

..... Kirklikçi, Gedik: Development Study of Perceived Institutionalization and Perceived...

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# Development Study of Perceived Institutionalization and Perceived Performance Scales

## Studija razvoja ljestvica za percipiranu institucionalizaciju i percipirani učinak

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**ABSTRACT** • Institutionalization is necessary for corporations to prevent economic, financial, legal, administrative, and technical chaos and thus improve performance. The concept of performance is the most supporting tool in conducting the control function in business management. While the amount of input and products in the forest industry in Turkey is rising, institutionalization is inadequate. This study attempts to methodologically develop and test scales for perceived institutionalization and perceived performance in furniture and panel businesses, which are two sub-sectors of the forest industry. Data was obtained in 35 cities between March and July 2017, through face-to-face interviews with 797 employees in 462 furniture businesses and 31 panel businesses. In the analysis of the study, content validity of the scales was evaluated through expert opinion and initial application, while construct validity was assessed by EFA and CFA. Cronbach alpha coefficient, CR, and AVE were used to evaluate reliability, while the suitability of perceived institutionalization and performance scale model was assessed through SEM. The scales have high reliability and validity, and an improvement in the institutionalization level of a business will result in improvements in performance ( $r=0.98$ ). Through this methodological study, scales for perceived institutionalization and perceived performance in furniture and panel businesses operating in Turkey and the relationship between perceived institutionalization and perceived performance were explained by a model.

**Keywords:** perceived institutionalization; perceived performance; furniture and board sector; methodological study; structural equation model; Turkey

**SAŽETAK** • Institucionalizacija je nužan preduvjet za sprečavanje ekonomskoga, financijskog, pravnog, administrativnog i tehničkog kaosa korporacija te za poboljšanje njihova učinka. Koncept učinka najpouzdaniji je alat u provođenju kontrole poslovnog upravljanja. Dok količina sirovine i proizvoda u drvnoj industriji u Turskoj raste, institucionalizacija je neadekvatna. Ovim se istraživanjem pokušavaju metodološki razviti i testirati ljestvice za percipiranu institucionalizaciju i percipirani učinak poduzeća za proizvodnju namještaja i proizvodnju ploča, što su dva podsektora drvne industrije. Podatci su dobiveni u 35 gradova između ožujka i srpnja 2017., i to putem osobnih razgovora sa 797 zaposlenika u 462 tvrtke za proizvodnju namještaja i u 31 tvrtki za proizvodnju ploča. U analizi ovog istraživanja ocijenjena je valjanost sadržaja ljestvica na temelju stručnog mišljenja i inicijalne

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primjene, dok je valjanost konstrukcije procijenjena uz pomoć EFA-e i CFA-e. Za procjenu pouzdanosti primijenjeni su Chronbachov alfa-koeficijent, CR i AVE, a prikladnost modela ljestvice za percipiranu institucionalizaciju i učinak procijenjeni su uz pomoć SEM-a. Ljestvice imaju visoku pouzdanost i valjanost, a poboljšanje na razini institucionalizacije poduzeća donijet će i poboljšanje učinka tvrtke ( $r = 0,98$ ). Ovim su metodološkim istraživanjem objašnjene ljestvice za percipiranu institucionalizaciju i percipirani učinak poduzeća za proizvodnju namještaja i proizvodnju ploča koja posluju u Turskoj te prikazan odnos između percipirane institucionalizacije i percipiranog učinka.

**Ključne riječi:** percipirana institucionalizacija; percipirani učinak; sektor proizvodnje namještaja i ploča; metodološko istraživanje; model strukturne jednadžbe; Turska

## 1 INTRODUCTION

### 1. UVOD

#### 1.1 Institutionalization, performance and productivity

##### 1.1.1 Institucionalizacija, učinak i produktivnost

According to Knight (1992), institutions are defined as “a set of rules that structure social interactions in particular ways in a society and of which knowledge is shared by members of the community”. Institutionalists define institutions not in the narrow sense of formal organizations, but in the broader context of socially predetermined behavior as “the widespread and constant way of thinking or acting, which is implanted in habits of a group or in customs of the people” (Dayneko *et al.*, 2014). Four general criteria, developed by Huntington (1973), allow us to assess the level of institutionalization of an institution. These are autonomy, adaptability, complexity and coherence. It was noted that these four criteria could be applied to institutional arrangements and are roadmaps for the transformation period that institutions need in order to influence their members and environments and survive.

The concept of “institutional” generally represents the characteristics of institutionalized organizations (Uygun *et al.*, 2013). Institutionalization is, however, defined differently in the literature. Institutionalization is defined as the process by which an activity becomes generally accepted or routinized and is then handled in a regularized, structured, and systematic manner (Fuchs and Anderson, 1987). Institutionalization processes involve forming of an official structure, creation of unofficial norms, development of non-personal/objective procedures, focusing on administrative rituals, ideologies, legalization and legitimation. Thus, institutional theory traces the emergence of distinctive forms, processes, strategies, outlooks, and competences as they emerge from patterns of organizational interaction and adaptation (Selznick, 1996).

Through institutionalization, businesses adapt to their business world and this harmony increases performance. Institutional pressures, which compel businesses to institutionalization, have a long-term and extensive impact on administrative performance. As these institutions have the funds provided by entrepreneurs, they spend more effort to accomplish their goals (Han *et al.*, 2016; Zhu and Sarkis, 2007). On the other hand, perceived business performance is measured by market share, turnover, profitability and institutional

image indicators. These measurements can be performed by taking into consideration components such as market (e.g. market share), accounting (e.g. turnover, sales, profitability) and social performance (e.g. company image).

#### 1.2 Institutionalization in forest industry

##### 1.2.1 Institucionalizacija u drvnjoj industriji

The Forest industry plays an essential role in sustainable development, not only in terms of its specific raw material but also due to the ongoing globalization of the industry (Tuppura *et al.*, 2013). It is noted that the transformations currently occurring in the forest industry are frequently spontaneous and inconsistent and are vastly affected by national, regional, economic and social policy reforms. It is emphasized that even in countries where the forest industry has progressed, the sector cannot respond sufficiently to the policy reforms that affect instructional transformation and that the level of institutionalization is low (Dayneko *et al.*, 2014; Wanat *et al.*, 2018). For instance, the forest industry in Finland has been accused of not being innovative due to insufficient research and development activities (Åkerman *et al.*, 2010).

