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A Comparative Study of Health Status (Schizophrenia) of Different Countries

Prerana Isaac Mudumala, *NMIMS University, Mumbai, Maharashtra*
Purvika Talwar, *NMIMS University, Mumbai, Maharashtra*
Raghav Gupta, *NMIMS University, Mumbai, Maharashtra*
Riddhi Chaturvedi, *NMIMS University, Mumbai, Maharashtra*

Rishit Bhatnagar, *NMIMS University, Mumbai, Maharashtra*
Ms. Tejaswini Angre, *Professor at NMIMS University, Mumbai, Maharashtra*

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ABSTRACT
During recent decades intraregional migration has increased in Latin America. Chile became one of the main receiving countries and hosted diverse international migrant groups. Evidence has suggested a healthy migrant effect (HME) on health status, but it remains scarce, controversial, and needs to be updated. This study performed a comprehensive analysis verifying the existence of diseases and a comparison between different countries.

INTRODUCTION

It is critical to comprehend the health conditions of other nations in an increasingly interconnected world where borders are vanishing and distances are getting shorter. This study sets out to explore the complex web of global health, seeking to understand the various

Health status is a reflection of socioeconomic position, cultural norms, and political regulations, as well as the availability and accessibility of healthcare, regardless of location—from thriving metropolises to isolated villages. We investigate a range of variables, including life expectancy, disease prevalence, healthcare system, and public health initiatives, to disentangle the complex dynamics underlying the health profiles of various countries. Since every country has a unique story to tell, our investigation goes beyond simple numbers to examine the tales of resiliency.

FACTORS AND STATISTICS

Analysis of descriptive statistics

Column1	
Mean	0.216541816
Standard Error	0.001575069
Median	0.198097
Mode	0.197004
Standard Deviation	0.050254339
Sample Variance	0.002525499
Kurtosis	1.709532239
Skewness	1.435638792
Range	0.214713
Minimum	0.152365
Maximum	0.367078
Sum	220.439569
Count	1018

- The mean (0.2165) and median (0.1981) of the given data are close, indicating that the data might be symmetrically distributed.

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- The positive skewness (1.4356) suggests that the distribution is skewed to the right, meaning it has a longer tail on the right side.
- The positive kurtosis (1.7095) indicates that the distribution is leptokurtic, meaning it has heavier tails and a sharper

Analysis of Moving Averages

A moving average is a basic math tool that people use in many different fields, like money, business, and science. This sentence means that it helps to reduce the noise or changes in data over time so that we can see the main trends or patterns more easily. When we get new information, we ignore the old ones and find the average again.

This means that the moving average changes as the data changes, so it shows the average of the data more smoothly. For example, in money markets, moving averages are often used by experts and investors to find patterns in how prices change for things like stocks, metals, or money. By using moving averages to look at prices over time, analysts can get rid of small changes in prices, and see peak compared to a normal distribution.

- The range (0.2147) indicates the spread of values from the minimum to the maximum. The standard deviation (0.0503) and variance (0.0025) quantify the dispersion of values around the mean, with higher values indicating greater variability more clearly which way the market is going.

This helps to tell if the prices are going up (bullish), going down (bearish), or staying the same (range-bound). Additionally, moving averages help find important points where prices are likely to go up or down. These numbers show places where the cost stays the same, goes down or stays the same. By watching how prices and lines move together, traders can decide when to buy or sell things, and how strong or weak a trend is.

In the analysis of health status in different countries, especially Schizophrenia, the sum for all countries' data ranges from 7.65-8%. This tells us that it was not a major disorder in the given years as compared to anxiety disorder, depression, eating disorder, etc

Year	Data point
1990	1
1991	2
1992	3
1993	4
1994	5
1995	6
1996	7
1997	8
1998	9
1999	10
2000	11
2001	12
2002	13
2003	14
2004	15
2005	16
2006	17
2007	18
2008	19
2009	20
2010	21
2011	22
2012	23
2013	24
2014	25
015	26
2016	27
2017	28

The following data point can be separated in three phases

Phase one:

Phase one is from data points 1-8 which is the years 1990-1999 where the percentage of people affected by schizophrenia in various countries is constant or increasing by a very small percentage. This indicates that the
difference in the percentage of people affected by the disease is not a lot and is very minute. This could've been due to changes in diagnostic criteria. If it remained constant during the period, the data would've appeared constant as well. It is high due to a lack of awareness about the disease and proper cure or treatment.

