



التباين المكاني للبطالة في الأردن باستخدام نظم المعلومات الجغرافية (Gis)

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الملخص:

يهتم البحث بدراسة ظاهرة البطالة وتباينها المكاني في الأردن وتحليل الأسباب والآثار الناجمة عنها وسبل معالجة البطالة والحد من مخاطرها الاجتماعية والاقتصادية والأمنية في المجتمع ، كذلك التعرف على مفهوم البطالة وأنواعها وأسباب نشيها واستمرارها، فضلاً عن استخدام التقنيات الجغرافية (Gis) في توزيعها على الفئة العمرية النشطة والمستوى التعليمي والجنس والمحافظه ، من خلال توظيف البيانات الإحصائية عن مؤشرات التشغيل والبطالة في دولة الأردن بالاعتماد على البيانات الإحصائية الحكومية للمملكة الأردنية الهاشمية لعامي 2015 و 2016 اذ تم التوصل لتحديد الأسباب الرئيسة التي تدفع الى تفاقم هذه الظاهرة والتي كان من أهم أسبابها سوء التخطيط وعدم التوسع بتشجيع الاستثمار وخلق فرص العمل وعدم ربط مخرجات التعليم والتدريب باحتياجات سوق العمل ، فضلاً عن عدم الاهتمام الكافي من الحكومة بالمشاريع الصغيرة والمتوسطة ، وإهمال رفع نسبة مساهمة المرأة في سوق العمل الأردني والتي تعد من أدنى المستويات في العالم، فضلاً عن تأثير العمالة الوافدة التي شكلت تحدياً إضافياً للحكومة الأردنية.

الكلمات الدالة: التقنيات الجغرافية، التوزيع، البطالة، الفئات العمرية



The Spatial Variation of Unemployment in Jordan by Using Geographic Information System (GIS)

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Abstract:

This study is concerned with studying the phenomenon of unemployment and its spatial variation in Jordan and analyzing the causes and effects resulting from it and ways to address unemployment and reduce its social, economic and security risks in the society, as well as to identify the concept of unemployment and its types and the reasons for its prevalence and continuity, in addition to the use of geographical information systems (GIS) in distribution to the category Active age, educational level, gender and governorate by employing statistical data on employment and unemployment indicators in Jordan based on government statistical data of the Hashemite Kingdom of Jordan for 2015 and 2016. The main reasons that exacerbate this phenomenon, the most important of which were poor planning and expansion by encouraging investment and creating job opportunities and not linking the outputs of education and training to the needs of the labor market, as well as insufficient attention by the government to small and medium enterprises (SME) and neglect to raise the proportion of women in the Jordanian labor market. It is considered one of the lowest levels in the world, as well as the impact of expatriate labor which posed an additional challenge to the Jordanian government.

Keywords: distribution, GIS, Unemployment, Age Group.



.1 Introduction

Unemployment is one of the major problems in these days all over the world. It is one of the insurmountable problems in the developing countries or less economically developed country (LEDC) and in Arab countries particular; regardless their progress levels, economic, social and political systems. The aggravation of unemployment might be the worst and the most notable problem in Arab countries and developing countries as well, there is an increasing number of individuals who are capable and want to work but they fail to find a job .

1.1 Statement of the Problem

This study is an attempt to answer the following questions :

- Is there any variance in unemployment ratio at the level of the Jordanian governorates ?
- What are the best ways to resolve unemployment?
- Is there a variation in unemployment levels at the Kingdom level?
- What are the most high-level areas of the unemployment phenomenon?
- Can this be represented in the form of maps and graphs using the geographic information systems?

1.2 Hypothesis

This study is hypothesized that :

There is a spatial variation in unemployment distribution at the level of the governorates where there are variations related to this variance and these variations provide job opportunities in specific governorates and less opportunities in other governorates. as well the possibility of represented in the form of maps and graphs using the geographic information systems?



1.3Value

Hence the significance of the study comes from the fact that it tackles the problem of unemployment, which is one of the intractable issues the Jordanian economy faces, therefore it's connected to the work which represents the means and the end sought by humans to provide the source of income, also the loss of this income prevents this human from being able to meet his/her basic living needs and conditions.

1.4Aims

The study aims to:

- .1 Recognition of unemployment rates in Jordan.
- .2 Reaching the spatial variation of unemployment at the level of governorates.
- .3 Recognizing its negative effects on the Jordanian society.
- .4 Trying to provide adequate solutions in order to reduce it.

1.5spatial and temporal boundaries

- .1 Place Limit: Unemployment in Jordan, Map (1 .(
- .2 Time Limit: that represented in Unemployment in Jordan in 2015-2016 .

