**Ranking the factors affecting international contracts based on sister city emphasizing the sustainable income of municipalities**

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**Abstract:** Implementation of international contracts that directly affect economic issues has been one of the most important issues in recent decades. Therefore, the aim of this study is to determine the factors affecting international contracts based on sister city with a sustainable income approach of municipality. In this study, 20 academic experts and municipalities were asked to select five components that they viewed as the most important factors in international contracts based on sister city. Emphasizing the sustainable income of municipalities in the region, they were asked to prioritize each of their five selected components from least important to most important based on the scale one to five. Then, with a casual structural and textual connection they determined the type of relationship between the components using pair wise comparison. The information obtained from the experts' opinions was entered into the ISM software and was used in the ranking of factors affecting the conclusion of international contracts based on sister city, emphasizing the sustainable income of municipalities. The results revealed that the components "change of management style", "domestic and foreign political stability" and "legal" had the lowest significance (fourth level) and the components "attracting foreign investment", "private sector investment", "development", "International Entrepreneurship", "Tourism Growth" and "Operational" were the building blocks (first level) of international sister city-based contracts that make up a sustainable income for municipalities.

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**Keywords**: city sister, municipal income, sustainable income, municipalities.

**Introduction**

Achieving a sustainable model of financial resources in order to provide current and civil costs of the city is one of the most important factors of urban sustainability that provides the possibility of investment in the city's development infrastructure (Mozaffari et al., 2016: 25). Lack of sufficient income in municipalities leads to the prevention of essential services in the city and causes many problems. (Nesari et al., 2015: 100) The system used in the municipalities of developed countries gives them a lot of authority on how to earn their income (Danesh Jafari et al., 2013: 16-15). In these countries, using scientific methods, some resources are continuously prioritized to earn money, which helps to improve urban services. Unfortunately, Municipalities of Iran do not have such support to earn money and currently more than 70% of municipal revenues are unstable and limited to construction activities (Sami and Daroudi, 2017: 5155). Sustainable revenues entail relative continuity and it should not expose or threaten the quality of the city (Sadeghi et al., 2015: 157).

The over-reliance of many municipalities on unsustainable revenues has caused them many financial problems (Danesh Jafari et al., 2013: 15). Restrictions on the economic capacity of developing countries have hindered their sustainable development (Mandiambir, 2014: 129). The prevailing attitude in accessing new resources and reforming existing ones must move towards dependence on sustainable revenues and move away from inappropriate revenues (Sami and Darudi, 2017: 5155-5152).

For sustainable municipal revenue, Solivan (2003), Milenkowski et al. (2016), and Vankatchalam (2005) suggested collecting tolls. Also, Hessou and Yuen (2001), Janaskova, and Sabatavikova (2019) noted taxes on assets, Gavinda and Brad (2010), Vankatcalam (2005), Gavinda and Brad (2010), sales of land, urban goods and services, and Mandyambira (2014) suggested recycling.

Most of the researches in this field have evaluated the revenue system of municipalities with sustainability criteria and there are few researches that have presented a model for providing stable income (Mozaffari et al., 2016: 28). The sister city contract can have a positive effect on the provision of services by the local government or strengthen it financial position and influence its development (Boys et al., 2009: 194-193). However, studies suggest that the cost of this contract may outweigh its benefits (D. Willers,

2009: 150). Another difficulty that arise with this agreement is establishing a sister city partnership (Indriati et al., 2016: 157). Many factors contribute to the success of urban sister city, which have been studied by many scientific experts (D-Willers, 2009: 150; Bentenbell and Mamun, 2017: 14-12) and by specialists from international sister city organizations (D-Willers, 2009: 150) ‌. Political, social and cultural factors are an important part of sister city activities (Shaw and Carlisle, 2016). In such a way that political will and commitment of civil society is considered an important factor influencing the participation of sister city (Bantenbal and Ma'mun, 2017) and instability of this factor causes a significant decline in the entry of foreigners and their capital (Kazemi et al., 2013). City-to-city cooperation can have a positive impact on local government services or strengthen their financial condition. This cooperation can also affect the development of the local government sector (Boys et al., 2009: 194-193). Lack of focus on clear goals, political change, and one-sided flow of resources are among the challenges impeding sister city planning (Bantenbal and Mamun, 2017: 14-12).

