FORECASTING UNEMPLOYMENT RATE IN SAUDI LABOR MARKET IN 2030: THE STORY OF DOWNWARD RESISTANCE

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ABSTRACT

In the light of globalization theory, protecting the interest of domestic residents especially the livelihood has always been challenging task for the government. Keeping into mind this scenario, this research work is aimed at (1) forecasting the future of employment status measured in terms of unemployment rate of Saudi workers by 2030 (2) to understand the relationship between unemployment rate, Gross Domestic Products (GDP) and population growth; and 3) to justify the reasons of downward resistance of unemployment rate in Saudi Labour market. These were completed by using appropriate models and techniques with the aid of statistical packages viz. SPSS 20 and AMOS. The data employed in this study were collected from the annual reports of Saudi Arabia Monetary Authority (SAMA), for the last 20 years (i.e. 1999 - 2019). The results of this study show that the unemployment rate will be 10.99 % in 2030 which is approximately 3 % higher as announced in Saudi 2030 vision. Another interesting finding is that unemployment rate has no significant correlation with GDP and population growth and the combined influence of both GDP and population growth is only 4.2% (squared multiple correlations) which is insignificant.

Keywords: Saudi Labour Market, Saudi 2030 Vision, Unemployment, the KSA, Forecasting Unemployment Rate, unemployment rate.

INTRODUCTION

Theoretical debates on the impact of social, economic, and political globalization upon the unemployment rate are considered as an active topic (Pozhhan et al., 2020; Mosarrezaii and Kargar, 2018; Aliakbari et al., 2019) not only in the developed economy but also in an emerging economy (Mahulu et al., 2018) such as the Kingdom of Saudi Arabia (KSA). Globalization theory combines a multi-dimension understanding of phenomena such as economic, social, and political (Siddiqa, et al., 2018; Anthony, 1990; Appadurai, 1996). Sahoo and Sahoo (2019) and Baghestani (2008) argued that the unemployment rate is a multidimensional phenomenon that consists of economic, political, and social structure activities of the state. In general, globalization or 'neoliberalism' is seen as the main factor of the increasing unemployment rate (Wagner, 2013); whereas, the unemployment rate negatively affects the socio-economic activities. However, the impact of globalization on the unemployment rate can be noticeably seen in developing countries than other developed ones. Navarro (1998) argued that developed countries have "greater social protection and more regulated labor market [which can be seen successful] in producing jobs and lowering unemployment [rate]".

The unemployment rate is crucial for social, political, and economic planning of industrial policies, for example, risk, taxes, finance, and education (Mahipan et al. 2013).

Macroeconomic disturbances such as productivity slow down, the steep rise in oil prices, changes in interest rates, the slowdown in revenue and sales, school dropouts, increases health issues and nature of expenditures, and crimes lead to persistent unemployment rates (Roed, 1997). In this regard, the Saudi Arabian Monitory Authority (SAMA) reports that in 2018 the unemployment rate in the Saudi labor market stood at around 12.7 percent. However, it fell to 12.5 percent in the first quarter of 2019; while, in the second quarter of this year was 12.3 and "dipped slightly to 12 percent in the third quarter of 2019" (Alarabia Business, 2019). In the third quarter of 2019, there are "1,025,328" Saudi job seekers (Saudi General Authority for Statistics, 2020; Saudi National Portal, 2019). However, the unemployment rate in the United States fell to 3.9 percent in 2018 from 4.4 percent in 2017; while, in Japan, it decreases to 2.4 percent in 2018. In Germany, France, and Italy it went down to 3.4 percent, 9.1 percent, and 10.6 percent in 2018 respectively. However, in the United Kingdom, it fell to 4.1 percent in 2018 (SAMA reports, 2018). Therefore, it is important to find why the unemployment rate in the KSA is noticeably higher compared to these countries.

Economists suggest that policymakers' primary objective is to promote economic growth and bring down employment variability (Ewing et al. 2005) because unemployment and economic are interlinked (Awad and Yousef 2016; Mucuk and Demirsel, 2013; Reeshan, 2017). Here, one can question how does Saudi Arabia controls its unemployment rate?

The purpose of this study is: 1) to forecast the future of unemployment rate of Saudi nationals in 2030 by using Autoregressive Integrated Moving Average (ARIMA) model; 2) to investigate the causal relationship between unemployment rate, Gross Domestic Products (GDP) and population growth; and 3) to justify the reasons of downward resistance of unemployment rate in the Saudi labor market.

The structure of this study contains a critical analysis of related literature. The third part is to justify the chosen research methods followed by results in the fourth part. Discussion of the results is in the fifth section; while, conclusions, and remarks are in the last.

LITERATURE REVIEW

This part aims to determine the research gab of this study and to draw its validity and addressing its objectives by reviewing recent studies related to: 1) globalization and unemployment; 2) unemployment in the Saudi labor market; 3) the impact of Saudization and Nitaqat (stages) programs upon unemployment rate.

