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ANALYSIS OF CRITICAL SUCCESS FACTORS OF THE PUBLIC-PRIVATE PARTNERSHIP MODEL AT TURKEY AIRPORTS' TERMINALS

KAMU-ÖZEL ORTAKLIK MODELİNİN TÜRKİYE HAVALİMANLARI TERMİNALLERİNDEKİ KRİTİK BAŞARI FAKTÖRLERİNİN ANALİZİ

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ABSTRACT

Turkey's air transport has accelerated since 2003. To meet infrastructure needs, airport privatization is commonly used. Today, 89% of passengers use PPP management airport. The aim of this study is to investigate the PPP model, which is used extensively in airport terminals in Turkey, and to put forth the approaches in public, private and scholars to the PPP model, and also to determine the critical success factors of the PPP Project. In this study, 20 items, determined as Critical Success Factor (CSF), were evaluated with the Likert method by the stakeholders of the sector. The study has shown that project success and stakeholder satisfaction can be assured using Critical Success Factors of airport terminal PPPs in Turkey. According to the study, "Technical and Financial Suitability of the Project" and "Efficient and Productive Operation" are the most influential factors among the critical success factors of the project. Set forth in this study, CSFs can be used to create a basis for Key Performance Indicators (KPI) to be used in airport performance measurement.

Keywords: *Public Private Partnership (PPP), Critical Succes Factors (CSF), Privatization, Turkey Airports Privatization, Airport Economy*

Jel Codes: *L32, L33*

ÖZ

Türkiye'nin hava ulaşımı 2003 yılından itibaren hızlanmıştır. Altyapı ihtiyaçlarını karşılamak için havalimanı özelleştirmesi yaygın olarak kullanılmaktadır. Bugün yolcuların %89'u Kamu-Özel İşbirliği (KÖİ) yönetim havalimanını kullanıyor. Bu çalışmanın amacı, Tükiye'de havalimanı terminallerinde yaygın olarak kullanılan KÖİ modelini araştırarak kamu, özel sektör ve bilim adamlarının KÖİ modeline yaklaşımlarını ortaya koymak ve KÖİ'nin kritik başarı faktörlerini belirlemektir. Bu çalışmada Kritik Başarı Faktörü (KBF) olarak belirlenen 20 madde sektör paydaşları tarafından Likert yöntemi ile değerlendirilmiştir. Çalışma, Türkiye'deki havalimanı terminal KÖİ'lerinin Kritik Başarı Faktörleri kullanılarak proje başarısının ve paydaş memnuniyetinin sağlanabileceğini göstermiştir. Araştırmaya göre, projenin kritik başarı faktörleri arasında "Projenin Teknik ve Finansal Uygunluğu" ile "Etkili ve Verimli İşleyişi" en etkili faktörlerdir. Bu çalışmada ortaya konan KBF'ler, havalimanı performans ölçümünde kullanılacak Temel Performans Göstergeleri'ne (TPG) bir temel oluşturmak için kullanılabilir.

Anahtar Kelimeler: *Kamu Özel Ortaklığı (PPP), Kritik Başarı Faktörleri (CSF), Özelleştirme, Türkiye Havalimanları Özelleştirmesi, Havalimanı Ekonomisi*

Jel Kodları: *L32, L33*

1. INTRODUCTION

A direct proportion can be seen between infrastructure development and economic growth in the country. Infrastructure investments also provide a political advantage to the government (WB, 2017). Turkey has an estimated 975 billion US dollars infrastructure needs until 2040. Currently, it is seen that there is a financial deficit of 405 billion dollars (Emek and Küçükkocaoğlu, 2019). The government's budget is insufficient to cover this fund. Therefore, for a few decades, financing from the private sector has become one of the most crucial options for meeting infrastructure needs.

