

## STATISTICAL ANALYSIS OF ELDERLY SURVEY IN SAUDI ARABIA IN THE YEAR (2017)



Students names:  
Marwa-Bashatta  
Najla-Alabbad

## - Table of content:

<b>Introduction</b> .....	3
<b>Abstract</b> .....	3
<b>Analysis and discussion</b> .....	4
Data overview.....	5-8
Descriptive statistics.....	8-11
<b>Association and Prediction</b> .....	12
Correlation.....	13
Regression.....	13-14
<b>Conclusion</b> .....	15
<b>References</b> .....	15

## - Introduction :

This report is primarily aiming at providing an integrated image of the reality of the elderly belonging specifically to the age group 65+ years old in the Kingdom of Saudi Arabia. Such population are surveyed by their demographic and social characteristics, needed services, communication with the homes for the elderly, as well as their role in voluntary work. The report also encompasses the methodology of the survey, collecting data and analytic findings.

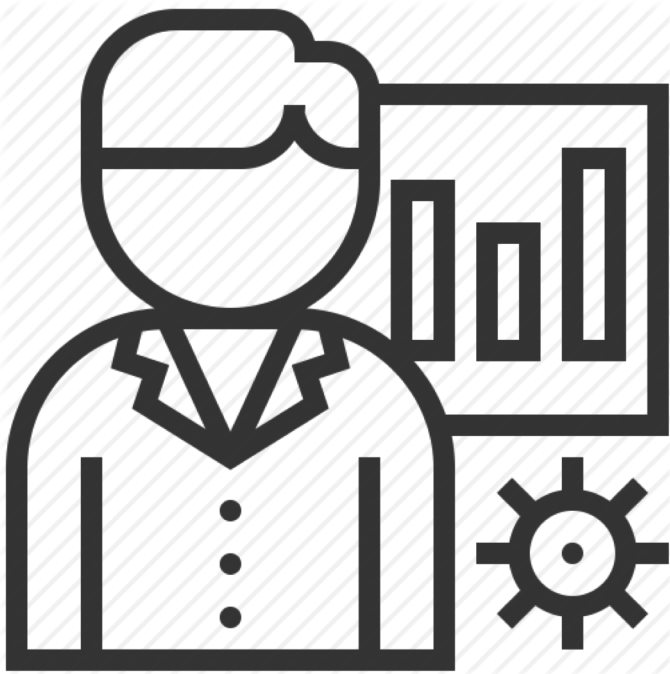
In this survey family data were collected including the marital and educational status. The data also included the demographic structure of Saudi population (65+ years old) on the level of KSA and administrative regions. The survey also extracted several indicators such as: age and gender structure for the age group (65+ years old), marriage and divorce rates, educational status, diseases, difficulties in physical functions, voluntary work and communication with the homes for the elderly. The authority hopes these results meet the needs of planners, researchers and whoever is interested in the elderly studies.

## - Abstract :

This analysis studies the relationship between the number of elderly and the treatments expenses for both genders Male and Female around 13 areas around Saudi Arabia, the statics reveals that there is a strong relationship between the number of elderly and the treatments expenses, And according to the schedule the highest number of elderly is in Riyadh and Dammam.



- Analysis and discussion



## - Data overview :

### Population ( 65 Years and over ) by sex, Administrative areas

Administrative Area	Total		
	Total	Female	Male
Al-Riyadh	198855	86863	111992
Makkah Al-Mokarramah	309443	140648	168795
Al-Madinah Al-Monawarah	86576	39038	47538
Al-Qaseem	45815	22446	23369
Eastern Region	112983	55674	57309
Aseer	103139	53724	49415
Tabouk	23490	11402	12088
Hail	27143	13240	13903
Northern Borders	11267	5659	5608
Jazan	71539	36337	35202
Najran	19991	10415	9576
Al-Baha	26286	14756	11530
Al-Jouf	14358	6694	7664
<b>Total</b>	<b>1050885</b>	<b>496896</b>	<b>553989</b>

## - Data overview :

### Saudi **Males** Population ( 65 Years and over ) by Administrative Area and Carry of Treatment expenses

Administrative Area	Carry of Treatment expenses
	<b>Male</b>
Al-Riyadh	45815
Makkah Al-Mokarramah	49738
Al-Madinah Al-Monawarah	14229
Al-Qaseem	12351
Eastern Region	23043
Aseer	29932
Tabouk	5188
Hail	6448
Northern Borders	3099
Jazan	17201
Najran	3759
Al-Baha	4478
Al-Jouf	3069

## - Data overview :

### Saudi **Females** Population ( 65 Years and over ) by Administrative Area and Carry of Treatment expenses

Administrative Area	Carry of Treatment expenses
	<b>Females</b>
Al-Riyadh	50047
Makkah Al-Mokarramah	61214
Al-Madinah Al-Monawarah	17414
Al-Qaseem	11420
Eastern Region	30347
Aseer	36101
Tabouk	6080
Hail	6304
Northern Borders	3609
Jazan	18954
Najran	5640
Al-Baha	8443
Al-Jouf	2529

