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Analyzing the Role of Climate in the Spatial Distribution of the Robbery Phenomenon and Threats to National Security (Case Study: Cities of Isfahan Province)

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Abstract

Robbery is considered as one of the human crimes which has a long history in different societies. This phenomenon underwent many changes over time; however, the only thing which remained constant since its emergence is its ugly and heinous nature. In this regard, the present study aimed to evaluate the role of climate and its changes in the spatial distribution of the crime of robbery in the urban level of Isfahan Province. After obtaining the statistical yearbook of Isfahan Province in the form of SWARA, ARAS, and cluster analysis multi-index techniques, the data related to the crime of robbery among the cities in Isfahan Province were weighted, ranked, and clustered. Pearson correlation coefficient and linear regression were used to measure the relationship between robbery and three parameters of elevation, temperature, and precipitation which its maps were prepared through Kriging method in ArcGIS Software. The results of SWARA technique indicated that the robbery of the in-car accessories weighting 0.170 ranked first and the robbery from public buildings weighting 0.085 ranked last. The results of the ARAS Technique indicated that Chadegan city ranked first based on the robbery, Fereydounshahr ranked second, Semirom city ranked third and Naien city ranked fourth. The results of Pearson correlation coefficient and linear regression indicated that there is a significant correlation between crime occurrences in the urban level of Isfahan Province and elevation, temperature and precipitation. Considering the three parameters of elevation, temperature, and precipitation, most of the crime was committed in the southern and western parts of Isfahan Province (i.e., Semirom, Daran, Fereidounshahr and Khansar). The central and northern parts of Isfahan Province (i.e. Ardestan, Kashan, Mobarakeh and Khor cities) had the least rate of the crime of robbery.

Keywords: Spatial Distribution, Robbery, Climate, SWARA, ARAS.

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1.Introduction

During the last decades, urban safety and the need to reduce urban anomalies have been the major concern for managers and planners, because safety is the basis issue which pave the way for economic, social and environmental development which is itself influenced by these elements (Rahnamaie,2006). The occurrence of crimes within the context of a society is considered as one of the most important threats against safety among different segments of society. Based on the available statistics, the rates of crime in most societies are increasing. This incremental process differs from one place to another depending on the type of crime and its own reasons and motives (Rezaie and et al.,2009).

Crime is a deviant behavior which, in most cases, results in casualties and injuries to one's surroundings. Social, economic, psychological, environmental, political, etc. factors can influence crime occurrence in different ways (Boba Santos,2013:5). The occurrence of various types of crime leading to many problems at the community level, leading to insecurity, anxiety, panic and turmoil among the citizens. On the other hand, it endangers the health of the city leading to judiciary and law enforcement agencies in Iran to spend huge amounts of money on crime detection, prosecution, and detention, and detaining the offenders as well as judicial proceedings and their punishment (Zangi Abadi and Rahimi Nader,2010). Crime is considered as one of the fundamental problems of human societies which costs a lot to individuals in a society and is a threat to the life and integrity of individuals and humans' property. More occurrence of these crimes in urban environments results in heavy damage, hardship, and human suffering as well as wasting economic resources and disruption of human's quality of life. This issue is accelerated through the increasing population and density of cities and the industrialization of societies (Moazami and Siavashi,2016).

As an academic field in the study of politics through geographic and naturalistic approaches (Gharayagh Zandi,2015:217-244; Cox and et al, 2008:9; Hafiznia and Kavianirad,2013; Ezzati,2006), geopolitics gives various explanations to political phenomena.

Robbery is defined as a crime, the theft of others' property without his knowledge or consent and any intention to return it. In other words, robbery is the illegal occupation of others' property by violence or non-violence

(Abbasi and Akhbari,2012). Todays, the phenomenon of robbery threats the socioeconomic safety of citizens and somehow is related to the national discipline and security. Therefore, it leads to insecurity in the society and results in the physical and spiritual damages which is imposed by citizens is not resolved for a long time even after detecting the theft and arresting the thief or thieves. Preventing from robbery and other crimes is considered as one of the major and fundamental tasks of the Law Enforcement Force. People's expectations of crimes prevention is in a large scale and people evaluate the Law Enforcement Force performance in establishing security and preventing from crime (Morshedi and Jafarian,2014).

Robbery is considered as one of the most common crimes in all societies, especially in urban areas. Undoubtedly, crime is increasing in urban areas. Therefore, the people's fear and anxieties of crime victimization increased in parallel. Accordingly, more attention should be paid to the issue of crime occurrence in urban areas through researchers around the world (Moghimi, 2017). The crime of robbery is a phenomenon which simultaneously disrupts other financial and life safety. In other words, as the rubber commits theft, he/she tries to improve his/her own situation through encroaching another one's property. While creating a sense of financial and life threat among individuals greatly weakens their motivation to pursue legitimate wealth and property, it increases chaos in social occasions and relations and, subsequently, shakes the foundations of public order and reinforces social disorganization. Meeting individual and collective needs in any way may lead to the emergence and prevalence of other social crimes through encroaching other people's properties and choosing the 'robbery pattern' as a way to reinforce the subcultures of delinquency (Hooshmand and Kuh Shefak,2002). The methods and ways of robbery, type of stolen property, and tools and appliances used to commit the theft changed over time because some thieves use the latest techniques and technologies to advance their work today. Therefore, the methods and ways of dealing with them were evolved while changing the theft methods . In other words, the situation was difficult to deal with since various equipment and tools were robbed in our time and the tendency towards them changed. In fact, the crime of robbery can be transformed through the transformation of the forms of society. Thus, its planning requires a new attitude to accompany with this transformation (Kazemi,2009).

Because man behaves differently under different climates, climatic conditions along with other environmental factors are considered as one of the most important and influential factors in the formation of social, ethical, and cultural problems. It is assumed that climate affects the human mood. Cold weather makes people active and hardworking and the unfavorable and harsh environment makes them aggressive and bold. People in such environments are grown as pragmatic people and their approach to the environment is aggressive, competitive, or exploitative. On the contrary, people living in hot climates are usually passive and inattentive. The feature of this temperament is laziness and lassitude. This type of climate reinforces the tendency to succumb, giving up, and accepting the conditions, and the approach to the environment is fear and superstition. The temperate climate brings people up with a pure and moderate temperament. The features of moderate temperament are holism, being intuitive and balanced (Keynia, 1991).

American criminologists acknowledge and believe the role of the geographical environment in crime because climate, especially humidity, pressure and air temperature, are influential for committing a variety of crimes, and they believe that violent crimes increase when the air pressure decreases. Conversely, when the humidity is higher, violent crimes occur less frequently. In the places where mild wind blows, armed robbery is more common than ever. It is necessary to identify the crime-producing factors such as climate, in preventing the occurrence of crimes and abnormalities, opening up deadlocks and problems to prevent and make appropriate decisions through the relevant institutions which are necessary in order to control and minimize these social abnormalities (Borna and et al.,2015).

Judith Blaw and Peter Blaw established the concept of relative deprivation and accordingly analyzed deviance. They believe that people from the lower classes feel deprivation and dissatisfaction when comparing their living conditions with those who are more prosperous. As the economic and racial class of these people leads to injustice and dissatisfaction, they feel deprivation (Hosseini Nesar,2004). Active believes that criminal activity is a direct result of negative affective states such as anger and unpleasant emotions which subsequently appear in destructive social relationships. The pressure exerted on the individual creates a tendency to deviate (Momtaz, 2002). This phenomenon has many consequences and harms related to the

complexity of social relations. In fact, not only does the prevalence of robbery deprive people of their personal belongings, but it also undermines social security. In addition, robbery increases the cost of production, and much of the treasury and other facilities should be spent on preventing and combating criminals and thieves as well as allocating funds to administer prisons, supplying the families of inmates, and the like. Furthermore, it undermines national security politically leading to public discontent and protest. Therefore, due to the complex and influential dimensions of the robbery problem, the necessity of conducting such research is redoubled (Safa and Fouladi,2018). Although some studies were conducted related to the crime of robbery in recent years, these studies were more oriented towards the social sciences, law, and psychology and this issue was not taken into consideration as it should from a geographical point of view. In other words, robbery was not studied in terms of geographic dispersion and its relationship to climate.