As privatization is completely asset sales to the private sector, governments have been interested in the PPP model. This method involves the private and public sectors. A thorough review of PPP literature revealed that there is no common definition of PPP. However, it is generally accepted that PPP includes fair sharing in terms of costs, risks, and returns in projects handled by the public and private sectors on the basis of contracts (Yescombe, 2007; Mouraviev, 2016; Arata et al., 2016; Ghazali et al., 2017).

Privatization also becomes common in airport projects. Two main reasons arise behind airport privatization. First, airports are high-cost infrastructures. According to CAPA, 245 billion dollars of capital is needed for newly built airports and 845 billion dollars for the repair and expansion of existing airports around the world (CAPA, 2019). The International Air Transport Association (IATA) reports that the cost of global airport infrastructure could reach 1.2-1.5 trillion dollars by 2030 (Graham and Morrel, 2017). The second reason involves non-aviation revenue. Non-aviation income was around 30% until the 1990s and increased to 46.5% in 2011 (Halpern and Graham, 2013). When we investigated European airports, their expenditure reached a total of 32.2 billion euros, while their aviation income was only 21.9 billion euros in 2014. This indicates a loss of approximately 10 billion euros (ACI, 2015). Commercial revenue filled this gap and allowed the airport to profit. "It is widely known that the private sector will be more helpful in achieving the commercial of airports. As for airport privatization, only PPP models are implemented. Therefore, both airport commercial revenue potential and high-cost infrastructure needs make PPP the best solution for airport management.

Turkey has the largest public-private partnership (PPP) market in terms of investment value (22.76 billion euros) in Europe between 2014 and 2018 (KÖİ, 2019). From 1986 until the end of 2018, Turkey has had a total of 242 PPP projects, composed of 210 in operation and 32 in financial closing or under construction, which result in a total investment of 63.8 billion us dollars (KÖİ, 2019). According to data from the Turkish Ministry of Transportation, 18 PPP projects worth 67.5 billion dollars were implemented in Turkey airports. The world's largest airport PPP application is the Istanbul Airport project, which was worth 35.6 billion dollars. Currently, 89% of airline transportation in the country is carried out from airports operated by PPP (DHMI, 2019). Turkey's figures indicate the need for this study.

As PPP project success is an abstract term, determining its realization necessitates a highly subjective and complex analysis (Zayyanu and Johar, 2017). The IATA report discloses that the best way to successfully implement PPP projects is to first determine critical success factors (IATA, 2018). Project success factors are defined as the set of conditions, events, or matters that increase the probability of success (Kerzner, 1987). In the literature, critical success factors (CSF) are widely used instead of success factors.

Turkey airport PPP CSF are determined using previous studies, interviews with industry stakeholders, and researchers' experiences. The survey was conducted among the stakeholders of the PPP airport in Turkey, while the results were analyzed with the 5S Likert scale. The aim of this study is to first identify the critical success factors of airport

PPP in Turkey. Second, it is expected that the study will shed light on stakeholders' common and conflict points. Results and suggestions will contribute to the airport PPP success.

This paper is organized as follows: In Section 1, we present previous studies about airport PPP and PPP CSF. Section 2 describes the literature review, while Section 3 explains material and methods. Section 4 presents the Results and Discussion. Section 5 concludes the study.

2. LITERATURE REVIEW

The PPP model has been accepted as a solution model for projects that the government does not want to give up control of and makes use of the private sector's commercial ability (Graham, 2014). In addition to the sale of existing facilities, new infrastructure investments are also within the scope of the PPP model. Besides other advantages, governments generally prefer PPP to overcome budget constraints (In et al., 2017). For their part, the private sector does not want to overtake all investment risks as well. For big infstracture investments, PPP seems to be the best model for private financing for both governments and the private sector.

Parties to PPPs are becoming more aware of critical success factors (CSFs) for PPP projects (Osei-Kyei and Chan, 2015). CSFs can be defined as subjective factors that directly affect the success of projects, and may vary for each project (Özcan, 2014). Owen investigated CSFs on behalf of stakeholders and found that CSFs can lead to and/or actively contribute to a profitable outcome for one or more of the stakeholders (Owen, 1997). Benefits of CSFs are listed below (Filizözü, 2010):

They help managers to focus on important points.