Data on the forest industry sector in Turkey displays a tendency to expand to new markets. Turkey has established import and export connections with more than 200 countries for forest products. In many sub-sectors in Turkey, most especially in furniture and panel production, foreign trade balance looks positive. Strong aspects of Turkish furniture and panel sectors in the international market are cheap labor and being close to the middle east market. Iraqi and Syrian markets are possible opportunities for this sector (Serin and Şahin, 2018; İstek *et al.*, 2017). Hence, Turkey has a 0.5 % share of the 128-billion-dollar world wood-based product export, while amounting to 1 % of 132-billion-dollar world wood-based products import. The forest products sector comprises 2.4 % of the added value created in the production sector in Turkey (WMBA, 2017). Turkey's share in world furniture production is around 1 % and it is rapidly increasing. In 2015, 16-billion-dollar worth of production had been achieved in the furniture sector and it was predicted that this figure would reach 22 billion dollars in 2018 (UCCET, 2017). Total furniture export reached 2.4 billion dollars in 2017 and its share in exports was 2.2 %. In 2018, it increased significantly, reaching 3.4 billion dollars. Turkey's share in world furniture export in

2019 was 1.6 %. Furniture imports decreased by 6.6 % in 2019, compared to the previous year. (TMT, 2020). Total panel production in 2016 was 9.2 million square meters, with only 10-15 % of this being exported (JFIB, 2019). The furniture industry capacity usage ratio was 72 % for 2016 (IIBA, 2018). The capacity usage ratio in the panel sector ranged between 75-85 %, and the total installed capacity was 12 million square meters. The installed capacity of the panel sector was 5 million square meter/year in particle board, 7 million square meters/year in medium-density fiberboard (MDF) and 240 thousand square meters in Oriented Strand Board (OSB) (JFIB, 2019). According to figures of General Census of Industry and Business Establishments, the furniture sector employed 133 thousand people, while the panel sector employed 13 thousand people (UCCET, 2015).

Small and medium-sized enterprises in the forest products industry, however, face threats such as a low level of state support (Sarıkahya, 2012), insufficient utilization of national and international financing opportunities, the necessity to import raw materials and have an inadequate number of qualified employees, regional instability, lack of design and adverse effects of Chinese furniture sector (Serin and Şahin, 2018).

While the amount of input and products in forest industry in Turkey are rising, institutionalization, the effectiveness of quality assurance systems, viability of European Union (EU) legislations and research and development expenditure are inadequate (Koç *et al.*, 2017). Due to the rapid growth in the furniture industry in recent years, it is necessary for businesses to innovate their administrative activities and establish quality assessment systems (Altınok and Saçlı, 2009). Thus, it is noted that only basic quality control methods are implemented in the furniture industry, while quality control activities are more systematic and intense in fiber and particle board producers (Cındık *et al.*, 1999). It seems necessary to focus on more advanced competitive elements such as research and development, design and marketing in order to strengthen the competitiveness of the sector and ensure its continuity.

Considering all this data, there is a close connection between business performance and institutionalization in furniture and panel businesses. From this point of view, this study attempts to determine the level of institutionalization of furniture and panel businesses, which are two sub-sectors of the forest industry. Scales for Perceived Institutionalization Scale (PIS) and Perceived Performance Scale (PPS) at the sectoral level were developed and tested methodologically.

Accordingly, the hypotheses below, which are related to independent (institutionalization) and dependent (performance) variables and sub-variables, were made.

H<sub>1</sub> 1, There is a relationship between consistency and institutionalization.

H<sub>1</sub> 2, There is a relationship between formalization and institutionalization.

H<sub>1</sub> 3, There is a relationship between transparency, accountability, and institutionalization.

H<sub>1</sub> 4, There is a relationship between productivity and performance.

H<sub>1</sub> 5, There is a relationship between operating income and performance.

H<sub>1</sub> 6, There is a relationship between product development and performance.

H<sub>1</sub> 7, There is a relationship between institutionalization and performance.

## 2 MATERIALS AND METHODS

### 2. MATERIJALI I METODE

#### 2.1 Data

##### 2.1. Podatci

The data of the study consists of 2622 furniture and panel businesses registered in UCCET and the Turkish Particle Board Industrialists Association (TPBIA) in 2016. The data of the study is the businesses with ten or more employees within the enterprises mentioned above. The sample size was determined as 346 with a 5 % margin of error and a 95 % level of confidence by means of sampling formula for limited sample groups. The study population was obtained by a stratified sampling method which is set for geographical regions. Data was obtained in 35 cities between March and July 2017, through face to face interviews with 797 employees in 493 businesses, 93.7 % of which (462) are furniture and 6.3 % (31) are panel businesses. While 60.2 % (297) of these businesses employ 10-49 people, 23 % (118) of them have 50-149, 6.7 % (33) of these establishments work with 150-249 employees, and 9.1 % (45) employ more than 250 workers.

#### 2.2 Development steps of PIS and PPS

##### 2.2. Koraci razvoja PIS-a i PPS-a

##### 2.2.1 Generating the item pool

###### 2.2.1. Stvaranje skupa teza

In this step, postgraduate theses in the Council of Higher Education in both Turkish and foreign languages, which include the keywords of institutionalization, corporate governance, performance in their subject of study or name, were scanned. Three hundred fifty-five theses written before 2016 were found. One hundred and seventy of these theses were about institutionalization, 185 of them were about performance. In addition to this, 400 different studies (articles, notices, reports, etc.), which were accessed by scanning through Science Direct and Google Scholar on the internet, were analyzed. One thousand six hundred ninety-nine items included in these separate studies in the literature were listed, compared, and checked for repetitions, which resulted in a pool of 71 items after the omission of repeated items (Table 1). In order to express the level of agreement on the items in the list, 5-point Likert scale ("1" Strongly Disagree, "2" Disagree, "3" Undecided, "4" Agree, "5" Strongly Agree) was used.