.2Unemployment Definition

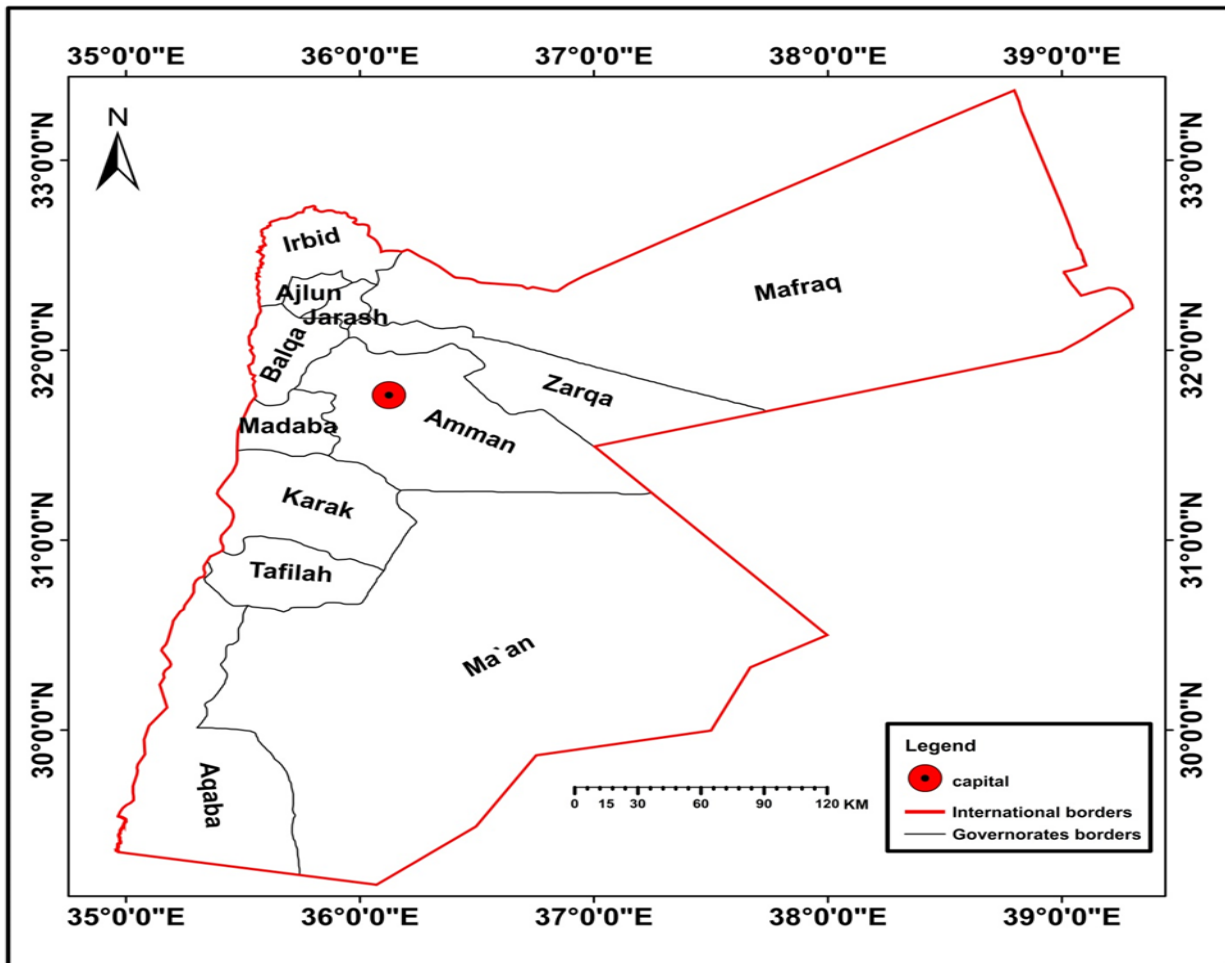
Unemployment is considered as one of the most danger dangerous social and economic phenomena, because its appearance leads significantly to an increase in rates of poverty and disease in societies. Unemployment is defined as an essential interruption of part of the work force in a society although their ability and desire to work, the labor force is represented by the economic active population, i.e., "they are that part of the active population of working age that includes workers as well as the unemployed people and they represent the actual energy of the society". (mathi, 2005,p3(

The International Labour Organization (ILO) defined the unemployed persons as "Persons who do not work more than an hour a week and at the same time have a willingness to work and desire to

work while they are looking for work". This measure differs from country to another, such as using one week per month or day per week. (Ismail, 2008,p111(

Unemployment is measured by using unemployment rate, which is extracted by dividing the unemployed person's number by the total workforce and in other words by dividing the unemployed (aged 15 and over) by the economic active population aged over than 15. (Edwin, 1989,P103)

**Map (1)
Hashemite Kingdom Of Jordan**



Source: From the work of the researchers by Using ArcMap 10.8 Based on the map of the administrative divisions of the Royal Geographical Center in 2015



2.1 Types of Unemployment

There are different types of unemployment, according to the different reasons, which leading to its appearance; among these types we will state the following types:

- 1. Involuntary Unemployment and Voluntary Unemployment:** Involuntary Unemployment is the case in which a person take out from his/her work of his/her own free will for certain reasons. While voluntary unemployment is agreed with the case in which the worker is forced to leave his/her job, i.e., without his/her will, even though he/she is willing and able to work at a prevailing wage level.
- 2. Disguised Unemployment:** Disguised unemployment arises in cases where the number of employed workers exceeds the actual need for work, i.e., there is surplus employment that produces almost nothing since if it is withdrawn from its place of work then the production volume will not decrease . (Zaki, 1997,p.33)
- 3. Seasonal Unemployment:** is that which occurs in a particular season, such as farmers in a particular season working in the cultivation and harvest of their crops and stop in the rest of the seasons, or such as that there are professions that are active in the summer season and face stagnation in the winter season and vice versa. (Otaibi, 2009,p277)

2.2 Causes of unemployment

1. -Absence of government planning
2. -The universities ignore the needs of the labor markets
3. -The small size the private sector in Jordan , as well as the impact of expatriate labor which posed an additional challenge to the Jordanian government.
4. -There's a difference in pay between men and women ,in addition to the negative social perception of working women in Jordan,which has resulted in many women reluctance to work
5. -A culture of shame and the unwillingness and reluctance if Jordanians to work in some professions



6. -Poor public transport sector, This enables a person to stay in his place of residence and work in another governorate, which increases unemployment in the governorates, Especially since the capital governorate has the largest number of job opportunities (Dr Yousef Mansour, 2019)

2.3 The Effects of Unemployment

Most of the available data on the unemployment problem indicate that the treatments that were supposed to be put in place of this problem were not at the level of ambition and do not reflect an effective and targeted national strategy, which held this problem and increased its severity. The following are the most important social effects that this problem leaves at the social level:

1. The problem of unemployment use to declines the loyalty factor to the state and the country, and reviews cases of support and backing for the announced decisions of the state.
2. The problem of unemployment may lead the unemployed to carry destructive and harmful beliefs and ideas on the social fabric of society.
3. Unemployment is a powerful factor to drive anyone into delinquency and committing different types of crimes, such as terrorism, drugs, and other crimes, for the purpose of obtaining sufficient money.
4. Unemployment destroys family and kinship relationships and young people's reluctance to marry.
5. Unemployment has a relationship with the migration of many scientific professionals abroad in order to ensure certain levels of living.

From all of the above, the impact of unemployment appears to be more pronounced on the youth groups aged 15-24, which exceeds this percentage (31.5 %). Males vs. (56.9%) for females in 2016, comparing with 26.7 % and 53.3 % respectively in 2015 , it can be said that unemployment remains one of the major challenges facing the development process in Jordan through the reality of the economic policies of successive governments in the absence of unified visions, strategies and policies of the state in the fields of development, finance and others. The role of the State, particularly with regard to its role in the economic field, has been forced to fold.