Globalization and Unemployment in Saudi labor Market

The impact of globalization on the unemployment rate is generally debatable. The theory of globalization emphasizes multi-dimensions phenomena including economic, social, and political and other relevant dimensions such as geographical, cultural, psychological, etc (Scholte, 2008; Beck et al., 1992). The term globalization is a 'social process' where countries became borderless (Waters, 1995; Ritzer, 1996). On the other hand, it is a compression of the world and intensification of consciousness of the world as a whole (Robertson, 1992).In other words, globalization is a phenomenon shaped by forces of "modern" capitalism: politics, military power, and industrialism (Giddens, 1990).

Consequently, this is a complex meaning of globalization which highlighted the diverse meaning from different perspectives (Castells, 1996). Here, one can argue that modern capitalism can directly or indirectly shape the form of unemployment in our global village.

The reviewed studies with regard to the impact of globalization upon the unemployment rate arguably show that there are two contradictory streams.

One school of these streams demonstrates that globalization increases the unemployment rate. For example, the study of Gozgor (2017)stated that the impact of economic, social, and political aspects of globalization upon unemployment is negative and statistically insignificant. Daly et al. (2012) in his study of unemployment in Pakistan found the insignificant effect of globalization in the long-run as well. The study of Tavera (2007)who used Static Panel Data Analysis to examine the impact of globalization on unemployment in Peru came up with similar findings. Relatedly, Lim and Burgoon (2017)indicated in their study of pubic opinions in Asian countries, that globalization can be seen as a factor of the increasing unemployment rate.

On the other hand, the second stream sees that globalization's factors participate positively in decreasing the unemployment rate. Soomro et al. (2012) in their comparative study (16 countries), for example, used Autoregressive Conditional Heteroskedasticity (ARCH) to test the influence of globalization on the employment rate in emerging market economies in these countries (see their tables 4 and 5, pp: 1772, 1773), had stated that globalization's factors participated in minimizing employment rate. Recently, the study of Awad and Yousef (2016) examined the effect of globalization on unemployment in Malaysia using Autoregressive Model with Distributed Lags (ARDL) Model, which advocated that unemployment was positively reduced.

Based on these two contradicted schools of thought, one can question *how* globalization theory can interpret the findings of this study in the case of the unemployment rate in the Saudi labor market.

Unemployment in the Saudi labor Market

Rosser and Sheehan(1985) described many aspects of unemployment in the KSA and related it with an inflation rate and gave a forecast model using ARIMA. Madhi and Barrientos (2003) argued that recent Saudization policies were initiated to reduce foreign dependence to raise national employment rates. They also see that offering more careers in the Saudi labor market will generate further employment opportunities for native workers. Mellahi (2007) stated that the current shifting of the legal frameworks of human resource management (HRM) in the private sector will allow the Saudi government to generate life-long employment for its citizens. However, such development should adhere to the conventions of the World Trade Organization (WTO) related to social, political, and economic matters (Baghestani, 2008). In this light, the World Economic Situation and Prospects of United nations in 2017argued that the international economic rescission forced WTO state members to adjust their economic plans to sustain their economic stabilities.

Recently, Alkhateeb, et al. (2017) by using Auto-Regressive Distributed Lag (ARDL) found a positive relationship between oil price and employment rate in Saudi Arabia during the period from 1980 to 2015 where was a declining in the employment rate. They recommend that for the Saudi government to secure and raise its employment rate it should save oil revenue in

times of prosperity. Nurunnabi (2017) argued that shifting from the oil-based economy to knowledge-based economic dependency is a vital choice for the Saudi government to maintain labor market stability. Another factor is that by replacing foreign workers in the Saudi labor market in private as well as a public sector by national workers will increase the employment rate (Alghamedi, 2016). Headded that developing the current Saudi educational system, reforming current employment policy, and creating middle-class jobs are crucial to secure the vacancies after deporting migrant workers. However, inflation is another key factor that can increase the unemployment rate (Kimbrough, 1986). Nazer (2016) found that the Saudi employment rate was decreased during the 1990s. Another factor that participates in raising the employment rate in the Saudi labor market is Nitaqat (ranges) policy. Kabli (2015)stated that the Nitaqat policy initiated to indigenize the Saudi labor market by allowing Saudi youths to secure employment. Table 1 shows the methods/techniques used to forecast unemployment models in the world.

Nitaqat program

The study of Alshanbri, et al. (2015) stated that Nitaqat (Stages) program divided Saudi private sector enterprises into four ranges: green, yellow, platinum, and red. According to them, the excellent range means reasonable and achieved acceptable rates of localization; while, all enterprises located in the yellow and red ranges means that they did not employ Saudis, or that Saudization rate is less than acceptable rate. Hence, these enterprises should correct their positions thereof at a specific time(Alshanbri et al., 2015). Al-Asfour et al. (2014)found that the Nitaqat program allows growth in terms of women empowerment; for example, in the Saudi labor market.

