

# Efficiency of Civil Defense Services in The Main District Centers of Al-Muthanna Governorate

**Maher Nasser Abdullah<sup>1</sup>**

Al-Muthanna University / College of Education for  
Human Sciences, Department of Geography. /Iraq  
[rohaidah@fsmt.upsi.edu.my](mailto:rohaidah@fsmt.upsi.edu.my)

Corresponding author: Al-Muthanna University / College of Education for Human Sciences, Department of Geography. /Iraq Email: [rohaidah@fsmt.upsi.edu.my](mailto:rohaidah@fsmt.upsi.edu.my)

## Abstract

The performance of civil defense services and their concentration in urban centers is one of the recent studies that are concerned with the geography of cities, which must be given attention because it is concerned with protecting the population and their properties. The research aims to assess the efficiency of civil defense services in the main district centers in the Muthanna governorates through the current distribution and Evaluation of that distribution through some criteria and variables such as population density, housing density and intensity of accidents, and the research followed the descriptive and analytical approach that is consistent with the nature of this study, and the research reached several results, including the variation of population density according to urban centers, which reached its climax in the city of Greens (8548 inhabitants / km<sup>2</sup>) recorded the highest fire accidents for the year 2017 in the extent of NH Samawa (683) fire, and reached the share of the center of the city area Nilai in Samawa (14,38 km<sup>2</sup>) and the least in the city of Salman (1,55 K m<sup>2</sup>) the most important proposals are to increase the number of civil defense centers in areas with high population density and building an extensive database on the organization of the work of the civil defense centers and by increasing the number of research and studies.

## Keywords

Pedagogical Content Knowledge, Teaching Styles, Efficacies, Primary School Mathematics Teachers

**To cite this article:** Abdullah, M, N. (2020) Efficiency of Civil Defense Services in The Main District Centers of Al-Muthanna Governorate. *Review of International Geographical Education (RIGEO)*, 10(4), 794-803. doi: 10.33403/rigeo.791621

**Submitted:** 01-02-2020 • **Revised:** 02-07-2020 • **Accepted:** 03-10-2020

## Introduction

Security services are among the important services whose distribution within the urban space is one of the main tasks of the geography of cities, and its precise signature must be taken into account because it takes care of the protection of man and his property as well as the protection of state property, and one of the tasks of the geographer is also to study and analyze the distribution of these services in accordance with the variables The distribution of which varies within the city, and the success of this service depends on the extent of its availability in all neighborhoods in line with the size and functions of those neighborhoods and in proportion to the continuous increase in the size of its population and with the area of that city and the future expansion of each of them.

### Research Problem

How are the civil defense centers distributed in the main district centers and is this distribution commensurate with the number of population and the spatial expansion of urban centers, and is their distribution and number in line with local standards?

### Research Hypothesis

There is a discrepancy in the distribution of civil defense centers at the level of district centers and it does not correspond to the number of population and the area of each center, which led to the lack of coverage of large areas of urban centers with this service.

### Search Objective

Knowing the current distribution of civil defense centers in the main districts of Al-Muthanna Governorate and evaluating them through the application of local standards and knowing the actual need for that service.

