Abstract: The share of small and medium-sized enterprises in the economy has increased in recent times. Nevertheless, it is seen among the most risky groups when evaluated in terms of tax compliance. The aim of the present study is to investigate the reliability and structural validity. Because of this aim we used the Turkish version of the tax compliance intention, general fairness, procedural fairness and social norms scale. The study group consists of 320 participants. We used AMOS program for the data analysis. As a result, the best fit indices are obtained. All factor loadings were found statistically significant after confirmatory factor analysis. Cronbach Alpha reliability coefficient is calculated to determine the reliability of the scale in this study. Cronbach’s alpha values of the all dimensions were found within the range between 0.73 and 0.90. The Turkish form of tax compliance intention, general fairness, procedural fairness and social norms scale was found to be adequate and reliable. These instruments can be used by the researchers in research in Turkey.

Keywords: Confirmatory Factor Analysis, Tax Compliance Intention, General Fairness, Procedural Fairness, Social Norms

JEL Classification: C00, H20
researchers recognised that compliance cannot be explained completely by levels of enforcement. They have identified other factors such as social norms, perceptions of tax fairness, etc. (OECD, 2010; Feld & Frey, 2007; Torgler, 2002).

The use of social norms is one of the most popular concepts in social sciences disciplines including sociology, law, political science, and economics. The importance of social norms comes from the fact that they persuade people to behave in a certain way by telling them which attitudes are accepted as right or wrong (Saborit, 2015: 7). Fehr and Gachter (2000) define social norms as a behavioral regularity that is based on a socially shared belief and argue that these norms constitute the driving force behind the attitudes adopted by individuals due to the informal social sanctions (Nabaweesi, 2006: 12). According to another definition made by Cialdini and Trost (1998: 152), social norms are “rules and standards that are understood by members of a group and that guide and/or constrain social behavior without the force of law”. The four categories of social norms identified by Cialdini and Trost are descriptive norms, injunctive norms, subjective norms and personal norms. Descriptive norms are the standards that develop out of observation of others’ actual behavior in given situations (Bobek, Roberts & Sweeney, 2007: 4). Injunctive norms, on the other hand, refer to what is required to be done and reveal the moral values of a group. In fact, injunctive and descriptive norms co-occur in that if an individual perceives tax evasion is common (descriptive norms), they will infer that the percentage of people who socially approve of tax evasion to be high (injunctive norms) (Onu & Oats, 2014: 7). Subjective norms reflect an individual's perception of whether his/her specific behavior is to be approved or not by the people important to him/her (Bobek & Hatfield, 2003: 18). In other words, the underlying element for subjective norms is referent others’ (e.g. family, co-workers and friends) approval. Since subjective norms relate specifically expectations of referent others, they are a specific type of injunctive norms (Hite, 1996: 76). Finally, personal norms are individuals' moral /ethical standards and beliefs about appropriate behavior, which may arise from the internationalization of subjective, injunctive and descriptive norms (Wenzel, 2004: 551; Çevik, 2012: 269).

Perceived fairness of tax system has been identified by researchers as one of the most important factors that can influence tax compliance behavior (Thomas, 2012: 1). If the tax system is perceived as fair, tax compliance is likely to increase whereas a system perceived as unfair might increase non-compliance (Barbutamışu, 2011: 74). In the context of tax behavior literature, perceived fairness can be expressed in the form of distributive fairness, procedural fairness, and retributive fairness. Distributive fairness refers to a fair exchange of resources, benefits, and costs. Besides the comparison between benefit and contribution, it is important to find out what a taxpayer thinks when his/her tax burden is compared to others’ tax burden. Distributive fairness can be further classified into three groups: horizontal fairness, vertical fairness, and exchange with government/exchange fairness. Horizontal fairness concerns the fair distribution of benefits and costs among the individuals of the same group whereas vertical fairness relates to a fair distribution of benefits and cost among the individuals who are not equal to each other (for example, people that earn more income and people that earn less income). Similarly, exchange fairness concerns the fairness between the benefits gained from the public goods and services provided by the government and the tax burden imposed on taxpayers (Geberegbe, İdornigie & Nkanbia-Davies, 2015: 2). How taxes are distributed among public services like health and education also has an impact on the taxpayers’ perception of distributive fairness (Kazemi, 2009: 148). Furthermore, procedural fairness has a significant impact on tax compliance. Procedural fairness is connected with the fairness of allocation process, neutrality, and respect. Procedural fairness provides tax administration to demonstrate the taxpayers how much they are valued and respected (Niesiobedzka, 2014: 3). Finally, retributive fairness refers to the perception that tax administration is fair in its application of penalties on tax crime. In order to be fair, the penalty imposed by tax administration should match the crime or offense committed. While procedural and retributive fairness can be influenced by tax administrations, distributive fairness depends on policymakers (Saad, 2011: 343; Hauptman, Horvat & Korez-Vide, 2014: 82).
The aim of this study is to eliminate the lack of some scales in Turkey that are tax compliance intentions, tax fairness perception (only general fairness was used), procedural fairness and social norms. In other words, a scale where the above-mentioned concepts are measured is used to gain Turkish literature by using confirmatory factor analysis.

