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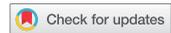
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Ethical leadership, intrapreneurship, service innovation performance and work engagement in chambers of commerce and industry

Fahri Özsungur 

Department of Family and Consumer Sciences, Hacettepe University, Ankara, Turkey; Department of Business, Aksaray University, Aksaray, Turkey

ABSTRACT

The main purpose of this study which examines how it can be more effective in terms of organizational and managerial aspects with chambers of commerce and industry affiliated to The Union of Chambers and Commodity Exchanges of Turkey is to analyze the relationships between ethical leadership, work engagement, intrapreneurship, and service innovation behavior. In addition, it is to determine the role of mediation of work engagement effecting on intrapreneurship and service innovation behavior. For this purpose, quantitative analysis methods have been adopted. The data collected from 568 employees who were employed in chambers of commerce and industry operating in Turkey were analyzed. For the validity and reliability of the measurement tools, confirmatory factor analysis, the model's good fit values and the AMOS Structural Equation Model were used. It was found that ethical leadership had statistically significant effect on employee engagement, intrapreneurship and the subscales of service innovation behavior (employee service innovation behavior and new service development). The results showed that work engagement partially mediated with ethical leadership effecting on intrapreneurship, ethical leadership effecting on the subscales of service innovation behavior. It is thought that the study is important in terms of providing empirical contributions to the ethical leadership, service innovation, intrapreneurship and work engagement literature. Finally, there are some limitations of the study and some suggestions are offered for future studies.

KEYWORDS

Ethical leadership; service innovation; intrapreneurship; work engagement; chamber of commerce

Introduction

Organizations continue to exist under the influence of the changing framework in which they are located. Organizations need good performance management for a life cycle in line with their mission and vision. The performance of organizations depends on an ethical leadership approach, innovation in the services provided, work engagement of the employees and intrapreneurship (Brown & Treviño, 2006). These elements enable the organization to adapt to its environment and gain a sustainable competitive advantage (Cheng, Chang, Kuo, & Cheung, 2014). It is important to examine service innovation and intrapreneurship, which are necessary for the profitability and productivity of enterprises,

CONTACT Fahri Özsungur  ticaretsicili@gmail.com  Adana Chamber of Commerce Karasoku, Abidinpasa st. 22 01010 Seyhan, Adana, Turkey

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in the context of professional organizations. The fact that professional organizations are public and private legal entities provide a different feature from the enterprises. This feature is particularly worth considering in the context of public institutions and professional organizations. Chambers of commerce are one of these professional organizations. It is important to investigate these organizations in the context of organizational behavior, which serve their members with their mission (Fallon & Brown, 1999).

There are few studies in the literature regarding chambers of commerce. Crawford and Branch (2015) demonstrated that rural chambers of commerce represent a unique example of emerging public-private partnerships that challenge the traditional commercial logic of chambers of commerce. Fallon and Brown (1999) discussed and compared various aspects of the UK, French and German Chambers of Commerce in order to assess whether the transition to public law status for the UK Chambers of Commerce would be in the best interests of England. Using Meyer and Allen (1997) scale, the multidimensionality of organizational commitment of volunteer chamber members and the effect of organizational commitment on board member roles were tested using data from 616 participants in 116 chambers in 36 states using Confirmatory Factor Analysis. Contrary to previous research using Meyer and Allen (1997), which focuses on paid employees, Dawley, Stephens, and Stephens (2005) found that normative, emotional, and continuity commitment are three distinct structures that apply to voluntary employees, and that these components have a positive impact on the roles of board members. According to a study by Giurgiu, Manciu, and Lese (2016) in order to demonstrate the role of the new ways of communication in the training courses of the Chamber of Commerce, they identified the need to create a distinctive appeal in the market for the provision of a new design and the transformation and modernization of teaching methodology. According to a study by Alageeli and Aalyateem (2015), which aims to determine the role of implicit knowledge in developing human resources in the Jeddah Chamber of Commerce and Industry, they revealed that managers in the chamber of commerce and industry know-how to effectively manage employees and their favorite learning techniques and encourage them to work seriously they have to understand what motivations are. The authors emphasized that knowledge is no longer a power in the computer and internet age, that knowledge is difficult to implement, and that knowledge management focuses primarily on people, procedures and modern techniques. This study reveals the role of human resources management, learning and information support practices in the chambers of commerce and industry, and the promotion of human resources to a level that helps commercial organizations to live and continue successfully. These studies show that knowledge management in the chambers are important, public or private law chambers have different forms of management, they should create an attraction in the market by demonstrating innovative behaviors in their services, and organizational commitment has a positive role on board members. In this case, investigating the effect of the work engagement of employees of professional organizations with public institution status on ethical leadership-service innovation performance-intrapreneurship is crucial.

Ethical leadership, work engagement, intrapreneurship and service innovation are at the center of this study which are the current issues in the business management literature. Service innovation is a current issue rather than similar performance criteria such as productivity and profitability, which are shaped within the framework of the innovation concept that has become one of the performance criteria in today's organizations. It is

possible to determine the effective management of chambers of commerce and industry affiliated to UCCET (The Union of Chambers and Commodity Exchanges of Turkey) by examining service innovation, ethical leadership, work engagement and intrapreneurship. Therefore, this study focuses on how to make the chambers more efficient in terms of organizational and managerial.

Ethical leadership is remarkable in terms of long-term relationships and sustainable competitiveness, with the behavior of entrepreneurship transforming innovation into opportunities within the organization. The aim of the study analyzing the effects of ethical leadership on service innovation behavior and intrapreneurship, determining the mediating effect on the association between ethical leadership-service innovation and ethical leadership-intrapreneurship.

Theoretical background

Organizational socialization is a crucial process in which the individual's interaction with the organization has social consequences, and the individual gains social knowledge, experience and skills (Taormina, 1997), values can be converted to common value, together with the membership, develops feelings of belonging, responsibility, adoption, self-realization and provides acceptance by performing organizational roles (Van Maanen & Schein, 1979). In this process, it is necessary to have an effective and strategic leadership in order to achieve profitability, competitive advantage, innovation-oriented behavior development and productivity (Lussier & Achua, 2007). The effects of leadership on organizational performance were revealed through previous studies (Bass, Avolio, Jung, & Benson, 2003; Yahaya & Ebrahim, 2016). Leaders succeed in influencing subordinates through their ethical behavior (Northouse, 2007), which allows followers to adopt the vision and values of the organization by taking role models (Bass et al., 2003; Yahaya & Ebrahim, 2016).