To answer a question related to why some world regions are more affected by security issues, you need to go through a new field of study called geosecurity, which is a combination of security studies, political power, and geography. In addition, just describing the security issues in the world does not justify the introduction of new concepts to geopolitics. It should present some essential components to help us to discuss why some regions of the world are more prone to security issues. It also raises more questions about the relationship between security and geography. Based on a deterministic approach, geopolitics defines political geography in their mutual sense. In this case, components of geo-security can help us to solve the security problems in a place or to protect the environment against the destructive impacts of conflicts and wars. Focus on geography turns the subject into the environmental security, and attention to the security issues gives the importance to the national security, in a way that the main subject of the former is geography and that one of the latter is the nation-state. Geosecurity, as described here, focuses on the latter and does not necessarily cover environmental security. It is also an interdisciplinary field in which the study of issues is related to both geopolitics and the state as the main Westphalia structure in progress today(Gharayagh Zandi,2023:215).

The concept of security deals with the preservation of the people, a place or a thing from danger (objective security), a sense of security (subjective

security), and protection against anxiety to be confident about personal findings (Buzan,2008:36). Therefore, some security issues, such as protecting places and material things against threats, are related to geography. Whilst geography is a context of well-being for humans, the security perception of geography affects the mutual human-nature relations. It makes us seriously take the human perception of geography into consideration. This determines the main subject of geo-security because multi-dimensional security would be more complex. Any issue is generally a geographic one; but it is very critical in the security studies to know that what the main subject of security is. Nowadays, any geographical and security studies are configured into the national structure. It means that the geographical divisions, urban planning and economic activities are affected by the countries' behavior. It means that the main objective of the security studies is to protect the state regarding the common domain between the geography and the security, while the nation-state long-lasting objective is to preserve the state regarding the geo-security.

There has always been a debate between thinkers and geographers about which geographical factor has played the most important role in human life. However, the influence of other factors such as location, size, shape of the country, vital resources, etc. should not be overlooked. From the beginning of human life, the search for security has always been one of the necessities of human society and international order throughout history. With the emergence of national governments, the concept of national resources and below that the concept of international security became common (Qidi and et al., 2017:2).

Based on the existing statistics, robbery had various consequences and complications in Iran such as deteriorating social security of production, eliminating the incentives for working, efforts and investment in the country, wasting parts of the social capital and law enforcement forces to detect, maintain, punish the thieves. Isfahan Province, as a metropolis, experienced a large migration and population growth in recent years. On the other hand, Due to special geopolitical features (size, location, ethnic diversity, climate, military facilities and facilities, etc.) and the presence of different subcultures (ethnic, racial, religious, etc. differences) paved the way for social abnormalities such as robbery. This disrupted the security of the citizens, created many problems, and deprived the social dynamics from

this province. In this regard, the present study aimed to analyze the role of climate and its changes in the spatial distribution of crime at the level of Isfahan Province.

Regarding the objectives of the study, the main questions raised are related to which cities in Isfahan provinces have the highest and lowest rate of robbery, and evaluate the relationship between the rate of crime and geographical and climatic parameters in Isfahan Province. Then, some studies conducted in this field in different areas of the world are mentioned.

Abbasi and Akhbari (2011) studied the geography of robbery and murder in the Tehran metropolis. The results indicated that some negative facilitating forces for committing crime are created in urban spaces in parallel to population growth and the size of Tehran city, which consequently increases the density and a variety of functions. In addition, the friction levels among people and disruption of social ties increases while increasing the collective controls, which is related to the high concentration and extreme variety of activities and transportation in the central part of the city. Some social crimes occur more frequently in the offenders' residence and living place, some in their workplace and activities, and the other in other places. On the other hand, location mobility is an important factor in increasing crime in geographical locations for migration destination (Tehran).

Rezaie and et al. (2012) surveyed the relationship between the changes in climatic elements and the rates of crime in Rasht and Bandar Anzali cities. They concluded that the number of disputes with a correlation coefficient of 0.8234 had the highest correlation and precipitation and the number of disputes with the amount of 0.0425 had the lowest correlation in the study stations.

Salami and et al. (2012) conducted a study for identifying and zoning the crime centers in Birjand city for purposeful management of police forces and identifying the causal factors involved in crime formation. They found that the centers for robbery in Birjand city are related to the central context of the city, i.e. the confines of the main and old market of the city. In the criminological zoning of Birjand city, crowded and overcrowded areas were identified as the centers of the crime of robbery.

Jumble and Hayes (2012) evaluated the relationship between climatic changes and violent crimes in Dallas, Texas, and found a positive

relationship between the mean daily ambient temperature and the daily rate of violent crime.

Maris (2013) reported the relationship between climatic changes and crime in St. Louis between 1990 and 2009, and observed a significant relationship between climatic changes and the rates of crime for most crimes. However, the relationship between temperature abnormalities and crime may seem mild related to the potential climatic warming in the future, where climatic change may have a significant impact on the rates of crime.

Ranson (2014) evaluated the relationship between crime and climatic changes in the United States and found a positive relationship between temperature and criminal behaviors. In fact, climatic changes resulted in 22,000 homicides, 180,000 sexual assaults, 1.2 million severe rape, 2.3 million simple assaults, 260,000 robberies, 1.3 million robberies, 2.2 million larcenies and 580,000 vehicles robbery in the United States during 2010-2099.

Borna and et al. (2015) focused on the impact of climatic elements on crime rates in the Khuzestan Province. Based on the results, robbery increased 1.55% in winter, homicide 1.09% in spring, quarrels and conflict increased 4.19% in summer, and social corruption increased 1.44% in spring.

Ling et al. (2016) studied the relationship between the temporal changes of the properties-based crimes and different climates in Vancouver and Ottawa (Canada) and observed that the cities experiencing more climatic change during the year indicated a significant increase in property crimes during the summer months.

Safa and Fouladi (2016) studied qualitatively the causes and contexts of home robberies and its impact on social order and security in Qom city. They found that a series of economic, cultural, social, familial, judicial, law enforcement, and individual factors lead people towards robbery. Contexts such as carelessness of the victims, ease of sale of robbed equipment, special environmental conditions as well as exclusion are involved in the robberies of homes.

Moghimi (2017) surveyed the impact of quality of life on the crime of robbery and found a significant relationship between income, education, satisfaction with current living conditions and social disorders with robbery.

Hosseini and Kameli (1986) investigated the factors impacting the occurrence of robbery in districts 1 and 7 in Qom city. The results indicated

that from the view of the residents living in district 1 at Qom city, the district guardian index with a mean of 4.21 can have the greatest impact in reducing the crime of robbery and population density has the least impact. On the other hand, residents in the district seven considered increasing the quality of doors and windows with the mean of 4.64 as the main factor in reducing the rate of crime and the index of providing facilities and appliances for better district performance from the municipality had the least impact.

Hu and et al. (2017) focused on the impact of climatic variation and its changes related to the rates of crime in Tangshan, China, and found a significant positive correlation between the rates of crime and temperature in Tangshan, China. In addition, a positive and significant relationship was observed between relative humidity and the rate of sexual rape and theft.