2. Materials and Methods

2.1. Participants

The data for this study was obtained as a result of interviews with small and medium-sized enterprise owners. The interviews were conducted face-to-face. The convenience sampling method was applied. 400 units by the sample size table (Krejcie & Morgan, 1970) from small and medium sized enterprises located in Bursa were selected. Usable questionnaires were determined. The final sample for this aim comprised 320 small and medium-sized enterprises.

2.2. Measures

In this study, four different structures were evaluated with specific scales. These are, namely, tax compliance intentions, tax fairness perception, procedural fairness and social norms.

Social norms are designated in four different dimensions by Cialdini and Trost (1998). These are injunctive norms, descriptive norms, subjective norms and personal norms. When this four-dimensional structure is assessed through factor analysis, items were observed to gather successfully under these dimensions (Bobek, Hageman & Kelliher, 2013). Hanno and Violette (1996) evaluated personal norm by two items. Wenzel (2004a, 2005) evaluated injunctive and personal norms by three items each. Blanthorne and Kaplan (2008) evaluated subjective norms by three items and personal norms by five (Bobek et al., 2013). In previous research, both social norms in general and social norms related to the decision of injunction were evaluated. Ajzen and Fishbein (1980) assert that attitudes about a specific behavior will have more insight than general attitudes (Bobek, Hageman & Kelliher, 2011). For this reason, in these studies, social norm structures can be established based on the items regarding general or specific behavior.

Out of the four social norms above, injunctive and personal norms are constituted by six whereas descriptive and subjective norms are constituted by five items. In her study, Jimenez (2013) utilized the items developed by Bobek (2007) and after adding new ones to the ones at hand, the four-dimensional structure was evaluated through 22 items. When the non-operative questions were deducted, there were 16 items within four structures. For this study, six personal, four injunctive and five descriptive norms developed by Jimenez (2013) were translated into Turkish terminology. For subjective norms, five were adapted from Smart (2012) and one was added by ourselves (“Our business partners think that we should not declare all our income”). The items were assessed by means of the five-point Likert scale (1=totally disagree to 5=totally agree). High scores show high injunctive, subjective, descriptive and personal norms in all sub dimensions. The reliability coefficients obtained in this study are 0.75 for injunctive norms; 0.73 for descriptive norms, 0.83 for subjective norms and 0.80 for personal norms (Cronbach’s alpha).

In previous studies, certain scenarios and questions regarding such scenarios were employed in order to assess tax compliance intentions. Likewise, a scenario was utilized in this study with the aim of assessing tax compliance intentions. This scenario was fictionalized as follows: “A tradesman leases out an apartment for 600 TL per month even though he claims it to be 400 TL on the contract of lease. In this way, he both declares less income and rids himself of the need to collect his rental income through the bank.” The questions regarding this scenario were designed in line with a variety of studies (Gillian & Richardson, 2005; Bobek, 2007; Smart, 2012; Jimenez, 2013). One such question is as follows: “If I were in the same position, I would also declare my rental income in the same manner.” In most studies, the difficulty of assessing tax compliance was mentioned. Since the subject matter is a tax in the studies carried out by the development of scale questions, it has been observed that evaluations were not conducted on an ideal level of reliability (Trivedi, Shehata & Mestelman, 2005; Kirchler & Wahl, 2010; Bobek et al., 2013). Therefore, tax compliance was assessed by means of different methods and evaluative instruments in different studies. In this study,
Tax compliance intentions were assessed based on the above scenario and 11 questions regarding this scenario. The higher values point at higher levels of tax compliance intention. The five-point Likert scale was applied and the reliability coefficient of a scale without sub dimension was found to be 0.90 (Cronbach’s alpha).

