational culture had a statistically significant mediating role between administrator leadership and organizational commitment. Based on the estimate of mediating effects, it was found that organizational trust had a greater positive effect than organizational culture. The results of the test for mediating effects are shown in Table 6.

**Table 6.** Results of the mediation model using the phantom model approach.

Hypothesis	Effect	Estimate	SE	95% Confidence Interval	$p$	Bootstrap	
						M	SD
H6	Organizational Commitment ← Organizational Trust ← Authentic Leadership of Deans and Directors	0.730	0.75	(0.575, 0.882)	*	0.734	0.004
H7	Organizational Commitment ← Organizational Culture ← Authentic Leadership of Deans and Directors	0.457	0.08	(0.275, 0.655)	*	0.470	0.013

\*  $p < 0.05$

## 5. Discussion and Suggestions

This study analyzed the factors through which the leadership of university deans and directors affects the organizational commitment of Korean university professors mediated by organizational culture and trust. The key research findings based on the research hypotheses are as follows: First, authentic leadership had a statistically significant positive effect on organizational culture, trust, and commitment. This indicates that the authentic leadership exercised by university deans and directors positively influences organizational culture and trust among university professors which, in turn, improves the organizational commitment of members. The results of previous studies showed that leadership had a positive effect on the organizational commitment, culture, and satisfaction of employees in general, except for a few cases where the effect of leadership on organizational commitment and organizational culture was rejected [43]. The results of this study also showed that authentic leadership had a positive effect on organizational culture, trust, and commitment [32,35,60].

Second, organizational culture and trust among university professors had a statistically significant positive effect on organizational commitment. In other words, there can be sustained organizational commitment if university professors build a positive organizational culture among themselves and practice higher organizational trust. Previous studies on organizational culture, trust, and commitment sometimes included dependent and independent variables but, in general, organizational culture and trust have been shown to have a positive effect on organizational commitment [60]. This is consistent with previous studies which report that organizational culture and trust perceived by the members of an organization have a positive effect on organizational commitment [61,62].

Third, this study used phantom variables to closely examine the mediating effects of organizational culture and trust on the relationship between the authentic leadership of university deans and directors and the organizational commitment of professors. The results indicate that organizational culture and trust play a positive mediating role between authentic leadership and organizational commitment, with organizational trust showing a higher mediating effect than organizational culture. The importance of organizational trust can also be gauged from previous studies that selected organizational culture and organizational trust as mediator variables [63,64]. Organizational trust is an important variable with moderating and mediating effects. In this study, the research results showed that organizational trust has an important mediating effect on the relationship between organizational commitment and leadership [65].

Based on the above results, this study has important implications for sustainably increasing the organizational commitment of university professors, exercising the required level of authentic leadership that facilitates this, creating a positive organizational culture, and increasing organizational trust. First, it is necessary to improve the authentic leadership of university deans and directors who share policies and work with the top management of the university to increase the organizational commitment of professors. Most professors generally focus on education and research, while only a few of them hold these administrative positions. Thus, professors in most universities tend to become university deans and directors without thorough preparation or training to develop the necessary competencies. Considering these unusual circumstances, universities must provide leadership training and administrative competency-building programs for university deans and directors [66,67]. It is necessary to establish the roles, competencies, and leadership concepts of university deans and directors based on each university's educational goals and ideologies and provide effective leadership development programs. The concept of authentic leadership required by university deans and directors must be redefined, and research must be conducted to develop and validate tools that can measure authentic leadership.

Second, it is necessary to establish and implement policies to restructure the university organization based on basic statistics so that the authentic leadership of university deans and directors leads to positive organizational cultures and high organizational trust among university professors. Leadership is not an ability that can be captured at a single point

in time; thus, time-series data must be accumulated to conduct a longitudinal analysis of authentic leadership, organizational culture, trust, and commitment based on reliable measurement tools and results. There must be continuous research that measures the changes in leadership with time gaps, how personal or situational factors affect the awareness of authentic leadership, or how authentic leadership affects the competencies of individuals and organizations. Furthermore, it is necessary to expand interdisciplinary research by considering multiple perspectives on the changes and phenomena of authentic leadership and to restructure the abstract concepts of awareness, internalization, morality, relationship, balance, and transparency, which are connoted by authentic leadership, using quantitative and qualitative empirical indicators.

Third, there should be individual efforts among university deans and directors and the entire organization to catalyze positive changes in the organizational culture and increase organizational trust, which were the key mediating variables in this study. University deans and directors, who serve as middle managers of the organization, must attempt to create a flexible and positive organizational culture based on lateral communication with other professors. Institutional management measures must also be implemented, such as voluntary study groups, clubs, and mentoring systems, which increase interactions with professors of other departments or majors and decrease isolation within the university. These active and continuous policy efforts for organizational management can prevent stagnation, silence, indifference among members, or negative collective behavior and help create a positive organizational culture among members of the university. University deans and directors who are precisely aware of the university's founding ideology and educational goals and who run the administrative system with a clear direction and plan can encourage both personal and organizational trust in the members of the organization [68]. Additionally, to strengthen the normativity, transparency, and sustainability of a university's deans and directors' authentic leadership that is based on an open organizational culture, it is necessary to regularly share university development plans and hold policy meetings with members of the university.

## 6. Conclusions

As of 2022, universities in Korea are facing a situation in which they must simultaneously pursue quantitative progress (e.g., enrollment) and qualitative reform while facing a decreasing school-age population, insufficient higher education budgets, tuition freezes, and competition with global universities. Therefore, understanding, cooperation, trust, and commitment among university members are essential so that university deans and directors can efficiently, effectively, and continuously undertake their leadership roles. Their administrative tasks may include attracting outstanding students, reforming the curriculum, reorganizing the academic structure, managing the quality of education, seeking a strategic alliance with global universities, and promoting universities and departments.

This study revealed how the authentic leadership of university deans and directors has a positive effect on organizational culture, trust, and commitment among university professors and that organizational culture and trust play a significant mediating role between authentic leadership and organizational commitment. Higher organizational commitment among university professors reduces employee turnover and encourages them to focus on further education and research, thereby delivering positive educational effects to students. University deans and directors, who serve as middle managers of the university, must exercise authentic leadership to ensure that university professors perceive that the organization to which they belong has an open and positive culture, thereby fostering increased trust in the organization. These efforts are very important for inclusive and quality higher education and its sustainable progress. The role of higher education is critical in educating university students, who will become part of society, regarding sustainability and sustainable development. In addition, the role of the university is not only to exchange knowledge but to play a leading role as an active member of society itself [69,70]. This is evidenced by the fact that various studies on "higher education" and

“sustainability” have been conducted since the 2000s [71]. Sustainability plays an important role in contemporary organizational strategy [72].

This study was conducted considering the status of Korean universities, the specificity of university structures, and the rotating administrative positions of general professors. The analysis covered four-year universities in Korea, classified by location and selected based on establishment type and university size. The professors working at the selected universities participated in the survey. Future studies should provide evidence to establish policy directions for universities by increasing the sample size of Korean universities as well as the number of participating professors.

According to previous studies, organizational commitment among university members is affected by individual background (gender, position, etc.) and university background (foundation type, location, etc.) [3].

Therefore, it is expected that future analytical studies will consider demographic variables of the study participants. Additionally, further research can provide a global comparison of leadership, organizational culture, organizational trust, and organizational commitment of university professors to contribute to the development of higher education worldwide while considering the unique characteristics of each nation.

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