In the previous studies, factors such as political will and commitment of civil society, community participation, clear goals and specific work plans between sister cities (long-term goals with realistic steps), understanding (building trust and respect) and clear definition of mutual expectations, have been regarded as effective factors in the success of sister city (Bantenbal and Mamun, 2017: 12). However, in developing countries, scientific evidence about the benefits and challenges of working with the city is ambiguous and scarce, and there is no consensus on the factors influencing the success of sister city plan to help foster urban development and proper management of cities (Bantebal et al. Mamun, 2017: 12) ‌, By the end of 2015, 30 cities of Iran have adopted the sister city contract together with 140 cities in the worl.

According to the abovementioned descriptions, it seems necessary to categorize the factors affecting the conclusion of international conventions based on sister city with a sustainable income approach, which is discussed in this study. Even though scientific research on sister city is completely new, international cooperation from city to city is not a new phenomenon (Boise, 2009: 190). Urban Sister city has been around for over 200 years. The purpose of urban sister city partnership is to unite people to strengthen mutual understanding and enhance mutual benefits by sharing new knowledge and opportunities (Shaw and Carlisle, 2002: 44). It has become a powerful tools for building capacity, learning, and economic and social development in developing countries (D. Willers, 2009: 149). The term " sister city " was first coined by Dwight Eisenhower in the twelfth century. This concept intends to establish relations and peace between members of society in all parts of the world (Tambonan, 2011). The sister city scheme began in 1951 and was developed in the United States in 1956 (Citin Jack et al., 2014: 7). Traditionally, the role of sister city relationships has been political and cultural, encompassing all local governments around the world (Chang and Masitili, 2008: 232). Proponents of town building believe that city participation is a good way to share experiences and strengthen urban governance (Bantenbal and Mamun, 2017: 1).

The phenomenon of sister city is a simple connection between cities including an intricate network of relationships with different geographical orientations that have various geographical or political characteristics. This type of collaboration is based on common characteristics that are usually used to improve relationships between cultures and individuals (Rolland, 2018: 503; D-Willers, 2009: 149; Levant et al., 2006: 4; Indriati et al., 2016: 156; Yamin and Otami, 2016: 402; Esgaf et al., 2015: 40) Also one of the most important goals of sister city scheme is strengthening the collective identity of residents and the sense of dependence on the city (Davidovic and Arbil, 2017: 464) This scheme, as is grows in the long term, facilitates the development of the region (McConnell and Weidenfeld, 2016: 389; Yamin and Otami, 2016: 402).

Based on a review of the relevant context, there are several factors (such as educational services, political activities and cultural recreation) that attract urban sister city participation (Shaw and Carlisle, 2016: 44). However, studies have dedicated little attention to the role of cultural recreational factors in sister city participation (Shaw and Carlisle, 2016: 44). The results of a research carried out by Yin and Otami's (2016) revealed that creating sister city leads to an operative relationship between cities, and can benefit economy, tourism, etc through the sister city. Based on the results of a study conducted by D. Willers (2005), similarity of characters on both sides, partner commitment, understanding, cultural sensitivity, positive cooperative attitude, community awareness of collaboration, existence of a business plan, management quality, management commitment and marketing activists were cited as the primary factors influencing the success of the sister city scheme. Such instances as lack of support, lack of coordination and interaction between the three areas of government, lack of marketing, lack of municipal capacity at the national level, and incompatibality of municipalities with official policy, are among the factor leading to the failure of the sister city scheme.

**Materials and methods**

**Study area**

The study area included ​​the municipalities of the provincial centers (metropolitan areas) in Iran: Tehran, Shiraz, Isfahan, Ahvaz, Tabriz, Qom, Karaj and Mashhad.

**Method**

Interpretive structural modeling method (ISM) was used to rank the factors affecting the conclusion of international contracts based on sister city, emphasizing the sustainable income of municipalities. Since the aim of the present study is to determine the factors affecting the conclusion of international contracts based on the sustainable income of municipalities in the region, 20 academic experts and municipalities were asked to select five components that they viewed as the most important factors in concluding contracts between sister cities, and prioritize each of the five selected components from numbers one (least important) to five (most important). Then, with a structural and textual relationship, determine the type of relationship between the components as a pairwise comparison using the following concepts (Iranzadeh, 2016: 13):

V‌: i leads to j;

X‌: There is a reciprocal and two-way effect between i and j;

A‌: j has a one sided effect on i;

O‌: There is no relationship between the two components.