Ide and et al (2020), in a study entitled " Multi-method evidence for when and how climate-related disasters contribute to armed conflict risk" came to this conclusion, By combining statistical approaches with systematic evidence from QCA and qualitative case studies in an innovative multi-method research design, we show that climate-related disasters increase the risk of armed conflict onset. This link is highly context-dependent and we find that countries with large populations, political exclusion of ethnic groups, and a low level of human development are particularly vulnerable. For such countries, almost one third of all conflict onsets over the 1980-2016 period have been preceded by a disaster within 7 days.

Suh and et al (2021), in a study entitled " The role of psychological research in understanding and responding to links between climate change and conflict" came to this conclusion, Climate change will cause conflict through both direct and indirect pathways. Although climate change may not directly cause conflict, heat waves and extreme weather events could amplify interpersonal violence, and climate change consequences (i.e. economic deprivation and migration) could also intensify intergroup conflict.

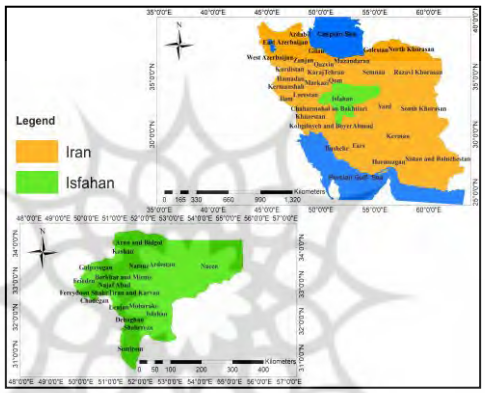
2. Methodology

2-1. Introducing the Study Area

Isfahan Province with an area of 105937 square kilometers is located between 30° 43′ to 34° 27′ north latitude and 49° 36′ to 55° 31′ east longitude. The province, located in central Iran, is bordered with the Markazi, Qom and Semnan Provinces

from the north, Fars and Kohgiloueh and Bouerahmad Provinces from the south and Lorestan and Chaharmahal Bakhtiari Province from the east. Based on the latest national divisions, this province has 23 cities, 45 districts, 103 towns, and 125 suburbs, with the capital city of Isfahan. Based on the census in 2016, the population of the province was estimated to be 5120850, among whom 2599477 (51%) were male, and 2521373 (49%) were female. Based on the available statistics, 44% of the population is related to Isfahan (Fig.1).

Figure (1): The Study Area



2-2. Method

The present study is descriptive based on methodology and an applied study based on the objective. The required data were obtained through library studies (books, articles, documents, internet, etc.).

2-3. Data Collection

In the present study, 9 indicators were selected from the indicators of robbery in the statistical yearbook of the cities in Isfahan province (As geopolitical security). These indicators are public places, homes, shops, other places, cars, motorcycles, bicycles, in-car accessories, livestock and other crimes. First, the robbery indicators were weighted in the cities in the form of SWARA multi-index model. Then, research indicators were weighted in the form of SWARA multi-index decision model. Then, they were rated through ARAS multi-index technique in these cities based on the crime of robbery. Then, they were clustered based on the crime of robbery through SPSS Software in Isfahan Province. Subsequently, 16 with climatic stations were selected through climatic data of 16 synoptic stations at

Isfahan Province. Finally, the relationship between the crime of robbery in these cities(Which can affect the national and political security of the country) was assessed through three geographical factors such as longitude, latitude, and altitude, and five climatic parameters such as temperature, precipitation, humidity, wind and frost through Pearson correlation and linear regression. Accordingly, altitude, temperature, and precipitation, which were significantly related to robbery, were selected. The results of linear regression were zoned and analyzed through Kriging Method.

Table (1): Climatic Data of 16 Synoptic Stations in Isfahan Province

Row	Station Name	latitude	Longitude	Altitude	Temperature	Precipitation	Humidity	Wind	Frost
1	Ardestan	52.38	33.36	1255.5	20	131.50	30	4	33
2	Esfahan	51.86	32.74	1551.9	16.40	127	38.70	2.50	72
3	Khansar	50.32	33.23	2300	12.60	387.60	33.80	2	98
4	Khor and Biabank	55.08	33.77	842.2	21	81.50	32	2	26
5	Semirom	51.55	31.42	2459.9	13.50	493	32.50	3.50	92
6	Shahin Shahr and Maymeh	51.17	33.43	1980	14.03	157.07	37	3.70	125
7	Shahreza	51.81	31.98	1858	15.07	145.04	37	3.30	85
8	Frieden	50.37	32.97	2290	11	336.70	42	2.20	113
9	Fereydoon Shahr	50.13	32.94	2490	11.50	567	36	4	118
10	Kashan	51.48	33.97	955	19.10	134	39.50	4	45
11	Golpayegan	50.28	33.47	1870	15.60	255	36.70	3	81
12	Lenjan	51.38	32.40	1713	17.80	159	34.50	2	87
13	Mobarake	51.45	32.36	1680.2	17.06	133	33.50	2	90
14	Naeen	53.08	32.85	1573.7	18.07	100.08	29	4	61
15	Najaf Abad	51.39	32.60	1636.2	18.20	159	34	4	68
16	Natanz	51.90	33.53	1685	16.07	193.04	35	2	58

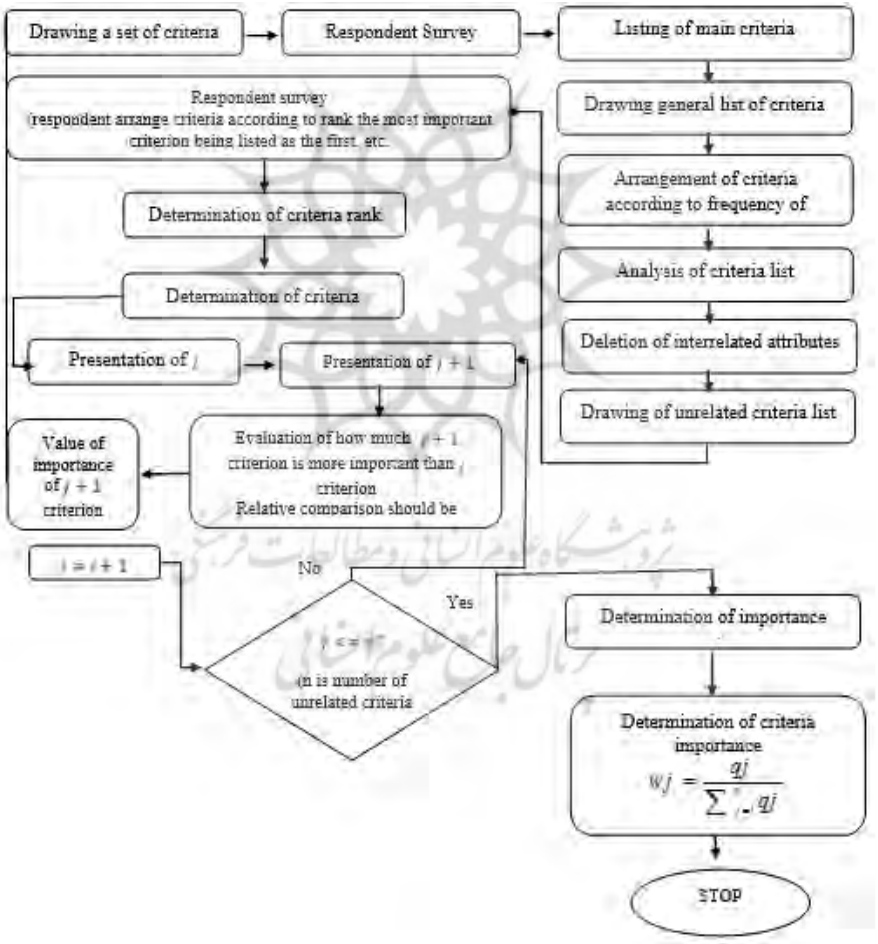
(**Source:** Isfahan Meteorological Organization,2016)