Moreover, Rajkhan (2014) stated that the Saudi government is keen to maintain women's rights in terms of equality and justice. On the other hand, they found that some enterprises could not replace skilled foreign labor with nationals.Alsheikh (2015) added despite the feasibility of the Nitaqat program which is socially accepted; the Saudi government still struggles to motivate its nationals to acquire its national benefits (see for example, Arabian Business Global, 2018).

In sum, the reviewed studies examined the Saudi labor market fail to forecast the unemployment rate with a specific period. Although some studies used Autoregressive Integrated Moving Average (ARIMA) model, they were mainly focusing on the forecast employment rate within the Saudi labor market (Alkhateeb, et al. 2017). Other studies in this regard used the ARIMA model to forecast only Saudi women's labor force (Rajkhan, 2014). Therefore, the current study will bridge this lacuna by employing ARIMA model for forecasting an unemployment rate of Saudi workers in 2030 to underline if that the found rate below or above the expected rate by the Saudi government, which is 7 percent in 2030 (Saudi Vision 2030, 2018: 39). Furthermore, this study aimed to investigate the causal relationship between the unemployment rate, Gross Domestic Products (GDP), and population growth. Further empirical data conducted via semi-structured interviews to justify these casual relationships. Such attempts have never been conducted in the previous studies in this regard.

Table 1: Summary of Techniques Used to Forecast the Unemployment Rate

Authors	Techniques	Results	Country

Mahipan et al. (2013)	Box-Jenkins and Artificial Neuron Network	The forecast values are consistent with the actual value and tend to decrease	Thailand
Dumicic et al (2015)	Smoothing Methods (Holt' Winters Additive Methods) and (Holt' Winters Multiplicative Methods)	For Spain- Double smoothing method, For Croatia and Italy- Holts' Winters Multiplicative models are relevant	European Countries
Mihaela (2013)	Regression-based on resample technique	Improve accuracy in forecasting the unemployment rate	Romania
Nkwatoh (2012)	ARMA (Autoregressive Moving Average) ARCH (Autoregressive Conditional HeteroScedasticity) GARCH (General Autoregressive Conditional HeteroScedasticity)	ARIMA/ARCH is relevant for decision making	Nigeria
Kurita (2010)	ARFIMA (Autoregressive Fractionally Integrated Moving Average	Satisfactory representation of data	Japan
Wilson and Perry (2004)	Spectral Analysis against ARIMA	Spectral analysis achieves higher levels than ARIMA	Australia

RESEARCH METHODS

Although there are several forecasting techniques used to predict the unemployment rate, this study uses the ARIMA model to explore an accurate forecast of unemployment rate by 2030 as ARIMA Model captures autocorrelation in the series by modeling it directly. ARIMA model has a strong underlying theory and is flexible to use.

To assess the relationship between unemployment rate, Gross Domestic Products (GDP), and population growth Bivariate analysis is used along with Structured equation Modelling (SEM) for graphical presentation of their relationship as all the variables are observed scale variables. Here, the researcher used two forms of data: secondary data (published statistical data) pertaining to GDP, Population Growth, and the unemployment rate for a period of 20 years (1999 to 2019) and primary data (conducting semi-structured interviews). The statistical packagesused for this research paper were SPSS 20 and AMOS 16.

Secondary Data: Statistical Data

Data sample of this study contains Saudi national unemployment rates, Gross Domestic Products (GDP), and Population Growth for twenty years starting from 1999 until 2019 as shown in Table 2. These collected data are to forecast the unemployment rate in 2030. The other two variables will be used to investigate the effect of GDP on the unemployment rate and population growth in case of increasing or decreasing the future unemployment rate which will help to address the problems. The researcher has carefully decided to use only the exogenous variable i.e. unemployment rate prevailing in the KSA.

Table 2: Unemployment Rate in Saudi Labor Market Over 20 Years

Year	Unemployment Rate	Gross Domestic Product (GDP)	Population Growth
1999	8.1	-3.8	2.1
2000	8.1	5.60	2.3
2001	8.3	-1.20	2.6
2002	9.7	-2.80	2.8
2003	10.4	11.20	2.9
2004	11.0	8.00	3
2005	11.5	5.60	2.9
2006	12.0	2.80	2.8
2007	11.2	1.80	2.8
2008	10.0	6.20	2.8
2009	10.5	-2.10	2.8
2010	11.2	4.76	2.9
2011	12.4	10.00	3
2012	12.1	5.40	3.1
2013	11.7	2.70	3
2014	11.7	3.65	2.8
2015	11.5	4.11	2.6
2016	11.6	1.67	2.3
2017	12.8	-0.74	2
2018	12.7	2.43	1.8
2019	12.26*	0.46	2.1

(Source: SAMA reports 1999-2019)
* Average of Unemployment Rate in 2019 for Q1, Q2, and Q3: Researcher's Calculation

