

Qatars population
following the
demographic
transition model
sociology essay



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This paper will be an investigation of the following research question “ does the changes in Qatar’s population follow the demographic transition model”. To do that a questionnaire has been gathered that looks at the number of living children per women per year, by looking at the interviewees birth and the year she was born, the year her daughter, her mother, her grandmother and her great-grandmother were born and the number of children they had. The data is then analyzed by graphing the results and by using Spearsman’s Rank Correlation. After analyzing the data it is compared to the different stages of the demographic transition model and it is compared to the different characteristics that each model has such as the birth rates and the natural rate of increase.

In conclusion this investigation has showed that Qatar’s population does indeed follow the demographic transition model.

INTRODUCTOIN

Population growth is one of the biggest problems we face in our world right now. Many countries have the problem of a positive population growth, while others are struggling with a negative population growth rate. Population change is usually correlated with the strength of the economy. Qatar is an example of a country that has been through an extreme economic development that has affected the population greatly. Qatar is a small country located in the Middle East

The objective of this essay is to investigate whether Qatar’s population change follows the different stages of the demographic transition model. The demographic transition model does not set any guidelines as to how long it

will take for a country to go through the different stages, however for most countries that have been through the different stages, it took centuries. Therefore it would be interesting to see if a country that has had an extreme economic growth would go through the different stages.

BACKGROUND INFORMATION

One way to look at population change is through the demographic transition model. The demographic transition model is based on observation of the American demographer Warren Thompson in 1929 of changes in birth rates, death rates and population changes due to the economic development of a country. Walter Thompson observed these changes in industrialized societies over the last 200 years. According to the model all countries pass through the same transitions or stages.

According to Warren Thompson three of the major things that can affect population patterns are the countries wealth, the health care sector and the educational sector. The wealth of Qatar is the resultant of the discovery of oil. Oil was discovered in the 1940 and Qatar started importing in 1949 (“History of Oil Discovery”). Before oil Qatar’s economy was dependent on pearl diving and fishing. However both of these industries were not very profitable, especially since the discovery of Japanese artificial pearls which has faltered the pearl diving industry. Before the discovery of oil the economy of Qatar was very weak and was not able to properly support the population of Qatar. After the discovery of oil, the economy of Qatar started to improve and since then Qatar has become one of the fastest growing economies in the world (“Economy of Qatar”). The discovery of oil has

transformed the country; it helped in developing the different social sectors
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which includes education and health, now Qatar enjoys the benefits that come with the high standards of living. Qatar has also become one of the richest countries in the world with a GDP of \$171, 000 and a growth rate of 9. 5% (“ Qatar”).

Education is also another factor that contributes in changing the patterns of population. Before the discovery of oil, an education system has not existed, education was offered informally in the homes of literate men, and the education consisted of learning how to write and read in Arabic and learning the Quran (“ Qatari Merchant Explains Life before the Oil.”). At that time education was offered only to males as the social status of women was low. However education has improved since then, in 1952 Qatar opened its first boy’s only elementary school with 240 students and only six teachers and by 1955 an elementary school for girls opened however it only had 50 students at that time (“ Education in Qatar”). However by 1980 Qatar has managed to open 140 schools for both boys and girls in 1980. Since then education has improved as Qatar build its education city that hosts six branch campuses of some the top universities in the US which includes Northwestern and Weil Cornell and that includes some research centers which includes RAND (“ Education City”).

Healthcare has also improved greatly in Qatar since the discovery of oil. In 1937 Qatar opened its first hospital that held at least 200 people and provides ambulance services. In 1982 Qatar opened Hamad Medical Corporation which includes a section dedicated to maternal care and equipped with first class equipment (“ Health Care in Qatar”).

The first stage is of the demographic transition model is the ' high fluctuating' stage where birth rates and death rates are high and population growth is small. The first stage is usually associated with pre-industrial societies because of the societies attributes. Lack of education is one characteristic of pre-industrial societies and with a lack of education there is a lack of family planning and use of contraception's which can cause high birth rates. High infant mortality rates and the need of children to work on land is another reason that causes high birth rates. High mortality rates which is caused by high poverty rates in pre-industrial societies result in high death rates. Poverty can also cause high death rates because poverty can result in famine, spread of disease and poor hygiene.