The data obtained from the experts was entered into the ISM software. This information was implemented to rank the factors affecting the conclusion of international contracts based on sister city with an emphasis on the sustainable income of municipalities.

**Results**

Forming the structural similarity matrix (SSIM)

After a pairwise comparison of the components, information obtained from the opinions of experts was entered into the structural similarity matrix (Table 1).

Table 1- The structural similarity matrix of the research components

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Attracting foreign investment | Attracting private sector investment | Creating business opportunities | Entrepreneurship development among nations | Change of management style | Support | Attention to the market | Reporting to stakeholders | Tourism growth | Domestic and foreign political stability | Legal | Public participation | Social exchanges | Operationally | Staff training |  |
|  | X | A | X | A | A | A | A | X | A | A | A | A | X | A | Attracting foreign investment |
|  |  | A | X | A | A | A | A | X | A | A | A | A | X | A | Attracting private sector investment |
|  |  |  | V | A | X | X | X | V | A | A | V | V | X | X | Creating business opportunities |
|  |  |  |  | A | A | X | A | X | A | A | A | A | X | X | Entrepreneurship development among nations |
|  |  |  |  |  | V | V | V | V | O | O | V | V | V | V | Change of management style |
|  |  |  |  |  |  | O | V | V | O | A | V | V | X | O | Support |
|  |  |  |  |  |  |  | O | V | O | O | V | V | A | A | Attention to the market |
|  |  |  |  |  |  |  |  | V | O | A | V | X | A | A | Reporting to stakeholders |
|  |  |  |  |  |  |  |  |  | A | A | A | A | A | A | Tourism growth |
|  |  |  |  |  |  |  |  |  |  | X | V | V | V | O | Domestic and foreign political stability |
|  |  |  |  |  |  |  |  |  |  |  | V | O | V | O | Legal |
|  |  |  |  |  |  |  |  |  |  |  |  | X | X | A | Public participation |
|  |  |  |  |  |  |  |  |  |  |  |  |  | O | A | Social exchanges |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | A | Operationally |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Staff training |

**Reachablility Matrix Formation (RM)**

To create the Reachablility Matrix, the components of the structural similarity matrix were converted to binary codes (0 and 1). To this aim, in each row X and V were replaced with 1, and A and characters O were replaced with 0.

This action was performed in the software environment. The numbers indicating each of the components were presented in the X and Y axes. For each answer "yes" indicating the existence of a relationship between the two variables, software put number 1 and for each answer "no" which indicates the absence of a relationship between the two components being compared, software put number 0. At this stage, the initial reachability matrix was obtained. In the initial reachability matrix, only the direct relationships between components were considered, but their indirect relationships were not estimated. Therefore, the secondary relationship between the components was evaluated. The secondary relations means that if components 1 affects components 2 and components 2 affects components 3, then components one affects components 3. Also, at this stage, the power of the components were evaluated. In order to calculate the power of each component, the numbers related to its corresponding row and to obtain the effectiveness of each component, the numbers related to its corresponding column were summed and put in the final reachability matrix. The algebraic sum of each row and column related to components denotes their power and effectiveness, respectively. These results are presented in Table (2).

Table 2 - Final reachability matrix and Influence and power of components

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | power |
| 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 3 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 12 |
| 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 13 |
| 6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 12 |
| 7 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 12 |
| 8 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 12 |
| 9 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 10 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 14 |
| 11 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 14 |
| 12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 7 |
| 13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 7 |
| 14 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 15 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 12 |
| Dependence | 15 | 15 | 8 | 15 | 1 | 8 | 8 | 8 | 15 | 2 | 2 | 10 | 10 | 15 | 8 |  |

**Determining posterior and prior, and ranking relationships**

At this stage, the posterior and prior score for each component were estimated. The posterior score of a component indicates on how many components it has an effect. Also, the prior score of a component indicates the number of components of which it is influenced by. The aim of calculating the posterior and prior scores is to determine the direction of the effects of each component in the model (Table 3).