## - Descriptive statistics :

		Statistics			
		Region	Male	femal	number
N	Valid	13	13	13	13
	Missing	0	0	0	0
Mean			42614.54	38222.77	80837.3077
Median			23369.00	22446.00	45815.0000
Std. Deviation			48176.352	39132.975	87165.95245
Variance			2320960920.436	1531389733.026	7597903265.897
Skewness			1.874	1.741	1.819
Std. Error of Skewness			.616	.616	.616
Range			163187	134989	298176.00
Minimum			5608	5659	11267.00
Maximum			168795	140648	309443.00
Percentiles	25		10553.00	10908.50	21740.5000
	50		23369.00	22446.00	45815.0000
	75		53362.00	54699.00	108061.0000

Stated in (Table 1)

The **Mean** number of elderly **Male** is **42614.54** and the **Median** is **23369.00**, The **Mean** is greater than the **Median** which reveals that the data is slightly skewed to the right.

In addition, large range value indicates greater dispersion in the data. For these data the **Range** is **163187**.

Also, The greater the variance, the greater the spread in the data.

The table shows that the **Variance** is **2320960920.436** with **Standard deviation** of **48176.352**. In these results, the third quartile (**Q3**) is **53362.00**, That is, **75%** of the data are less than or equal to **53362.00**, The first quartile (**Q1**) is **10553.00**. That is, **25%** of the data is less than or equal to **10553.00**.



## - Descriptive statistics :

		Statistics			
		Region	Male	female	number
N	Valid	13	13	13	13
	Missing	0	0	0	0
Mean			42614.54	38222.77	80837.3077
Median			23369.00	22446.00	45815.0000
Std. Deviation			48176.352	39132.975	87165.95245
Variance			2320960920.436	1531389733.026	7597903265.897
Skewness			1.874	1.741	1.819
Std. Error of Skewness			.616	.616	.616
Range			163187	134989	298176.00
Minimum			5608	5659	11267.00
Maximum			168795	140648	309443.00
Percentiles	25		10553.00	10908.50	21740.5000
	50		23369.00	22446.00	45815.0000
	75		53362.00	54699.00	108061.0000

Stated in **(Table 1)**

The **Mean** number of elderly **Female** is **38222.77** and the **Median** is **22446.00**, The **Mean** is greater than the **Median** which reveals that the data is slightly skewed to the right. In addition, large range value indicates greater dispersion in the data. For these data the **Range** is **134989**. The numbers reveals that **Female elderly are less than Male**

Also, The greater the variance, the greater the spread in the data.

The table shows that the **Variance** is **1531389733.026** with **Standard deviation** of **39132.975**. In these results, the third quartile (**Q3**) is **54699.00**, That is, **75%** of the data are less than or equal to **54699.00**, The first quartile (**Q1**) is **10908.50**. That is, **25%** of the data is less than or equal to **10908.50**.

## - Descriptive statistics :

		Statistics			
		gender	region	NuEldary	TREATExpenses
N	Valid	26	26	26	26
	Missing	0	0	0	0
Mean				40418.6538	18325.0769
Median				22907.5000	11885.5000
Mode				5608.00 <sup>a</sup>	2529.00 <sup>a</sup>
Std. Deviation				43059.76195	17331.55380
Variance				1854143099.275	300382756.954
Skewness				1.764	1.170
Std. Error of Skewness				.456	.456
Percentiles	25			11155.2500	5010.5000
	50			22907.5000	11885.5000
	75			54211.5000	30035.7500

a. Multiple modes exist. The smallest value is shown

Stated in **(Table 2)**

The **Mean** number of **elderly** is **40418.6538** and the **Median** is **22907.5000**, The **Mean** is greater than the **Median** which reveals that the data is slightly skewed to the right. In addition, The **Mode** is **5608.00**

Also, The greater the variance, the greater the spread in the data. The table shows that the **Variance** is **1854143099.275** with **Standard deviation** of **43059.76195** In these results, the third quartile (**Q3**) is **54211.5000**, That is, **75%** of the data are less than or equal to **54211.5000**, The first quartile (**Q1**) is **11155.2500**. That is, **25%** of the data is less than or equal to **11155.2500**.

## - Descriptive statistics :

		Statistics			
		gender	region	NuEldary	TREATExpenses
N	Valid	26	26	26	26
	Missing	0	0	0	0
Mean				40418.6538	18325.0769
Median				22907.5000	11885.5000
Mode				5608.00 <sup>a</sup>	2529.00 <sup>a</sup>
Std. Deviation				43059.76195	17331.55380
Variance				1854143099.275	300382756.954
Skewness				1.764	1.170
Std. Error of Skewness				.456	.456
Percentiles	25			11155.2500	5010.5000
	50			22907.5000	11885.5000
	75			54211.5000	30035.7500

a. Multiple modes exist. The smallest value is shown

Stated in **(Table 2)**

The **Mean** number of **Treatment expenses** is **18325.0769** and the **Median** is **11885.5000**, The **Mean** is greater than the **Median** which reveals that the data is slightly skewed to the right. In addition, The **Mode** is **2529.00**.