Primary Data: Semi-Structured Interviews

The researcher decided to conduct semi-structured interviews i.e. qualitative research method. The reasons behind choosing this method are to acquire 'rich' and 'thick' descriptions and justifications of the studied topic based on using 'how', 'who', and 'why' questions (Doz, 2011). Using semi-structured interviews was due to its suitability for this study because it allows researcher more flexibility to design and refine the chosen interview guiding questions, the ability to underline the needed justifications or "motives more directly" (Horton, et al., 2004) to factors govern unemployment rate in the Saudi labor market. Semi-structured interviews also allow participants more freedom to answer any question among the asked questions and to explain their thoughts in detail and to elaborate on any related "contradictions" (Horton et al., 2004). It also allows researchers to ask any further related questions beyond the planned questions (Doz, 2011). Therefore, choosing semi-structured

interviews was useful to justify the results of analyzing statistical data related to forecasting an unemployment rate of Saudi nationals in 2030.

Hence, the researcher was able to acquire 37 recorded interviews with participants who resigned from the private sector and resorted to the public sector. Besides, the researcher also interviewed nationals who refused to work with the private sector while their ages were between 18-24 years old. The researcher personally contacted HR departments' at random public organizations to review employees' Curriculum Vitae (CVs) to know their previous experiences to nominate only employees who were working with the private sector. The contacted public agents contain universities, public hospitals, and other public organizations such as the Ministry of Finance, Commission of Investment. Interviewed participants were colleges' deans, academics, managers, and employees below the supervisory level. The main reason was to obtain the real-life experiences of these participants to understand motives behind their aversion from the private sector; while, choosing unemployed participants was to underline their personal justifications of preferring only the public sector as a future employer. The researcher also decided to interview official members of the Saudi Ministry of Labor and Social Works to acquire their legal point of view with regard to participants who resorted to the public sector rather than staying in their jobs in the private sector. He was keen to know *why* qualified nationals are still waiting for opportunities in the public sector (some of them is waiting for about 4 years since they graduated). Semi-structured interviews were for justifying the reasons for the steady high form of unemployment rates in the Saudi labor market. Table 3 shows the details of the conducted interviews.

Table 3: Semi-Structured Interviews

Participants	Number	Average Duration/hour
Colleges' Deans	4	1.5
Faculty members	7	2
Managers	5	1.5
Employees	8	2
Unemployed participants (age from 18 to 25 years old)	10	1
Official members of the Ministry of labor	3	1.5
Total	**37**	**9.5**

DATA ANALYSIS AND DISCUSSIONS

This part contains analysis and discussions of secondary data and primary data.

Analysis and Discussions of Secondary Data:

The researcher devoted this section to analysis and discuss the main collected secondary data to underline the findings pertaining to the objectives of this study.

- *Forecasting the Unemployment Rate of Saudi Workers by 2030: ARIMA Model*

The primary purpose of this study was to forecast the Saudi unemployment rate by using the ARIMA model for twenty years. Annual data for the period of 1999 to 2019 are used from SAMA. SPSS 20 statistical software package is used to determine the ARIMA model. The following are the steps adopted for the application of the ARIMA model (Nath et al., 2019).
1. Testing significance of ARIMA model and
2. Forecasting through ARIMA.

Nath et al. (2019) and Chakraborty et al. (2019) stated that this model has been quite successful because of its fixed structure and specifically for long time series historic data. Evidently, used the Box-Jenkins model (ARIMA) as a tool to predict the unemployment rate and he used this model to predict Federal Reserve Monetary policies. For these advantages, the researcher chooses this model due to its explicabilities to meet the requirements, nature, and objectives of this study.

- *Testing Significance of ARIMA Model*

ARIMA is generally described by (p, d, q) where p is autoregressive terms usually referred as the lag order, d is the number of time series to be differenced to make residual stationary and q is denoted as moving average window also known as moving average order in the model (Nath, et al., 2019). According to Nath et al. (2019), the forecasting equation under the ARIMA model isthe general forecasting equation under the ARIMA model in terms of X is prescribed as mentioned below:

$$X_t = \mu + \phi_1 X_{t-1} + \ldots + \phi_p X_{t-p} \sim \theta_1 e_{t-1} \sim \ldots \sim \theta_q e_{t-q}$$

Equation 1: The Forecasting Equation under the ARIMA Model

- *Time Series Modeler*

Table 4: Model Description

Model Description			
			Model Type
Model ID	Unemployment Rate	Model_1	ARIMA(1,0,0)

Table 5: ARIMA Model Parameters

ARIMA Model Parameters					Estimate	SE	t	Sig.
Unemployment Rate-Model_1	Unemployment Rate	No Transformation	Constant		10.539	1.312	8.033	.000
			AR	Lag 1	.899	.094	9.520	.000

As shown above The ARIMA Model, parameters are significant as p-value < 0.05 (Default level of significance). This indicates that the model is fit for predicting the value for 2020 to 2030.

- *ARIMA Forecasting*

The forecasted result of the unemployment rate of Saudi Arabia for the period of 2020-2030 is presented in Table 4.