Table 3. Posterior and prior score of the factors influencing the conclusion of international contracts based on sister city, emphasizing sustainable income of municipalities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Prior | Posterior | Common | Component | Number |
| 2,3,4,5,6,7,8,9,10,11,12,13,14,15 | 2,4,9,14 | 2,4,9,14 | Attracting foreign investment | 1 |
| 1,3,4,5,6,7,8,9,10,11,12,13,14,15 | 1,4,9,14 | 1,4,9,14 | Attracting private sector investment | 2 |
| 5,6,7,8,10,11,15 | 1,2,4,6,7,8,9,12,13,14,15 | 6,7,8,15 | Creating business opportunities | 3 |
| 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15 | 1,2,9,14 | 1,2,9,14 | Entrepreneurship development among nations | 4 |
| - | 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15 | - | Change of management style | 5 |
| 3,5,7,8,10,11,15 | 1,2,3,4,7,8,9,11,12,13,14,15 | 7,8,15 | Supportive | 6 |
| 3,5,6,8,10,11,15 | 1,2,3,4,6,8,9,11,12,13,14,15 | 6,8,15 | Attention to the market | 7 |
| 3,5,6,7,10,11,15 | 1,2,3,4,6,7,9,12,13,14,15 | 6,7,15 | Call reporting to stakeholders | 8 |
| 1,2,3,4,5,6,7,8,10,11,12,13,14,15 | 1,2,4,14 | 1,2,4,14 | Tourism growth | 9 |
| 11 | 1,2,3,4,6,7,8,9,10,11,12,13,14,15 | 10 | Domestic and foreign political stability | 10 |
| 10 | 1,2,3,4,6,7,8,9,10,11,12,13,14,15 | 10 | Legal | 11 |
| 3,5,6,7,8,10,11,13,15 | 1,2,4,9,13,14 | 13 | Public participation | 12 |
| 3,5,6,7,8,10,11,12,15 | 2,3,9,12,14 | 12 | Social exchanges | 13 |
| 1,2,3,4,5,6,7,8,9,10,11,12,13,15 | 1,2,4,9 | 1,2,4,9 | Operationally | 14 |
| 3,5,6,7,8,10,11 | 1,2,3,4,6,7,8,9,12,13,14 | 3,6,7,8 | Staff training | 15 |

According to the table (4), the posterior score of the component "Domestic and foreign political stability" is 13, indicating that it affected most of the components in the model. In contrast, it's prior score of 1 shows that this component was affected only by one component. Subtracting posterior score of this component from its prior score yields 12, which is the net score of posterior and prior, indicating its effectiveness in the structure of the model. The sum of net score for each component results from the difference between the net score of its posterior and prior and its rank score.

Table 4 – Ranking the factors affecting the conclusion of international contracts based on sister city, emphasizing the sustainable income of municipalities

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Prior | Posterior Score | Role Score | Posterior and prior score | Sum of net score | Surface | Component | Number |
| 14 | 4 | 18 | 10 | 9 | 1 | Attracting foreign investment | 1 |
| 14 | 4 | 18 | 10 | 9 | 1 | Attracting private sector investment | 2 |
| 7 | 11 | 18 | 4 | 7 | 3 | Creating business opportunities | 3 |
| 14 | 4 | 18 | 10 | 9 | 1 | Entrepreneurship development among nations | 4 |
| 0 | 12 | 12 | 12 | 16 | 4 | Change of management style | 5 |
| 7 | 11 | 18 | 4 | 7 | 3 | Support | 6 |
| 7 | 11 | 18 | 4 | 7 | 3 | Attention to the market | 7 |
| 7 | 11 | 18 | 4 | 7 | 3 | Reporting to stakeholders | 8 |
| 14 | 4 | 18 | 10 | 9 | 1 | Tourism growth | 9 |
| 1 | 13 | 14 | 12 | 16 | 4 | Domestic and foreign political stability | 10 |
| 1 | 13 | 14 | 12 | 16 | 4 | Legal | 11 |
| 6 | 6 | 15 | 3 | 1 | 2 | Public participation | 12 |
| 6 | 6 | 15 | 3 | 1 | 2 | Social exchanges | 13 |
| 14 | 4 | 18 | 10 | 9 | 1 | Operationally | 14 |
| 7 | 11 | 18 | 4 | 7 | 3 | Staff training | 15 |

In order to rank and draw the factors in our model, a power -influence matrix was formed. To this end, the components were divided into the following four categories based on their power and influence score:

Level 1‌: Components that do not have much influence and power over other components.