Also, The greater the variance, the greater the spread in the data. The table shows that the **Variance** is **300382756.954** with **Standard deviation** of **17331.55380** In these results, the third quartile (**Q3**) is **30035.7500**, That is, **75%** of the data are less than or equal to **30035.7500**, The first quartile (**Q1**) is **5010.5000**. That is, **25%** of the data is less than or equal to **5010.5000**.



- Association and Prediction



## - Correlation :

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938 <sup>a</sup>	.880	.875	6122.20390

a. Predictors: (Constant), NuEldary

Correlation ( $r$ ) is = **.938**

There is strong positive relationship between the number of elderly and treatment expenses.

Determination ( $r^2$ ) is = **.880**

## - Regression :

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6610015790.826	1	6610015790.826	176.355	.000 <sup>b</sup>
	Residual	899553133.020	24	37481380.542		
	Total	7509568923.846	25			

Dependent Variable: TREATExpenses

Predictors: (Constant), NuEldary

from the **ANOVA** table we can see that the estimated line regression equation is a good fit and significant. **P.V <.05**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3062.022	1662.098		1.842	.078
	NuEldary	.378	.028	.938	13.280	.000

**Dependent Variable: TREATExpenses**

**Independent Variable: Nueldary**

**(a)=3062.022 (b)=.378**

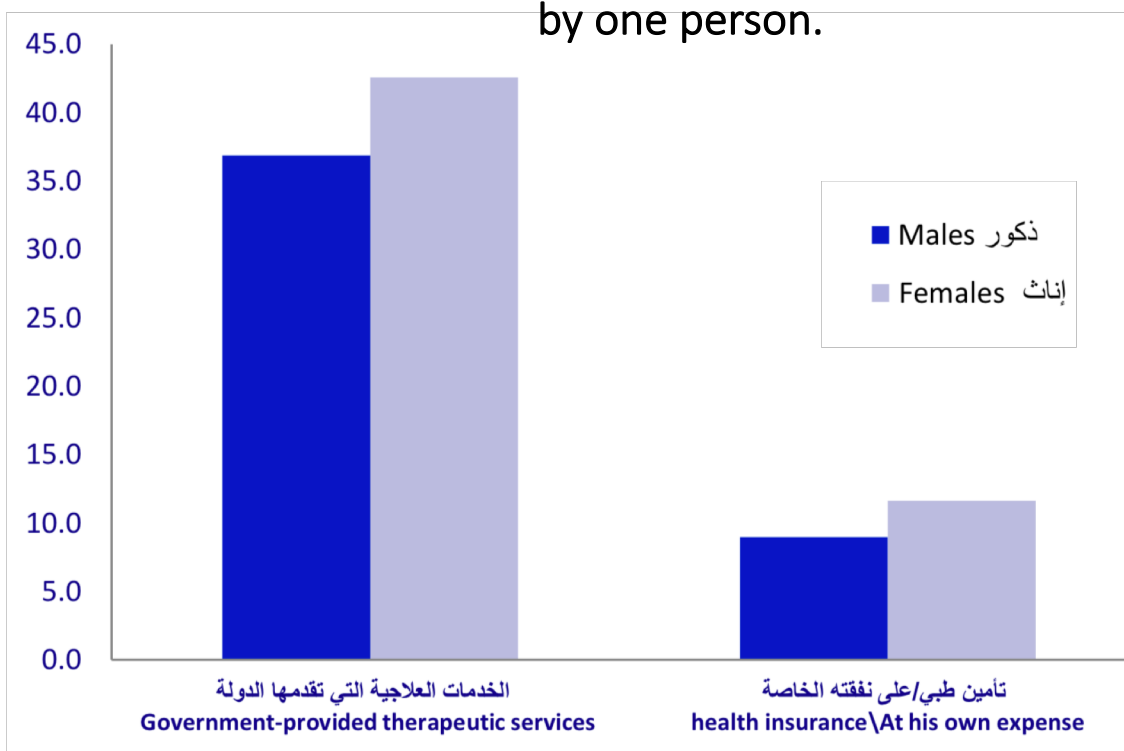
-From the **coefficients table** we can see that the constant is not significant. **P.V = .078 so P.V >.05**

-From the **coefficients table** we can see that the number of elderly is significant. **P.V = .00 so P.V <.05**

$$\hat{Y} = a + X_1 + X_2 + \dots$$

$$\hat{Y} = 3062.022 + .378 X_1$$

The expenses increase .378 when elderly number increase by one person.



## - Conclusion :

In conclusion there are a number of elderly people with ages around 65 years and more from different areas around the kingdom ,And these numbers has an effect on the budget, The statics reveals that there is a Positive relationship between the increase of elderly numbers and the treatments expenses offered by the kingdom as a support for a very important category in the society.

## - References :

c. (2017). *elderly survay*. Saudi Arabia: general authority for statistics. statistics, g. a. (2017). *eldarly survay*. Saudi arabia: general authority for statistics.

SPSS-Program