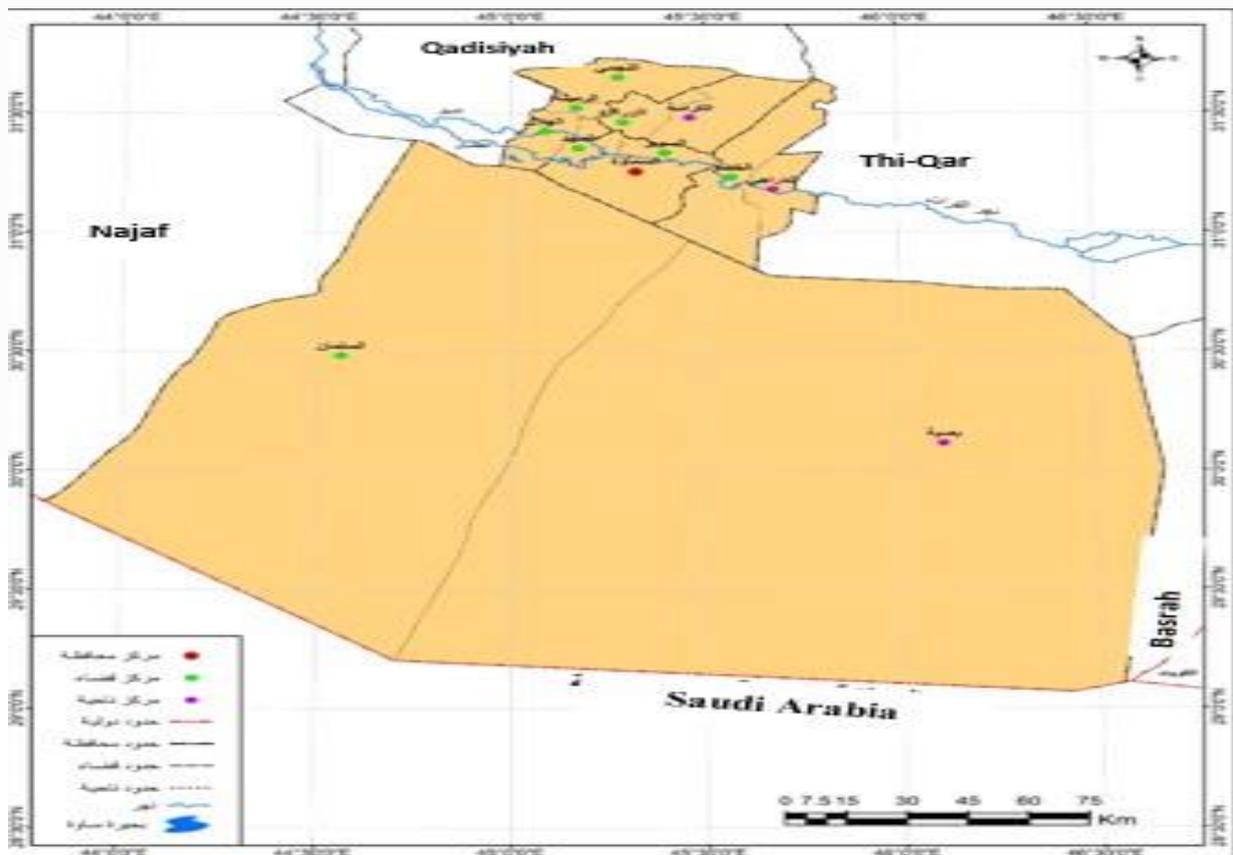
### Search Limits

Al-Muthanna governorate represents the spatial borders of the study, which is located geographically in the southwestern part of Iraq and shares international and administrative geographical borders with the Kingdom of Saudi Arabia, representing the southern borders of the governorate. It has administrative borders with four governorates: Al-Qadisiyah governorate from the north and northwest, Najaf governorate from the west, Dhi governorate bitumen from the east and north - east and finally the province of Basra from the east, the map (1) located astronomically between latitudes  $29^{\circ}05'$  and  $42^{\circ}31'$  north and between the brackets of the length  $43^{\circ}50'$  and  $46^{\circ}32'$  to the east, and includes the area The study is divided into four districts, followed by a group of districts, which are characterized by a large variation in their areas, map (2) and the area of Al-Muthanna Governorate is (51740 km<sup>2</sup>). It is seen from the table (1) and map (3) to eliminate the center of an area of Samawa (57.54) km<sup>2</sup> and a counted civil defense centers in it (4) centers, either center spend Rumaiitha, which covers an area of (12.2) km<sup>2</sup> where there is a civil defense center, either spend Salman Center with an area (1.55) km<sup>2</sup> and has a view to the center sector and one civilian, and center the fourth is to spend the Greens on an area of the center (6.31) km<sup>2</sup> and where there is One civil defense center.