The second stage is the ' early expanding' stage where birth rates remain high however death rates drop significantly and population growth increases rapidly. This stage is associated with developing countries. Improvements in medical care cause death rates to drop because of prevention of disease and improvements in vaccinations and medicine. Not only that, but improvements in the quality of life which includes increased number of yields, some education, access to technology and many more has allowed death rates to drop. However even though death rates dropped birth rates remained high and that is because people still thought that they need to have more children in order for few to survive since infant mortality rates have been high before.

The third stage is the ' low expanding' stage where birth rates begin to drop rapidly and death rates to drop slightly while population growth rates also starts to drop. Birth rates drop because of people's awareness that infant

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mortality rates has dropped and thus people do not need to have a lot of children in order for a few to survive. Another reason is the improved economic standards of both the country and the people. Two effects of that are the increased desire of people for material goods and thus less desire for large families since large families cost money. The other effect of this economic improvement is empowerment of women which enables them to follow their own career and thus their desire to have more children decreases. Improved levels of education, improved medical care and improved quality of life have overall helped in decreasing death rates.

The fourth stage of the demographic transition model is the 'low fluctuating' stage where birth rates and death rates are low and population growth is also low. In the fourth stage the death rates has completely dropped reaching the same level as birth rates because of the improved quality of life and birth rates continue to be low because of the improved economic standards of people and their desire for possession goods.

The demographic transition model was formed in 1929 and can be seen as being a bit outdated. For one thing people have predicted or seen a sign of a possible fifth stage. The fifth stage is the stage where birth rates are lower than death rates and thus the population growth rate will be negative, meaning that the population will be decreasing.

METHODOLOGY

According to the model all countries pass through the same transitions or stages; Qatar is no exception. In order to investigate whether Qatar has been through the different stages of the demographic transition model a

questionnaire has been conducted to investigate the number of living children per women per year, that is because it can be a combination of both the death and birth rates, the rate of natural increase, it does that by looking at the interviewees birth and the year she was born, the year her daughter, her mother, her grandmother and her great-grandmother were born and the number of children they had.

The first method of analysis will be by using the Spearman's Rank Correlation (SRC) to find the correlation between the years that women were born and the number of children they had. When looking at our results we have to keep in mind that we looked at the year the women were born therefore if we have to add 20 years to the year she was born since it is the average age that women start having children. SRC looks at the correlation of two sets of data with 1 being a strong positive correlation and -1 being a strong negative correlation the correlation gets weaker as it approaches 0. However even with the SRC we cannot be sure if the correlation is right, therefore we need to look at the significance of the correlation which will give us the likelihood of the correlation occurring, if it was less than 95% then the results are rejected. This is done by using the graph (see graph 1)

Graph 1:

Source: (" Spearman's Rank Correlation Coefficient")

Modified by: Author, 2011

which plots the coefficient of the SRC and the degrees of freedom, which is $n-2$. The second method we will be using to analysis our data is by graphing them.

ANALYSIS

By comparing all the results of the live births and the year the mother was born using the SRC (see appendix B) we get a weak correlation of 0. 24. This result shows us that there is a small increase of births as the year increases. However, according to the demographic development model the data should go through different population stages and therefore we should divide the data to correlate with the economic development that the country should have according to the demographic development model.

The first stage is of the demographic transition model is associated with pre-industrial societies, which is probably the condition of Qatar before the discovery of oil. Oil in Qatar was discovered in 1940, however it wasn't until 1949 that Qatar started to export (" History of Oil Discovery"), therefore we should expect to see first stage characteristics in our results from 1860 till 1929 since we should account for the 20 year difference between the year that the women was born and the beginning of her child bearing years.

Looking at the results of the SRC (see appendix C) we can seen that there is a moderate positive correlation of 0. 57. Our results suggest that as the years increase the number of births increase however only but a little bit, which suggests that there is a small population increase. In the first stage the population increase is low, however it is increasing, therefore we can say that the results seem to fit with the first stage of the demographic transition model. However to be certain of our results of the SRC we have to look at the <https://assignbuster.com/qatars-population-following-the-demographic-transition-model-sociology-essay/>

significance of this correlation. Our results show that the SRC is 0.57 and the degree of freedom is 63 (65-2), finding this on the graph (see graph 2)

Graph 2:

Source: ("Spearman's Rank Correlation Coefficient")

Modified by: Author, 2011

we can see that the point lies closest to the 0.1% significant level meaning that there is only 0.1% chance that the correlation happened by chance.