##### 2.2.2 Expert opinion (content validity)

###### 2.2.2. Stručno mišljenje (valjanost sadržaja)

Items in the pool were proved by twelve experts (forest industry engineering academic members) to at-

tain content validity. Experts did not call for any changes in the item number but provided suggestions

on their content. Necessary editing was completed before pre-application.

**Table 1** Item pool related to perceived institutionalization and perceived performance  
**Tablica 1.** Skup teza vezanih za percipiranu institucionalizaciju i percipirani učinak

<b>Categories</b> <i>Kategorije</i>	<b>Item pool / Skup teza</b>
Institutionalization <i>institucionalizacija</i>	<ol style="list-style-type: none"> <li>1. Our company has a mission and vision.</li> <li>2. Our company has an organizational chart.</li> <li>3. Each duty, authorization and responsibility is settled and these are acknowledged by employees in our company.</li> <li>4. Standards for each task and process are specified and documented.</li> <li>5. There is an effective reporting system in our company.</li> <li>6. In our company, recruitment, dismissal, and promotions are decided according to a clearly defined procedure.</li> <li>7. The administrative staff consists of experts.</li> <li>8. In our company, regular meetings are held, and decisions related to the firm are mostly made during these meetings.</li> <li>9. Employees are regularly provided with training and reminders related to their tasks.</li> <li>10. Emotions are at the forefront in decision-making and applications.</li> <li>11. Our company pays attention to suggestions made by employees and suggestions/ideas that provide added value to the establishment are evaluated.</li> <li>12. There is a high level of cooperation and communication among units.</li> <li>13. The administration creates a customer-focused culture in the establishment and all applications are directed towards customer satisfaction.</li> <li>14. Through market and outside environment analysis, opportunities and threats that the company is facing are regularly followed.</li> <li>15. In our company, computers and software (such as MRP, ERP, CRP) are being effectively utilized and analysis are regularly made.</li> <li>16. Activities of competitors are studied in deciding business strategy.</li> <li>17. Our company has an idiosyncratic organizational culture and identity.</li> <li>18. Our company is a business admired by other people and establishments, especially by its employees, public, business partners and partner companies.</li> <li>19. Our company has a name/symbol/logo/sign that represents the firm nationally and internationally.</li> <li>20. The dominant focus of our company is “not I” but “we”.</li> <li>21. A transparent understanding of administration is present in our company.</li> <li>22. The attendance of employees in the decision-making process is essential in our establishment.</li> <li>23. Our company takes responsibility for the results of its actions.</li> <li>24. Recruitments are conducted according to objective criteria.</li> <li>25. The Middle and long-term plans of our company are shared with the shareholders.</li> <li>26. Financial information users can access financial tables of the establishment with ease.</li> <li>27. Customer complaints can be observed transparently by customers.</li> <li>28. Decisions regarding society and the future of the company are shared with employees.</li> <li>29. Our establishment participates in social responsibility projects (such as the social responsibility projects on environment and education involving people with disabilities and ex-convicts.).</li> <li>30. Our company is aware of its responsibilities towards the society.</li> <li>31. Our company expects all employees to abide by ethical (moral) rules accepted by society.</li> <li>32. Social activities are organized in our company to boost motivation.</li> <li>33. The activities of our company conform to the norms that are determined by the state, professional and industry associations.</li> <li>34. The mission, strategies and actions of our company are consistent.</li> <li>35. Rewards and penalties in our company are imposed according to objective and systematical criteria.</li> <li>36. The personnel assessment process is fair and transparent.</li> <li>37. Our company keeps the promises it makes to other firms, customers and its employees.</li> </ol>

**Table 1** Item pool related to perceived institutionalization and perceived performance (continuation)

**Tablica 1.** Skup teza vezanih za percipiranu institucionalizaciju i percipirani učinak (nastavak)

Performance učinak	<ol style="list-style-type: none"> <li>1. Our establishment can produce at a lower cost compared to major competitors.</li> <li>2. An increase in sales income has been achieved.</li> <li>3. The return of our investments is higher than that of our competitors.</li> <li>4. The market value of our company is higher than that of our competitors.</li> <li>5. In our company, there are studies for measuring customer satisfaction.</li> <li>6. Our company has a high level of customer satisfaction.</li> <li>7. Our company has a high reputation and image.</li> <li>8. Defective product rate is low.</li> <li>9. Compliance with consumer rights has increased in the last three years.</li> <li>10. There has been a decrease in customer complaints/refunds in our establishment.</li> <li>11. New product developments or product improvements to meet customer expectations have seen an increase in the last three years.</li> <li>12. Employees can express their opinions on innovation inside the company.</li> <li>13. Problem solution committees (e.g. quality circles) in our company hold periodical meetings.</li> <li>14. The research and Development unit of our company implements innovative activities.</li> <li>15. Our company keeps up with the technology as much as possible and reduces the costs accordingly.</li> <li>16. Our company has a higher level of achievement than significant competitors.</li> <li>17. Our company is able to reach its target market compared to its competitors.</li> <li>18. Customer orders are fulfilled precisely and on time.</li> <li>19. Our company carries out planned maintenance activities.</li> <li>20. Our suppliers are able to deliver raw materials when needed and at the right quality.</li> <li>21. Our company has a high rate of benefiting from inputs.</li> <li>22. Our company displays a solution-oriented approach towards the existing and possible productivity setbacks.</li> <li>23. Production costs of our establishment are lower compared to those of our competitors.</li> <li>24. Our product prices are lower than those of our competitors'.</li> <li>25. Our company aims to sustain its function by optimizing resource usage.</li> <li>26. Job satisfaction is high among employees of our company.</li> <li>27. Payments in our company are made regularly.</li> <li>28. Occupational health and safety is valued in our establishment.</li> <li>29. Physical working conditions of our company (Ventilation, humidity, dust, vibration, noise, etc.) are suitable.</li> <li>30. Our employees are aware that they play an active role in increasing productivity.</li> <li>31. Our company maintains a lower level of inventory.</li> <li>32. In our company, the rate of faulty products is minimized.</li> <li>33. Our company tries to reduce waste.</li> <li>34. Results related to the measurement of productivity are shared with all employees.</li> </ol>
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### 2.2.3 Initial application

#### 2.2.3. Inicijalna primjena

Items designated according to expert opinion were tested in Konya by face to face interviews with 100 people in the production business active in 22 different sectors. After the analysis, it was concluded that the items had no cases of absence of perception and that none of the items needed to be removed or added.