2-4. SWARA Method

Step Wise Weight Assessment Ratio Analysis (SWARA) is considered as one of the new multi-criteria decision-making (MCDM) methods in which Cresolein utilized in 2010 was to develop a reasonable discrepancy analysis method among the criteria. Generally, in SWARA method, the criteria are ranked based on their value. In this method, the most important criterion is ranked first and the least important is ranked last. In this method, experts play an important role in evaluating the calculated weights. It is recommended to used the use of SWARA method as one of the group decision-making methods in high-level and very important decisions performed based on the collective agreement among experts. This simple

and understandable approach is a reliable alternative for continuous analyses. Compared to the ANP and AHP methods, it has fewer paired comparisons and can easily be used to solve a significant number of decision problems. As a simple technique, the SWARA technique enables experts to communicate easily with its main objective in various fields (Qasemieh,2015). The stages of weighting through the SWARA method are illustrated in Fig. 2 (Croswell and et al.,2010).

Figure (2): Steps of Weighting to Indices in the SWARA Method



(**Source:** Kressulin and et al.,2010)

2-5. ARAS Method

Additive Ratio Assessment (ARAS) method is considered as one of the multi-criteria decision-making methods introduced by Zavadskas and Turkis (2010). The ARAS method is similar to that of TOPSIS, VICOR, or ELECTRA. That is, the decision matrix is considered as the criterion-option, whichis considered as one of the best multi-criteria decision making methods to choose the best option. The best option is the one which has the highest distance from the negative factors and the lowest distance from the positive factors. The different steps of this method are as follows:

Forming the decision matrix: The first step in this technique is the formation of a decision matrix. The decision matrix is used to assess a number of options based on a number of criteria, i.e. a matrix in which each option is scored on a number of criteria. The decision matrix is represented by X and each of its entry is represented by xij (Equation.1).

$$X = \begin{bmatrix} x_{11} & x_{12} \cdots & x_{1n} \\ x_{21} & x_{22} \cdots & x_{2n} \\ \vdots & \vdots & \vdots \\ x_{m1} & x_{m2} & x_{mn} \end{bmatrix} \quad \text{Eq. (1)}$$

Forming the normal decision matrix: Normalization or un-scalability is the second step in solving all the decision matrix-based multi-criteria decision-making techniques. In the MCDM methods, it is better to use the word un-scalability. In the COPRAS technique, normalization is conducted linearly. It is worth noting that the indices should first be reversed and then normalized based on linear method if they are negative (losses) (Equation.2).

$$N = \begin{bmatrix} n_{11} & n_{12} \cdots & n_{1n} \\ n_{21} & n_{22} \cdots & n_{2n} \\ \vdots & \vdots & \vdots \\ n_{m1} & n_{m2} & n_{mn} \end{bmatrix} \quad \text{Eq. (2)}$$

Forming the balanced normal decision matrix: In the third step of the ARAS technique, the normal decision matrix should be balanced. For this purpose, the weight of each criterion is multiplied by all the entries below the same criterion. The weight of the criteria must be determined in advance. Therefore, Shannon entropy techniques, Hierarchical Analysis Process

(AHP), best-worst Method (BWM) and SWARA methods are commonly utilized (Equation.3).

$$\mathbf{V} = \begin{bmatrix} v_{11} & v_{12} \cdots & v_{1n} \\ v_{21} & v_{22} \cdots & v_{2n} \\ \vdots & \vdots & \vdots \\ v_{m1} & v_{m2} & v_{mn} \end{bmatrix} \quad \text{Eq. (3)}$$

Calculating the utility rate of each option: In the fourth step of the ARAS technique, the utility rate of each option is calculated through the utility function. The best option is the one which has the higher utility. Finally, the rate of utility should be calculated. The utility rate of each option is expressed in S_i and calculated by the Equation (4):

$$S_i = \Sigma(V_{ij})$$
$$K_i = S_i / S_o \qquad \text{Eq. (4)}$$

3. Finding

3-1. Analyzing the Type and amount of the Crimes of Robbery

Table (2) indicates the frequency distribution of the type of robbery in Isfahan province in 2017. In the present study, the crimes of robbery were divided into nine categories. As shown, of the total 61363 committed robberies, the highest frequency related to in-car accessories with 25.29%, other crimes with 17.39% and other places with 14.72%. On the other hand, the lowest rate of crime was 0.75 for the government places and 2.70 for cattle and livestock, respectively.

Table (2): Frequency Distribution of the Types of Robberies in Isfahan Province in 2017

The Crime Type of Theft	Abundance	Percent	The Cumulative Percentage
Public Places	464	0.75	0.75
Homes	7050	11.48	12.24
Shops	1724	2.80	15.05
Other Places	9038	14.72	29.78
Car	6974	11.36	41.14
Motorcycles and Bicycles	8256	13.45	54.60
In-Car Accessories	15520	25.29	79.89
livestock	1662	2.70	82.60
Other Crimes	10675	17.39	100
Total	61363	100	-

(**Source:** Author's calculations based on statistical yearbook data of the cities of Isfahan Province,2017)

As outlined in the research method section, after finalizing the indices, the steps of SWARA method were taken to determine the weight and importance of the indices in order to calculate the significance of each index. In this section, the results of this method are analyzed. The process of calculating the weight of robbery criteria in the cities of Isfahan Province based on the formula of the SWARA method is presented in Table (3).

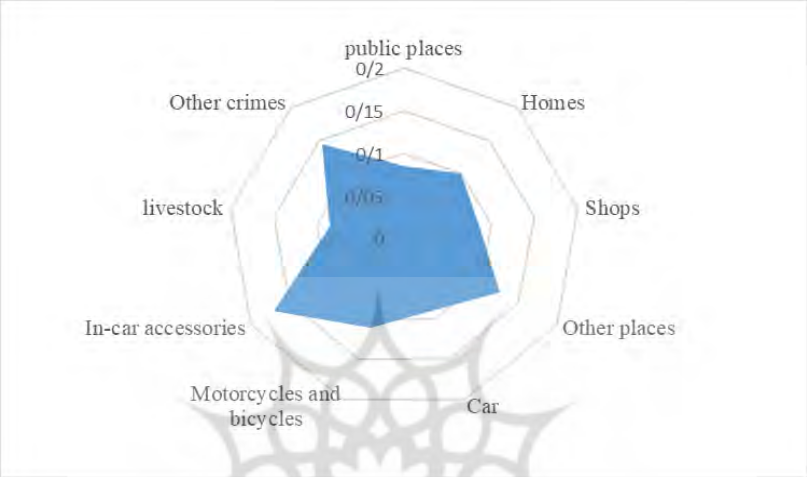
Table (3): Weight of the Main Criteria and Dimensions of Robbery in the Cities of Isfahan Province

Evaluation Indexes	Relative Importance	Coefficient	The Initial weight	The Final Weight
In-Car Accessories	-	1	1	0.170
Other Crimes	0.173	1.173	0.853	0.145
Other Places	0.147	1.147	0.743	0.126
Motorcycles and Bicycles	0.134	1.134	0.655	0.111
Homes	0.114	1.114	0.588	0.100
Car	0.113	1.113	0.529	0.090
Shops	0.028	1.028	0.514	0.087
Livestock	0.027	1.027	0.501	0.085
Public Places	0.007	1.007	0.497	0.085

(**Source:** Documentary Findings and Researcher's Calculations,2019)

The first column in Table (3) indicates a list of criteria in the order of priority (in a descending order). As the steps of SWARA method are proceeded, the final weight of the concerned model dimensions is shown in the last column. As shown in Table 3, among the indices impacting the robbery, in-car accessories robbery ranked first (0.174), other crimes ranked second (0.145), robberies from other places ranked third (0.126), motorcycle and bicycle robbery ranked fourth (0.111). In addition, home, car, shop, livestock robberies ranked fifth, sixth, 0.087 seventh, and eighth with the weights of 0.1, 0.09, 0.087, and 0.085, respectively. Finally, robbery from government places weighting 0.085 ranked last. These security criteria, due to their position and importance at the micro and territorial level, ie the city of Isfahan, have the ability to spread and expand to the national level and can be a threatening factor at other levels, ie other lands and even the country. Fig (3) displays the weighting distribution of these criteria.