This result then strengthens our SRC findings and reinforces our analysis.

The second stage of the demographic transition model is associated with developing countries, which is probably the condition of Qatar after the discovery of oil and the improvement of healthcare. The second stage will then be from 1930 until 1952 where education has improved ("Education in Qatar") and which will affect the number of children that women have. In the second stage we should see a strong positive correlation since as the country develops, health care develops which decreases the infant mortality rates. Looking at the results of the SRC (see appendix E) we can see that there is a strong positive correlation of 0.80. From our results we can conclude that as the second stage suggests birth rates will rapidly increase as the years increase. We can also conclude that the population will increase since birth rates are increasing. For the second stage we also need to find the significance of the results of the SRC. For the second stage the SRC is 0.80 and the degree of freedom is 20 (22-2). By connecting the two data of the graph (see graph 3)

Graph 3:

Source: ("Spearman's Rank Correlation Coefficient")

Modified by: Author, 2011

we notice that the point lies next to the 0.1% line which means that there is only 0.1% possibility that the SRC happened by chance. This then reinforces our data analysis method and reinforces our conclusions.

The third stage of the demographic transition model is probably the condition of Qatar after the improvement of the education systems. Therefore the third stage will be from 1953 and onward. Looking at the results of the SRC (see appendix G) we can see that there is a strong negative correlation of -0.85. Our results suggest that as the years increase the number of births decrease rapidly, which is associated with the patterns of population in the third stage. Also, in the third stage the rate of natural increase is decreasing, and since there is a negative correlation and since we are looking at the number of live children women have we can say that our results demonstrate the third stage of the demographic transition model. However to be confident of the results of the SRC we have to look at the significance of this correlation. From our results we can see that the SRC is -0.85 and the degree of freedom is 33 (35-2). For the third stage the SRC has a negative value however this does not make a difference since we can take the absolute value of the SRC which is 0.85. Connecting the two points on the graph (see graph 4)

Graph 4:

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Source: (" Spearman's Rank Correlation Coefficient")

Modified by: Author, 2011

we can see that the point lies closest to the 0. 1% significant level meaning that there is only 0. 1% chance that the correlation happened by chance. This gives us confidence that our results are valid and it did not occur by chance.

The fourth stage of the demographic transition model is when birth rates are really low and we should expect to see that for the women born from 1970 and onwards. However looking at our results we do not notice that trend; even though the fertility rates have dropped they are still high considering the proliferated economic and social sectors. We can see that the average number of children that women have from 1970 and onwards is 2. 50 which is still high considering that those women are still in their child bearing years. This result could be from the pro-natalist policies Qatar has implemented, such as free education and free healthcare.

Pro-natalist policies are used to encourage families to have more children. In many countries the government has implemented pro-natalist policies. Many countries, such as Romania and France, are enforcing laws that prohibit abortion. Other countries are trying to increase their birth rates by increasing the taxes of men and women, over the age of 25, who remain childless.

Other policies includes decreasing divorce rates by complicating the rules of divorce, increasing allowances for family with every child or decreasing taxes for families with three or more children (" Demographic Policy"). One

problem that leads to low birth rates is the fact that women are choosing
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their careers over having children. To solve that, some countries such as Norway, created day-care centres funded by the government, and allowed women to have maternity leaves without affecting their position at work. However these countries are all facing a declining population or a very low population increase. For example Romania has a negative population growth rate of -0.247% ("Romania").

The second method of analyzing our data is by graphing them. The first graph is a graph of all the data (see graph 5).