**Map.1** The location of Al-Muthanna Governorate, Iraq

**Source:** The Ministry of Water Resources ,Directorate of Public Survey ,the administrative map of Iraq at a scale of ,1:1000000 for the year.2010



**Map 2.** The location geographic for the province of Muthanna and administrative units

**Source:** Republic of Iraq, Ministry of Water Resources, General Authority for Survey, Map Production Department ,Map of Al-Muthanna Administrative Governorate, Baghdad, 2010, scale, 1: 250000

**Table1**

The location and area of civil defense centers and the area of urban centers in Al-Muthanna Governorate

The area of the urban center	Center location	The area of the civil defense centers m2	Center name
57,54	Samawah City	946	Samawa Center
	Samawah City	3357	Republican Center
	Samawah City	2856	The center of the twentieth revolution
12,02	Samawah City	1600	Small greenhouse center
	Rumaitha City مدينة	1680	Al Rumaitha Center
6,31	green city	2500	The vegetable center
1,55	Salman City	1668	Salman Center

**Source:** Based on -1 :Al-Muthanna Civil Defense Directorate, unpublished data, 2019

2- Hanan Abdel Reda Taher, Spatial Analysis of Development Indicators and Their Trends in the Urban Centers of Al-Muthanna Governorate for the Period (1997-2012), Master Thesis, College of Arts, Al-Qadisiyah University, 2013, p. 50.



**Map 3.** The location of civil defense centers in the urban centers of Al-Muthanna Governorate

**First: The spatial distribution of civil defense centers in district centers and the factors affecting them.**

The study of the distribution of services within cities is an important matter ,and among those services are the civil defense services, whose distribution is a basic and necessary factor in order

to achieve its goal of easy access to the scene of the accident .The distribution of defense centers varies from one region to another based on a set of geographical factors such as ,Population size , housing density , number of accidents.<sup>(1)</sup>

The distribution of centers will be studied based on these factors

### 1- Distribution of centers in relation to population density

The population of urban centers in the governorates of Muthanna for the year 2020 reached 381,545) people .(To study the distribution of civil defense centers, the population density must be considered, which is one of the most important criteria .There is a direct relationship between population density and the great protection that must be provided through the appropriate number of that service.

The study area has been divided into three density ranges to find out the appropriateness of distributing centers with population density ,and those ranges are:

**A - High population density zones :**The population density in this zone reaches more than 7000) people / km<sup>2</sup> ( and includes ) Al-Rumaitha and Al-Khader ,( and within this zone there are (2 ) a civil defense center.

**B - ranges of medium population density :**ranging from population density) of - 7000 4000people / km<sup>2</sup> (2 and includes this Alnta s both ) Samawa ( and the number of centers within this range ( 4 ) centers.

**C - Low population density zones :** This zone includes a population density less than 4000 ) people / km<sup>2</sup> ,( and it is like in urban centers ) Al-Salman ( and there is one civil defense center

**Table 2**

Density distribution of the population of the main district centers in Al-Muthanna Governorate for the year2019

Density (in/km <sup>2</sup> )	population	space	urban centers
4058	233528	57,54	<b>M.S Samawa</b>
7540	90638	12,02	<b>M.Q Al Rumaitha</b>
8548	53944	6,31	<b>m.s. vegetables</b>
2216	3435	1,55	<b>M.S .Al-Salman</b>
22362	381545	77,42	<b>Total</b>

**Source: From the work of the researcher based on**

- 1- Al-Muthanna Statistics Directorate, unpublished data.2019 ,
- 2- Hanan Abdel Reda Taher, Spatial Analysis of Development Indicators and Their Trends in the Urban Centers of Al-Muthanna Governorate for the Period (1997-2012), Master Thesis, College of Arts, Al-Qadisiyah University, 2013, p. 50.