Table 6: Forecast

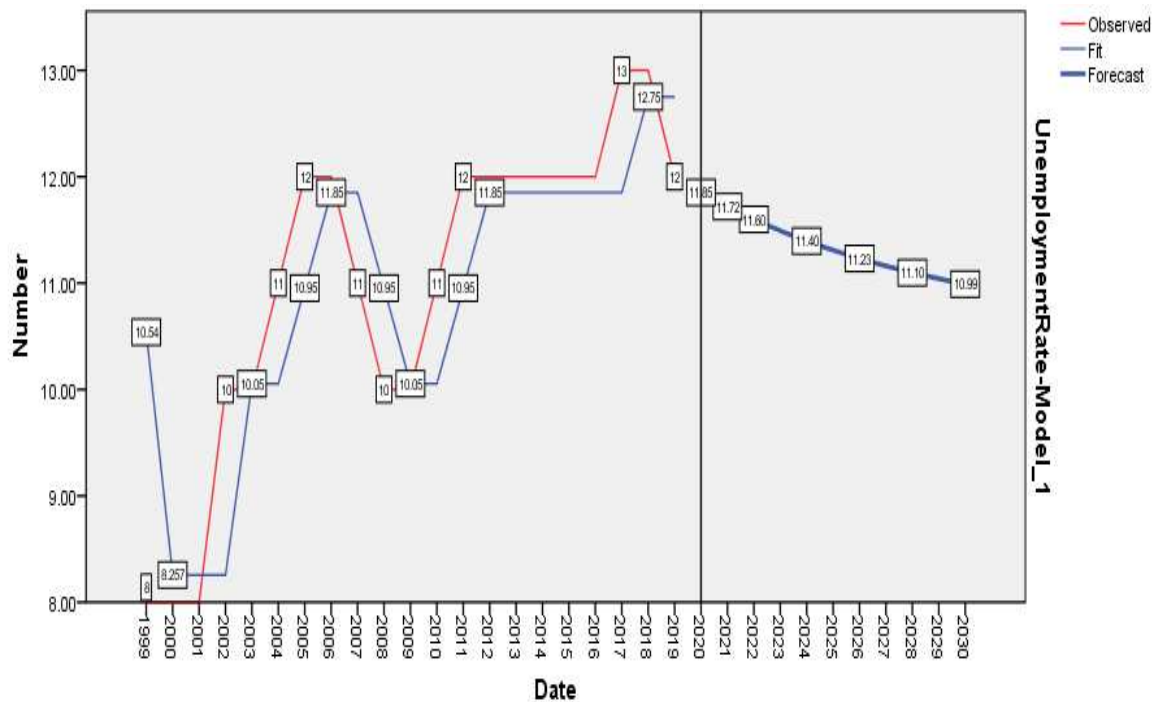| Forecast												
Model		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Unemployment Rate-Model_1	Forecast	11.85	11.72	11.60	11.49	11.40	11.31	11.23	11.16	11.10	11.04	10.99
	UCL	13.52	13.97	14.22	14.38	14.48	14.55	14.59	14.61	14.62	14.62	14.61
	LCL	10.18	9.47	8.98	8.60	8.31	8.07	7.88	7.71	7.58	7.46	7.37

Figure 1: Forecast Unemployment Rate

Discussion

The above tables/Graphs indicate that the forecasted unemployment rate in the Saudi labor market decreased to nearly 10.99 percent which is approximately 3 percent higher than as projected in the Saudi vision 2030. The Fit line as computed based on the ARIMA model mechanism is in line with the observed value from 1999 to 2019. This also confirms the fitness of the Model. The forecasted value based on the same mechanism is gradually decreasing to the level of 10.99 % i.e. approximately 11%. Table 6 shows the range under which the predicted value can fluctuate depicting the upper confidence limit (UCL) and lower confidence limit (LCM) for the forecasted period from 2020 to 2030.

Though the predicted value of the unemployment rate in 2030 is approx. 11%, it is empirical to investigate the relationships between of GDP, unemployment rate and Population Growth to understand the determinants of the unemployment rate as the upper limit (UCL) of employment rate can go up to 14.61% (Table 6) which is approximately 7 % higher as reported in Saudi vision 2030. However, it is interesting to see that if things which are crucial to curb unemployment rate are kept under check, the employment rate can replicate the Saudi vision 2030 on the unemployment rate as the lower limit (UCL) for 2030 is 7.37 % (Table 6) which is close to it. The identification of determinants, which are crucial to curb unemployment rate, is beyond this research work and could be carried out in separate research work as it requires a study of primary data related to the demography of Saudi residents and also primary data on government's vision and policy towards the economy.