Graph 5:

Source: Author, 2011

From the graph we can see straight away that the results have been going through the different stages. We can estimate from the graph that between 1860 to about mid-1920s have been going through the first stages of the demographic transition model. We have come to this conclusion because we can notice that the number of live birth rates are in the low ranges and not increasing or decreasing as the years go by. We can also estimate from the graph that the population of Qatar has been through the second stage of the demographic transition model from the mid-1920s till about 1950 because of the rapid increase in the number of live birth rates. The rapid decrease in the number of live birth rates from about 1950 to 1986 suggests that the population of Qatar has been going through the third stage of the demographic transition model. Our observations of the graph suggests that Qatar has been through the stages of the demographic transition model, however to be sure about our conclusion we should split the graph in the <https://assignbuster.com/qatars-population-following-the-demographic-transition-model-sociology-essay/>

different stages that we have come up with before and see if the graphs reinforces our conclusion that Qatar has been through the stages of the demographic transition model. Previously we have split the results into different stages that correlate with Qatar's economic position. We have said that the first stage is between 1860 till 1929, the second stage from 1930 till 1951 and the third stage from 1952 till 1986.

Graphing the first stage of the demographic transition model (see graph 6)

Graph 6:

Source: Author, 2011

the first thing that we notice is that the number of live births are really low they range from 1 to 6, however most are between 2 and 4. The low number of live birth rates is one of the characteristics of the demographic transition model; the high birth and death rates which results in low live birth rates. Another thing that we notice from the graph is that the number of live birth rates is increasing. This is not a characteristic of the first stage, since population growth is supposed to be stable, however the increase is very small therefore it can just be an effect of the small sample that we had take. From these similarities we can conclude that the results are similar to the characteristics of the first stage of the demographic transition model and therefore we can conclude that the population changes in Qatar follow the demographic transition model.

The graph of the second stage of the demographic transition model (see graph 7)

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Graph 7:

Source: Author, 2011

shows a rapid increase of the number of live birth rates. From our previous knowledge of the second stage of the demographic transition model we know that death rates drop rapidly while birth rates stay constant which creates a large rate of natural increase, a high number of live births rates. Another thing we notice from the graph is that the live birth rates reach about 12, this is seen as a characteristic of the demographic transition model because one of the reasons that in this stage the death rates drop and thus the birth rates increase is because people still think that the infant mortality is high thus they need to produce more children to ensure that some will survive. This characteristic of the second stage explains the reason for the staggering high value of the number of live births. Therefore we can conclude that the results are similar to the characteristics of the second stage of the demographic transition model and therefore we can conclude that the population changes in Qatar follow the demographic transition model.

Graphing the third stage of the demographic transition model (see graph 8)

Graph 8:

Source: Author, 2011

we notice a rapid decline in the number of live births. This is seen as a characteristic of the third stage since in this stage the birth rates drop due to the fact that people realize that infant mortality rates had dropped due to <https://assignbuster.com/qatars-population-following-the-demographic-transition-model-sociology-essay/>

the increase of educated people. The next thing we can see is that in this stage the number of live births decrease to about one and two which is not a characteristic of the third stage because with those number we should expect a negative rate of natural increase and in the third stage the population is still increasing, however this could be explained due to the fact that those number are from 1980 and onwards and thus this means that the women are still in their child bearing years. However this can also mean that Qatar is moving towards the fourth stage of the demographic transition model where the birth rates are really low.

CONCLUSION

In conclusion we can say the population in Qatar has followed the different stages of the demographic transition model. From looking at the rate of natural increase and the number of births in our graphs and comparing to the different stages and from calculating the SRC we have concluded that the characteristics that we have found in the different stages matched those of the demographic transition model.

Evaluating our method we can say that our methodology was successful, we have analyzed our data using two different methods and we have come up with the same conclusion for the two methods. We have also considered the possibility that our results might not be sufficient for the SRC and we backed our by finding the significance of the results by calculating the percentage that our results have occurred by chance. One small limitation in our method is that our sample was small; we have looked at only 100 people and in my opinion when looking at demographic patterns 100 people seem to be a small ample size. However even with this limitation we were able to gather <https://assignbuster.com/qatars-population-following-the-demographic-transition-model-sociology-essay/>

our data sufficiently and properly. Another limitation was that we looked at the live birth rates, a more suitable variable would have been to look at the number of children that a women had and the number of the children that have died; those variables would have been more suitable since it would gives us the death and birth rates to compare with the demographic transition model and not only the rate of natural increase.