Level 2: Components that are highly dependent on other components (high dependency score).

Level 3: Components that have a two-way relationship with other components.

Level 4: Components that have a significant impact on other components (high power score).

According to figure 1, the components used in the present study were located in the second and fourth levels. In the fourth level, the component "Change of management style" (No. 5), while having a significant impact on other components, got the least influenced from other components. In the second level, the components " Domestic and foreign political stability ", and "legal" stability were located, which had more influence and also got more influence from other components compared to the component "Change of management style ".

Also, the five components: "creating business opportunities", "support", "attention to the market", "responding to stakeholders" and " Staff training " were located in the fourth category. These components had less influence compared to the three components mentioned above, but received more influence from other components.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16 | high |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 15 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10,11 |   | 14 |
|   |   |   |   | III |   |   |   |   |   |   |   | IV |   |   | 5 | 13 |
|   |   |   |   |   |   |   |   | 3,5,7,8,15 |   |   |   |   |   |   |   | 12 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 11 | Power  |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 8 |
|   |   |   |   |   |   | 12,13 |   |   |   |   |   |   |   |   |   | 7 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6 |   |
|   | 1,2,4,9,14 |   |   | II |   |   |   |   |   |   | I. |   |   |   |   | 5 |   |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | Low |
|   |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1 |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |   |
| High |   |   | Influence |   |   | Low |   |   |

Figure 1. The power-influence matrix of the factors influencing the conclusion of international contracts based on sister city, emphasizing the sustainable income of municipalities

In the second level, although the two components "public participation" and "social exchanges" were highly influenced by other components, but this was not true when compared with the other five components of this category, which include "attracting foreign investment", "attracting private sector investment", " entrepreneurship development among nations ", "tourism growth " and "operationality ". The matrix indicated that there is relationships and participation between all components in the model, and no component acted independently or separately because it is not located in the first category.

After having determinined the relationships between the components of the model, there relationships were drawn, resulting in the model of concluding international contracts based on sister city, emphasizing the sustainable income of the municipalities (Figure 2).

According to the research model, the components: "change of management style", "domestic and foreign political stability" and "legal" were the most fundamental (fourth level) and the five components "attracting foreign investment", "attracting private sector investment". "Entrepreneurship development among nations ", "tourism growth" and "operationality" were the most constructive (first level) components of the international contracts based on sister city with an emphasis on the sustainable income of municipalities.

Therefore, from the viewpoint of experts, in order to achieve international sister city-based contracts that lead to sustainable municipal revenues and also to act in a sustainable (desirable) manner, political stability, legal reforms and efficient management practices must first be established. The existence of a two-way relationship between the components "domestic and foreign political stability" and "legal" indicates that the existence of stability in domestic and foreign policies can lead to the accomplishment of legal goals such as bilateral contracts between countries, and vice versa, with the development of friendly relationships between cities. Improving the conditions of the three components mentioned above or the components "change of management style" and "legal" will provide the ground for improving the conditions of the component "staff training". This is especially important when it comes to changing management practices for increasing the culture of organizational entrepreneurship in municipalities, as it is largely dependent on the passive and entrepreneurial management style in these organizations. Also, improving the legal conditions and growing exchanges with other cities will lead to the provision of a ground for formal and informal training of municipal employees. Improving the "staff training" component entails improving the response of stakeholders and thus raising market attention (domestic and foreign) as well as increasing support for entrepreneurs and revenue-generating projects, all of which are effective in creating effective business opportunities. On the other hand, creating business opportunities to enhance incentives and support will make it possible to pay attention to new and innovative aspects of the market and increase the response to the stakeholders and thus enhance the awareness and training of employees.



Figure 2 - ranking the factors influencing the conclusion of international conventions based on sister city with an emphasis on the sustainable income of municipalities

In the second level, by improving the condition of responding to stakeholders, which is dependent on the proper functioning of other components of the third and fourth levels, the necessary ground will be provided to increase people's participation and cooperation with municipalities. Improving people's participation will set the foundation for increasing social exchanges at home and abroad with municipalities, and vice versa, increasing social exchanges will facilitate more public participation.