The scale regarding tax fairness perception was developed by Gerbing (1988). The scale consists of five sub dimensions. These sub dimensions are, namely, general fairness, exchange with the government, attitude towards taxes of the wealthy, progressive versus flat tax rate and self-interest. In their study, Christensen, Weirich and Gerbing (1994) found the same sub dimensions as those of Gerbing (1988). Similarly, Richardson (2005) and Gilligan and Richardson (2005) employed the same structure (Azmi & Perumal, 2008: 12). Gilligan and Richardson (2005) assessed tax fairness perception with 21 questions by means of the five-point Likert scale and came up with five sub dimensions. They named these sub dimensions as general fairness, exchange with the government, spatial provisions, tax rate structure and self-interest. In his study, Topal (2011) employed the questions in the tax fairness perception scales, which are cited in Gerbing (1988) and Gilligan & Richardson (2005). He also adapted these question to Turkish, tested their validity and reliability, as a consequence of which he manifested six dimensions (general fairness, reciprocal fairness, horizontal fairness, vertical fairness, penal fairness and fairness of self-interest). In their study, Benk, Budak and Çakmak, (2012) employed Gilligan and Richardson’s “21 item-tax fairness perception” scale and did their reliability analysis. In their research focusing on tax experts, they found tax fairness perception as a structure with six sub dimensions.

In this study, tax fairness perception scale is developed with six sub dimensions (general fairness, reciprocal fairness, horizontal fairness, vertical fairness, penal fairness and fairness of self-interest). Out of these six sub dimensions, only general fairness was evaluated. The questions for the general fairness sub dimension were based partly on the scale questions in Topal (2012) and partly on other research. There are six items in the general fairness sub dimension. On a five-point Likert scale, higher scores for general fairness point toward higher general fairness. The Cronbach’s alpha value of general fairness sub dimension was found to be 0.89.

For the assessment of procedural fairness, the findings in Wenzel (2001), Murphy (2007), Saad (2012), Smart (2012) and Farrar (2011) were evaluated. Procedural fairness perception was researched in these studies. Certain questions were adapted from these studies and a five-item scale was presented. As a result of five-point Likert scale evaluation, the Cronbach’s alpha value of procedural fairness scale was found to be 0.88. The higher scores obtained point toward higher procedural fairness perception.

Table 1. Cronbach α Values (n=320)

<table>
<thead>
<tr>
<th>Scales</th>
<th>Sub-Scales</th>
<th>Item</th>
<th>Mean</th>
<th>S. Deviation</th>
<th>C. Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Norms</td>
<td>Personal Norms</td>
<td>6</td>
<td>25.50</td>
<td>2.88</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>Injunctive Norms</td>
<td>4</td>
<td>16.45</td>
<td>1.83</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>Descriptive Norms</td>
<td>5</td>
<td>17.69</td>
<td>1.96</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>Subjective Norms</td>
<td>6</td>
<td>20.18</td>
<td>4.29</td>
<td>0.83</td>
</tr>
<tr>
<td>Tax Fairness Perception</td>
<td>General Fairness</td>
<td>6</td>
<td>14.65</td>
<td>4.99</td>
<td>0.89</td>
</tr>
<tr>
<td>Procedural Fairness</td>
<td></td>
<td>5</td>
<td>15.30</td>
<td>4.90</td>
<td>0.88</td>
</tr>
<tr>
<td>Tax Compliance Intentions</td>
<td></td>
<td>11</td>
<td>45.63</td>
<td>6.24</td>
<td>0.90</td>
</tr>
</tbody>
</table>

The Cronbach’s alpha coefficients of all these scales were between 0.73-0.90. Therefore, we used the translated versions of these scales as reliable in statistical analysis.