Work engagement is associated with the work energy of the employee and the state of mind (Tims, Bakker, & Xanthopoulou, 2011). The trust in the leader is associated with the positive expectations of the employees about the intentions of the leaders (Schoorman, Mayer and Davis, 2007). Employees compare their loyalty and trust with the treatment they see in a fair and respectful way (Blau, 1964). This situation is related to social exchange. The theory of social exchange suggests that trust grows when leaders and subordinates interact in high-quality relationships (Blau, 1964). By making more efforts for the job, these behavioral tendencies of self-employed employees become possible with ethical leadership behaviors (Brown, Treviño, & Harrison, 2005; Macey, Schneider, Barbera, & Young, 2009). Ethical leaders try to strengthen their subordinates with their fair and honest characters, their educational and spiritual support, and provide their followers with the freedom to exercise their jobs in a more efficient way by providing them with the freedom and responsibilities (Bellingham, 2003). Ethical leaders' behavior increases the commitment of their subordinates. Ethical leaders, with the mission and vision of the organization to reveal its values, open communication with the followers to adopt these values (Brown & Treviño, 2006). Acceptance of values ensures employee loyalty (Macey et al., 2009). According to the study conducted by Brown et al. (2005) a positive relationship between ethical leadership and work engagement was determined (Schaufeli & Bakker, 2003). Former studies confirmed that there was a positive

relationship between ethical leadership and work engagement (Brown et al., 2005; Cheng et al., 2014; Den Hartog & Belschak, 2012; Macey et al., 2009). In the light of these studies, the first hypothesis of direct effects was established as follows: H1. Ethical leadership has a positive effect on work engagement.

Ethical leaders are the leaders who have an impact on her/his followers. Chan et al. (2017) found that intrapreneurship potential is not only pertain to entrepreneurial employees in their study. Intrapreneurs can be found among employees with strong leadership characteristics and professional motivations. According to a study conducted in Spain with 212 employees, organizational identity and organizational empowerment of employees was found to mediate the relationship between authentic leadership and intrapreneurial behaviors (Edú, Moriano, & Molero, 2014). Studies have shown that leaders can improve the performance of employees and direct employees to achievements beyond the scope of their obligations, and that leadership is one of the variable with the greatest impact on the development of intrapreneurship behaviors (Alambeigi, Mohammadi, Asadi, & Zarei, 2012; Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009; Bass, 1997; Knies & Leisink, 2013; Kuratko, Hornsby, & Bishop, 2005; Moriano, Molero, Topa, & Lévy Mangin, 2011; Zahra, Jennings, & Kuratko, 1999). In the light of these researches, the second hypothesis of direct effects was formed as follows: H2. Ethical leadership has a positive effect on intrapreneurship.

According to a study conducted by 239 chef-employees in Northern Taiwan, it was found that ethical leadership facilitated their subordinates to do their jobs and encouraged their subordinates to voice behavior (Cheng et al., 2014). According to this study, ethical leadership allowed employees to focus on promotion. Engelbrecht, Heine, and Mahembe (2017), using electronic web-based questionnaires, found that ethics leaders played a key role in creating an ethical and reliable working environment that was suitable for the participation of employees in a study conducted by 204 employees from various business organizations with using structural equation model. In the light of these studies, the third hypothesis of direct effects was established as follows: H3. Ethical leadership has a positive effect on service innovation performance.

According to a study conducted with 351 participants based on the Job Demands and Resources Theory (Bakker & Demerouti, 2014), which unites work stress and motivation approaches, demonstrates how the well-being and performance of employees are influenced by proactive employee behavior such as job characteristics (job demands and resources), personal resources, it was determined that the employees' intrapreneurial behaviors, human resources and work engagement were positive sources in the business relationship and employee's instincts created personal resources over time and this strengthened the business relationship. The Job Demands and Resources Theory integrates Hobfoll's (1989) Conservation of Resources Theory in terms of work behavior, human resources and work engagement. This theory reveals that employees can improve their behavior by mobilizing their own business and personal resources. Thus, the emotional motivation of employees as work engagement is positively affected (Fredrickson, 2004). Therefore, individuals with high levels of work engagement exhibit business roles and proactive behaviors emotionally, physically and cognitively (Kahn, 1990; Kim, Kolb, & Kim, 2012).

The process of intrapreneurship may result in failure and difficulties (Shepherd, Haynie, & Patzelt, 2013). When employees engage in intrapreneurship activities, they

are motivated to go beyond the current situation and accept opportunities (Antonicic & Hisrich, 2003). To overcome this situation depends on work engagement. Therefore, individuals with high levels of work engagement are expected to have high levels of success and intrapreneurship levels. Studies have shown that high level of work engagement strengthens proactive and entrepreneurial behaviors (Gawke, Gorgievski, & Bakker, 2017; Hahn, Frese, Binnewies, & Schmitt, 2012; Parker, Williams, & Turner, 2006). In the light of these studies, the fourth hypothesis of the direct effects was formed as follows: H4. Work engagement has a positive effect on intrapreneurship.

According to a study conducted by Hollebeek et al. (2018) customer, business and employee commitment were identified as three actors of service innovation. Service innovation behavior has direct and indirect effects on work engagement. Increased employee loyalty, increased longevity can be given as examples of direct positive effects; employees' self-improvement by developing creative behavioral patterns, increasing their wages and contributing to self-fulfillment can be given as examples of indirect positive effects. Stress, burnout, insufficient support perception, poor performance can be given as examples of negative direct effects; stresses and pressures on the production, realization, and continuity of new ideas, workaholism, limited work-life balance, criticism of ideas proposed by others, social and health risks can be given as examples of indirect negative effects (Hollebeek et al., 2018).