### 2.2.4 Factor and reliability analysis

#### 2.2.4. Analiza faktora i pouzdanosti

After the draft scale was applied on 797 people working in 493 furniture and panel businesses, explanatory factor analysis (EFA) was implemented. According to the results of the analysis, items demonstrating construct validity were listed in the final scale. Cronbach Alpha internal consistency coefficient was calculated for the finalized scale. Calculations were made in SPSS 22 (IBM corp., 2013). In order to test the suitability of the structure, which was created through explanatory factor analysis, a confirmatory factor analysis (CFA) was conducted using AMOS 22 (Arbuckle,

2013). It is suggested that EFA should be applied initially in scale development phase, followed by CFA to confirm these new factor structures discovered (Yaşlıoğlu, 2017). In this respect, in order to determine in which sub-dimension or conceptual framework the items were perceived by the participants in the businesses, EFA, which is a process used to discover factors, was used considering the relationships between variables in the first step. The data to be used in factor analysis must display a normal distribution pattern. As a result, it was assumed that skewness-kurtosis coefficients demonstrated normality between -3 and +3 (Bentler, 2006). After the designation of factors constituting the scale, a suitable title for each factor was chosen according to expressions related to items included in every factor. CFA was implemented to test the model determined after EFA application.

### 2.2.5 Structural equation modeling (SEM)

#### 2.2.5. Modeliranje strukturnih jednačbi (SEM)

Structural equation modeling (SEM) is a robust analysis as it enables us to study interrelations of implicit along with observed variables, conduct many

**Table 2** SEM fit indexes**Tablica 2.** SEM indeksi prikladnosti

Fit index* Indeks prikladnosti*	$\chi^2$ /df	NFI	CFI	RMSEA	GFI	AGFI	RMR
Good fit dobra prikladnost	$0 \leq \chi^2/\text{df} \leq 3$	0.95 - 1.00	0.95 - 1.00	0.00 - 0.05	0.90 - 1.00	0.90 - 1.00	0.00 - 0.05
Acceptable fit prihvatljiva prikladnost	$3 \leq \chi^2/\text{df} \leq 5$	0.90 - 0.94	0.90 - 0.94	0.06 - 0.08	0.85 - 0.89	0.85 - 0.89	0.06 - 0.08

\*AGFI – Adjusted Goodness of Fit Index, CFI – Comparative Fit Index, GFI – Goodness of Fit Index, NFI – Normed Fit Index,  $\chi^2/\text{df}$  – Chi Square/Degree of Freedom, RMR – Root Mean Square Residual, RMSEA – Root Mean Square Error of Approximation

\*AGFI – prilagođeni indeks prikladnosti, CFI – usporedni indeks prikladnosti, GFI – indeks prikladnosti, NFI – normirani indeks prikladnosti,  $\chi^2/\text{df}$  – Hi-kvadrat/stupanj slobode, RMR – korijen srednjeg kvadrata ostatka, RMSEA – korijen iz prosječne kvadrirane pogreške aproksimacije

analyses simultaneously, structure models and speculate on them. Fit indexes used to interpret SEM are given in Table 2 (Byrne, 2010; Schermelleh-Engel *et al.*, 2003).

### 2.3 Ethics

#### 2.3. Etika

Written consent was obtained from the institutions. The purpose of the study was explained to the workers, and participation was allowed after their consent. It was explained that the information provided by the participants would only be used within the scope of the current study.

### 2.4 Limitations of the study

#### 2.4. Ograničenja studije

During the study, 50 cities were visited in total; however, due to time limitations, closed businesses, technical and economic difficulties and security issues, the survey study could only be conducted in 15 cities. All registered panel businesses were contacted, in addition to visiting almost 1000 businesses. As some businesses refused to participate, the survey was not conducted in these firms. The study is confined to the responses of 797 employees from 493 companies that participated in the survey.

## 3 RESULTS AND DISCUSSION

### 3. REZULTATI I RASPRAVA

#### 3.1 Demographic and workplace findings

##### 3.1. Demografski nalazi i nalazi na radnome mjestu

A high percentage of participants (75.7 %) (603) were male, 43.3 % (345) were within 26-35 years of age, 70 % of the participants (558) were married, and 47.9 % (382) were university graduates. Almost half of the participants (48 %) (357) were directors, 31.9 % (254) had worked between 1 and 3 years for the same company, and 46.7 % (372) had been working in the same sector for more than 10 years. Similar to the demographics given in this study, a study conducted in the forest products industry in Turkey determined that most of 432 employees involved were university graduates (48 %), male (83 %), between 26-35 (50 %), married (70 %) and at upper and middle levels (49 %). While the rate of employees working for ten or more years was 16 % in the same study, the rate of experienced workers in this study is higher (Ayđın and Tiryaki, 2018).

#### 3.2 Suitability assessment of data for factor analysis

##### 3.2. Procjena prikladnosti podataka za faktorsku analizu

Kaier-Meyer-Olkin (KMO) and Barlett test were used to determine whether the data obtained from the study group was suitable for EFA. In this study, Cronbach Alpha Coefficient for PIS is 0.959, KMO value is 0.970, Barlett value is equal to 16896.501. For PPS, Cronbach Alpha Coefficient is 0.942, KMO value is 0.951 and Barlett value is 13832.059. These results show that the scales have high reliability and validity (Yaşar, 2014).