- **Relationship between Unemployment Rate, Gross Domestic Products (GDP) and Population Growth: Bivariate Analysis and Structured Equation Modelling (SEM)**
    - ✓ **Bivariate Analysis: (Software used – SPSS 20)**

The bivariate analysis shows that the unemployment rate has no significant correlation with GDP and Population growth as the p-value (probability value) is > 0.05 (Assumed level of significance). As shown in above Table 8, the p-value of the unemployment rate with GDP is 0.407, and the p-value with population growth is 1.000, which is > 0.05.

(The p-value represents the observed level of significance calculated by system need to be compared with the assumed level of significance to test the significance of the correlation between two variables).

This analysis concludes no significant correlation among the unemployment rate, Gross Domestic Products (GDP), and population growth.

Table 7: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
Unemployment Rate	11.00	1.549	21
Gross Domestic Product (GDP)	3.14	4.053	21
Population Growth	2.71	.463	21

Table 8: Correlations

		Unemployment Rate	Gross Domestic Product (GDP)	Population Growth
Unemployment Rate	Pearson Correlation	1	.191	.000
	Sig. (2-tailed)		.407	1.000
	N	21	21	21
Gross Domestic Product (GDP)	Pearson Correlation	.191	1	.369
	Sig. (2-tailed)	.407		.099
	N	21	21	21
Population Growth	Pearson Correlation	.000	.369	1
	Sig. (2-tailed)	1.000	.099	
	N	21	21	21

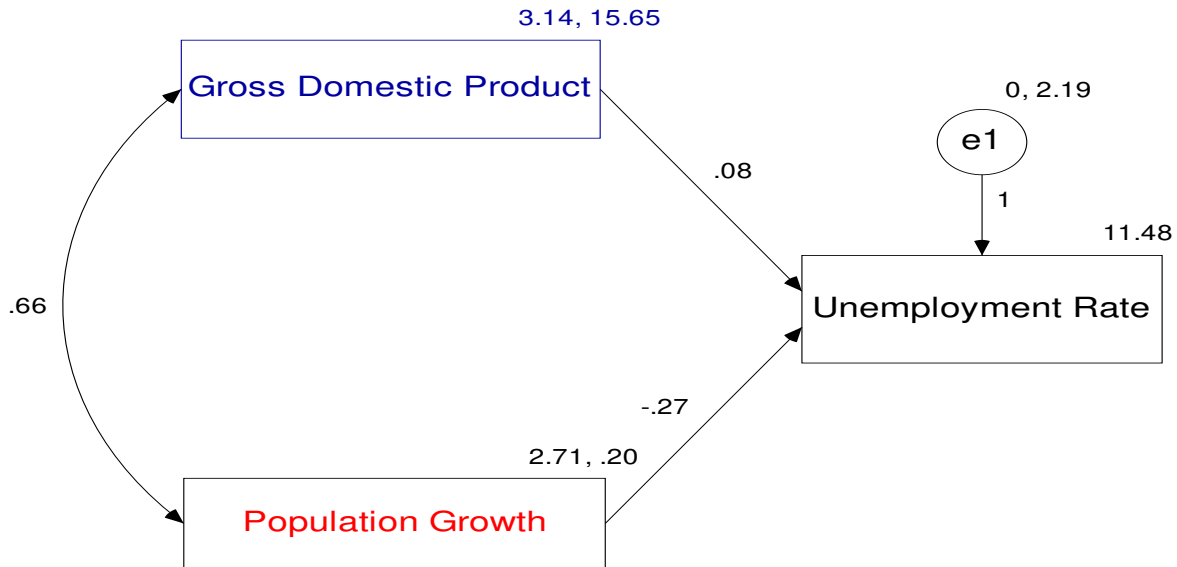- Structured Equation Modelling (SEM) – (Software used AMOS 16)

Figure 2: Structured Equation Model (SEM)

✓ **Text View of Structured Equation Modelling (SEM) – Screen shot of output view**

The following tables present the calculations of SEM (regression weights, standardized regression weights, covariance, correlations, variances, and squared multiple correlations: Table 9, Table 10, Table 11, Table 11, Table 11, respectively.

Table 9: Regression Weights

	Estimate	S.E.	C.R.	P	Label
Unemployment _Rate < … GDP	.085	.080	.940	.347	
Unemployment _Rate < … Population Growth	-.273	.788	-.347	.729	

Table 10: Standardized Regression Weights

	Estimate
Unemployment _Rate < … GDP	.221
Unemployment _Rate < … Population Growth	-.082

Table 11: Covariance

	Estimate	S.E	C.R	P	Label
GDP <-->Population Growth	..660	..426	1.549	.121	

Table 12: Correlations

	Estimate
GDP <--> Population Growth	.369

Table 13: Variances

	Estimatre	S.E.	C.R.	P	Label
GDP	15.646	4.948	3.162	.002	
Population_Growth	.204	.065	3.162	.002	
el	2.189	.692	3.162	.002	

Table 14: Squared Multiple Correlations

	Estimate
Unemplopyment _Rate	.042

The structured Equation Modelling is simply a graphical representation of the linear regression model between dependent and independent variables. In this Model, the dependence variable (also known as the unobserved variable) is the unemployment rate whereas the GDP growth rate and population growth rate are independent variables (also known as the observed variable). The regression coefficient (Table 9) showed that GDP has only 8.5% influence on the unemployment rate whereas population growth has 27.3 % influence employment rate but in opposite direction. This means the unemployment rate is not in line with population growth. The correlation between GDP and population growth is only 36.9% (Table 11). Whereas the combined influence of GDP and population growth is only 4.2 % (Table 11) of squared multiple correlations (which is the same as the R-Square value calculated in the statistical linear regression model).