3. The Spatial Variation of Unemployment in Jordan



It has been observed from the Table (1) and Figure (1) the increase in the unemployment rate in 2016 comparing with 2015 in some governorates such as Jerash where it reached 15.5% with an increase of 3.6 percentage points, and then comes Irbid Governorate with unemployment rate of 17.4% and an increase of 3.4 percentage points, then Aqaba Governorate Unemployment rate of 15.8% and an increase of 3.1 percentage points, as well as Ajloun, Balqa and the capital with unemployment rate of 16.7%, 14.8 and 14.1% respectively and an increase of 2.7, 2.6 and 2.6 percentage. The governorates of Ma'an, Irbid, Ajloun and Mafraq recorded the highest unemployment rate in 2016, where the rate in Ma'an was 19.1%, with an increase of 2.3 percentage points from 2015, and Irbid governorate comes at the second class, where the unemployment rate reached 17.4% in 2016, with an increase of 3.4 percentage points. Then Ajloun governorate comes at the third class with an unemployment rate of 16.7%, and an increase of 2.7 percentage points over 2015, and Mafraq governorate comes at the fourth class with an unemployment rate of 16.3% and an increase of 1.1 percentage points from 2015. Which means that some governorates suffer more than others in the size of investments and projects and lack of employment as the map (2) shows.

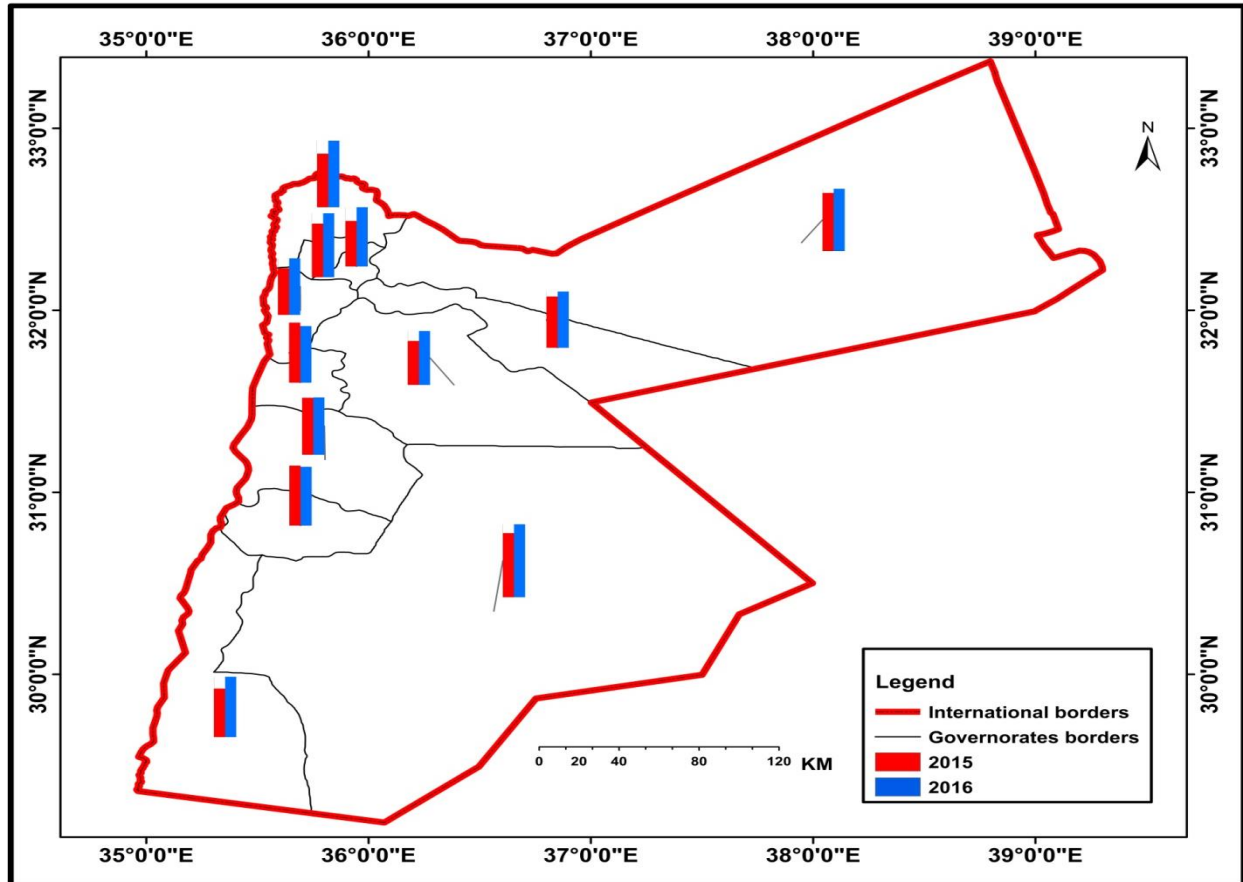
Table (1): Geographical distribution of unemployment in Jordan in 2015 – 2016
(Directorate of Economic Statistics, 2015-2016).

Governorate	2015	2016
Amman	11.5	14.1
Albalqa	12.2	14.8
Alzarqa	13.4	14.7
Madaba	15.7	14.8
Irbid	14.0	17.4
Almefraq	15.2	16.3
Jarash	11.9	15.5
Ajloan	14.0	16.7
Alkarak	14.9	15.0
Atafeilh	15.7	15.4
Ma'an	16.8	19.1
Alaqabh	12.7	15.8
General Rate	13.0	15.3

Sourcer : from the work of the researchers

Map (2)

Geographical distribution of unemployment in Jordan in 2015 – 2016.