### 3-Distribution of civil defense centers in relation to the intensity of accidents

It is evident from Table (3) and Figure (1) that the number of fires in the district centers is characterized by the discrepancy between years and at the level of the urban center, as in the center of the city of Samawah ,where the number of fires took an ascending form , after reaching the lowest number of fires in the Civil Defense Center of the 20th Revolution As the general average for the three years was 100) fires ,( the Al Soub Al Sagheer Civil Defense Center recorded the highest rate in the city of Samawah, which amounted to 257) fires ,( while Al Rumaitha Civil Defense Center ranked second in the number of fires at the level of urban centers, as it reached 282) fires . ( Al-Khidr Civil Defense Center ranked third with an average of 160) fires (for the three years .As for the intensity of fire per) km<sup>2</sup> ,(it was the highest in Al-Khader /25) km<sup>2</sup> ,( while the lowest intensity was in Samawah city, which amounted to /11) km<sup>2</sup> .( (as a result of the large urban center with an area difference between the two cities.

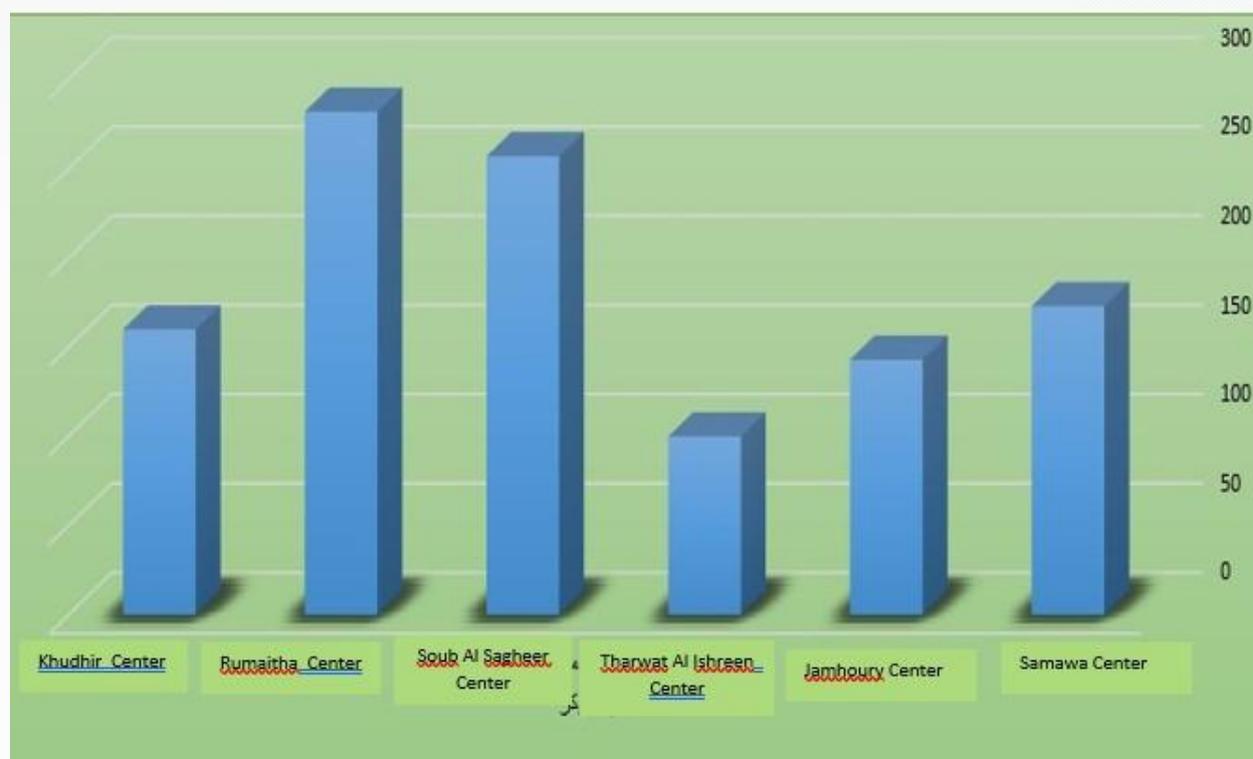
**Table 3**

The number of fire accidents in the main district centers of Al-Muthanna Governorate for the

period2019 - 2017

Accident density / km2	The general rate of fires	The number of accidents			Center name
		2019	2018	2017	
11	173	196	158	165	Samawa Center
	143	138	160	133	Republican Center
	100	122	79	99	The center of the twentieth revolution
23	257	304	223	245	Small greenhouse center
	282	292	291	264	Al Rumaitha Center
25	160	165	193	122	The vegetable center
14	1116	1217	1104	1028	Total