Figure (3): Weight Distribution of the Main Criteria and Dimensions of Robbery in the Cities of in Isfahan Province



ARAS multi-index technique was utilized to measure the criteria of robbery in the cities of Isfahan Province based on nine indices of government places (X1), homes (X2), shops (X3), other places (X4), cars (X5), motorcycles and bicycles (X6), in-car accessories (X7), livestock (X8) and other crimes (X9). Table 4 indicates the data obtained from documentary studies (Statistical Yearbook of Isfahan Province). Then, through the ARAS technique, it was found that the highest rate of crime occurred in the cities of Isfahan Province.

Step one: Forming the decision matrix: Table (4) indicates the frequency distribution of the type of robbery in 2017 in Isfahan Province. As shown, the crimes of robbery were categorized into nine different groups.

Table (4): Distribution of the Type and amount of Crimes of Robbery in the Cities of Isfahan Province in 2017

County	Public Places	Homes	Shops	Other Places	Car	Motorcycles and Bicycles	In-car Accessories	Livestock	Other Crimes
Aran and Bidgol	8	91	30	174	3	113	39	103	42
Ardestan	12	122	11	75	5	42	24	77	69
Esfahan	177	3748	976	3753	5201	4631	11040	330	6485
Borkhar	18	145	41	244	104	97	193	56	177
Tiran and Karvan	13	69	26	117	13	54	48	60	58
Chadegan	7	23	2	18	1	14	1	19	31
Khomeini shahr	36	491	169	622	422	628	587	92	759
Khansar	2	40	7	35	1	16	11	14	26
Khor and Biabank	5	30	4	23	0	12	8	10	18
Dehaghan	5	34	8	75	3	32	21	38	37
Semirom	2	32	8	86	3	15	32	36	41
Shahin Shahr and Maymeh	13	209	30	291	215	151	464	51	268
Shahreza	11	231	26	375	71	297	410	90	412
Frieden	7	29	12	30	6	30	17	28	87
Fereydoon Shahr	2	15	2	10	0	12	3	22	19
Falavajan	14	200	67	523	250	369	311	81	398
Kashan	47	565	104	910	163	809	901	190	681
Golpayegan	3	121	16	126	19	97	89	37	152
Lenjan	50	264	68	401	193	294	656	66	314
Mobarake	17	118	32	349	88	129	171	47	221
Naeen	4	29	4	29	1	16	19	17	41
Najaf Abad	8	355	74	696	201	363	428	138	270
Natanz	3	89	7	76	11	35	47	60	69
Wj	0.085	0.100	0.087	0.126	0.090	0.111	0.170	0.085	0.145

In this step, indices of crime were standardized in the cities of Isfahan Province based on the population of each city (The authors' calculations based on the statistical yearbook of Isfahan Province,2017).

Thus, in order to obtain each index in each city, that index was divided into the population of each city and multiplied by 100, and finally the standardization operation was performed. Table (5) displays the standard matrix, type, and amount of crimes of robbery at the urban level of Isfahan province based on population in 2017.

Table (5): Standard Matrix of the Type and amount of the Crimes of Robbery at the Urban Level of Isfahan Province based on Population in 2017

County	Population	Public Places	Homes	Shops	Other Places	Car	Motorcycles and Bicycles	In-car Accessories	Livestock	Other Ccrimes
Aran and Bidgol	103517	0.007	0.087	0.028	0.168	0.002	0.109	0.037	0.099	0.040
Ardestan	42105	0.025	0.289	0.026	0.178	0.011	0.099	0.057	0.182	0.163
Esfahan	2243249	0.078	0.167	0.043	0.167	0.231	0.206	0.492	0.014	0.289
Borkhar	122419	0.014	0.118	0.033	0.199	0.048	0.079	0.157	0.045	0.144
Tiran and Karvan	71575	0.018	0.096	0.036	0.163	0.018	0.075	0.067	0.083	0.081
Chadegan	32479	0.025	0.070	0.006	0.055	0.003	0.043	0.003	0.058	0.095
Khomeini shahr	319727	0.011	0.153	0.052	0.194	0.131	0.196	0.183	0.028	0.237
Khansar	33049	0.006	0.121	0.021	0.105	0.003	0.048	0.033	0.042	0.078
Khor and Biabank	19761	0.025	0.151	0.020	0.116	0	0.060	0.040	0.050	0.091
Dehaghan	34511	0.014	0.098	0.023	0.217	0.008	0.092	0.060	0.110	0.107
Semirom	74109	0.002	0.043	0.010	0.116	0.004	0.020	0.043	0.048	0.055
Shahin Shahr and Maymeh	234667	0.005	0.089	0.012	0.124	0.091	0.064	0.197	0.021	0.114
Shahreza	159797	0.006	0.144	0.016	0.234	0.044	0.185	0.256	0.056	0.257
Frieden	49890	0.014	0.058	0.024	0.060	0.012	0.060	0.034	0.056	0.174
Fereydoon Shahr	35654	0.0056	0.042	0.005	0.028	0	0.033	0.008	0.061	0.053
Falavajan	249814	0.0056	0.080	0.026	0.209	0.100	0.147	0.124	0.032	0.159
Kashan	364482	0.012	0.155	0.028	0.249	0.044	0.221	0.247	0.052	0.186
Golpayegan	90086	0.003	0.134	0.017	0.139	0.021	0.107	0.098	0.041	0.168
Lenjan	262912	0.019	0.100	0.025	0.152	0.073	0.111	0.249	0.025	0.119
Mobarake	150441	0.011	0.078	0.021	0.231	0.58	0.085	0.113	0.031	0.146
Naeen	39261	0.010	0.073	0.010	0.073	0.002	0.040	0.048	0.043	0.104
Najaf Abad	319205	0.002	0.111	0.023	0.218	0.062	0.113	0/134	0.043	0.084
Natanz	43977	0.006	0.202	0.015	0.172	0.025	0.079	0/106	0.136	0.156
The ideal amount	-	0.002	0.042	0.005	0.028	0	0.020	0.003	0.014	0.040
SUM		0.262	2.668	0.531	3.576	1.036	2.284	2.795	1.366	3.111

Step two: the normalized matrix: in this step, the indices were normalized based on the cities. Table (6) shows the data normalization matrix.