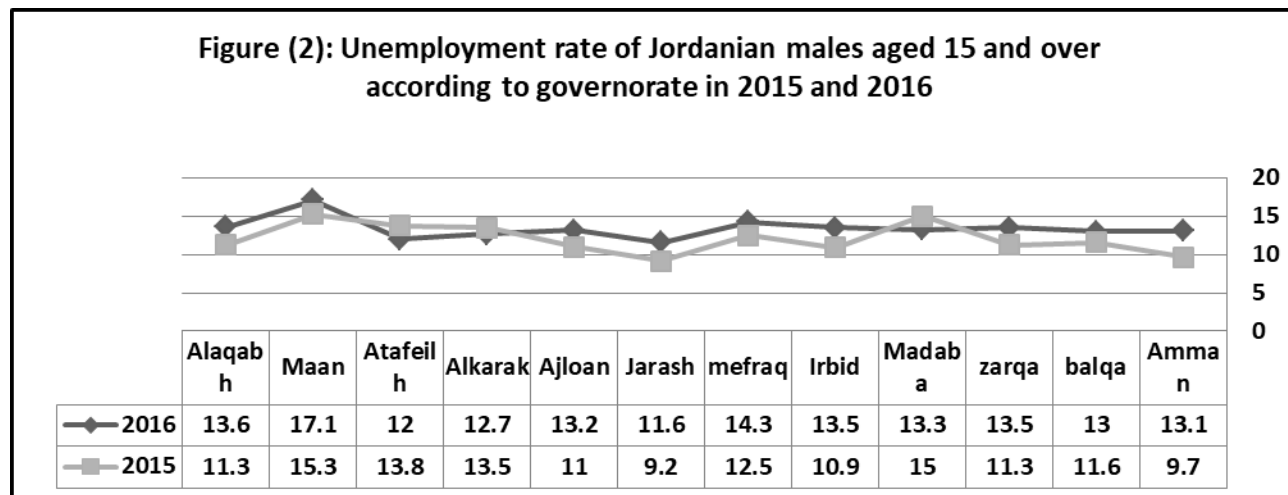
Source: From the work of the researchers by Using ArcMap 10.8, dependence on Table (1)

It appears when comparing the unemployment rates for males in the governorates (Figure 2) and map (3), that the Governorate of Ma'an recorded the highest unemployment rate for males, reaching 17.1%, followed by Mafraq and Aqaba governorates, where the unemployment rate for males was 14.3% and Aqaba Governorate 13.6% in 2016 comparing with the rates 12.5% and 11.3% respectively in 2015. The lowest unemployment rate for males in Jerash Governorate was 11.6% in 2016 comparing with 9.2% in 2015, followed by the governorates of Tafila, Karak, Balqa, Al-Asimah, and Ajloun with unemployment rates (12%, 12.7%, 13% and 13.1%)

respectively in 2016 comparing with the rates (13.8%, 13.5, 11.6, 9.7 and 11%) respectively in 2015.

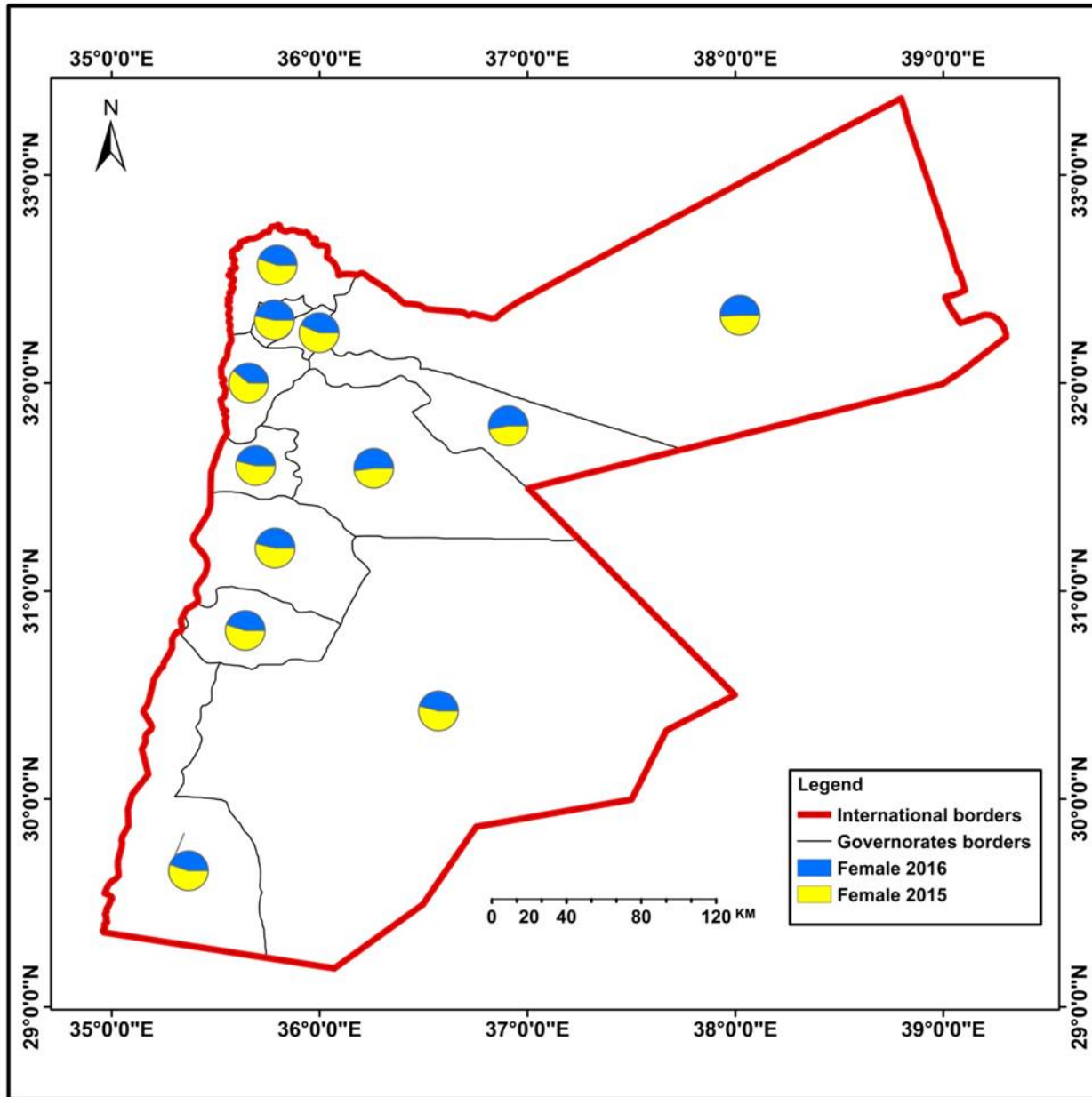
It appears when comparing the unemployment rates for males in the governorates (Figure 3) and map (4), that the Governorate of Irbid recorded the highest unemployment rate reaching 34.8% in 2016, while 28% in 2015. Then Ajloun governorate recorded 31.1% in 2016 and 27.1 in 2015, and then Jerash and Aqaba governorates recorded 29.6%, 27.4% in 2016 respectively and 22.8%, 22.1% in 2015, while the lowest female unemployment rate in Amman was 18.1% in 2016 vs. 19.8% in 2015.