In the first level, increasing social exchanges will make it possible to achieve the goals and operational plan, which is an example of participatory development. With the implementation of job creation and revenue generation projects of municipalities, the ground for the growth of tourism activities will be provided and the entrepreneurial at home and especially internationally will be enhanced. This will increases the attraction of foreign investment and investment in the private sector. On the other hand, attracting foreign investment and private sector investment can facilitate the development of international entrepreneurship, which one of its most important and lucrative aspects is tourism growth. This way, this action will be effective for municipalities in achieving project goals and operational plans.

In the following, the path coefficient of each component of the model was examined, which is mentioned below.

Table 5 - Significance, standard and non-standard path coefficients of the model components

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Component | Relationship direction | Component | Estimate (Regression Weights) | Standardized Regression Weights | S.E. | C.R. | P |
| 11 | <--- | 10 | .378 | .464 | .057 | 6.667 | \*\*\* |
| 15 | <--- | 5 | .622 | .737 | .017 | 36.074 | \*\*\* |
| 15 | <--- | 11 | .383 | .453 | .017 | 22.188 | \*\*\* |
| 6 | <--- | 15 | .794 | .762 | .053 | 14.988 | \*\*\* |
| 3 | <--- | 6 | .921 | .894 | .036 | 25.465 | \*\*\* |
| 7 | <--- | 3 | .922 | .759 | .062 | 14.824 | \*\*\* |
| 8 | <--- | 15 | .434 | .397 | .043 | 10.007 | \*\*\* |
| 8 | <--- | 7 | .534 | .633 | .033 | 16.030 | \*\*\* |
| 12 | <--- | 8 | .762 | .520 | .098 | 7.747 | \*\*\* |
| 13 | <--- | 12 | .666 | .543 | .081 | 8.230 | \*\*\* |
| 14 | <--- | 13 | .468 | .573 | .053 | 8.889 | \*\*\* |
| 9 | <--- | 14 | .5550 | .646 | .051 | 10.772 | \*\*\* |
| 4 | <--- | 9 | .643 | .713 | .050 | 12.932 | \*\*\* |
| 2 | <--- | 4 | .580 | .558 | .068 | 8.554 | \*\*\* |
| 1 | <--- | 2 | .631 | .651 | .058 | 10.903 | \*\*\* |

According to the results, in the fourth level, the three components "change of management style", "domestic and foreign political stability" and "legal" were located. At this level, the two components "change of management style" and "legal" with a rate 74% and 45%, respectively explained the "employee training" component. In addition, even though the component "domestic and foreign political stability" did not directly affect "staff training", it loaded on the component "legal" with a rate of 46%. Also, the three components of the fourth level were 94% effective in explaining "staff training".

In the third level, the "staff training" component affected "support" and " reporting to stakeholders " with a rate of 76% and 40%, respectively, and along with "legal", "change of management style " and " domestic and foreign political stability " there rates became 58% and 82%, respectively. In other words, the four components mentioned above were 58% effective in explaining "support" component, 82% effective in explaining the component "responding to stakeholders". Other results at the third level revealed that that the component "support" loaded on "creating business opportunities" with a rate of 89%, and "creating business opportunities" affected "attention to the market" with a rate of 76%. Also, "attention to the market" was 63% effective in explaining "responding to stakeholders". In general, 82% of the component "responding to stakeholders", 58% of the component "attention to the market" and 80% of the component "creating business opportunities" were explained by the components before them. Also, "the component "responding to stakeholders" affected the component "public participation" with a rate of 52%.

In the second level, the components "public participation" and "social exchanges" were located, in which "public participation" affected "social exchanges" with a rate of 54%. Also, 29% of "social exchanges" and 27% of "public participation" were explained by the components in the third and fourth levels. Also, "social exchange" was 57% effective in explaining "operationality".

Finally, in the first level the relationships were as follow. The "operationality" component was 65% effective in explaining "tourism growth", and 71% effective in explaining "entrepreneurship development among nations". The component "attracting private sector investment" was also affected by "entrepreneurship development among nations" with a rate of 56%, affected "attracting foreign investment" with a loading of 65%. Based on the results, 33% of "operationality", 42% of "tourism growth", 51% of " entrepreneurship development among nations ", 31% of "attracting private sector investment" and 42% of "attracting foreign investment " were explained by affected by the fourth, third and second level components.