Table (6): The Normalized Matrix of the Data Related to Robbery in the Cities of Isfahan Province

County	Public Places	Homes	Shops	Other Places	Car	Motorcycles and Bicycles	In-car Accessories	Livestock	Other Crimes
Aran and Bidgol	0.141	0.046	0.025	0.029	0.156	0.027	0.036	0.018	0.013
Ardestan	0.111	0.141	0.028	0.028	0.038	0.030	0.024	0.010	0.028
Esfahan	0.040	0.024	0.017	0.030	0.001	0.014	0.002	0.125	0.015
Borkhar	0.021	0.034	0.022	0.025	0.005	0.038	0.008	0.040	0.031
Tiran and Karvan	0.017	0.042	0.020	0.030	0.024	0.040	0.020	0.022	0.056
Chadegan	0.014	0.057	0.120	0.090	0.147	0.070	0.450	0.031	0.048
Khomeini shahr	0.028	0.026	0.014	0.025	0.003	0.015	0.007	0.064	0.019
Khansar	0.053	0.033	0.035	0.047	0.150	0.062	0.041	0.043	0.058
Khor and Biabank	0.012	0.026	0.036	0.043	0.0004	0.049	0.034	0.036	0.050
Dehaghan	0.022	0.041	0.032	0.023	0.052	0.032	0.022	0.016	0.043
Semirom	0.119	0.094	0.068	0.043	0.112	0.149	0.032	0.038	0.083
Shahin Shahr and Maymeh	0.058	0.045	0.058	0.040	0.004	0.047	0.007	0.085	0.040
Shahreza	0.046	0.028	0.045	0.021	0.010	0.016	0.005	0.032	0.017
Frieden	0.022	0.070	0.030	0.083	0.037	0.050	0.040	0.033	0.026
Fereydoon Shahr	0.057	0.097	0.132	0.179	0.004	0.090	0.164	0.030	0.086
Falavajan	0.057	0.051	0.027	0.024	0.004	0.020	0.011	0.057	0.028
Kashan	0.024	0.026	0.026	0.020	0.010	0.013	0.005	0.035	0.024
Golpayegan	0.096	0.030	0.041	0.036	0.021	0.028	0.014	0.045	0.027
Lenjan	0.016	0.040	0.028	0.033	0.006	0.027	0.005	0.073	0.038
Mobarake	0.028	0.052	0.034	0.021	0.007	0.035	0.012	0.059	0.031
Naeen	0.031	0.055	0.072	0.068	0.178	0.074	0.028	0.042	0.044
Najaf Abad	0.128	0.036	0.032	0.023	0.007	0.026	0.010	0.042	0.054
Natanz	0.047	0.020	0.046	0.029	0.018	0.038	0.012	0.013	0.029
The ideal amount	0.009	0.015	0.010	0.007	0	0.008	0.001	0.010	0.013
WJ	0.085	0.0100	0.087	0.026	0.090	0.111	0.170	0.085	0.145

Steps three and four: the balanced weights matrix and the final rank: In these steps, the balanced weights matrix and the final rank were obtained. Table (7) indicates the final rank of the cities in Isfahan Province based on the indicators of robbery.

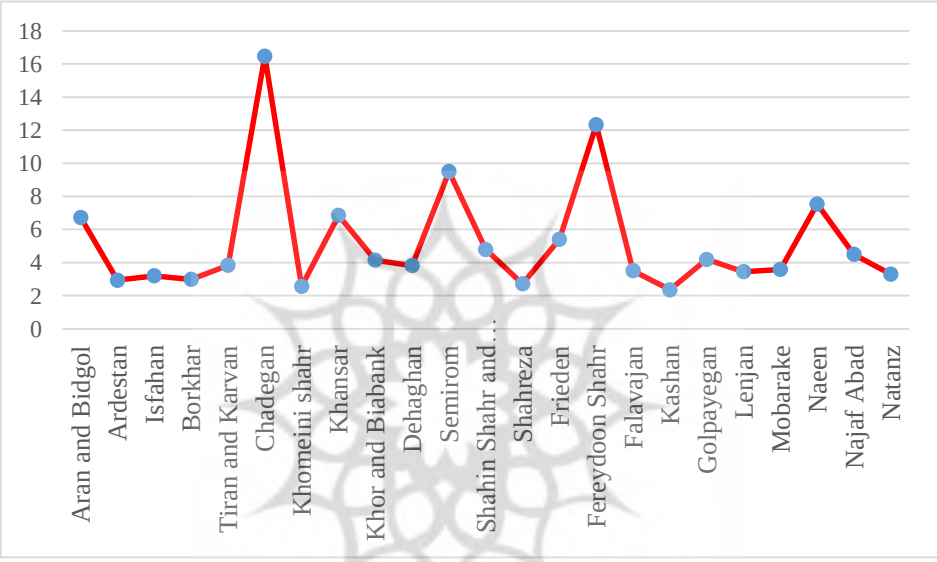
Table (7): Final Rank of the Cities in Isfahan Province based on the Indicators of Robbery

	Public Places	Homes	Shops	Other Places	Car	Motorcycles and Bicycles	In-car Accessories	Livestock	Other Crimes	SJ	KJ	Rank
Aran and Bidgol	0.0035	0.0046	0.0022	0.0037	0.0140	0.0030	0.0062	0.0015	0.0164	0.055	6.732	6
Ardestan	0.0009	0.0014	0.0024	0.0035	0.0034	0.003	0.0041	0.0008	0.0040	0.024	2.937	20
Esfahan	0.0034	0.0024	0.0014	0.0037	0.0001	0.0016	0.0004	0.0107	0.0023	0.026	3.203	18
Borkhar	0.0018	0.0034	0.0019	0.0031	0.0004	0.0042	0.0014	0.0034	0.0046	0.024	2.988	19
Tiran and Karvan	0.0015	0.0042	0.0017	0.0038	0.0022	0.0044	0.0035	0.0018	0.0082	0.031	3.840	12
Chadegan	0.0012	0.0057	0.0105	0.0114	0.0132	0.0078	0.0765	0.0026	0.0070	0.136	16.475	1
Khomeini shahr	0.0024	0.0056	0.0012	0.0032	0.0003	0.0017	0.0012	0.0054	0.0028	08021	2.559	22
Khansar	0.0045	0.0033	0.0030	0.0059	0.0135	0.0069	0.0070	0.0037	0.0084	0.056	6.853	5
Khor and Biabank	0.0010	0.0026	0.0031	0.0054	0.0008	0.0055	0.0058	0.0031	0.0073	0.034	4.149	10
Dehaghan	0.0018	0.0041	0.0027	0.0029	0.0046	0.0036	0.0038	0.0014	0.0062	0.031	3.822	13
Semirom	0.0101	0.0094	0.0059	0.0054	0.0100	0.0166	0.0054	0.0032	0.0120	0.078	9.498	3
Shahin Shahr and Maymeh	0.0049	0.0045	0.0050	0.0051	0.0004	0.0052	0.0011	0.0072	0.0058	0.039	4.796	8
Shahreza	0.0039	0.0028	0.0039	0.0027	0.0009	0.0018	0.0009	0.0027	0.0025	0.022	2.722	21
Frieden	0.0019	0.0070	.0026	0.0105	0.003	0.0055	0.0069	0.0028	0.0038	0.044	5.414	7
Fereydoon Shahr	0.0048	0.0097	0.0115	0.0226	0.0008	0.0099	0.0279	0.0025	0.0125	0.101	12.324	2
Falavajan	0.0048	0.0051	0.0024	0.0030	0.0004	0.0022	0.0018	0.0048	0.0041	0.029	3.513	15
Kashan	0.0021	0.0026	0.0022	0.0025	0.0001	0.0015	0.0009	0.0030	0.0035	0.019	2.363	23
Golpayegan	0.0082	0.0030	0.0026	0.0045	0.0019	0.0031	0.0023	0.0038	0.0039	0.034	4.192	11
Lenjan	0.0014	0.0040	0.0025	0.0041	0.0005	0.0030	0.0009	0.0062	0.0555	0.028	3.452	16
Mobarake	0.0024	0.0052	0.0030	0.0027	0.0006	0.0039	0.0020	0.0050	0.0045	0.029	3.590	14
Naeen	0.0026	0.0055	0.0063	0.0085	0.0160	0.0082	0.0048	0.0036	0.00064	0.062	7.539	4
Najaf Abad	0.0019	0.0036	0.0027	0.0029	0.0006	0.0029	0.0017	0.0036	0.0079	0.037	4.496	9
Natanz	0.0040	0.0020	0.0040	0.0036	0.0016	0.0042	0.0022	0.0011	0.0042	0.027	3.293	17
The ideal amount	0.0008	0.0015	0.0009	0.0009	0	0.0009	0.0001	0.0009	0.0018	0.008		

As shown in Table (7), among the cities of Isfahan Province in terms of robbery, Chadegan city with the total amount of 16.475 ranked first, Fereydounshahr city with the total amount of 12.324 ranked second, Semirom city with the total amount of 9.498 ranked third and Naein city with the total amount of 7.539 ranked fourth. On the other hand, Ardestan, Shahreza, Khomeini Shahr and Kashan cities with the amounts of 2.937, 2.722, 2.559, and 2.363ranked last, respectively. Certainly, this type of security (theft) will certainly occur in other cities of the country, including

(Kerman, Yazd, Sistan and Baluchestan, etc.), if not planned and managed, it can lead to national and political security. The country will suffer.