Figure (2 and 3) notes that there is a disparity in the unemployment rate for both males and females in different provinces, where data showed that the unemployment rate for females is the highest in all provinces of the Kingdom compared to males, despite the efforts made by official and unofficial bodies in the public sectors. Private to strengthen and support and raise the rate of economic participation of women in the labor market, but the rate of economic participation for them is still low due to the high unemployment rate among females compared to males and the breadth of the gap between them and this pushes the females out of the labor market towards the direction of the economically inactive in the direction of the inactive in the Most provinces, especially in Irbid, Ajloun, Gersh, Aqaba, Tafila and Maan, also indicate that the highest unemployment rate for females was in Irbid province and reached the lowest rate in the capita.



Sourcer: from the work of the researchers

Map (4)
Unemployment rate of Jordanian females aged 15 and over according to governorate in 2015 and 2016

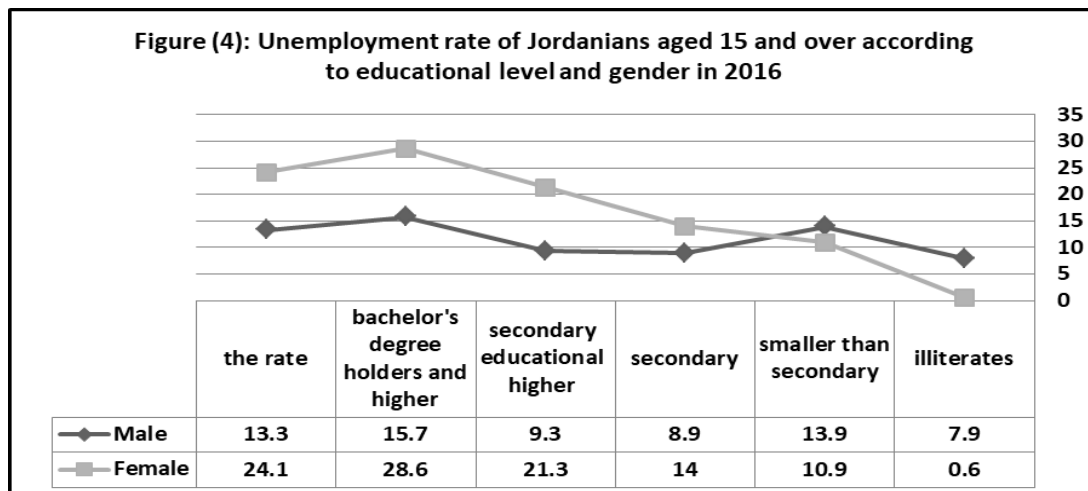


Source: From the work of the researchers by Using ArcMap 10.8, dependence on figure and Table (3)

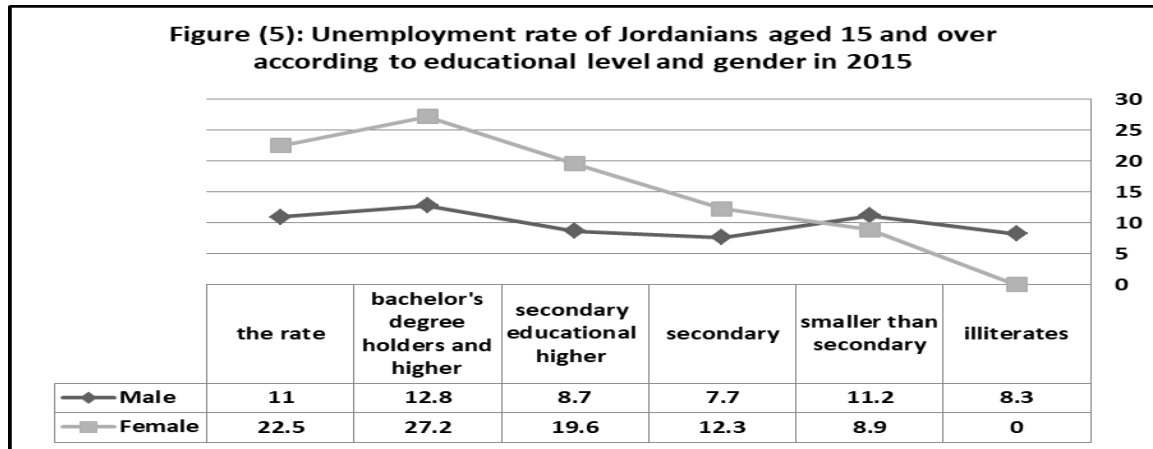
Despite the reverse proportionality between unemployment and the scientific level, it is high among bachelor's degree holders and higher where the unemployment rate was 21% for both sexes in 2016. The unemployment rate for the

same male educational qualification was 15.7% compared to 28.6% for females, and the unemployed of this male and female educational qualification sat at 39.1% of the total unemployed, while unemployed males with a bachelor's degree accounted for 24.3% of the total male unemployed in the 2016 compared to 24.4% in 2015. It is worth mentioning that the percentage of females with bachelor's degrees higher reached 76% of the total holidays in 2016 compared to 75.5% in 2015, and the results indicated that the unemployment rate among the holder of educational qualification smaller than secondary for both sexes was 13.8% of the total labor force. For the same educational qualification in 2016 compared to 11.1% in 2015, while the male rate was 13.9% in 2016 compared to 11.2% in 2015, while for females the rate was 10.9% in 2016 compared to 8.9% in 2015 in Form (4 and 5) , And Map (5 ,6,7,8).