#### 3.3 Determining the factor pattern of PIS

##### 3.3. Određivanje uzorka faktora PIS-a

It was detected that item 19 in the PIS did not demonstrate normal distribution and thus was removed from the analysis. It was calculated that the coefficient of kurtosis ranged between -1.075 and +2.889, while the skewness coefficient had values between -1.997 and -0.344 for the data used in perceived institutionalization. Therefore, it was concluded that these values displayed normal distribution. This three-factor structure accounts for 59.3 % of the total variance.

In the study, the first factor lists items that emphasize the necessity of the firms to focus on consistency and on how important this is for the institutionalization, as well as the importance to keep the focus on these topics. The first factor was thus classified as “Consistency (c)” sub-dimension. Items 7 (c13), 11 (c12), 12 (c15), 13 (c9), 17 (c14), 18 (c4), 20 (c5), 21 (c8), 23 (c6), 24 (c7), 30 (c1), 31 (c3), 33 (c11), 34 (c10) and 37 (c2) belong to the first factor. Factor loads for these items range between 0.761 and 0.555. The variance displayed by this factor is 29.4 %. Cronbach Alpha coefficient is 0.944. The second factor was named “Formalization (f)” sub-dimension, due to the fact that the items belonging to this factor express that businesses should focus on formalization. Items 1 (f2), 2 (f1), 3 (f3), 4 (f5) and 5 (f4) were placed in the second factor and their factor loads range between 0.766 and 0.667. Variance declared by this factor is 16.23 %. Cronbach Alpha Coefficient is 0.855. Items expressing that the businesses should focus on transparency and accountability were mostly listed in the third virtual factor. Hence, this factor was named “Transparency and accountability (ta)” sub-dimension. Items number 25 (ta4), 28 (ta3), 32 (ta1) and 35 (ta2) belong to

**Table 3** Factor analysis results related to PIS

**Tablica 3.** Rezultati faktorske analize povezani s PIS-om

Factors / Faktori	Factor I		Factor II		Factor III	
		≠30	0.761	≠2	0.766	≠32
	≠37	0.742	≠1	0.738	≠35	0.662
	≠31	0.729	≠3	0.708	≠28	0.621
	≠18	0.722	≠5	0.697	≠25	0.528
	≠20	0.664	≠4	0.667		
	≠23	0.656				
	≠24	0.648				
	≠21	0.639				
	≠13	0.635				
	≠34	0.622				
	≠33	0.580				
	≠11	0.579				
	≠7	0.567				
	≠17	0.561				
	≠12	0.555				
<b>Eigen value / Vlastita vrijednost</b>	11.533		1.455		1.234	
<b>Explanatory power of the factor, %</b> <i>Obrazloženje snage faktora, %</i>	29.4		16.23		13.6	
<b>Reliability / Pouzdanost</b>	0.944		0.855		0.727	

the third factor and their factor loads range between 0.772 and 0.528. Variance declared by this factor is 13.6 %. Cronbach Alpha Coefficient is 0.727. The fact that the explained variation exceeds 50 % of the total variation is stated as an important criterion of factor analysis (Yaşloğlu, 2017). Accordingly, while the first factor sub-dimension is able to represent, the other two factor sub-dimensions have a lower potential of representation. Items 6, 8, 9, 10, 14, 15, 16, 22, 26, 27, 29 and 36 that do not return a meaningful result in any of the virtual factors, a lower load of a factor (<0.50), return meaningful results for more than one virtual factor or exist alone in a virtual cluster are removed from the scale. Cronbach Alpha Coefficients are perfect fit for (c), a good level of fit for (f) and (ta) (Kalaycı, 2009) (Table 3).

**3.4 Determining the factor pattern of PPS**

3.4. Određivanje uzorka faktora PPS-a

It was detected that items 27 and 28 in the PPS did not demonstrate normal distribution and thus they

were removed from the analysis. It was calculated that the coefficient of kurtosis ranged between -0.685 and +2.38, while the skewness coefficient returned values between -2.035 and -0.242 for the data used in perceived institutionalization. Therefore, it was concluded that these values displayed normal distribution. The factor structure of the PPS is organized in three factors. This three-factor structure accounts for 57.1 % of the total variance.

This factor, which consists of items expressing that the main focus of businesses should be productivity, was named as “Productivity (p)” sub-dimension. Items 7 (p4), 8 (p2), 12 (p13), 18 (p1), 19 (p9), 20 (p12), 21 (p10), 22 (p6), 25 (p11), 26 (p3), 29 (p7), 30 (p 35) and 33 (p8) belong to the first factor and their factor loads range between 0.744 and 0.521. Variance displayed by this factor is 30.6 %. Cronbach Alpha coefficient is 0.925. The second virtual factor, which consists of items related to profitability and efficiency in the study, is named as “Operating income (oi)” sub-

**Table 4** Factor analysis results related to PPS

**Tablica 4.** Rezultati faktorske analize povezani s PPS-om

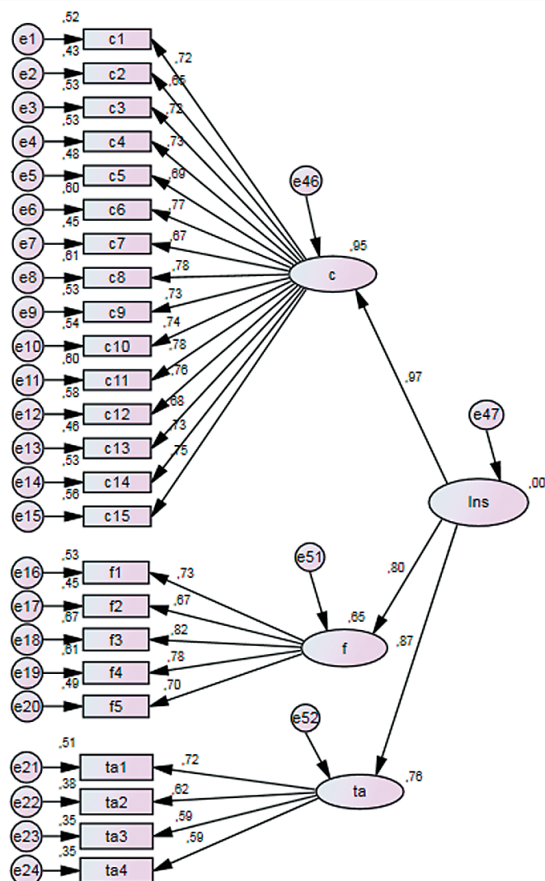
Factors / Faktori	Factor I		Factor II		Factor III	
		≠18	0.744	≠3	0.828	≠14
	≠8	0.734	≠4	0.769	≠13	0.722
	≠26	0.727	≠16	0.647	≠15	0.576
	≠7	0.716	≠17	0.604		
	≠30	0.711	≠2	0.591		
	≠22	0.707				
	≠29	0.668				
	≠33	0.663				
	≠19	0.648				
	≠21	0.637				
	≠25	0.623				
	≠20	0.605				
	≠12	0.521				
<b>Eigen value / Vlastita vrijednost</b>	9.033		1.896		1.065	
<b>Explanatory power of the factor, %</b> <i>Obrazloženje snage faktora, %</i>	30.6		14.7		11.8	
<b>Reliability / Pouzdanost</b>	0.925		0.798		0.756	