**Source:** Al-Muthanna Civil Defense Directorate ,unpublished data.2019 ,  
Figure (1) Number of fire accidents in urban centers of Al-Muthanna Governorate for the period2019 - 2017



**Source Table 3**

### 3- Distribution of civil defense centers for the density of housing

The density of housing is one of the important matters that must be taken into consideration when establishing civil defense centers . The number of housing units in the urban centers of Muthanna Governorate reached ( 56746 ) housing , table( 4 )

The study area has been divided into three areas of housing density as follows:

**A - Areas with high housing density :**The housing density in this area reached more than 1200) dwellings / km2 ( and was represented in the cities of ) Al-Rumaitha and Al-Khader .( The reason for the high density is due to the high population density and the small area of the urban center.

**B - with ranges of density residential medium :** ranging between residential density 1200 - 500) Miss Be / km ( 2 consisted in ) Samawa ( which is characterized by sizeable area with a population density medium.

**C - Areas with low housing density :**The housing density in this area is less than 500) housing units / km2 ,( and is represented by the city of ) Al-Salman.

**Table 4**

Distribution of housing density for urban centers in Al-Muthanna Governorate for the year 2019

Density dwell/km <sup>2</sup>	number of dwellings	space	urban centers
580	33361	57,54	M.S Samawa
1256	15106	12,02	M.Q Al Rumaitha
1221	7706	6,31	m.s. vegetables
370	573	1,55	M.N Salman السلم
-	56746	77,42	Total

**Source:** Al-Muthanna Statistics Directorate ,unpublished data 2019 ,

#### 4- Distribution of centers according to the number of wheels

The fire engine is designed to put out the fire through the necessary equipment it contains, such as ladders, hoses, water and other extinguishing materials, and these wheels must be characterized by speed so that it can respond to the fire as quickly as possible, and there are several types, some of them are for tall buildings and others for military airports and are also classified as rescue or for extinguishing. The number of wheels in the district centers is shown in terms of number, distribution and type of wheels, as it is clear from table ( 5 ) that the city of Samawah has ( 23 ) wheels, which is equivalent to ( % 57.5 ) of the total wheels in the main district centers of the governorate, either Urban centers ) Al-Rumaitha, Al-Khader and Al-Salman ( have , 8 ,2) and ( 7 wheels, respectively . This is an indication of a deficit and poor distribution of wheels at the level of urban centers.

**Table 5**

Number of wheels for civil defense centers in district centers =

Number of Wheels	Center Location	Center Name
5	Samawah City	Samawa Center
7	Samawah City	Republican Center
5	Samawah City	The center of the twentieth revolution
6	Samawah City	Small greenhouse center
7	Rumaitha City	Al Rumaitha Center
8	green city	The vegetable center
2	Salman City	Al-Salman Civil Defense Detachment
40		Total

**Source:** Al-Muthanna Civil Defense Directorate ,unpublished data.2019 ,

#### 5- Distribution of centers according to the number of members

Varies the number of affiliated men between centers of districts, as a total number of ( 289 ) member at the level of district centers, and there is a discrepancy between these centers in terms of the number of members, as illustrated by the table ( 6 ) that the center of defense Rumaitha civilians in the city of Rumaitha occupied the first number of rank associate's ( 70 ) member and make up ( % 2, 24 ) of the total centers of the districts, either Salman city has occupied the last rank by ( 11 ) member of a rate ( % 3.8 ) .