It should be noted that the percentage of unemployed people with secondary educational qualifications higher for both sexes was 53.4% in 2016 compared to 56.1% in 2015, and it was found that the highest percentage of unemployed males were among the lowest-level education qualification holders, while the highest unemployment rate for females was recorded among the qualified campaign. The education is a bachelor's degree and higher which means that there is real suffering for female university graduates in finding jobs. On the other hand, the proportion of illiterate unemployed was the lowest.



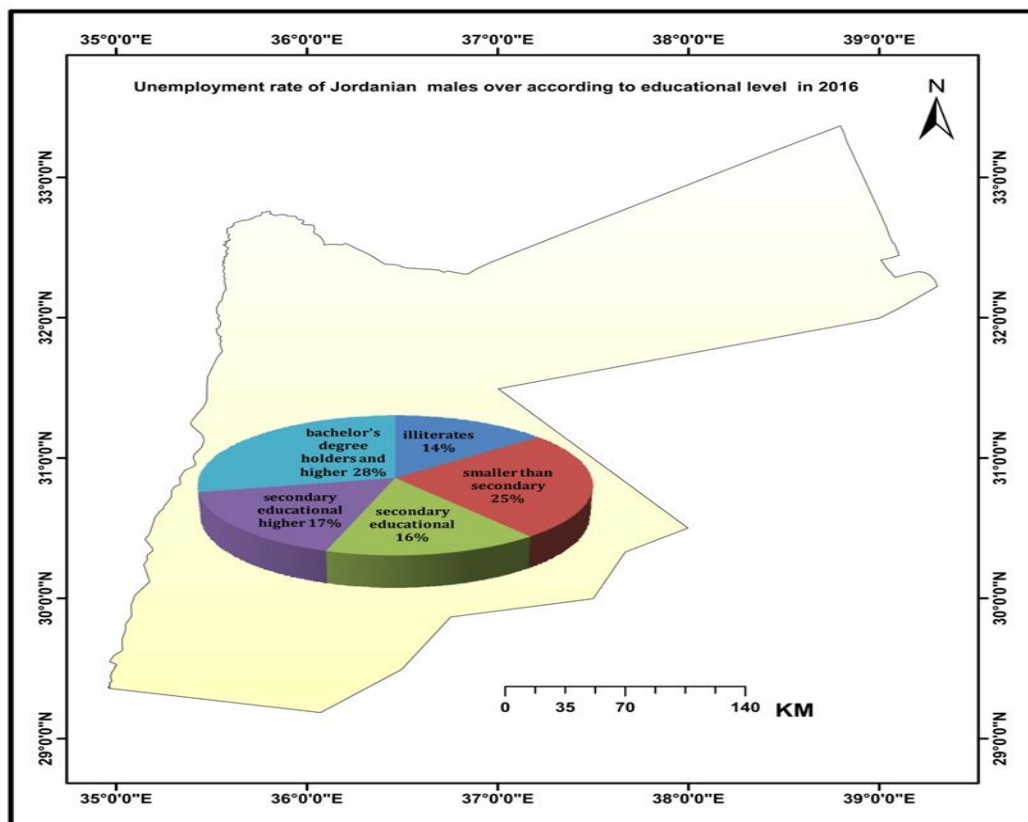
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Map (5)

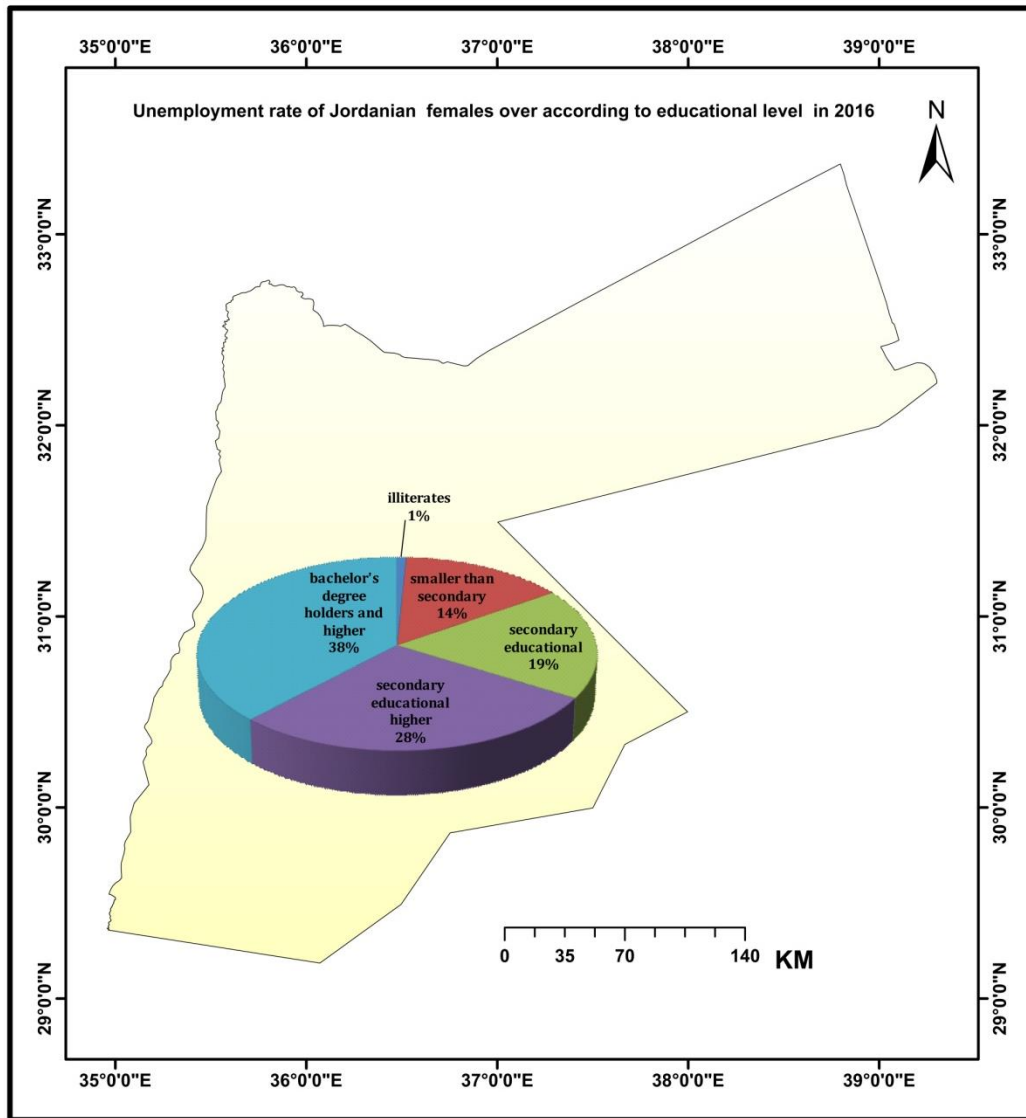
Unemployment rate of Jordanian males over according to educational level in 2016