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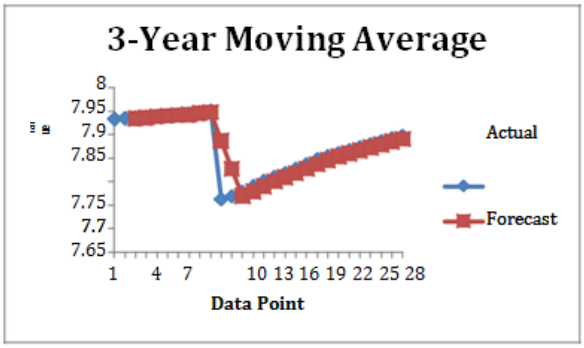

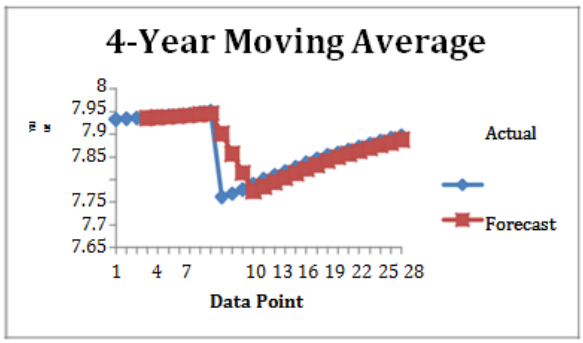

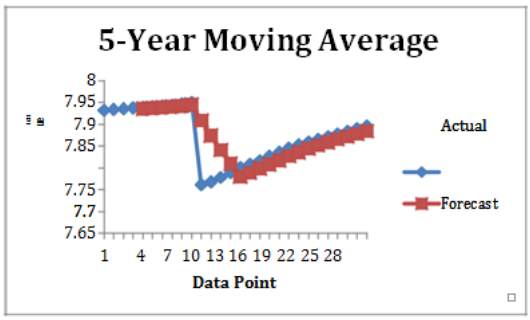

Phase two:

Phase two is from the data points 10-13 which is from 2000-2003 where there is a drastic drop in the percentage of people affected by the disease. This could be due to improvements in treatment and advances in psychiatric treatment and medication during this time. There was also the introduction of community mental health programs during this period along with reduced stigma. It's important to note that the observed decrease in the percentage of people affected by schizophrenia during the years 1991-2002 may be influenced by a combination of these factors.

Phase three:

Phase three is from data points 14-27 which is the year 2004 to the latest data of 2017. Here the percentage of people affected by schizophrenia has kept on increasing. This could've happened due to socioeconomic factors, environmental stressors, and other social determinants of health. Along with this, changes in access to mental healthcare services, including increased availability of treatment options and community support programs, may have resulted in more individuals receiving a diagnosis of schizophrenia during this period.

The choice of the length of the moving average window affects the level of smoothing applied to the data. Shorter moving averages are more sensitive to short-term fluctuations but may provide more timely signals, while longer moving averages offer a broader view of the underlying trend but may be slower to respond to changes in the data. It's essential to select the appropriate length of the moving average based on the specific characteristics of the data and the analysis objectives.

Analysis of the least square method

Here we have used the method of least square to calculate the linear regression model. The link between the percentage of people having schizophrenia (dependent variable) and yearly time (independent variable) is shown. We have 28 data points for analyzing the number of people having schizophrenia for the period 1990-2017.

To simplify the calculations, we have taken the middle year as 2003.5

So, in this data

Y= sum of people having schizophrenia,

X=Current year – Middle year **1. INTERCEPT**

The Y-intercept represents the estimated value of the sum of people having schizophrenia when the independent variable is zero.

The Independent Variable denoted in the in the regression equation by 'a' is 7. 87284175.This indicates that in

the middle year the sum of people having schizophrenia will be 7.87284175

2. X VARIABLE 1

This represents the coefficient for the independent variable. It represents the change in the sum of people having schizophrenia for a change or increase of one unit in the independent variable. The

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coefficient is denoted by 'b' and is 0.00295053448275858 for the data.