They support free thinking and creativity since there are no direct mandatory rules.

They substantiate key performance indicators (KPIs) that measure performance.

CSF were first defined by Rockart and MIT the Sloan School of Management for management to obtain satisfactory results in certain areas and to achieve project objectives at information service (Rockart, 1982). CSF was later used in financial services (Boynton and Zmud, 1984) and in manufacturing industries (Mohr & Spekman, 1994; Lie et al., 2005: 460).

In the Tiong CSF PPP study, six KBFs were determined for a private company to be successful in a BOT project. Some of these KBFs include the technical suitability of the project, the stability of the macroeconomic environment, and the appropriate legal framework (Tiong, 1992). A subsequent study determined eight KBFs for BOT projects in China. Namely, these are appropriate project description, stable political and economic situation, attractive packaging, acceptable tariffs, reasonable risk allocation, appropriate subcontractor selection, management control, and technology transfer. (Qiao et al., 2001). In a study in which 47 KBFs were determined for infrastructure work in developing and developed countries, five were considered the most important: vitality of the economy, fair risk sharing, strong financial package, technically competent consortium, and attractive investment environment (Zhang, 2005).

Table 1: PPP CSF Timeline

CSFs	Author
Predictable inflation, exchange rate and interest rates, well-defined legal and economic framework	Tiong 1990
Technical and financial feasibility, innovation, Project profitability	Tiong et al., 1992
Well organized public institution	Boyfield 1992;
Appropriate risk sharing, Beneficial for all stakeholders	Grant 1996
Public and private responsibilities/commitments, Government guarantee and support, Responsibility sharing between the public and private sectors	Stonehouse et al.1996;
Macroeconomic stability	Tiong 1996
Well-prepared environmental impact report	Tiong and Alum (1997);
Competitive, transparent tender process	Kopp 1997;
Good governance, public support	Frilet 1997
Financial capacity / capabilities of the parties	Salzmann and Mohamed 1999
Comprehensive and realistic cost/benefit assessment	Hambros 1999
Technical innovation and technology transfer, General information about PPP, Well-structured legal dispute resolution mechanism	Qiao et al., 2001;
Project brief and clear statement of client requirements	Jamali 2004;
PPP monitoring and evaluation system, Sustainable economic policy	Li et al., 2005
A stable and reliable partnership between the public, private sector and a third party	Zhang 2005
Completion of the project on time, professional relationship between stakeholders	Mladenovic and Vajdic 2013
Public personnel training and know-how transfer	Maseko 2014
Transparency and constant communication	Osei-Kyei and Chan 2015
Trustness between the parties	Muhammed and Johar 2019
Transparency and constant communication	Osei-Kyei and Chan 2015
Trustness between the parties	Muhammed 2019

As (Table 1) shows, new PPP experiences and studies bring new CSFs to the literature.

CSFs are also sector-specific and should be tailored to the industry, project stages, company, and country in which they are found (Korbijn, 2014; Demir, 2006: 27; Almarri and Hijleh, 2017: 21). CSFs of Malaysian irrigation systems (Ameyaw & Chan, 2016) and Chinese Build Operate Transfer (BOT) projects for thermal and wind power plants were examined (Zhao et al., 2010). Studies in Tanzania (Kavishe, 2018) and Malaysia (Babatunde et al., 2012) for mass housing projects were also executed. In Bali, Indonesia, there has been work with CSFs on tourism PPP projects (Adnyana et al., 2015). Similar

projects are stadium construction in Australia (Jefferies et al., 2002), a Social Services System (Grant 1996) and a PPP hospital project (Stonehouse et al., 1996).