Work engagement, which is a positive organizational behavior pattern, has a significant effect on the behavior of the employee (Luthans, 2002, p. 59). Kahn (1990) determined the relationship between the conditions of safety, significance and accessibility with work engagement, and a significant relation of these conditions was confirmed empirically by May, Gilson, and Harter (2004). Innovative business behavior is the creation and implementation of new ideas in order to benefit organization or role performance (West & Farr, 1990, p. 17). Agarwal (2014) found that work engagement significantly affected the innovative behaviors of employees in a study conducted with 323 managers working in manufacturing and pharmaceutical organizations in western India. In the light of these studies, the fifth hypothesis of the direct effects was established as follows: H5. Work engagement has a positive effect on service innovation performance.

Studies reveal that work engagement is an important predictor of employee proactive behaviors (Blader & Tyler, 2009). Work engagement has a positive effect on the proactive behavior of the employee (Salanova & Schaufeli, 2008; Sonnentag, 2003). In this respect, ethical leadership behavior is expected to be positively associated with work engagement (Blader & Tyler, 2009). Ahmad and Gao (2018) found that psychological empowerment partially mediated the relationship between ethical leadership and work engagement of employees. According to an analysis made by using the structural equation model, it is revealed that the transformational leadership style affects the characteristics of the followers (Ghadi, Fernando, & Caputi, 2013). The direct relationship between transformational leadership and work engagement has been shown to be partially mediated by the perceptions of meaning given by employees (Ghadi et al., 2013). The leaders and followers of the transformational leadership type, associated with the results of various employees behaviors such as well-being (Nielsen, Yarker, Randall, & Munir, 2009), creativity (Shin & Zhou, 2003) and task performance (Piccolo & Colquitt, 2006) When it is considered that transformational leadership is the process that these leaders help to progress to the level of morality and motivation, it is obvious that they have similar characteristics with ethical

leaders (Burns, 1979: 21; Zhu, Avolio and Walumba, 2009). In the light of these studies, the sixth hypothesis (indirect effects) was established as follows: H6. Work engagement mediates the effect of ethical leadership on intrapreneurship.

According to the study conducted with 375 flight attendants of Taiwan-centered China Airlines using hierarchical regression analysis, it was found that flight attendants with high-psychological capital level had more job relationship and better service behavior, and work engagement had a mediating effect between psychological capital and service behavior (Cheng, Hong, & Yang, 2018). The impact of factors such as job mistrust that negatively affect the job under the influence of factors related to poor management reduces the level of work engagement (Vander Elst, De Cuyper, & De Witte, 2011). Job insecurity is negatively associated with the direct and indirect effects of the employees' innovation behaviors and work engagement. On the other hand, autonomy has a positive (direct and indirect) association with innovative work behavior (IWB) and its estimated impact sizes are greater than job insecurity. Work engagement partially mediates this positive relationship (Spiegelaere, Gyes, Witte, Niesen, & Hootegem, 2014). Dawley et al. (2005) conducted a study with 616 participants in 116 chambers of commerce in 36 states, it was determined that normative, emotional and continuance commitment based on low alternatives could be applied for voluntary employees, these components could have a positive effect on the roles of the members of the board of directors, in contrast to previous studies by Meyer and Allen (1997). In the light of these studies, the seventh hypothesis (indirect effects) was established as follows: H7. Work engagement mediates the effect of ethical leadership on service innovation performance.

All these studies reveal the results of ethical leadership, intrapreneurship, service innovation and work engagement regarding business. However, the mediating role of work engagement has not been examined in the literature. In addition, these issues have not been investigated in terms of chambers of commerce, which are professional organizations with public institution status. Therefore, this study fills these gaps in the literature.

Methodology

Sample

The population of the research consisted of 12 Chamber of industry, 56 Chamber of commerce, 182 Chamber of commerce and industry in Turkey. There are a total of 4141 employees including 2553 male and 1588 female. 585 data were collected, 17 inappropriate data were excluded from the study. As a result, the sample of the study consisted of 568 employees in chambers of commerce and industry operating in Turkey. Participants had to fulfill the following eligibility criteria: a) offering service and b) working in a chamber of commerce or chamber of industry. Surveys were administered in Turkish by eleven interviewers. The surveys were carried out with randomly selected employees. The reason why the chambers of commerce or chambers of industry were selected for research was to determine service innovation performance, intrapreneurship, work engagement and ethical leadership level of the professional organizations with public institution status. The compulsory membership system has been adopted with chambers of commerce and industry in Turkey, these chambers are non-profit legal entities of public law. This study was approved by Aksaray University Senate Ethics Committee.

Data collection and analysis

Sample characteristics were included gender, age, marital status, educational status, term of office, type of chamber and legal status. “Ethical leadership” scale (short version) was obtained from Brown et al. (2005). The scale consists of 10 items. This scale measured the state of personal life with ethical manner, listening employees, making fair and balanced decisions and trustworthiness. Sample items included “My leader disciplines employees who violate ethical standards,” “My leader conducts his/her personal life in an ethical manner,” and “My leader has the best interests of employees in mind”. The total score ranges from 1 to 5. A five-point Likert-type scale was used (5 = “strongly agree”; 1 = “strongly disagree”).

In order to measure the intrapreneurship level of the participants with “Intrapreneurship Scale” consisting of 21 items and 6 sub-dimensions (*Innovation*, *Risk/uncertainty*, *Risk/challenges*, *Competitive energy*, *Proactiveness*, *Autonomy*) which was taken from Felício, Rodrigues, and Caldeirinha (2012). *Innovation* (three items) refers new products, new processes and new technologies. *Risk/uncertainty* (four items) refers reaction to sudden changes in agreements, new competitors, reaction to rapid changes in technological innovation and reaction to difficulties in obtaining financing. *Risk/challenges* (four items) represent profound innovations emerging in the market, investment in new projects, decision to conquer new markets and entry into new businesses. *Competitive energy* (four items) involves the level of personal commitment, willingness to work overtime and more intense dedication to tasks. *Proactiveness* (three items) refers to focus on firm growth and development, following leaders and positive relations with other companies. *Autonomy* (three items) represents decision-making, management of the allocated budget and provide human resources for new projects (Felício et al., 2012). Sample items included “Innovation developed by the firm over the past two years: new products”, “Attitude in the face of unexpected decisions in the last two years: entry of new competitors” and “Attitude of the staff: greater personal commitment”. The total score ranges from 1 to 5. A five-point Likert-type scale was used (5 = “very high/strong”; 1 = “very little/weak”).