**Table 6**

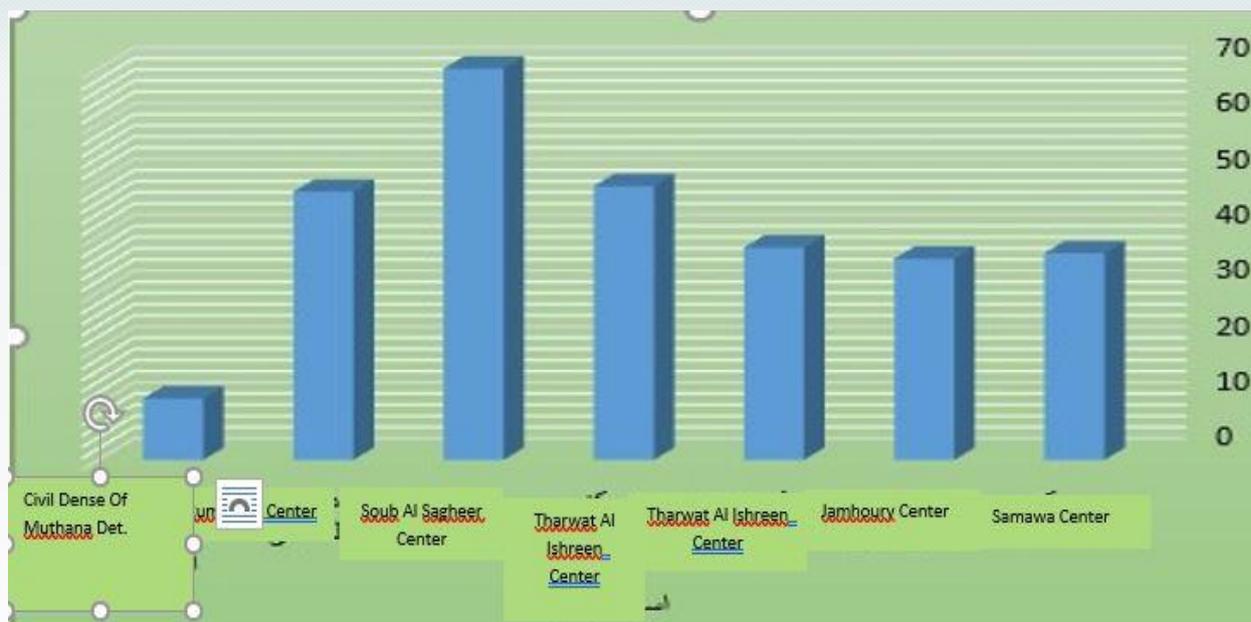
The number of employees in civil defense centers in Al-Muthanna Governorate for the year 2019

Percentage%	Affiliate Number	number of officers	Center name
12,8	37	1	Samawa Center
12,4	36	1	Republican Center
13.1	38	1	The center of the twentieth revolution
17	49	2	Small greenhouse center
24,2	70	1	Al Rumaitha Center
16.7	48	2	The vegetable center
3,8	11	1	Al-Salman Civil Defense Detachment
100	289	9	Total

**Source:** Al-Muthanna Civil Defense Directorate ,unpublished data.2019 ,

#### Shape 2

The Number of Employees In Civil Defense Centers In Al-Muthanna Governorate For The Year2019



Source: Table 6

Second .The efficiency of the current distribution of civil defense centers in the district centers

The research seeks, through the collected data, which included a number of variables, including population and area, to know the extent to which the current centers achieve local and global standards, and to suggest an alternative to this distribution.

**Population Standard**

The number of populations is the important criterion that planners must take into account ,as high population density is often accompanied by high traffic density, which leads to congestion and an increase in the time taken to reach ,in addition to that, high density is accompanied by a greater number of housing, which means greater demand for Services This is a burden on service providers.

It is clear from Table (7) that there is a discrepancy in the size of the population at the level of district centers in Al-Muthanna Governorate, accompanied by a variation in the distribution of civil defense services .When applying the local criterion that sets a civil defense center for every 12,000) people ,(we notice that there is a large deficit in the city of Samawah. In which there are (4) centers ,while the actual need is (19) centers according to the standard, that is, there is a deficit (15) centers and a population surplus of (180000) people .As for the city of Al-Rumaitha, the number of actual centers is one center, but according to the standard, it must be there are ( 8) centers ,ie deficit ( 7) centers and surplus population ( 78000) people , either D soft greens is a deficit (3) centers and surplus population ( 41,000 ) people , while there is no deficit in the city of Salman.