3.Y=AX+B

This is the general regression equation.

Therefore, the equation will be Y= 7.87284175+0.00295053448275858 X

With the help of the above model, we can predict the sum of people having schizophrenia for the current year period and the following result can be obtained.

Year	x	Y=a+bx
2018	-14.5	7.830059
2019	-15.5	7.827108466
2020	-16.5	7.824157931
2021	-17.5	7.821207397
2022	-18.5	7.818256862
2023	-19.5	7.815306328
2024	-20.5	7.812355793
2025	-21.5	7.809405259
2026	-22.5	7.806454724

Analyzing the data and the chart, we can see there is a negative correlation showing a downward-sloping regression equation line. This suggests that the sum of people having schizophrenia has decreased over the years
It can be seen how earlier at the start of the study the sum of people having schizophrenia was approximately 7.912 % whereas it has been estimated that this percentage might decrease to 7.806454724% in 2026 proving the regression equation sloping downwards is true for the analyzed data

Analysis of Index Numbers

An index number is used to quantify variations in the magnitude of change in a set of related variables over time.
In this study, we utilized Chain Based Index Numbers to determine how the percentage of schizophrenia patients changed over time.
The 1990–1999 Chain Index Numbers are still rather similar to the base year. However, in the year 2000, there is a sharp drop from 100.22% to

97.85%. The variables exhibit minimal changes over time, being largely steady and consistent aside from the above change. Patients with schizophrenia experience very little to no variation in their tendency to change.

LIMITATIONS

Restricted Insight: While descriptive statistics give summary statistics like mean, median, mode, variance, etc., they don't shed light on causality or correlations between variables. They don't get into why particular patterns exist; they just describe the data.

Doesn't Take Change Over Time Into Account: While descriptive statistics offer a moment-in-time view of the data, they could miss changes or patterns that occur over time. To effectively evaluate temporal patterns, time-series analysis or longitudinal investigations are required

Information Loss: Because moving averages average across neighboring data points, information is lost. Significant information, such as sudden shifts or outliers, may be hidden by this smoothing technique but may still be pertinent for some studies or decision-making procedures.

Sensitivity to Window Size: The smoothed series can be greatly impacted by the window size selection, which refers to the quantity of data points used in the moving average computation. Smaller window widths are more sensitive to short-term changes but may add more noise; larger window

sizes provide smoother curves but may not be able to catch short-term variations.

The third issue is known as the "index number problem" which describes how challenging it may be to create consistent and relevant indices when working with a variety of merchandise or services. There may be aggregation problems and possible distortions when different elements are combined into a single index since the index may not correctly reflect changes in its constituent parts.

Base Year Updating: To account for variations in market conditions, alterations in consumption habits, or advances in technology, index values frequently need to be updated on a regular basis. Updating the base year can take a lot of effort and resources, and if it isn't done often, the indices may become out-of-date or less useful.

Sample Size: Less squares estimates in small samples can be prone to sampling fluctuation and imprecise. Additionally, small sample sizes raise the possibility of overfitting the data and amplifying the impact of outliers.

Non-Independence of Observations: The theory behind least squares is the independence of observations from one another. In instances where observations exhibit correlation or clustering, such as in time series or panel data, least squares estimations may prove to be ineffective, and standard errors may exhibit bias

CONCLUSION

In the rich tapestry of global health, our journey revealed many insights that revealed both the challenges and the triumphs that determine the health status of countries. From the towering skyscrapers of the city centre to the remote corners of rural landscapes, health remains a cornerstone of human flourishing, transcending geographic boundaries and cultural differences. Our research highlighted the complex interplay of factors that influence health outcomes, from access. to health to take care of and socioeconomic differences in cultural norms and political landscapes. Amidst the complexity, however, a beacon of hope emerges—a testament to the resilience, innovation, and solidarity that characterize humanity's response to health challenges. As we conclude our study, we are reminded of the need for continued collaboration and sharing knowledge and collaboration to eliminate persistent injustice and build a future where health is not a privilege but a basic human right. By harnessing the power of joint efforts, we can strive for a world where every person, regardless of nationality or circumstances, has the opportunity to achieve good health. On the world health carpet, our journey may be over, but the work for a healthier and more equal world continues according to the experience and vision gained for a brighter future for all.