dimension. Items 2 (oi5), 3 (oi1), 4 (oi2), 16 (oi3) and 17(oi4) are placed in the second factor and their factor loads range between 0.828 and 0.591. Variance declared by this factor is 14.7 %. Cronbach Alpha Coefficient is 0.798. Items related to product development are listed in this factor, and thus it is named “Product development (pd)” sub-dimension. Items number 13 (pd2), 14 (pd1) and 15(pd3) belong to the third factor and their factor loads range between 0.801 and 0.576. Variance declared by this factor is 11.8 %. Cronbach Alpha Coefficient is 0.756. Accordingly, while the first-factor sub-dimension is able to represent, the other two factor sub-dimensions have a lower potential of representation. (Yaşlıoğlu, 2017). Items 1, 5, 6, 9, 10, 11, 23, 24, 31, 32 and 34 that do not return a meaningful result in any of the virtual factors, a lower load of a factor (<0.50), return meaningful results for more than one virtual factor or exist alone in a virtual cluster are removed from the scale. Cronbach Alpha Coefficients have a perfect fit for (p), while maintaining a good level of fit for (oi) and (pd) (Kalaycı, 2009) (Table 4).

**3.5 Confirmatory factor analysis of PIS**

**3.5. Potvrđna analiza faktora PIS-a**

According to the results of CFA of PIS, GFI was found as 0.90, AGFI as 0.88, RMR as 0.045, NFI as 0.91 and CFI as 0.94. NFI and CFI indexes lower than 0.95 and AGFI index lower than 0.90 prove an acceptable fit, while RMR below 0.05 and GFI showing 0.90 mean a good fit. (Byrne, 2010; Schermelleh-Engel *et al.*, 2003).



**Figure 1** Path diagram related to PIS  
**Slika 1.** Dijagram toka za PIS

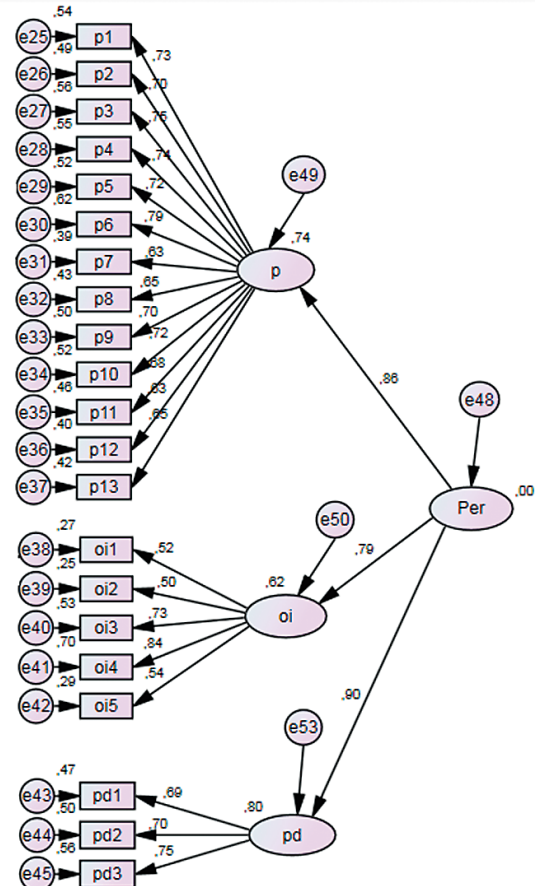
In the diagram illustrated according to the analysis conducted, correlation coefficients related to the items range between 0.59 and 0.82. The ratio of Chi-Square value to the degree of freedom is ( $\chi^2$  /df) 3.90. Results in the range between 3 and 5 can be interpreted as an acceptable fit. Considering RMSEA results, 0.06 can be seen as an acceptable fit (Schermelleh-Engel *et al.*, 2003). Based on the data obtained as a result of CFA, it is safe to say that 3-factor PIS is confirmed as a model. For the model to have better fit values, modification indices (MI) covariance values among disturbance terms under the same factors were studied (Yaşlıoğlu, 2017). Some changes were made according to disturbance covariances between c5-c6 and c10-c13 as the software suggested. PIS was confirmed as a model (Figure 1).

**3.6 Confirmatory factor analysis of PPS**

**3.6. Potvrđna analiza faktora PPS-a**

According to the results of CFA of PPS, GFI was found as 0.93, AGFI as 0.91, RMR as 0.04, NFI as 0.92 and CFI as 0.95. CFI equal to 0.95, AGFI index over 0.90, RMR lower than 0.05 and GFI value over 0.90 display good fit, NFI value being lower than 0.95 corresponds to an acceptable fit (Byrne, 2010; Schermelleh-Engel *et al.*, 2003).