Source: From the work of the researchers by Using ArcMap 10.8, dependence on figure and Table (4)

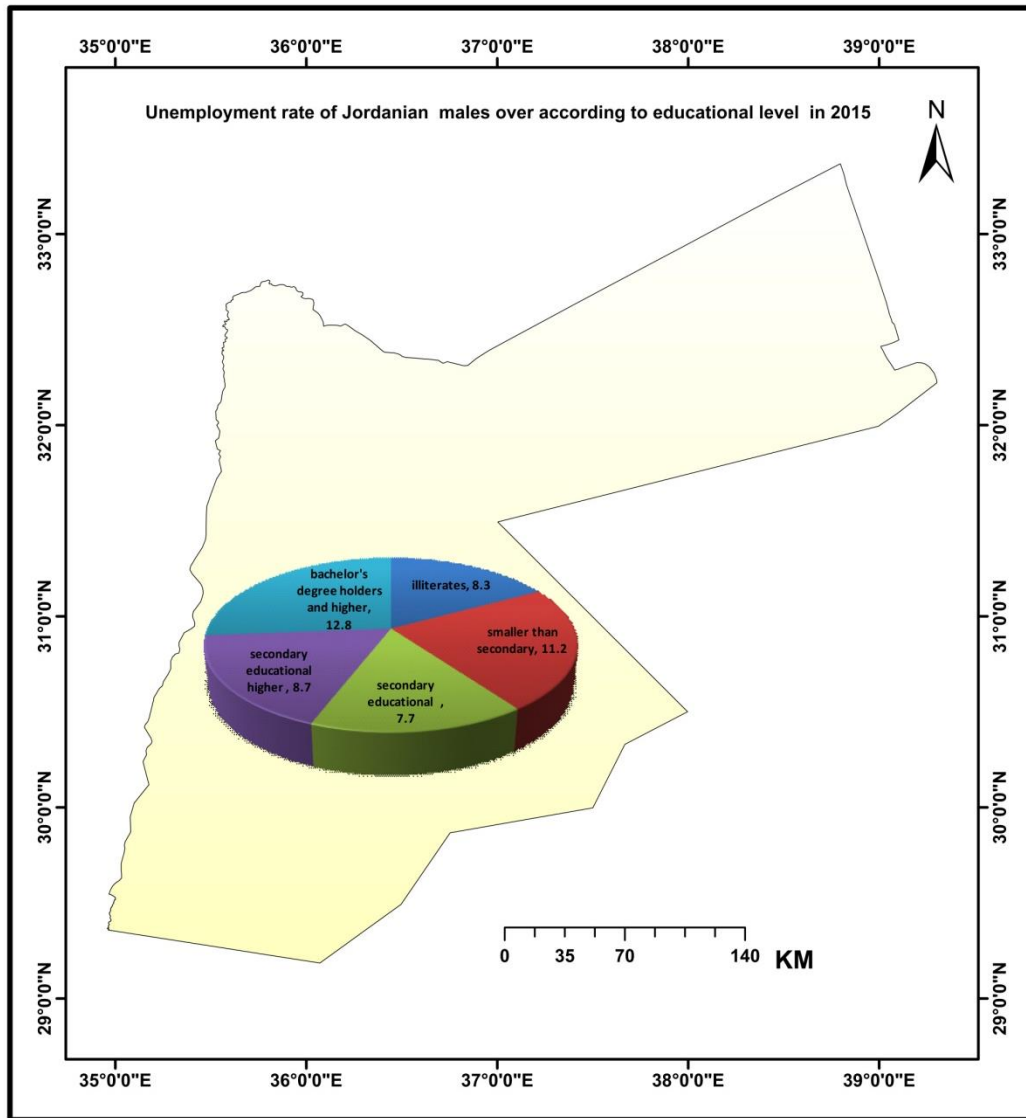
Map (6)

Unemployment rate of Jordanian females over according to educational level in 2016



Source: From the work of the researchers by Using ArcMap 10.8, dependence on figure and Table (4)