The above discussion concludes that two independent factors GDP and population growth have no significant impact on the unemployment rate and therefore of little use when forecasting its value. These are insignificant determinants of the unemployment rate to have a check on it to bring it in line with Saudi vision 2030 on the unemployment rate.

Analysis and Discussions of Primary Data: Semi-Structured Interviewed

This part focuses on analyzing the collected primary data to justify the reasons behind the story of downward resistance of the Saudi unemployment rate. Since the forecasted rate of the unemployment rate is 10.99 percent (Table 6) a slightly higher than as projected in the Saudi Vision, and there is no causal relationship between the unemployment rate, GDP and population growth in the context of the Saudi labor market, semi-structured interviews were conducted for justifying the reasons of a slightly higher form of unemployment rates in the Saudi labor market (See Table 3).

The Saudi Gazette (newspaper, 2018) published that over 73,000 Saudi workers left private-sector jobs in 2018. Findings out of the conducted semi-structured interviews provided further social bases of the increase of the unemployment rate in the Saudi labor market i.e. 10.99. Evidently, respondents confirmed that it would be vital for them to seek jobs in the public sector rather than private sector due to, for example, opportunity of advancement, job security, career development or professional advancement, flexible work scheduled, social prestigious, light job assignments, family issues, and stable annual salary increase.

For example, a dean of a public college explicitly pointed out that *"I worked as a banker for about four years with handsome salary and perks. But I left this job and joined public university, because of the opportunity of advancement and professional development. Hence, I*

was able to obtain my postgraduate studies. Now, I am a PhD holder and a dean of a college. I wouldn't do so if I stayed at my previous job" (Interviewed in August 2019). An academician claimed that moving to public university was a wise decision to obtain "*job security, career development, and vacations.*" (Faculty member at a Saudi University interviewed in June 2019). An employee at the public health sector stated that "*Previously I worked as a sales manager in a private company and do not feel comfortable. Hence, I decided to join a Saudi public hospital because I wanted to balance my work and personal life. Flexible work schedule attracted me to join this workplace"* (Interviewed in August 2019).

On the other hand, an unemployed participant frankly speaking "*I am 24 years old now. I graduated with a diploma in 2016. I had a number of opportunities to work with the private sector but I decided not to accept these offers because I need to work with the public sector to find myself and to remain at my job all my life. I will wait until I get a chance to join any public employment whatever it costs me*" (Interviewed in November 2019). Another unemployed participant claimed, "*I have good condition life with my family. They provide me with enough money, which I need. So, there is no need to struggle with the private sector. All my friends agreed that this sector requires lots of effort and a long time to stay at work during the day*" (Interviewed in July 2019). One of the unemployed participants added, "*I am seeking a job in the public sector to be close to my family to support them. They are older now and they need me to be with them when they need me.*" (Interviewed in October 2019).

Such a refrain of national workers from the private sector coupled with a high unemployment rate i.e. 10.99 percent can be attributed to the negative hegemony of neoliberalism as stated by Wagner (2013), for example. Hence, the attitude of Saudi job seekers can be seen as a cultural determinant which hinders the process of indigenizing private sectors. The findings of this study show a fragile status of Saudization and Nitaqat programs' policies, which initiated to decrease the unemployment rate to a possible lower level (Kabli, 2015; Hertog, 2018). These results indicate that the private sector's policy-makers fall short to offer a national workforce attractive and decent quality working life.

Another factor that might lead to this high rate of unemployment might result from the limited presence of entrepreneurship in the Saudi labor market. Drucker (2014) stated that the USA was able to minimize the unemployment rate by fostering entrepreneurship–small businesses. Around 70 years ago Ricardo (1951) stated that the unemployment rate can be minimized by creating more job opportunities. Recently, Sharahiley (2019) found a decisive lack of entrepreneurship skills among Saudi students; while, they showed a positive attitude toward starting new businesses. He also found a limited number of entrepreneurs and a critical need for further official efforts to diffuse the culture of entrepreneurship within Saudi society. Such a critical move might mirror the American model in cutting short unemployment issues in the KSA.