In the literature, CSFs are widely used to determine which area must be focused on. The ranking of importance among CSFs changes per country. For example, transparency or having a “transparent PPP project” ranked 1st in Ghana but only 25th in Hong Kong. On the other hand, “proper risk sharing” ranked 1st in Hong Kong but only 10th in Ghana (Osei-Kyei ve Chan, 2017). A study on CSFs of PPP housing projects shows that "risk sharing" ranked 1st in Nigeria but only 5th in Malaysia, while "action against project faults" ranked 1st in Malaysia but only 18th in Nigeria (Muhammed & Johar, 2019). In a CSF survey conducted in Poland by Li et al. (2015), "strong private sector partnership" ranked 1st, but only ranked 10th in another study conducted by Węgrzyn (2016).

The order of importance of PPP CSFs can be different for the public, private and academic sectors. For example, in a UK-wide CSF study, the "competitive tendering process", which was ranked 1st by the public sector, was ranked 16th by the private sector, and "public and private sector responsibilities/commitments" was ranked 10th by the public sector but was ranked 3rd by the private sector (Li et al., 2005: 464). According to Uganda CSF research, the “technical suitability of the project” was ranked 1st by the private sector, but 3rd by the public sector, while “well-structured public institution” was ranked 6th by the private sector, but 1st by the public sector (Alinaitwe 2013).

According to a Nigerian study, "technical suitability of the project" and "multiple benefit target" CSFs are perceived as more prominent by the private sector, while the timely completion of the project and its social benefits are more important for the public sector (Babatunde et al., 2012: 222). In Zhang’s international survey on CSF ranking, academics considered “good relations with the government, political stability, sound financial analysis and long-term demand” to be crucial for project success, while public and private sector project managers considered “concession agreement, ability to cope with volatility, government support and strong project team” as the most important CSFs (Zhang 2005).

Turna did her master's thesis titled "Critical Success Factors for Public-Private Partnership (PPP) Projects in the Turkish Construction Sector" for PPP construction projects in Turkey. In this research, 23 CSFs were identified and grouped into four areas: project finance, project management, operational factors, purchasing and organizational factors (Turna, 2014). In this study, the 10 most important factors were determined among a total of 54 CSFs. The first line is the CSF technical feasibility study (Budayan, 2018).

Recently, academic studies on PPP and CSF have been carried out regarding airports in Turkey. Kashef (2011) rendered studies like “Effectiveness and efficiency analysis of public-private cooperation projects in the context of new public management: Example of the General Directorate of State Airports Operations” (Su, 2017) and Critical Success Factors for “Build Operate Transfer” (BOT) Projects: Lessons Learned from Airport Projects” A master's thesis was made.

The data collection study carried out within the scope of this research included 37 expert participants from 4 different stakeholder groups in Turkey. When other PPP CSF studies are examined, the following rates of participation are found Wang and Zhang (2017), 62 persons; Dada and Oladokun (2012), 59 persons; Zhang (2005), 46 persons; Osei-Kyei and Chan (2017a), 42 persons; Babatunde et al. (2012), 49 persons; Wibowo and Alfen (2014), 30 persons; Li et al. (2005), 61 persons; and Kahwajian (2014), 34 persons. Considering the number of participants in these international and general PPP studies, it can be observed that the 37-participant population of the study on an airport PPP in Turkey is sufficient. One common method for examining the relationship between groups in the analysis of critical success factors is the t-test application. Those who have used the t-test to examine

the differences between groups in CSF PPP studies include Rohman (2021), Babatunde et al. (2012), Ng et al. (2012), and Ismail and Ajija (2012).

3. MATERIAL AND METHOD

In this study, the reports of institutions such as the Airport Council International (ACI), the International Air Transport Association (IATA), the World Bank (WB), and academic studies and interviews with PPP stakeholders were used together with the triangulation method. Triangulation is the comparison of the results of two or more data sources (Başkale, 2016). In the preparation of the survey, the views of PPP stakeholders, expert opinion on the subject, and the researcher's extensive work experience in the sector were taken into account. The survey was conducted, and data were collected by Web. Participants include the staff of public-private airports and academicians in Turkey. The data obtained were analysed with the SPSS package program, and the findings were organized into tables and figures and interpreted.