The 14 service innovation performance (SIP) items were developed by Hu, Horng, and Sun (2009). This research was implemented by 621 employees and included two dimensions. Employee service innovation behavior (ESIB) (six items) adapted from Scott and Bruce (1994). This subscale measured the state of creativeness, innovativeness reacting the job with new methods. Sample items included “At work, I seek new service techniques and methods.”, “At work, I sometimes come up with innovative and creative notion”, “At work, I sometimes propose my creative ideas and try to convince others”, and “At work, I try to secure the funding and resources needed to implement innovations”. Development of new services (NSD) (eight items) inspired by Matear, Gray, and Garrett (2004). This dimension revealed the readiness state of the business and the service team with new services using its’ resources such as offering incentives or promotions to develop innovative and new services. Sample items included “When developing and executing new service projects, managers and front-line service personnel collaborate closely”, “This team is professional in developing new services or new products”, and “The new services developed by this team are effective with respect to timing, resources and process”. A six-point Likert-type scale was used (6 = “strongly agree”; 1 = “strongly disagree”). For SIP,

the total score ranges from 1 to 6. Items were averaged to create a total SIP score. Higher scores indicated higher levels of the SIP.

In order to measure the work engagement level of the participants with Utrecht Work Engagement Scale (UWES) consisting of nine items developed by Schaufeli, Bakker, and Salanova (2006). 7-point frequency rating scale was used ranging from 0 (never) to 6 (always). Sample items included “At my work, I feel bursting with energy”, “At my job, I feel strong and vigor” and “I am enthusiastic about my job.”

The scales were placed in separate tables in the survey, and the scales of the dependent variables were arranged after the scales of the independent variables to minimize the common method bias (Podsakoff & Organ, 1986). The validity and reliability of measurement tools were measured by confirmatory factor analysis and variables were analyzed with IBM SPSS AMOS. The structural equation model allows to explain the direct and indirect effects of interrelated variables (Keith, 2006). This analysis is based on covariance. The analysis is carried out in two stages. It helps to perform standard multivariate analysis methods such as regression, factor analysis, correlation and variance analysis with AMOS (Hoyle, 1995). This model is a powerful structural equation modeling software that allows research and theories to be supported, to solve complex associations using multivariate statistical techniques and to solve behavior-based models. SEM is used to analyze structural relationships (Keith, 2006). In our study, SEM was used to analyze the relationships between multivariate factors and latent constructs, and to estimate the multiple and interrelated dependence in a single analysis.

Results

Demographic characteristics

Demographic variables on participants' gender, age, marital status, term of office, legal status, type of chamber and education level are given in Table 1.

60.7% of the employees were male and 39.3% were female participated in the study. 75% of the participants were married and 82.9% were over 30 years of age. 62.7% of the

Table 1. Personal demographic variables table.

Variables	n	%	Variables	n	%
<i>Gender</i>			<i>Term of office</i>		
Male	345	60.7	Less than 1 year	30	5.3
Female	223	39.3	1-3 years	69	12.1
<i>Age</i>			4-6 years	113	19.9
18-25	18	3.2	7-9 years	94	16.5
26-30	79	13.9	10 years and over	262	46.1
31-35	134	23.6	<i>Legal status</i>		
36-40	144	25.4	Contract employee with labor law	226	39.8
41-45	103	18.1	Permanent employee	134	23.6
46-+	90	15.8	Contract employee with the UCCEC Regulation	208	36.6
<i>Education level</i>			<i>Marital status</i>		
Primary School Graduate	5	.9	Single	142	25.0
Bachelor's Degree	356	62.7	Married	426	75.0
Master's Degree	90	15.8	<i>Type of chamber</i>		
High School Graduate	67	11.8	Chamber of industry	50	8.8
Associate's Degree	50	8.8	Chamber of commerce	228	40.1
			Chamber of commerce and industry	290	51.1

Note. UCCEC: The Union of Chambers and Commodity Exchanges of Turkey.

participants had a bachelor’s degree and 82.5% had more than 4 years work experience in the current workplace. Almost half of the respondents (46.1%) worked in the chambers for more than 10 years. 39.8% of the participants were contract employees with labor law, 36.6% were contract employees with the UCET Regulation and 23.6% were permanent employees.

Model analysis

Validity and reliability of the scales

For covariance-based analyses, validity and reliability analysis should be performed as a prerequisite. If Cronbach α value is greater than ≥ 0.70 , it is considered to be consistent (Tavakol & Dennick, 2011).

When Table 2 is examined, Cronbach Alpha values were determined for ethical leadership ($\alpha = 0.952$), work engagement ($\alpha = 0.881$), service innovation performance ($\alpha = 0.937$) and intrapreneurship ($\alpha = 0.959$).

Confirmatory factor analysis

Ethical leadership (EL), work engagement (WE), service innovation performance (SIP), intrapreneurship (IN) scales were analyzed with using IBM SPSS AMOS to determine the model fit values. Some procedures are required to ensure good fit values of the model in SEM analyses. There are two ways to eliminate associated errors during CFA. The first is discarding the items with a low factor loading from the model, and the second is to limit the effects of covariance errors between related and similar items. Brown (2015) points out that this choice should not be made only to meet the good fit criteria. First of all, the procedures of discarding items in order to eliminate errors or limiting the error by covariance should be appropriate for the purpose of the study. The covariance values were linked to each other in two ways without cutoffs, because they showed high values compared to others as Brown (2015) suggested. Another reason is that the chambers of commerce and industry employees are sensitive to respond the ethical leadership items due to the association between selection of the boards of directors and recruitment. After these procedures were followed, the analysis was performed and the model met the good fit values.

When the values in Table 3 were examined, it was seen that the model had good fit values for EL [χ^2 : 32,467, χ^2/df : 1.623, $p < .01$, RMSEA: .033, SRMR: .0093, GFI: .989,

Table 2. Table of reliability values of the scales.