On the other hand, this finding indicates that the current policies of Saudization and Nitaqat programs, yet, are inadequate to support the Saudi government to cut down the unemployment rate. However, such discourses show that the Saudi youth population, (15-34) which is 36.7% of the Saudi population (34.2 million) (Saudi General Authority for Statistics, 2019), is still limited to public and private sectors. Furthermore, one can induce that this high percentage of Saudi youth are in need of adequate employability skills. For this, The Saudi Minister of education called for converting community colleges into applied colleges to offer attractive and

decent applied programs (customized programs) to equip students and trainees with needed skills and knowledge to be *a good fit* with the requirements of the Saudi labor market (Okaz Newspaper, December 2019).This ambitious vision might be a magical steak to cut short the peculiarity of the unemployment rate in the Saudi labor market.

Ewing et al. (2005) stated that among the roles of government is to bring down the unemployment rate. Therefore, these questionable findings can be attributed to the social fabric of the KSA, which galvanizes attitudes of the national workforce toward accepting job opportunities of the private sector. These reluctant of Saudi job seekers might be seen as outputs of the current form of labor law, which seems to be unable to enforce decent works policies to attract more national works.

CONCLUSIONS

This research-based study aims to forecast the unemployment rate in the Saudi labor market as per Saudi vision 2030 using the ARIMA forecasting model. The analyzed statistical records were found statistically significant and best fitted the ARIMA (1,0,0) model for the purpose of forecasting for the period of 10 years, i.e. 2020 to 2030 (Table 6). Since there has been one dependent variable, the unemployment rate along with other exogenous variables as depicted in Bivariate Analysis (Tables 7 & 8) were used or considered for this study. Hence, effects on forecasting accuracy was a valid point but still researcher in this present course of time using the ARIMA model for the purpose of forecasting time series data. Thus, the used ARIMA model can be a very helpful tool for econometricians as well as policymakers of the KSA for further study, introspection, and research in the near future.

This model was well adopted and well versed in forecasting the unemployment rate for a specified time in the study. As a result, this research work has achieved its research objectives i.e. to measure and analyze the unemployment rate for a period of twenty years (1999 – 2019) and to predict the unemployment rate by 2030 i.e. from 2020 to 2030 which is found at 10.99 percent within a range of lower limit of 7.37% (LCL) to upper limit of 14.61% (UCL) (See Table 6).

As on the basis of the ARIMA forecasting model that predicted 10.99 percent unemployment rate which is higher than approx. 3 percent as mentioned in the Saudi vision 2030, this research further investigated the causal relationship between socio-economic globalization and the unemployment and confirms that population growth and GDP has significant covariance of 66% (Table 11) but the unemployment rate has no significant relationship with the rate of GDP growth and population growth. This strange finding contradicted other studies that show significant correlations among them such as the studies of Asif (2013) and Ewing et al. (2005). But it is empirical to note that predicted unemployment rate in 2030 which came to 10.99% (Table 6) is not far away from Saudi vision 2030 rather the lower level (LCL) of forecasted value in 2030 which is 7.37% (Table 6) is in line with as mentioned in Saudi vision 2030. It is, therefore, necessary to investigate the determinates of the unemployment rate to keep it in line with the plan document in time.

The conducted semi-structured interviews, with participants who resorted to the public sector and others, preferred to wait for public employments, uncover hidden social, economic, and political issues that govern this interesting finding. Therefore, the unique social attitudes of

Saudi job seekers can be considered as the main constraint that draws the characteristics of the Saudi unemployment rate which slightly remains high.

Literature review shows that the researchers are divided on globalization (neoliberalism) into two contradicted schools of thoughts (a group sees that globalization increases the unemployment rate; while, other school sees an adverse impact). However, this study found that globalization has no role in the unemployment rate in the case of the Saudi labor market.

Thus, on the basis of intense literature review and statistical findings, it is incumbent upon the policy-makers of the Saudi labor market to cut the short unemployment rate in the KSA by investigating determinants of unemployment rate on the ground level. In addition, more practical programs and policies are needed due to the inadequacy of Saudization and Nitaqat programs in eliminating unemployment rates at a faster rate such as implementing bases for entrepreneurship. For educational and cultural institutions, introducing modern employability skills compatible with the labor market's needs and hosting summits, conferences, exhibitions, and educational activates related to entrepreneurship are importantly recommended to boost more entrepreneurial jobs.

Limitations and scope of the study:

This study carries the following limitations:

1. The study is based on estimates from Secondary data collected from the annual reports of SAMA and therefore the authenticity of its findings has a strong bearing on the authenticity of secondary sources which might be based on certain assumptions or biasness different from ground reality.
2. The secondary data is collected till the period of 2019 i.e. pre-COVID-19, a global pandemic that has affected all the countries adversely across the globe including the KSA in terms of socio-economic condition, trade and commerce and therefore need to be incorporated accordingly in Saudi vision document 2030. In view of these changed circumstances, a similar study needs to be conducted after this ongoing pandemic is over i.e. post-COVID-19 to get the ground-level picture.

Despite the above-mentioned limitations, the finding of this study carries scope for researchers and the government to undertake the study in identifying significant determinates of unemployment rate rather than just focusing on economic data like GDP and population growth.

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