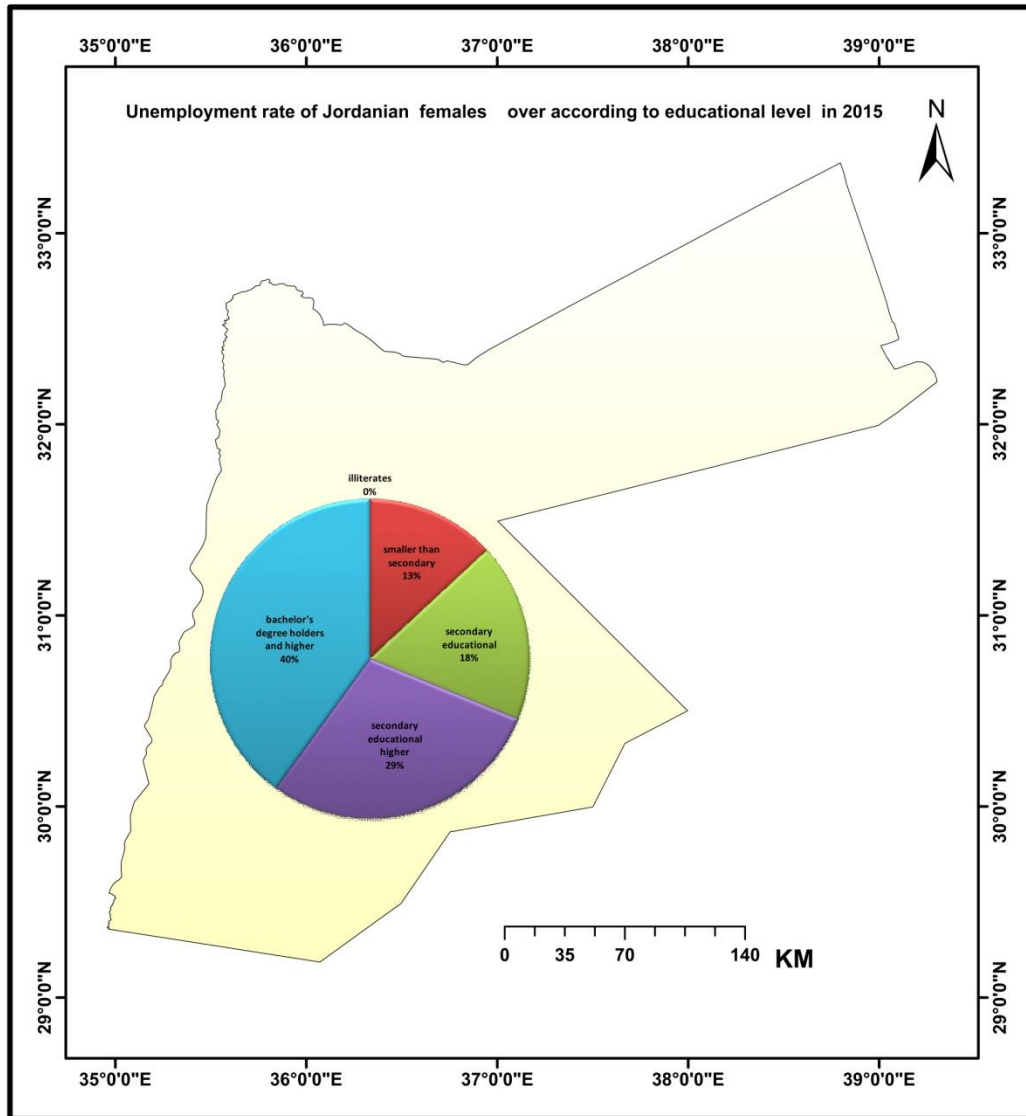
Map (7)
Unemployment rate of Jordanian males over according to educational level in 2015



Source: From the work of the researchers by Using ArcMap 10.8, dependence on figure and Table (5)

Map (8)

Unemployment rate of Jordanian females over according to educational level in 2015



Source: From the work of the researchers by Using ArcMap 10.8, dependence on figure and Table (5)

4. Ways to Treat and to Face the Unemployment

To treat and to face the unemployment is a complex process which requires a comprehensive planning. It is difficult for the private sector to do so because of its limited validity and this sector always aims to achieve the best profits. Therefore, it is the state that has the responsibility to undertake such task by doing the following:



1. To provide the necessary capital to carry out and execute the projects and to support their volume - which leads to increase the demand for the labor.
2. The Jordanian government should grant concessional loans to the unemployed to achieve two main objectives: To alleviate and to reduce the poverty and unemployment, as these loans have the effect on creating new job opportunities. In addition to the emergence of serious patterns for the work and employment, which are to raise the self-employment capacity of the unemployed or self-employed by gaining skills and being able to exploit their resources efficiently.
3. To reform the education to create advanced educational and training outputs that provide a skilled and qualified workforce in specializations which commensurate with the needs of the labor market.
4. To Redraft the labor law and workers in accordance with the requirements of the age and to retire whom their service 30 years and more as well as to control the movement of labor from abroad, which increases the problem of unemployment in the community.
5. Other effective measures the state can take in this area, such as to reduce the work hours, to prevent paying wage below the minimum wage, to prevent using the juveniles at work, to regulate women's work and to equalize their wages with men on the basis of "equal pay for equal work."

5. Conclusions

1. The lack of consistency between the needs of the labor market and the outcomes of the educational system and its various educational and specialized levels.
2. The unemployment rate of women is higher than men, as it reached (24.1%) vs. (13.3%) among men in 2016 , and 11% than men vs. 22.5 % of women in 2015.
3. The unemployment rate is directly linked to the educational level in Hashemite Kingdom of Jordan, if the level of education is heightened the unemployment rate is increased to reach (15.7%)of males and (28.6%) of females with a bachelor's degree, 7.9% Males and (0.6%) of females among illiterates in 2016, and 12.8 % of males and 27.2 % of females with a bachelor's degree 8.3% Males and (0.0%) of females among illiterates in 2015.
4. Despite women's academic achievements and their superiority over men in the rates of orientation, admission and study in universities, the unemployment rate of women in Jordan is high compared to men if Jordan is the third country in the world in terms of the shallowness of women's participation in the labour market, where only one woman participates among Eight women in the labour market, according to figures from the Department of Public Statistics, because women suffer discrimination in wages in the public and private sectors, where they are paid almost one third less than men in the public sector while nearly half in the private sector.



5. The acquisition of workers in most professions, especially in the sectors of tourism and construction, because of the widespread culture of defect among Jordanians and their unwillingness to join these professions because of their lack of decent work, such as social security, health insurance and limit the working hours.
6. Weakness of relationship between economic growth and employment, demographic factors, trends in labour demand and employment policies in the public sector, inefficiency of employment support programmes, low levels of training and poor public transport, which do not enable a person to stay in his/her place of residence and work in another governorate, which increases unemployment in the governorate, especially since the capital governorate has the most job opportunities.

6. Recommendations

1. Maximizing the competitiveness of the private sector to become more attractive than the public sector for Jordanian employment and improving the levels and quality of training.
2. Adjusting the labor law and controlling on its application while enabling women to work in the public and private sector and equal pay with men.
3. Granting concessional and small loans and taking care of small and medium-sized enterprises that will eliminate or alleviate the phenomenon of unemployment.
4. The necessity to reallocate resources in the direction of governorate that suffer from unemployment rates.
5. Raising the salary of the worker who comes to the employer through recruitment fees or taxes on wages, especially the fees on occupations that are suitable for the skills of the citizen worker.

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