Within the scope of this research, 37 people from four different groups participated. They were selected from among PPP stakeholders with different levels of expertise. From Turkish State Airports Authority (SAA), 8 personnel participated in the public survey group. Two people were invited from the Airport Management and Aeronautical Industries (HEAŞ) group, but no one participated. As a result, only the employees of the General Directorate of State Airports Authority (DHMI) participated from the public group. A total of 15 people participated from private airport operator companies, namely TAV Airports, YDA Airport, New Istanbul Airport, and Sabihe Gokcen Airport. Seventeen (17) scholars who have studied Turkey PPP were invited, but only eight (8) participated. Other important stakeholders of PPP like creditors, airlines, duty free shops, and consulting companies were also invited. From this group, six (6) people participated in the study. Among the 37 participants, 21 people have PPP experience for 10 years or more.

Subject to research, 20 CSFs were taken from 5 groups, which were formed by detailed literature reviews and semi-structured interviews with public and private PPP experts. These CSFs were determined after a pilot survey with four people. The 20-item questionnaire was given out through an online survey.

A five-point Likert scale was used for the questions of the study (1: Not Important, 5: Very Important). Participants were asked to give a score of 1 to 5 (1 = lowest, 5 = highest) for each item's importance in a PPP Airport project. Then, the scores given by the participants were averaged for each item and ranked from highest to lowest.

Reliability analysis, normality analysis, and independent sample test were rendered for each group in analysing data. First, the reliability analysis measures the internal consistency of the responses to questionnaire. The main task in reliability analysis is finding the Cronbach's Alpha (α) value. The Cronbach's alpha (α) coefficient is formulated as follows:

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K} \sigma_{Y_i}^2}{\sigma_X^2}\right)$$, where K is the number of items, σ_X^2 is the variance of the total test score, and $\sigma_{Y_i}^2$ shows the variance of the i (nth) item in the total sample.

Alpha (α) value

$0.00 \leq \alpha < 0.40$ Reliability poor

If $0.40 \leq \alpha < 0.60$ Reliability not good

If $0.60 \leq \alpha < 0.80$ Reliability good

If $0.80 \leq \alpha < 1.00$ Reliability very good (Kalaycı, 2008).

Second, for the results of normality tests, the number of samples was taken into consideration. If the sample is less than 50, we look at the significance value of the Shapiro Wilk test. Otherwise, we look at significance value of the Kolmogorov-Smirnov test (Mayers, 2013).

Third, independent sample T test was used in order to determine whether there is a significant difference between two groups with normal distribution. Levene's Test for Equality of Variances was used, wherein the expected value of the square of the deviation of a distribution from its mean is taken. Variance is average of the squared differences from the Mean.

If the significance value (Sig.) is greater than 0.05 in the Table of Levene's Test for Equality of Variances, then the variances are equal. In this case, first Sig. (2-tailed) Test take into consideration to interpret. If the variances are not equal (Sig. < 0.05) then the two-tailed (2. Sig.) is taken into consideration in interpreting the results. If (2. Sig.) < 0.05, then there is a significant difference between the means of the groups. If (2. Sig.) > 0.05, then there is no significant difference.

4. RESULTS AND DISCUSSION

The Cronbach's alpha (α) coefficient for the 20 items is $\alpha = 0.855$. The reliability coefficient of $\alpha = 0.855$ shows that there is a high level of internal consistency between the items. The Shapiro-Wilk test result is significant ($p = 0.054 > 0.05$). This shows that the test was distributed normally. As a result of the normality analysis made for each participant group, the Shapiro-Wilk values are found to be significant (Public $p = 0.715 > 0.05$; Private Airport Operator $p = 0.986 > 0.05$; Scholars $p = 0.716 > 0.05$; Other $p = 0.132 > 0.05$).