In the diagram generated with the results of the analysis conducted, correlation coefficients related to the items range between 0.50 and 0.84. The ratio of Chi-Square value to the degree of freedom is ( $\chi^2$  /df) 3.47. Results in the range between 3 and 5 can be inter-



**Figure 2** Path diagram related to PPS  
**Slika 2.** Dijagram toka za PPS



preted as an acceptable fit. Considering RMSEA results, it was seen that a fit index on the level of 0.05 was achieved. RMSEA value lower than 0.06 can be interpreted as a good fit (Schermelleh-Engel *et al.*, 2003). In the established model, some changes were made considering disturbance covariances between p5-p7, oi1-oi2 and oi1-oi5. Based on the data obtained as a result of CFA, it can be stated that three-factor PPS is confirmed as a model (Figure 2).

**3.7 Reliability values of PIS and PPS**

3.7. Vrijednosti pouzdanosti za PIS i PPS

For convergent validity test, composite reliability (CR) and Average Variance Extracted (AVE) were calculated and shown along with standard loading and t values (Table 5). Fornell and Larcker (1981) suggest that composite reliability (CR) should be over 0.70,

while AVE value is over 0.50 for a better convergent validity. Accordingly, for PIS, while CR values of all sub-dimensions prove a good fit, AVE value is lower than expected in only (ta) sub-dimension. When we consider PPS, CR values prove a good fit in all sub-dimensions while AVE value proved to be low in only (oi) sub-dimension. On the other hand, it was also stated that construct validity is at a sufficient level when AVE is lower than 0.50 only if CR value is higher than 0.60 (Huang *et al.*, 2013).

**3.8 Correlation matrix for scales and sub-scales**

3.8. Korelacijska matrica za ljestvice i podljestvice

The correlations among the institutionalization and sub-scales and performance and sub-scales are presented in Table 6 along with a discriminant validity test.

**Table 5** Reliability values of PIS and PPS

**Tablica 5.** Vrijednosti pouzdanosti za PIS i PPS

Institutionalization <i>Institucionalizacija</i>	Items <i>Teze</i>	Standard loading <i>Standardno opterećenje</i>	t*	Performance <i>Učinak</i>	Items <i>Teze</i>	Standard loading <i>Standardno opterećenje</i>	t*	
Consistency <i>dosljednost</i> (CR = 0.94, AVE = 0.53)	c1	0.722	21.843	Productivity <i>produktivnost</i> (CR = 0.93, AVE = 0.50)	p1	0.735	21.099	
	c2	0.652	19.351		p2	0.698	19.955	
	c3	0.725	21.919		p3	0.748	-	
	c4	0.730	22.123		p4	0.739	21.228	
	c5	0.694	20.776		p5	0.719	20.583	
	c6	0.773	23.728		p6	0.786	22.765	
	c7	0.669	19.918		p7	0.628	17.758	
	c8	0.781	24.047		p8	0.652	18.513	
	c9	0.728	22.038		p9	0.705	20.158	
	c10	0.737	22.382		p10	0.723	20.719	
	c11	0.777	-		p11	0.680	19.385	
	c12	0.760	23.236		p12	0.631	17.855	
	c13	0.681	20.343		p13	0.650	18.459	
	c14	0.726	21.957		Operating income <i>operativni dohodak</i> (CR = 0.77, AVE = 0.41)	oi1	0.517	13.825
	c15	0.750	22.864			oi2	0.496	13.268
Formalization <i>formalizacija</i> (CR = 0.86, AVE = 0.55)	f1	0.731	21.032	oi3		0.731	19.882	
	f2	0.671	19.070	oi4		0.838	-	
	f3	0.816	23.820	oi5		0.540	14.522	
	f4	0.781	-	Product development <i>razvoj proizvoda</i> (CR = 0.76, AVE = 0.51)	pd1	0.686	16.573	
	f5	0.698	19.940		pd2	0.705	-	
Transparency and accountability <i>transparentnost i odgovornost</i> CR = 0.73, AVE = 0.40)	ta1	0.717	14.865		pd3	0.745	17.656	
	ta2	0.617	13.468					
	ta3	0.593	13.088					
	ta4	0.592	-					

\*P values belonging to all t values is determined as 0.000. / \* Vrijednosti P koje pripadaju svim vrijednostima t određene su kao 0,000.

**Table 6** Correlation matrix for scales and sub-scales

**Tablica 6.** Korelacijska matrica za ljestvice i podljestvice

Scales and sub-scales <i>Ljestvice i podljestvice</i>	c	f	ta	ins	p	oi	pd	per
c	1							
f	0.697	1						
ta	0.689	0.556	1					
ins	0.899	0.857	0.868	1				
p	0.857	0.644	0.632	0.805	1			
oi	0.476	0.487	0.450	0.539	0.521	1		
pd	0.626	0.585	0.622	0.699	0.636	0.523	1	
per	0.768	0.678	0.677	0.807	0.840	0.798	0.881	1

### 3.9 Fit indexes for PIS and PPS

#### 3.9. Indeks prikkladnosti za PIS i PPS

Suitability of PIS and PPS model was tested by RMSEA, GFI, AGFI, RMR, NFI and CFI indexes. In consequence of the analysis, GFI value was found as 0.85, AGFI as 0.85, RMR as 0.047, NFI as 0.90 and finally CFI was found equal to 0.91. NFI and CFI indexes lower than 0.95, GFI value equal to 0.85 and AGFI equal to 0.85 correspond to an acceptable fit, while RMR value below 0.05 indicates a good fit (Byrne, 2010; Schermelleh-Engel *et al.*, 2003). In the diagram of the model generated with the results of the analysis conducted, the ratio of Chi-Square value to the degree of freedom is ( $\chi^2$  /df) 3.00. A result equal to 3 can be interpreted as a good fit. RMSEA result that is equal to 0.05 demonstrates that a good fit measure has been obtained (Schermelleh-Engel *et al.*, 2003). In the model established, some changes were made regarding disturbance covariance between c5-c6, c8-c11, c10-c13, p5-p7, oi1-oi2 and oi1-oi5. A total of 45 observed variables were used in the model. 15 of these variables contain items related to (c), 5 of these contain (f), 4 covers (ta), 13 of them include (p), 5 represent (oi), while 3 of these variables demonstrate (pd). The number of implicit variables in the model is 6 in total.