Figure (4): The Total amount of Final Weight of the Cities in Isfahan Province based on Robbery Indices in the ARAS Model



3-2. Cluster Analysis

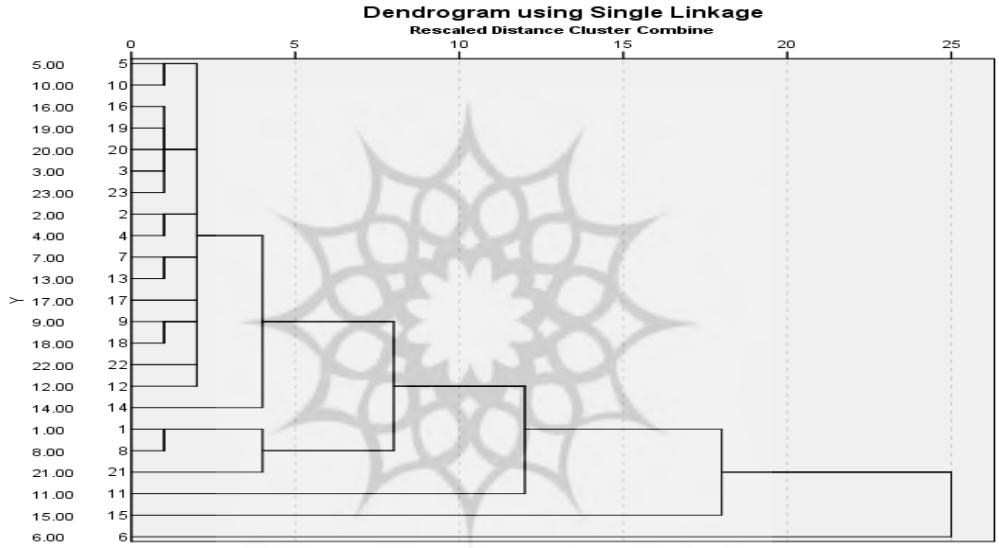
As shown in the results of ARAS technique, the cities of Isfahan Province were classified into four clusters based on the robbery factor through cluster analysis and SPSS Software. These four clusters are as follows:

Cluster one: In cluster one, there are Aran and Bidgol, Ardestan, Isfahan, Borkhar, Tiran and Keron, Khomeini Shahr, Khansar, Khor and Biabank, Dehaghan, Shahinshahr and Meymeh, Shahreza, Daran (Faridon), Falavarjan, Kashan, Golpayegan, Lanjan, Mobarakeh, Naien, Najafabad and Natanz cities. This cluster is in a very good and average condition based on the occurrence of crime, i.e. the least amount of crime can be observed in them.

Cluster two: In cluster two, there is Chadegan city which is in a very bad condition based on the crime occurrence, i.e. the highest amount of crime occurred in this city.

Cluster three: This cluster include Semirom city which is in a very bad condition based on the crime occurrence.
Cluster four: This cluster includes the Fereidounshahr city. Although it has a more favorable condition than that of the clusters two and three, the crime was observed yet. Figure(5) Displays the Clusters of Robbery at the Urban Level of Isfahan Province.

Figure (5): Clusters of Robbery among the Cities in Isfahan Province



Since only climatic information for the 16 stations (city) was available among 23 cities in Isfahan Province, the relationship between robbery and the geographic factors of length, width, and height, as well as the climatic parameters of temperature, precipitation, humidity, wind, and frost were measured in 16 cities of Isfahan Province. Table 8 indicates the relationships and correlations of these variables through Pearson correlation and linear regression.

Table (8): The Pearson Correlation Relationships between Robbery and Geographical Factors and Climatic Parameters in the Cities of Isfahan Province

Correlations										
		Robbery	**Latitude**	**Longitude**	**Altitude**	**Temperature**	**Precipitation**	**Humidity**	**Wind**	**Frost**
Robbery	Pearson Correlation	1	-.279	-.286	.683**	-.586*	.827**	-.192	.283	.488
	Sig. (2-tailed)		.295	.283	0.004	.017	.000	.475	.287	.055
	N	16	16	16	16	16	16	16	16	16
Latitude	Pearson Correlation	-.279	1	.154	-.727**	.747**	-.606*	-.530*	-.067	-.748**
	Sig. (2-tailed)	.295		.569	.001	.001	.013	.035	.807	.001
	N	16	16	16	16	16	16	16	16	16
Longitude	Pearson Correlation	-.286	.154	1	-.506*	.293	-.287	.142	-.022	-.274
	Sig. (2-tailed)	.283	.569		.045	.271	.282	.600	.935	.154
	N	16	16	16	16	16	16	16	16	16
Altitude	Pearson Correlation	.683**	-.727**	-.506*	1	-.932**	.830**	.206	-.015	.868**
	Sig. (2-tailed)	.004	.001	.045		.000	.000	.443	.956	.000
	N	16	16	16	16	16	16	16	16	16
Temperature	Pearson Correlation	-.586*	.747**	.293	-.932**	1	-.792**	-.475	.082	-.879**
	Sig. (2-tailed)	.017	.001	.271	.000		.000	.063	.763	.000
	N	16	16	16	16	16	16	16	16	16
Precipitation	Pearson Correlation	.827**	-.606*	-.287	.830**	-.792**	1	.150	.083	.598*
	Sig. (2-tailed)	.000	.013	.082	.000	.000		.578	.761	.014
	N	16	16	16	16	16	16	16	16	16
Humidity	Pearson Correlation	-.192	-.530*	.142	.206	-.475	.150	1	-.155	.430
	Sig. (2-tailed)	.475	.035	.600	.443	.063	.578		.568	.097
	N	16	16	16	16	16	16	16	16	16
Wind	Pearson Correlation	.083	-.067	-.022	-.015	.082	.083	-.155	1	-0.44
	Sig. (2-tailed)	.287	.807	.935	.956	.763	.761	.568		.870
	N	16	16	16	16	16	16	16	16	16
Frost	Pearson Correlation	.488	-.748**	-.374	.868**	-.879**	.598*	.430	-.044	1
	Sig. (2-tailed)	.055	.001	.154	.000	.000	.014	.097	.870	
	N	16	16	16	16	16	16	16	16	16
**. Correlation is significant at the 0.01 level (2-tailed).										
*. Correlation is significant at the 0.05 level (2-tailed).										