Variables	Composit reliability	Cronbach α
Ethical leadership	.950	.952
Work engagement	.889	.881
Service innovation performance	.778	.937
Employee service innovation behavior	.930	.939
Development of new services	.936	.936
Intrapreneurship	.966	.959
Innovation	.927	.921
Risk/uncertainty	.858	.854
Risk/challenges	.905	.924
Rekabete Dayanan Enerji	.817	.858
Proactiveness	.812	.853
Autonomy	.880	.873

Table 3. Model fit coefficients.

Fit index	EL model values	WE model values	SIP model values	IN model values	Acceptable model fit interval	References
χ^2	32,467; $p = .039$	21,481; $p = .206$	162,570; $p = .000$	480,337; $p = .000$	Low χ^2 value; $p < .01$; $p > .05$	Hooper, Coughlan, and Mullen (2008)
χ^2/df	1.623	1.264	2.580	2.894	$\chi^2/df < 3$ $\chi^2/df < 2$	Wheaton, Muthen, Alwin and Summers (1977); Kline (2005); Tabachnick and Fidell (2007)
RMSEA	.033	.022	.053	.058	RMSEA < .05 ^G RMSEA < .08 ^A	Hu and Bentler (1999) Steiger (2007)
SRMR	.0093	.0210	.021	.0831	.00 ≤ SRMR ≤ .05 ^G .05 ≤ SRMR ≤ .10 ^A SRMR ≤ .08	Byrne (1998) Diamantopoulos and Sigauw (2000); Hu and Bentler (1999)
GFI	.989	.982	.961	.927	.95 ≤ GFI ≤ 1 ^G .90 ≤ GFI ≤ .95 ^A	Tabachnick and Fidell (2007); Miles and Shevlin (2007)
AGFI	.970	.978	.935	.898	.90 ≤ AGFI ≤ 1.00 ^G .85 ≤ AGFI ≤ .90 ^A	Tabachnick and Fidell (2007)
CFI	.998	.998	.985	.969	.95 ≤ CFI ≤ 1.00 ^G .90 ≤ CFI ≤ .95 ^A	Hu and Bentler (1999); Schumacker and Lomax (1996)
IFI	.998	.999	.985	.969	.95 ≤ IFI ≤ 1.00 ^G .90 ≤ IFI ≤ .95 ^A	Miles and Shevlin (2007)
NNFI (TLI)	.994	.993	.976	.954	.90 ≤ NNFI ≤ 1 ^G NNFI > 0.90 ^A	Hu and Bentler (1999); Fan, Thompson, and Wang (1999) Bentler and Bonett (1980)

Notes: ^G: Good; ^A: Acceptable; χ^2 Discrepancy Chi Square; χ^2/df (Chi Square/Degrees of Freedom); RMSEA (Root Mean Square of Error Approximation); SRMR (Standardized Root Mean Square Residual); GFI (Goodness of Fit Index); AGFI (Adjusted Goodness of Fit); CFI (Comparative Fit Index); IFI (Incremental Fit Index); NNFI (Non-Normed Fit Index) TLI (Tucker-Lewis Index); EL: ethical leadership; WE: work engagement; SIP: service innovation performance; IN: intrapreneurship.

AGFI: .970, CFI: .998, IFI: .998, NNFI: .994], WE [χ^2 :21,481, χ^2 /df: 1.264, $p < .01$, RMSEA: .022, SRMR: .0210, GFI: .982, AGFI: .978, CFI: .998, IFI: .999, NNFI: .993], SIP [χ^2 : 162,570, χ^2 /df: 2,580, $p < .01$, RMSEA: .053, SRMR: .021, GFI: .961, AGFI: .935, CFI: .985, IFI: .985, NNFI: .976] and IN [χ^2 : 480,337, χ^2 /df: 2,894, $p < .01$, RMSEA: .058, SRMR: .0831, GFI: .927, AGFI: .898, CFI: .969, IFI: .969, NNFI: .954].

When Table 4 is examined, in the analysis of first-level factors, the composite reliability (CR) values for each sub-factor was .700 and the explained variance values were above .500. Generally, convergent validity of the first level measurement model was not detected. The square root of the AVE values of each sub-factor was calculated and showed in the black diagonal cells. In terms of discriminant validity, it is expected that the sub-factors of these values must be greater than all the correlation values (Fornell & Larcker, 1981). This rule was disregarded in the RU, RC, CE and PRO sub-factors. The associations between the sub-factors were generally .700 and above. When the results of the first level confirmatory factor analysis were taken into consideration, it was found that the IN scale had convergent validity but it had no discriminant validity. In order to get a grip on this situation, confirmatory factor analysis is recommended with the second-level factor (Hair, Hult, Ringle, & Sarstedt, 2016; Hu & Bentler, 1999). First level factors defined the second-level factor IN to provide convergent validity. The average variance extracted (AVE) of the second-level factor IN was .828 and the composite reliability value was determined as .966. With these results, construct validity of IN scale was provided by second-level factor. For this reason, the second-level factor structure was included in the path analysis.

Common method of bias

Initially, all the implicit variables in the scales of the study were examined with confirmatory factor analysis. Then, it was re-examined in a single-factor structure and the obtained Chi-Square (χ^2) values were compared with each other and the significant difference was examined. In this way, the measurement method used in the survey of the common method of bias was tested (MacKenzie & Podsakoff, 2012). The model was tested as one-factor model, the model fit coefficients produced by two models (initial and modified model) test results are given in Table 3. In order to determine whether there was a significant difference between the one-factor model [χ^2 : 7140,709, χ^2 /df: 5,373, $p < .01$, RMSEA: 088, SRMR: .0805, GFI: .611, AGFI: .565, CFI: .786, NNFI: .750] and the four-factor model [χ^2 : 2646,516, χ^2 /df: 2,025, $p < .01$, RMSEA: .043, SRMR: .0441, GFI: .851,

Table 4. Convergent, discriminant validity of the intrapreneurship scale and second-level factor loadings.