Presenting new approaches for financing the municipality of Babol using strategic planning is a quantitative plan. For this purpose, data collection was performed using library and survey methods, and interviews with experts and urban elites. The questionnaires was designed using Delphi method.

In the last step, after leveling the factors affecting the conclusion of international contracts based on sister city, emphasizing the sustainable income of municipalities in the ISM software environment, which showed the direction of relationships of the component in the model and also determining the path coefficient. The model was tested in the Amos software environment to determine the intensity of the relationship between the components, and to test the experimental model.

Table 6-Model fit indices

|  |  |  |  |
| --- | --- | --- | --- |
| Fit result | Acceptable value | Value | Index |
| Acceptable fit | X 2/ Df <3 | 2.89 | Chi- two |
| Acceptable fit | RMSEA> 0.05 | 75 | RMSEA |
| Acceptable fit | NFI> 0.90 | 96 | NFI |
| Acceptable fit | CFI> 0.90 | 92 | CFI |
| Acceptable fit | GFI> 0.90 | 97 | GFI |
| Acceptable fit | P-Value> 0.05 | 162.0 | P-Value |

According to the results, the ratio of chi-square to the degree of freedom was 2.89. Also, the value of Root Mean Square Error of Approximation (RMSEA) was 0.075, which is in the acceptable area. The values resulted for Normal Fit Index, Comparative Fit Index, Goodness of Fit Index were 0.96, 0.92 and 0.97, respectively. Also, the p-value for our model was calculated 0.162. Therefore, all the fit indices indicate an appropriate fit of the research model (Table 6).

The value of critical ratio (CR), which was calculated as the ratio of non-standard estimated value for the parameter to the standard error (SE), was outside the critical range -1.96 and +1.96, which confirmed the significance of the research model. Therefore, the model was structurally appropriate.

**Discussion**

According to the results, the components: "change in management style", "domestic and foreign political stability" and "legal" were the most fundamental (fourth level) and the components: "attracting foreign investment", "attracting private sector investment", " Entrepreneurship development among nations", "Tourism Growth" and "Operationality" were the most constructive (first level) components forming the model of international contracts based on sister city with an emphasis on the sustainable income of municipalities.

Therefore, from the viewpoint of experts, in order to achieve international sister city-based contracts that lead to sustainable municipal revenues and also to act in a sustainable (desirable) manner, political stability, legal reform and efficient management practices must first be established. The existence of a two-way relationship between "domestic and foreign political stability" with the component "legal" indicates that the existence of stability in domestic and foreign policies can lead to the realization of legal goals such as bilateral contracts between countries. Also, with the development of friendly relationships and trade exchanges, a ground for improving domestic political efficiency and increasing political power will be established. Improving the conditions of the three components mentioned above or the components "change of management style "and "legal" will be effective in facilitating the conditions of staff training. This is especially important when it comes to changing management practices. Because increasing the culture of organizational entrepreneurship in municipalities is largely dependent on the passive and entrepreneurial management style in these organizations. Also, by improving the legal conditions and increasing exchanges with other cities, the ground for formal and informal training of municipal employees will be established.

Improving the components "staff training" entails improving the response of stakeholders and thus increasing market attention (domestic and foreign) as well as increasing support for entrepreneurs and revenue-generating projects, all of which are effective in creating effective business opportunities. On the other hand, creating business opportunities to enhance incentives and support will make it possible to pay attention to new and innovative aspects of the market and increase the response to the stakeholders and thus enhance the awareness and training of employees.

At the second level, by improving the condition of responding to stakeholders, which is dependent on the proper functioning of other components of the third and fourth levels, the necessary ground will be provided to increase people's participation and cooperation with municipalities. Improving people's participation will prepare a ground for increasing social exchanges at home and abroad with municipalities, and vice versa, increasing social exchanges will provide the ground for more public participation.

At the first level, increasing social exchanges will make it possible to achieve the goals and operational plan which is an example of participatory development. With the implementation of job creation and revenue generation projects of municipalities, the ground for the growth of tourism activities will be provided and the entrepreneurial at home and especially internationally will be enhanced, which increases the attraction of foreign investment and investment in the private sector. On the other hand, attracting foreign investment and private sector investment can facilitate the development of international entrepreneurship, which one of its most important and lucrative aspects is tourism growth. This way, this action will be effective for municipalities in achieving project goals and operational plans**.**

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