Independent sample test is applied between groups

The significance value of the public and other participant groups is higher than 0.05 in the equality of variances test of the "non-aviation income increase" factor ($p = 0.340 > 0.05$). This shows that the variances are equally distributed. Since the variances are equally distributed, the first significance value was examined. Since the significance value is less than 0.05 ($p = 0.015 < 0.05$). It can be said that the Public and Other groups scored differently in the "non-aviation revenue increase" items, which impact a PPP project's success significantly.

The Scholars and Private airport operator's groups were tested using the independent sample T test. "Reasonable profit of the private sector" items were significant ($p = 0.256 > 0.05$), showing that the variances are equally distributed. Since the variances are equally distributed, the first significance value was examined. Since significance value is less than 0.05 ($p = 0.005 < 0.05$), it can be said that Private airport operator and Scholars think differently about whether the "Reasonable profit of the private sector" item impacts a PPP project's success significantly.

It was determined that the variances were equally distributed since the significance value was higher than 0.05 in the equality of variance test of the "non-aviation income increase" item according to the independent sample T test of the participant groups Public and Scholars ($p = 0.140 > 0.05$). Public and Scholars "non-aviation income increase" items scores were tested using the independent sample T test. Since the significance value was higher than 0.05, variances were equally distributed. Since the variances were equally distributed, the first significance value was examined. As Public and Scholars scored

differently, the significance value is less than 0.05 ($p = 0.021 < 0.05$), and the effect of the "non-aviation income increase" item on the PPP project's success differed significantly.

Independent sample T test was likewise conducted between Public and Private Airport Operator groups. As to the "Adequate legal regulation" item, the significance value is less than 0.05 ($p = 0.027 < 0.05$), which means that the variances are not equally distributed. Since the variances are not equally distributed, the second significance value was examined. Since the significance value is less than 0.05 ($p = 0.042 < 0.05$), Public and Private airport operators scored differently to the effect that the "Adequate legal regulation" item on the PPP project's success differed significantly. There was no significant difference between the Scholar, Others, and Other-private groups.

Table 2: Ranking of CSF According to Averages

CSFs	**Mean**
Technical and financial feasibility	4.68
Efficiently and productivity management	4.54
Airport operations safety	4.49
Completing the construction within expected time and cost	4.41
Strong private consortium	4.38
Transparent competitive tender	4.35
Strong and resilient contract	4.32
PPP experiment	4.32
Favourable macroeconomic conditions	4.32
Monitoring airport management with performance indicators	4.30
Environmentally respect airport operation	4.30
Passenger, revenue and cost truely estimation	4.27
Non-aviation revenue increase	4.24
Knowledge production and know how transfer	4.16
Reasonable profit of the private sector	4.05
Adequate legal regulation	4.05
Harmonious execution of the partnership through the boards	3.97
Stable social and political environment	3.89
Value for money service to passenger, aviation companies	3.84
Appropriate risk sharing	3.65

Based on the results of this study, the three most important CSFs for the success of an airport PPP project are (1) Technical and financial feasibility; (2) Efficiently and productivity management; and (3) Airport operations safety. Airports acquire high-cost investments, which is why stakeholders give importance to technical and financial feasibility. Moreover, the fact that efficient and productivity management item is the second most important CSF in the study shows that the participants view airports as a commercial enterprise rather than a public infrastructure facility. Finally, that airport operations safety is the third most important CSF means that it is also prioritized by the participants (Table 2).