Variables	CR	AVE	IN	RU	RC	CE	PRO	AUTO	Factor weights
INN	0.927	0.809	0.899 ^a						.90
RU	0.858	0.602	0.863**	0.776 ^a					.97
RC	0.905	0.705	0.781**	0.961**	0.839 ^a				.96
CE	0.817	0.529	0.665**	0.776**	0.708**	0.728 ^a			.87
PRO	0.812	0.592	0.729**	0.869**	0.855**	0.907**	0.769 ^a		.93
AUTO	0.880	0.710	0.610**	0.708**	0.685**	0.792**	0.882**	0.843 ^a	.83

Notes: CR = composite reliability; AVE = average variance extracted; ^a Square root of AVE value; ** Pearson correlation; INN: innovation, RU: risk/uncertainty, RC: risk/challenges, CE: competitive energy, PRO: proactiveness, AUTO: autonomy.

AGFI: .830, CFI: .951, NNFI: .908], the χ^2 values were tested and the difference was significant ($\Delta \chi^2 = 4494,193; p < .01$) (MacKenzie & Podsakoff, 2012).

A three-phase CFA marker technique was used to identify method biases (Williams, Hartman, & Cavazotte, 2010). A latent and common latent factors were added. The quality of method effects with the marker variable was determined in phase I (Baseline→Method-C: $\Delta\chi^2 = 7.98, \Delta df = 1, p < .01$), reliability decomposition was assessed in phase II Method-C→Method-U: $\Delta\chi^2 = 31,6, \Delta df = 21, p < .01$) and sensitivity analysis performed in phase III (Method-U<-Method-R: $\Delta\chi^2 = 1.9, \Delta df = 3$). The unstandardized method factor loadings were fixed at the upper end of the confidence interval for the .01 and .05 α levels in sensitivity analysis. The factor correlations maintained significance for the sensitivity. It was proved that the measurement tools had low effect on the participants' evaluations. (MacKenzie & Podsakoff, 2012; Podsakoff & Organ, 1986; Williams et al., 2010).

Mediating effect analysis

After checking the quality of the model tested in the study, a mediation analysis was applied for a possible mediating effect (Hayes, 2013). Since the association between the independent variable and the mediator variable, the mediator variable and the dependent variable, and finally the independent variable and the dependent variable were tested, the indirect effects were tested (Baron and Kenny, 1986; Hair et al., 2016). After determining that this indirect effect is significant, the degree of mediation should be evaluated with the proportion of variance explained. If the variance explained by the mediation is over 80% there is full mediation, between 20% and 80% there is partially mediation. If the variance value is below 20%, a mediation effect can not be mentioned (Howell, 2010). During the SEM analysis, the significance level of the direct effect was determined and if a meaningful result was obtained, the indirect effect was tested for significance in the presence of mediation and the mediation variance explained level was calculated after the significant indirect effect. For the analysis of mediation, IBM SPSS AMOS software was applied with implicit variables and path analysis (Byrne, 2013).

In this study, the direct effects of EL exogenous variable on ESIB ($t = 12,838, p < .01$), NSD ($t = 17,278, p < .01$) and IN ($t = 13,825, p < .01$) endogenous variables were found to be significant in the model we tested. Then, indirect effects in the presence of WE were analyzed using Bootstrap method with IBM SPSS AMOS software (Byrne, 2013). The Bootstrap method is the process of creating resampling with the same property larger than the existing data set (Sacchi, 1998). It is recommended to use it as a reliable method in the measuring of indirect effects in mediation analysis (Hair et al., 2016).

The mediation model had good and acceptable fit values except χ^2 , GFI and AGFI values [χ^2 (1310): 2828,742; χ^2/df : 2.159; SRMR: 0.0597; RMSEA: 0.045; NNFI: 0.901; IFI: 0.944; CFI: 0.944; GFI: 0.841; AGFI: 0.820]. χ^2 , GFI and AGFI fit values are classified as absolute fit indices and are not considered as useful indices of structural equation model analysis according to other fit index types (Hu & Bentler, 1999; Kline, 2016). In particular, due to the fact that absolute fit indices are sensitive to sample size, model size, normal distribution characteristics of data and factors such as highly correlated variables, GFI and AGFI may not give accurate results in the interpretation of the fit values in structural equation model analyses. Hu and Bentler (1999) stated that it was inconvenient for researchers to only use absolute fit indices,

the relative fit indices such as CFI and IFI or the combination of SRMR and RMSEA would have been a more accurate approach to assess the model fit in the SEM analysis.

In this study, it was observed that the fit indexes mentioned above provide the threshold values specified in the literature and that the evaluation of the relative fit index values would give a more accurate result. As a result, the mediation analysis examined in this study met the good model fit criteria.

The indirect effect of EL→WE→IN was found to be significant, the confidence interval lower bounds = .406 and upper bounds = .732, $p < .01$ and the total variance explained rate was 33.9%. In these circumstances, WE variable played a mediated role between EL and IN. Similarly, the indirect effect of EL→WE→ESIB was found to be significant, the confidence interval lower bounds = .327 and upper bounds = .551, $p < .01$, and the total variance explained rate was 36.5%. WE variable partially mediated the association between EL and ESIB. Finally, the indirect effect of EL→WE→NSD was also significant, the confidence interval lower bounds = .353 and the upper bounds = .695, $p < .01$, and the

Table 5. Mediation analysis with standardized regression weights table.

Work engagement	Total effects	Direct effects	Indirect effects	Lower bounds	Upper bounds	p	Mediation effect
EL→IN	.774	.467	.175	.406	.732	.007***	Partially
EL→SIP	This association was not included in the hypothesis analysis due to second-level factor analysis cannot be obtained in the service innovation behavior model.						na
EL→ ESIB	.788	.373	.177	.327	.551	.007***	Partially
EL→ NSD	.550	.671	.116	.353	.695	.007***	Partially

Notes: β , Standard Beta; *significant at .1 (two-tailed); ** p is significant at .05 (two-tailed) *** p is significant at .01 (two-tailed); EL: ethical leadership; WE: work engagement; SIP: service innovation performance; IN: intrapreneurship; ESIB: employee service innovation behavior; NSD: development of new services.