2.3. Analysis

Descriptive statistics, reliability analysis (Cronbach’s alpha), and confirmatory factor analysis were performed. In order to perform the descriptive statistics, Cronbach’s alpha values, SPSS 18.0 was used. Confirmatory factor analysis (CFA) was used to evaluate the model fit. For CFA, AMOS 18.0 was used.
model parameters were estimated using maximum likelihood. In this study, the adequacy of the model was assessed by: (1) The absolute fit, \( \chi^2/df \) measure which should be between 2 and 5 for an adequate fit; (2) Goodness-of-Fit Index (GFI), which shows the amount of variances and covariance explained by the model and should be greater than 0.90 for an adequate fit of the model; (3) Comparative Fit Index (CFI), which should be also greater than 0.90 for an adequate fitness; (4) Root Mean Square Error of Approximation (RMSEA), which should be below 0.10 for an adequate fitness; and (5) Standardized Root Mean Square Residual (SRMR), which should be below 0.10 for an adequate fitness (Steiger, 1990; Hoyle, 1995; Byrne, 2001; Bayram, 2010).

### 3. Findings

Our study group consisted of 320 participants, of which 87.8% were male. The mean age was 37.54±10.77 (mean±SD) years and the range was 18-65 years. 44.7% participants were graduated secondary school. 64.7% participants were the owner.

The fit statistics for CFA models are presented in Table 2.

<table>
<thead>
<tr>
<th>Model</th>
<th>( \chi^2 )</th>
<th>df</th>
<th>( \chi^2/df )</th>
<th>GFI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CFA for PN</td>
<td>319.41</td>
<td>9</td>
<td>35.49</td>
<td>.80</td>
<td>.70</td>
<td>.33</td>
<td>.15</td>
</tr>
<tr>
<td>2. CFA and correlated error for PN</td>
<td>64.43</td>
<td>8</td>
<td>8.05</td>
<td>.93</td>
<td>.94</td>
<td>.14</td>
<td>.04</td>
</tr>
<tr>
<td>3. CFA for IN</td>
<td>109.63</td>
<td>2</td>
<td>54.81</td>
<td>.87</td>
<td>.85</td>
<td>.26</td>
<td>.13</td>
</tr>
<tr>
<td>4. CFA and correlated error for IN</td>
<td>4.43</td>
<td>1</td>
<td>4.43</td>
<td>.99</td>
<td>.99</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>5. CFA for DN</td>
<td>33.88</td>
<td>5</td>
<td>6.78</td>
<td>.96</td>
<td>.92</td>
<td>.07</td>
<td>.06</td>
</tr>
<tr>
<td>6. CFA for SN</td>
<td>195.65</td>
<td>9</td>
<td>21.74</td>
<td>.82</td>
<td>.80</td>
<td>.22</td>
<td>.09</td>
</tr>
<tr>
<td>7. CFA and correlated error for SN</td>
<td>70.26</td>
<td>8</td>
<td>8.78</td>
<td>.94</td>
<td>.92</td>
<td>.13</td>
<td>.05</td>
</tr>
<tr>
<td>8. CFA for GF</td>
<td>83.86</td>
<td>9</td>
<td>9.32</td>
<td>.92</td>
<td>.93</td>
<td>.13</td>
<td>.04</td>
</tr>
<tr>
<td>9. CFA for PF</td>
<td>105.85</td>
<td>5</td>
<td>21.17</td>
<td>.88</td>
<td>.89</td>
<td>.25</td>
<td>.06</td>
</tr>
<tr>
<td>10. CFA and correlated error for PF</td>
<td>40.37</td>
<td>4</td>
<td>10.09</td>
<td>.95</td>
<td>.96</td>
<td>.16</td>
<td>.04</td>
</tr>
<tr>
<td>11. CFA for TCI</td>
<td>475.62</td>
<td>44</td>
<td>10.81</td>
<td>.80</td>
<td>.79</td>
<td>.17</td>
<td>.07</td>
</tr>
<tr>
<td>12. CFA and correlated error for TCI</td>
<td>150.59</td>
<td>41</td>
<td>3.67</td>
<td>.92</td>
<td>.94</td>
<td>.09</td>
<td>.04</td>
</tr>
</tbody>
</table>

| PN: Personal Norms; IN: Injunctive Norms; DN: Descriptive Norms; SN: Subjective Norms; GF: General Fairness; PF: Procedural Fairness; TCI: Tax Compliance Intentions |