Based on the scores given by the participants in this study, the least important CSF is "Appropriate risk sharing," and the second least important one is "Value for money service to passenger, aviation companies." The "Appropriate risk sharing" factor is explained as

sharing financial risks of airport operations in the rate of profit. It is interesting that this factor came last in this study. Aviation is exposed to many crises such as war, volcanic eruptions, earthquakes, economic crisis, and epidemics on an international scale. The Directorate General of Civil Aviation (SHGM) and the European Union Aviation Safety Agency (EASA) may request new additional security measures from airports. It can be said that this is a risk for the success of PPP, which the participants do not pay attention in sharing financial cost and profits. In order for PPP projects to survive and be sustainable, there must be appropriate risk- and profit-sharing (Table 2).

Meanwhile, the emergence of the item "Value for money service to passenger, aviation companies" as the second last important factor indicates that the interests of the users are less in PPP airport projects. In the past, Zurich Airlines and Atlasjet went bankrupt due to high cost to users in large airport projects. In addition, high transportation costs reduce the competitiveness of the country (Table 2).

Results by Participant Groups

Table 3: CSF Averages According to Participant Groups

CSF	**Participant Groups**			
	Public	**Private Airport Operator**	**Scholars**	**Others**
Efficiently and productivity management	4,63	4,60	4,75	4,00
Airport operations safety	4,13	4,60	4,50	4,67
Environmentally respect airport operation	3,88	4,40	4,50	4,33
Value for money service to passenger, aviation companies	3,88	4,07	3,50	3,67
Non-aviation revenue increase	4,75	4,33	3,88	3,83
Completing the construction within expected time and cost	4,25	4,47	4,50	4,33
Reasonable profit of the private sector	4,25	4,40	3,25	4,00
Appropriate risk sharing	3,50	3,33	4,00	4,17
Harmonious execution of the partnership through the boards	4,00	3,73	4,25	4,17
Strong private consortium	4,13	4,53	4,25	4,50
PPP experiment	4,25	4,20	4,50	4,50
Knowledge production and know how transfer	4,00	4,20	4,25	4,17
Adequate legal regulation	4,50	3,80	4,00	4,17
Favourable macroeconomic conditions	4,38	4,33	4,38	4,17
Stable social and political environment	3,38	4,00	4,00	4,17
Transparent competitive tender	4,75	4,27	4,13	4,33
Technical and financial feasibility	4,88	4,73	4,38	4,67
Monitoring airport management with performance indicators	4,13	4,33	4,50	4,17
Strong and resilient contract	4,63	4,13	4,25	4,50
Passenger, revenue and cost estimation	4,75	4,27	3,63	4,50

According to Public group, the most important factor in a PPP project's success is technical and financial feasibility.

The Public group considered the following factors as the most effective in a PPP project's success: "Technical and financial feasibility," "Transparent competitive tender," and "Passenger, revenue and cost truly estimation". On the other hand, "Stable social and political environment" is the least influential factor. Other factors in order of importance are: "Non-aviation revenue increase", "Transparent competitive tender" and "Passenger, revenue and cost truely estimation". The Public group gave more importance to tender process and revenue (Table 3).

The Private airport operator group considered the following factors as the most effective in a PPP project's success: "Technical and financial feasibility," "Efficiently and productivity management," and "Airport operations safety." On the other hand, the least influential factor is "Appropriate risk sharing" (Table 2). Private airport operators see that the second least important factor is the "Harmonious execution of the partnership through the boards". This indicates that private operators do not want to work closely with the public.

The Scholars group viewed that most important PPP CSF is "efficiently and productivity management". On the other hand, the least important factor is "reasonable profit of the private sector" (Table 3).

The Others group viewed that the most important factors are "Airport operations safety" and "Technical and financial feasibility." On the other hand, the least important factor is "Value for money service to passenger, aviation companies" (Table 2). Majority of this group consists of finance and law experts. Hence, in ranking the factors, they pay less attention to the interests of the citizen in PPP projects.