The results of the model analysis show that seven hypotheses ( $p < 0.05$ ) were accepted,

H<sub>1</sub> 1. A positive and meaningful relation was detected between (c) and “Institutionalization” ( $r=0.967$ ). Therefore, H<sub>1</sub>1 hypothesis is accepted. Şanal (2011) and Apaydın (2009) stated that consistency boosts institutionalization and business performance accordingly.

H<sub>1</sub> 2. A positive and meaningful relationship was found between (f) and “Institutionalization” ( $r=0.811$ ). Therefore, H<sub>1</sub> 2 hypothesis is accepted. These regulations are thought to prevent confusion in duty assignments, conflicts of authorities and task setbacks along with increasing the performance (Gürüz and Gürel, 2009; Tengilimoğlu *et al.*, 2012).

H<sub>1</sub> 3. An increase in (ta) has affected “Institutionalization” structure positively ( $r=0.877$ ). Therefore, H<sub>1</sub> 3 hypothesis is accepted. Similar to the strong underlying relationships determined in the model, the positive effect of transparency and accountability in increasing the institutionalization in an establishment was also emphasized in previous studies (Gedik, 2010; Yılmaz, 2006; Sözbilen, 2012).

H<sub>1</sub> 4. A positive and meaningful relationship was found between (p) and “Performance” ( $r=0.956$ ). Therefore, H<sub>1</sub> 4 hypothesis is accepted. In their study on furniture and panel businesses, Kırklıkçı and Gedik (2019) determined that the main factors affecting performance are productivity, operating income, and the ability to develop new products.

H<sub>1</sub> 5. A positive and meaningful relationship was found between (oi) and “Performance” ( $r=0.704$ ). Therefore, H<sub>1</sub> 5 hypothesis is accepted. It was stated that it is necessary for businesses to search for new markets and thus increase their income, which will increase their competitiveness (Tavşancı, 2009;

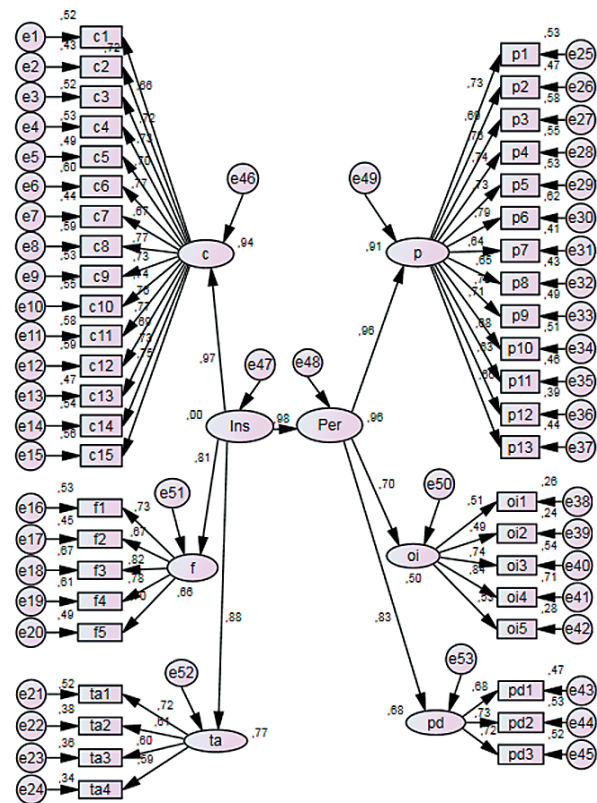


Figure 3 Path diagram related to PIS and PPS  
Slika 3. Dijagram toka za PIS i PPS

Yazıcıoğlu and Koç, 2009) and, having a high level of success, will positively affect the performance of the establishment (Yıldız, 2010).

H<sub>1</sub> 6. A positive and meaningful relationship was found between (pd) and “Performance” ( $r=0.826$ ). Therefore, H<sub>1</sub> 6 hypothesis is accepted. In literature, product development process is specified as an important factor that influences business performance positively (Keskin *et al.* 2016; Günday *et al.*, 2011; Küçük ve Kocaman, 2014). In addition, there are studies stating that institutionalization increases the performance by compelling businesses to innovate (Tengilimoğlu *et al.*, 2012; Onay and Vezneli, 2011).

H<sub>1</sub> 7. As a result of evaluations and statistical analyses, it is concluded that an improvement in the institutionalization level of a business will result in improvements in performance ( $r=0.98$ ). Therefore, H<sub>1</sub> 7 hypothesis is accepted. As institutionalization will increase the satisfaction of employees, it will also have positive effects on performance and productivity (Çam, 2002; Erdil *et al.*, 2004). In addition, there are studies stating that institutionalization increases the performance by compelling businesses to innovate (Tengilimoğlu *et al.*, 2012; Onay and Vezneli, 2011) (Figure 3).

## 4 CONCLUSIONS

### 4. ZAKLJUČAK

Through this methodological study, scales for perceived institutionalization and perceived perfor-

mance in furniture and panel businesses operating in Turkey and the relationship between perceived institutionalization and perceived performance were explained by a model. As a result of the analyses, it was concluded that 1 unit of institutionalization improvement in a business results in a 0.96-unit betterment (increase) in the performance of the business.

In consequence of analyses, a three-sub-dimensional structure was obtained through factor analyses results in both PPS (21 items) and PIS (24 items). While these sub-dimensions are identified as “Consistency” “Formalization” and “Transparency and accountability” in PIS, they are named as “Productivity”, “Operating income” and “Product development” in PPS. Reliability analyses results for both scales and their sub-dimensions are at an acceptable level. It was seen that sub-dimensions of these scales demonstrate a positive meaningful relationship with each other and the total scale. Seven new hypotheses made related to these relationships were accepted.

It is thought that the study will be instructive in (i) determining perceived institutionalization and perceived performance in furniture and panel businesses, (ii) determining the variables influencing perceived institutionalization and perceived performance, (iii) detecting factors influencing perceived institutionalization and perceived performance in food, chemistry, automotive, machine and other manufacturing sectors.

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