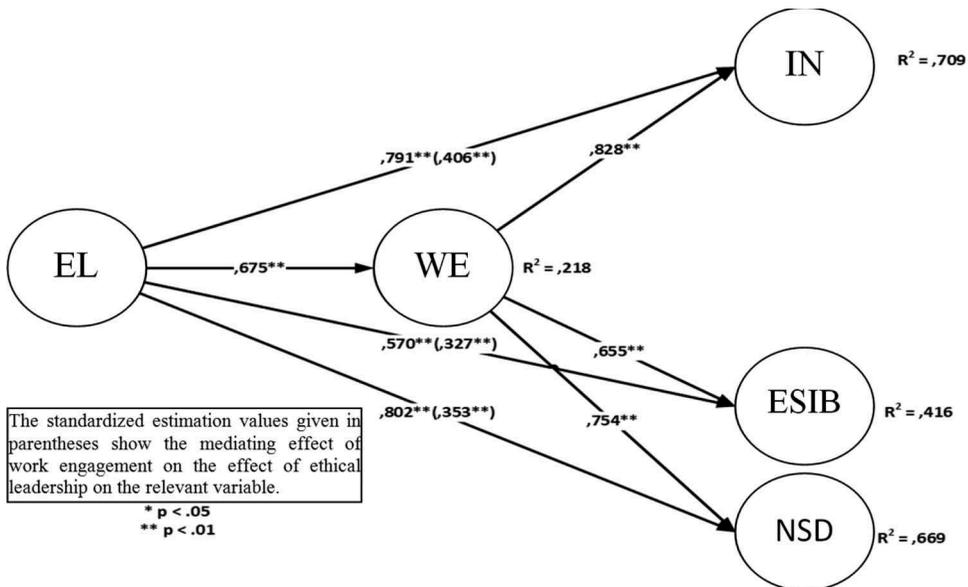


Figure 1. Partially mediation model. EL: ethical leadership; WE: work engagement; SIP: service innovation performance; IN: intrapreneurship; ESIB: employee service innovation behavior; NSD: development of new services.

total variance explained rate was 30.1% (Table 5). WE variable was partially mediated the association between EL and NSD. After these findings, the model tested in the study is as in Figure 1. As a result, the effect of EL on IN and the ESIB and NSD sub-factors of SIP can be said to be partially directed by WE.

Hypothesis testing

According to the results of confirmatory factor analysis, a second-level factor analysis was applied for the SIP scale which was valid and reliable, but since no descriptive model was found, two-factor structure of ESIB and NSD implicit variables was used in the path analysis to be performed with SIP, and hypothesis tests were performed in this manner (Byrne, 2013). Therefore, the hypotheses of H3, H5, and H7 were rejected. Estimated calculation values of standardized data according to the structural equation model (SEM) analysis with AMOS were determined as H1 (EL→WE; β : .467; t : 4,885; $p < .01$), H2 (EL→IN; β : .600; t : 13,825; $p < .01$), H3a (EL→ESIB; β : .373; t : 12,838; $p < .01$), H3b (EL→NSD; β : .671; t : 17,278; $p < .01$), H4 (WE→IN; β : .374; t : 6,699; $p < .01$), H5a (WE→ESIB; β : .380; t : 6,405; $p < .01$), H5b (WE→NSD; β : .249; t : 5,635; $p < .01$). Thus, the hypotheses of H1, H2, H3a, H3b, H4, H5a, H5b for direct effects were supported.

It was determined that the effects of EL exogenous variable on the IN and SIP endogenous variables, and indirect effects were significant. The results for indirect effects are as follows: EL→WE→IN [$t(1310) = .406-.732$, $p < .01$, the total variance explained rate = 33.9%]; EL→WE→ESIB [$t(1310) = .327-.551$], $p < .01$, the total variance explained rate = 36.5%]; EL→WE→NSD [$t(1310) = .353-.695$], $p < .01$; the total variance explained rate = 30.1%]. These results indicated that WE variable partially mediated the association between EL and sub-factors of SIP. The findings supported the hypotheses of H6, H7a and H7b for indirect effects.

Discussion

It was determined that ethical leadership had a statistically significant effect on work engagement. This result was supported by many studies (Babcock-Roberson & Strickland, 2010; ZZhu et al., 2009; Den Hartog & Belschak, 2012; Macey et al., 2009; Engelbrecht et al., 2017; Ahmad & Gao, 2018). Work engagement is a work-related positive motivating and psychological condition (Schaufeli et al., 2006). Cheng et al. (2014) found the mediation role of work engagement in the association between ethical leadership and voice behavior. Brown et al. (2005) found a positive association between ethical leadership and work commitment, which is a crucial factor of work engagement. Den Hartog and Belschak (2012) confirmed that there was a positive association between ethical leadership and job relationship, and found that viewers tended to give higher participation in their work when they perceive that they act ethically. Hansen, Alge, Brown, Jackson, and Dunford (2013) found that organizational and managerial ethical leadership was positively related to employee commitment and that ethical leadership was directly and indirectly related to the employee.

In the study, it was found that ethical leadership had a statistically significant effect on intrapreneurship. The significant association between ethical leadership and intrapreneurship was found by previous studies. Valsania, Moriano, and Molero (2016) found that authentic

leadership was the antecedent of intrapreneurship, and that there was a positive association between these two variables. Ethical leadership has the ability to transfer normative behaviors to followers, to achieve high level of honesty, reliability, and ethical standards and to determine related standards. According to authentic leadership, the ethical leaders are the leaders who provide the internalized moral point of view more actively to their followers and transform it into an idea of life (Brown et al., 2005). Therefore, although no direct research was found on the relationship between ethical leadership and intrapreneurship, the study of Valsania et al. (2016) substantially supported the results of the study.

Intrapreneurship, which consists of crucial factors such as innovation, proactiveness and risk-taking, requires an important impulse to transform these characteristics into behavior. One of these crucial driving forces is the ethical leadership (Miller, 1983). In a study conducted by Chen and Hou (2016), it was found that there was a positive association between the ethical leadership perceptions of the employees and the employees' voice behaviors, and that the voice behavior was positively related to individual creativity and that the ethical leadership had an indirect effect on individual creativity (via voice behavior) found to be strong. Engelbrecht et al. (2017) found that ethical leaders created a work environment that was suitable for the participation of employees.