5. CONCLUSION AND RECOMMENDATIONS

Turkey is one of the leading countries in the world in terms of the number and quantity of PPP projects. In airport management, where PPP is used the most, Turkey has realized the world's largest PPP project in Istanbul, costing 36.5 billion dollars. To bring Turkey's PPP experience to PPP projects in the rest of the world, an academic study with the participation of all stakeholders is required to document these achievements in the literature. This study will also provide a basis for performance measurement methodology such as Key Performance Indicators for scholars. Success is measured by the satisfaction of the stakeholders and achievement of the project's goal. This study is expected to contribute to the successful implementation of airport PPPs in Turkey and even worldwide.

Within the scope of the research, CSFs were compared according to the viewpoints of four groups: Public, Private, Scholars, and Others. "Technical and financial feasibility" ranked first among the most important CSFs. (Li et al., 2005; Maseko, 2014) while "Appropriate risk sharing" came last. Contrary to this study, the latter was seen as one of the most important items in other PPP CSF studies. (Węgrzyn, 2016; Li et al., 2005; Almarri & Boussabaine 2017; Chan et al., 2010). In other studies, this item ranked high. (Ullah et al. 2016; Ong & Lenard 2002; Al-Saadi 2016; Babatunde 2012; Ismail & Ajija 2012; Chan et al., 2012; Meng et al.,2011; Hwang et al.,2013; Dahiru & Muhammad 2015; Almarri & Hijleh 2017). It is very interesting that these results come at the end of this study. They show us that PPP executers in Turkey are careless about risk sharing and potential profits.

According to the survey results in the analysis of airport PPP CSFs, the item "Stable social and political environment" took the third place from the last. On the other hand, contrary to this study, the "political and public support" item, which was evaluated in a similar context

in studies conducted by different researchers, was among the most important CSFs (Ameyaw & Chan 2016; Ullah et al., 2016; Chan et al., 2010; Dulaimi et al., 2010; Abdul-Aziz & Kassim 2011; Özdoğan ve Birgönül 2000; Jacobson & Choi 2008; Sawalhi 2014).

For a deeper analysis, the PPP projects should divide into three different groups according to their main prominent feature.

a- Capital-oriented PPP projects (roads, bridges, dams, etc.)

b- Commercial management-oriented PPP projects (Airports, Shopping Mall etc.)

c- Human-oriented PPP projects (Hospital, prison, etc.)

While determining the airport charges, it should be taken into account that air transportation is one of the wheels of the economy. For example, in a tourism-intensive airport, the increase in airport fees will result in tourist loss in the ratio of tourism price flexibility. This will reflect on the economy as employment and income loss.

The role of the public in the PPP project is shown in protecting passenger, firms and employee rights, controlling service quality and transfer data and knowhow from the private sector. Public should control operations and service quality not part of operations. The role of the private sector in the PPP project: Carrying out airport operations, increase efficiency and commercial success.

Risk, profit, maintenance and new investments cost sharing principally should be in PPP project contract. For example, if the airport terminal and parking area privatized, all new investments in this area should belong to the terminal operator. While defining force majeure, there must be separation according to the source within the country or globally. This separation will protect the public from heavy payment obligations due to passenger guarantee. If force majeure emerges in country such as earthquake, epidemic or war then should support the terminal operator.

Turkey airport PPP models are BOT projects and Concession. The researcher suggests Master Concession privatization as the third model. According to this model, large income items such as food and beverage, parking, duty-free sales, advertisement, VIP and CIP lounges should be rented collectively. For example, all food and beverage units should be tendered as a package, and all advertising areas should be rented with a single tender. Security, health, cleaning, technical affairs services may be purchase separately.

Intensely PPP projects implementation caused economic crises as in Spain in the past.

A central PPP unit should be established, and this unit should follow all PPP projects throughout the country. In Turkey and globally there is criticism about public servant inadequate. As a result of the research, the same items take the lowest point; as fair risk sharing, appropriate legal environment, value for money. It was understood that the full philosophy of the PPP was not adopted by the stakeholders, conversely was perceived as a normal privatization.

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