As a result of the CFA, we found that the factor loads for all scales are high. Factor loads in CFA result; (0.23 - 0.88) for personal norms, (0.36 - 0.91) for injunctive norms, (0.41-0.81) for descriptive norms, (0.55 - 0.77) for subjective norms, (0.70 - 0.83) for general justice, (0.69 - 0.89) for procedural fairness and (0.52 - 0.82) for tax compliance. All of the factor loads obtained as a result of CFA (p <0.01) were found to be statistically significant. For all models, \( \chi^2/df \), GFI, CFI, RMSEA, and SRMR values are within acceptable limits (Table 2).

Correlation between the errors of item 5 and item 6 has been added to the scope of modification indices in the scale of personal norms. The factor load of these two items is lower than the factor load of the other items in the scale. The Chi-Square difference test for comparison of nested models of personal norms showed \( \Delta \chi^2 = 254.98, \Delta df = 1, p<.001 \) statistically better fit of the correlated error model. This is true for all models with correlated error added.

Correlations between the errors of item 3 and item 4 were added to the scale of the injunctive norm. The factor load of these two items is lower than the factor load of the other items in the scale. When the Chi-square difference test was examined \( \Delta \chi^2 = 105.20, \Delta df = 1, p<.001 \), it was found that the correlated error model showed better statistical fit.
Correlations were added between item 2 and item 3 in the scale of the subjective norms, items 4 and 5 in the procedural justice scale, and items 1 and 2, items 3 and 4 and items 6 and 8 in the tax compliance scale. There are no correlations between the errors in descriptive norms and general justice scales.

**Fig 1. CFA and Correlated Error for PN**

**Fig 2. CFA and Correlated Error for IN**

**Fig 3. CFA for DN**

**Fig 4. CFA and Correlated Error for SN**

**Fig 5. CFA for GF**

**Fig 6. CFA and Correlated Error for PF**
4. Discussion and Conclusion

The aim of this study was to adapted tax compliance intentions, general fairness, procedural fairness and social norms’ four sub-scales for Turkish literature by using confirmatory factor analysis. The reliabilities of the Turkish version of the scales, as measured by Cronbach’s alpha. Confirmatory factor analysis was used to test the latent structure of the social norms, general fairness, procedural fairness and tax compliance intentions. We found that factor loads for all scales are high and statistically significant. We found that Cronbach’s alpha values range from 0.73-0.90.

In this study, the social norms scale consists of four dimensions. Firstly, we found the confirmatory structure of the personal norms consisting of 6 items. The values of the goodness of fit were adequate for the measurement model data set. But, there was not high factor loading for PN5 – PN6. The conclusion from the confirmatory factor analysis modeling was consistent with Jimenez (2013) suggesting. We found the confirmatory structure of the injunctive norms consisting of 4 items. The values of the goodness of fit were adequate for the measurement model data set. There was the best fitting model with correlated errors (IN3 - IN4). The descriptive norm was constituted by five items. We did not the modification for this sub-dimension. For subjective norms, we made a modification for SN2 – SN3. After that, we found the goodness of fit were adequate.

We found the confirmatory structure of the general fairness consisting of six items. This result was consistent with previous empirical findings (Gerbing, 1988; Gilligan & Richardson, 2005; Topal, 2011). There was no the modification for this scale. All factor loadings were high. For procedural fairness, there was the best fitting model with correlated errors (PF4 – PF5).
Finally, we found the confirmatory structure of the tax compliance intentions consisting of 11 items. The values of the goodness of fit were adequate for the measurement model data set. We made a modification for this scale.

It can be concluded from the findings of this study that the Turkish versions of all the instruments used to examine social norms, general fairness, procedural fairness and tax compliance intentions were reliable, adequate and appropriate. Using these instruments, more studies can be performed in Turkey.

End Notes
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