According to the research findings, it was determined that ethical leadership had a statistically significant effect on service innovation performance. Leadership characteristics such as innovation, employee empowerment, and rewarding employee increase innovation behavior (De Jong & Den Hartog, 2007; Janssen, 2005). Gumusluoglu and Ilsev (2009) found a positive association between transformational leadership and creativity of employee conducted with 43 micro- and small-sized Turkish software companies with 163 research and development employee and managers. Schuckert et al. (2018) found a positive association between authentic leadership and transformational leadership in service innovation behavior. Ahmed, Naqshbandi, Kaur, and Ng (2018) found that paternalistic, democratic and authentic leadership types positively affected relationship-based employee governance and open service innovation in their study with 422 medical professionals in Malaysia. Dhar (2016) found that strong ethical leadership provided a high leader-member exchange and a positive association between ethical leadership and service innovation behavior. Another study supporting our research findings was the study by Kalshoven, Den Hartog, and De Hoogh (2011), which indicated that ethical leadership played an important role in ensuring employee performance of innovative leadership. Another study confirming this study was that Walumbwa Mayer, Wang, Wang, Workman and Christensen (2011) reported a positive and significant association between the ethical leadership and employee performance.

Work engagement, which is a positive motivational state and one of the factors of intrapreneurship, is associated with proactive work behavior (Bakker, 2011). Individuals with high levels of work engagement are cognitively, physically and emotionally dependent on their job roles (Kim et al., 2012). *The high level of work engagement shows that the employees strengthen the proactive work behaviors and cause the behavior of taking initiative* (Fritz & Sonnentag, 2007; Hahn et al., 2012; Kim et al., 2012; Parker et al., 2006). *There is also a study supporting the positive association between work engagement and intrapreneurship* (Gawke et al., 2017). All these studies supported the study finding of the effect of work engagement on intrapreneurship.

Xiaojun and Guy (2014) identified emotional labor, work engagement and ethical leadership as three elements that contributing to sensitivity in public service delivery.

Krell (2005) showed that the level of commitment was important in the service sector and especially in cases where the product to be offered to the customer depends on the relationship between the employee and the customer. Guzmán, Blanco-Mesa, and Gaviria (2016) found that service innovation behavior was highly influenced by work engagement as a result of a case study with a small family business dealing with retail trade. Garg and Dhar (2017) showed that the interaction between the employees' service innovation behavior and work engagement positively affected the leader-member exchange. These studies supported the study findings of quantitative analysis of the significant effect of work engagement on service innovation performance.

Vander Elst et al. (2011) found that factors such as poor management reduced the level of work engagement. Cheng et al. (2018) found that work engagement had a mediating effect between psychological capital and service behavior. Work engagement has a partially mediating role between autonomy and innovative work behavior (Spiegelaere et al., 2014). In the literature, no direct study was found on the partially mediating effect of work engagement on intrapreneurship and service innovation performance.

Implications, limitations, and future research

The purpose of this study was to determine the problem of organizational and managerial efficiency of the chambers of commerce and industry, to reveal the association between ethical leadership, work engagement, intrapreneurship, service innovation performance and the mediating role of work engagement. Therefore, it is recommended that the study be carried out in other service sectors. In addition, future studies may examine the applicability of the proposed model in enterprises operating in the manufacturing sector (Kindström, Kowalkowski, & Sandberg, 2013). This study only considers the chambers of commerce, chambers of industry, chambers of commerce and industry, and the suitability of the proposed model, the commodity exchanges and other professional chambers. The suitability of the proposed model in this study should be analyzed in commodity exchanges and other professional chambers. In order to obtain generalizable results, the proposed model should be examined in other countries subject to public and private law. It is recommended for future studies to test the partially mediating effect with other variables such as psychological capital, transformational leadership, organizational justice, authentic leadership, career commitment, affective participation, job satisfaction, organizational voice behavior, and psychological empowerment.

Ethical leadership is dominated by justice, responsibility, and honesty. However, ethical leadership limits the study in terms of some characteristics that affect people except these ethical aspects and in other types of leadership. Work engagement is a multi-faceted type of commitment, such as positivity, satisfaction, adoption, commitment and mental status linked to work. The effects of well-being associated with employee behavior (Nielsen et al., 2009), creativity (Shin & Zhou, 2003) and task performance (Piccolo & Colquitt, 2006) of transformational leadership type on work engagement should be taken into consideration. The self-awareness, balanced processing, and transparency in relationship factor that are the features of authentic leadership including aspects that differ from ethical leaders can create a significant mediation effect (partial or full mediation) in terms of work engagement.

As a result of the study, it was found that there was a positive association between ethical leadership-work engagement, intrapreneurship and the sub-factors of service

innovation performance. The significance of these effects clearly shows the management problem in which the chambers of commerce and industry are subject to public law. The partial mediation of work engagement clearly demonstrates the importance of the relationship between the employee and the manager.

According to the results of research, the level of ethical leadership of the chambers of industry was highest and the level of ethical leadership of the chambers of commerce and industry was the lowest. According to the type of chambers, this discrepancy should be solved by UCCET. The main reasons for this discrepancy between the chambers that offer similar services are recommended for future studies. The results of the analysis reveal that the managers of the chambers of commerce and industry affiliated to UCCET should ensure fairness of justice, a fair distribution of resources, review of human resource policies, harmonize technological infrastructure with the requirements of the era, and develop employee-oriented innovation strategies. This study identified the need to adopt a common policy among chambers of commerce and industry, especially in career development and recruitment.

Conclusion

Findings demonstrated that ethical leadership had a statistically significant effect on work engagement, intrapreneurship, and service innovation performance. It was proved that work engagement partially mediated the association between intrapreneurship and the subfactors of service innovation performance (employee service innovation behavior, development of new services). These findings may help to develop human resource management strategies of professional organizations with public institution status.

Declaration of interest

There is no conflict of interest regarding the publication of this paper.

Compliance with ethical standards

Research involving human participants and/or animals: This research involves human participants. Informed consent: This study was approved by Aksaray University Senate Ethics Committee.

ORCID

Fahri Özsungur  <http://orcid.org/0000-0001-6567-766X>

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