**Table 7**

The need to open civil defense centers in Muthanna governorate on the basis of the population surplus by applying the criterion of population size 12,000) people per one center.

The need to open centers	overpopulation	population	Center name urban
15th	180000	233528	Samawa
7	78000	90638	Rumaitha
3	41000	53944	vegetables
-	-	3435	Salman
25	299,000	381545	Total

Source : From the researcher's work based on the Muthanna Statistics Directorate , unpublished data. 2019 ,

## Areal Standard

Through the table (8) it is clear that ( 4 ) centers for civil defense any more than half the number found in the city of Samawa , and operates the civil defense centers in the city population MAHON (%74.3) of the total area of district centers . The area served by each center varies ,ranging in the district centers between 14.38) km<sup>2</sup> ( and 1,55) km<sup>2</sup> ,( a very large range that reflects the great disparity in the distribution of civil defense centers in relation to the serviced area.

**Table 8**

Distribution of the civil defense center in the urban centers of Muthanna Governorate and its relationship to the area of each urban center

The share of each center of the area km <sup>2</sup>	space	Number of centers	urban centers
14,38	57,54	4	M.S Samawa
12,02	12,02	1	M.Q Al Rumaiitha
6,31	6,31	1	m.s. vegetables
1,55	1,55	1	M.N Salman السلم
	77,42	7	Total

Source : data table(1)

## Results

1. It became clear through the study that the civil defense services suffer from a poor distribution among the district centers in the governorate.
2. Some urban centers are characterized by a high population density such as ) Al-Rumaiitha , Al-Khader ( to reach more than 7000 ) people / km<sup>2</sup> ,( which requires an increase in the number of civil defense centers.
3. There are disparities between urban centers in terms of the number of fire accidents for the period (2019 - 2017) as it reached the highest rate of fire accidents three years in the city of Samawa 673) Fire ( The lowest number was in the city as the Greens reached160.
4. It reached the highest density of housing in the city of Rumaiitha 1256 ) dwelling / km (2 The City of Greens 1221 ) dwelling / km.(2
5. It varies the distribution of wheels between the centers , occupying the city of Samawah first place the number of (21).
6. It became clear through the research that the number of affiliates in Al-Muthanna Governorate reached 293 members , and their number varies at the level of urban centers.
7. It became clear through the research that the main district centers in Al-Muthanna governorate, according to the population criterion, need (25) civil defense centers.

## Suggestions

1. Increasing the number of civil defense centers in areas with high population density.
2. Increasing the number of wheels and associates to suit the levels of population and housing.
3. Building a wide database on organizing the work of civil defense centers by increasing the number of research and studies.
4. Working on developing the local planning standards to take into consideration all the variables.

## References

- Al-Muthanna Civil Defense Directorate , unpublished data2019 ,  
 Al-Muthanna Statistics Directorate ,unpublished data. 2019 ,  
 Hanan Abdel Reda Taher , Spatial Analysis of Development Indicators and Their Trends in the

- Urban Centers of Al-Muthanna Governorate for the Period ,(2012-1997) Master Thesis , College of Arts , University of Al-Qadisiyah ,2013 , p.50 .
- Iyad Mahmoud Jabr , Hamza Ali Khawaldeh , Musa Samha , spatial planning of civil defense centers in the city of Amman using the site allocation model and geographic information system , The Jordanian Journal of Social Sciences , Vol ,10 .No ,2017 ,3 .p.414 .
- The General Authority for Surveying , a map of the administrative units of Al-Muthanna Governorate.2006 ,
- The Ministry of Water Resources , Directorate of Public Survey , the administrative map of Iraq at a scale of ,1:1000000 for the year.2010