As shown in Table (8), the intersection of the first column with the second, third, fourth, fifth, sixth, seventh, eighth and ninth columns yielded good results. As shown, a significant relationship was observed between the occurrence of robbery in Isfahan city and three parameters of height,

temperature, and precipitation (Under the heading of environmental security under a subset of national security). Thus, only a significant relationship between the occurrence of the crime with altitude, temperature, and precipitation was considered, and the relationship between robbery and other parameters of geographical latitude and longitude, moisture, wind, and frost were not regarded due to lack of significant correlation (with error greater than 0.05). Thus, multivariate regression was used to determine the linear relationship between the occurrence of crime and the three parameters of height, temperature, and precipitation. Table 9 indicates the results of multivariate regression between the occurrence of robbery and the parameters of elevation, temperature, and precipitation at 16 climatic stations in Isfahan province.

Table (9): The Linear Regression to Determine the Level of Relationship between the Occurrence of Crime and three Parameters of Elevation, Temperature, and Precipitation

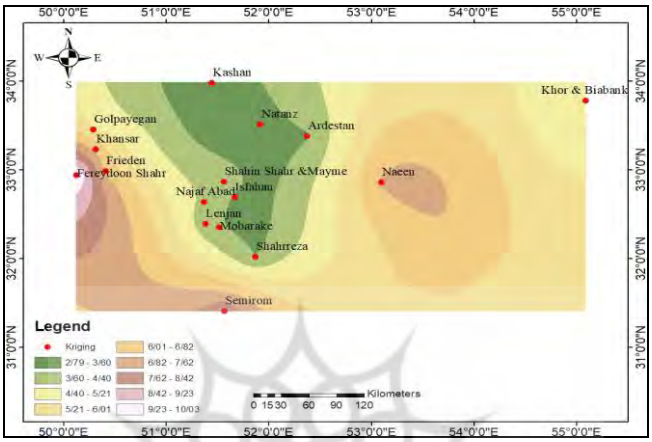
Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	-10.440	10.343		-1.009	.333
	Altitude	.002	.003	.437	.938	.367
	Temperature	.469	.093	.508	1.193	.256
	Precipitation	.016	.005	.867	3.139	.009
a. Dependent Variable: kj						

As shown in Table (9), the regression coefficient between the occurrence of robbery and height, temperature, and precipitation is 0.002, 0.496, and 0.016, respectively. The linear relationship between the occurrence of crime and the three parameters of altitude, temperature and precipitation is as follows:

$$kj = -10/440 + 0/002(\text{elevation}) + 0/469(\text{Temperature}) + 0/016(\text{rain})$$

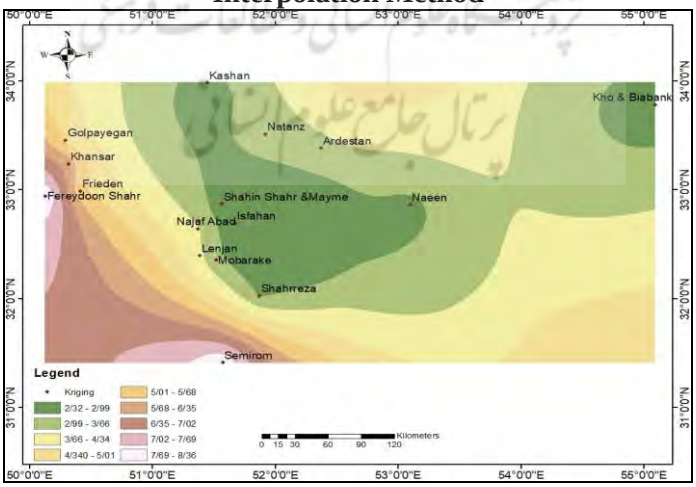
In order to compare the outputs better, the regression equations between the robbery and the three parameters of elevation, temperature, and precipitation were first interpolated based on the sole factor of the crime and the cities with robbery. Figure (6) displays the zoning of robbery based on 16 cities.

Figure (6): Distribution of Robbery among Sixteen Cities of Isfahan Province based on Kriging Interpolation Method



As displayed in Figure (6), the highest rate of robbery occurred in the eastern, southern and western parts of Isfahan Province, while the lowest rate of crime happened in the central and northern parts. Figure (7) demonstrates the zoning of the relationship between robbery and three parameters of the elevation, temperature, and precipitation. Then, the linear correlation was defined through the Kriging interpolation method.

Figure (7): The Map of Regression Relationships of Elevation, Temperature, and Precipitation at the Urban level of Isfahan Province based on Kriging Interpolation Method



As shown in Figure (7), a significant relationship was observed between the distribution of the crime of robbery in Isfahan Province with height, temperature and precipitation. The highest rate of the crime of robbery occured in southern and western parts of Isfahan province., i.e. the red, brown and white parts of Semirom, Daran (Frieden), Fereidounshahr and Khansar cities indicate a high rate of robbery, which has a significant relationship with altitude, temperature and precipitation. However, the central and northern parts, i.e. the green parts, including Isfahan, Ardestan, Kashan, Mobarakeh and Khor cities had the least rate of robbery. Of course, Nain and Khor are considered as the exceptions, and they are located in the parts of the provinces which had lower crime based on the three mentioned parameters. However, they are considered as high crime areas based on its ranking results in the model.

According to these results, it can be said that if we extend this security to other territorial levels and at the national and political level, regions of eastern, central, southern, and southwestern Iran due to the multiplicity of ethnicities, geographical dispersion and climatic diversity. They are exposed to more theft, crime and delinquency that can be critical to the country's political security.

4.Conclusion

Crime is considered as one of the phenomena which can have many social impacts, where it controls the city based on safety and creates an insecure atmosphere over the city. On the other hand, as one of the types of crime, robbery can have a significant role in the stagnation of the city and its social and economic non-dynamicity. Climate and its changes can greatly influence human behavior, where many of human activities and behavioral habits in life can be altered by the adverse weather conditions. There are a number of exchanges between humans and the weather leading to behavioral disorders and illness in humans. Conversely, it can develop a sense of complete well-being. These human behaviors are just some of the damage which results from the relationship between humans and the climate today. At present, Isfahan province has ethnic diversity (ethnic groups from Jaharmahal Bakhtiari and Isfahani), seasonal diversity (having different climates and its impact on human behavior) and having military facilities (Natanz sensitive complex), with problems such as Environmental (water shortage, lack of coordinated urban development, etc.). In recent years, the

ethnic tendency of the tribes to internal tensions has disrupted internal security and reduced the socio-political participation of the tribes with the central government. If this trend continues, it seems that Isfahan province will face wide-ranging challenges in the coming years and challenge the national interests of the Islamic Republic. The present study aimed to evaluate the role of climate in spatial distribution of robbery at the urban level of Isfahan Province. The results of the study indicate that there is a correlation between robbery at the urban level of Isfahan Province and its climates, where this climate influenced the criminal behavior of crime. In this relation, the climate of the cities which faced with high rates of robbery affected the occurrence of this phenomenon, among which Fereysounshahr city with high rates of robbery has a temperate summer climate and very cold and harsh winters which are covered with snow for eight months of the year. The average precipitation at the Shahankouh peak of Fereydounshahr is almost 1400 mm and snow stocks in the city highlands remain steady until the next year, which is a source of water supply for the city branches. It seems that the cold tensions and violent winters leads to some types of robbery in this city, which Semirom city, having a mountainous climate and weather with cold, snowy winters and dry, temperate summers, has a similar condition to Fereidunshahr city. Such a climatic condition affected the crime of robbery. On the contrary, Kashan city is among the cities with the lowest rate of robbery. There is a relationship between the warm, dry climate and low rainfall in this city and a low rate of robbery. Another example is Shahreza city with hot and dry climates in the eastern part of Isfahan province, which is considered as the cities where robbery is very low. The results of the present study are in line with those of Rezai and et al. (2012), which found a correlation between the crime and climate.

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