Human Capital Development Typology: A Case Study of the Saudi Arabia

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Abstract

Saudi government is struggling to build knowledge based society to encounter social and economic challenges for the year 2030, when oil supply will be just sufficient to meet local Saudi demands. This study embarks upon the importance of the mixed-economy for sustainable growth in the 21st century. This study investigates three objectives. Firstly, it highlights Saudi socio-economic challenges. Secondly, it identifies alternative ways to realize the vision of mixed economic model for oil driven economy. Thirdly, it identifies the relationship between human capital and Saudi economic indicators. This research presents a typology based upon econometric models using secondary data, collected from World-Bank, World Health Organization (2013) and Saudi Monitory Agency annual statistical data-streams. It is recommended that the Saudi youth can play a vital role in economic growth subject to change in their mindset to overcome artificial joblessness among the Saudis.
Keywords: Saudi human capital, Saudization

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1. Introduction

Developing and developed nations including Singapore, China, Japan, India and Pakistan are investing heavily in human capital as a tool to develop research & development and national cultures to secure the prosperous future of economy. Recently, Gulf nations including the Kingdom of Saudi Arabia (KSA) have also started investing in knowledge based society by building world-class universities, technology parks, and research centers as an effort to shift oil driven economies toward mixed economy in the near future for sustainable economic growth (Onsman, 2010; Alexander, 2018). This is because knowledge based economies normally utilize technology as a weapon for competitive advantage. To meet the economic objectives, societies need skilled labour for sustainable economic growth and future development (Shin, Lee, & Kim, 2012). The high-tech knowledge has facilitated economies to confront national socio-economic challenges, which in turn has improved the overall quality of life at the developed economic world.

Historically, the Arab world including KSA has mostly relied on oil and gas productions since 1938 (Simmons, 2005:p5). Nevertheless, the Saudi service sector including the hotel industry is becoming prominent due to the government's efforts by involving private sector through recent infrastructure development at Riyadh and holly cities i.e. Mecca and Medina to facilitate religious events of pilgrimages and Umrah. These steps are in turn are strengthening the Saudi service sector to achieve the industrial vision of Saudi economy (Sadi & Henderson, 2005). Notwithstanding the continuous increase in the youth population demands Saudi government to fabricate jobs, and meet societal demands for improved quality of life. However, as compared to Asian economies, the human capital development challenges are different in nature for KSA. Saudi labour force has protection of Saudi oil-driven economy and local Arab culture does not permit a common man to adopt low profile jobs (Al-Dosary & Rahman, 2005). Thus, partially unskilled Saudi youth, which neither fits for top-notch technical managerial positions withheld by Americans, nor youth is willing to adopt a low profile job, is not being utilized. The unemployment problem may be due to increasing population and limited availability of resource. In the next few years, it will be hard

for KSA to feed the citizens without additional income sources. Moreover, Saudis are constrained religiously and cannot open the economy like Turkey's for any kind of business.

In view of the above, our study is dedicated to identify socioeconomic issues. This study has guided three research questions i.e. what are the socio-economic challenges of Saudi economy? How Saudis can realize the vision of mixed economic model? Are Saudi human capital indices directing Saudi economy in a right direction? Consequently, first section highlights Saudi fault-lines. The second section explores knowledge economy, Islamic culture and role of education and related themes in the light of historic literature. Third section presents a typology using times series data analysis. The final part presents the recommendations.

2. Saudi Fault-Lines and their Future

Saudi nation has achieved its current economic status due to the economic vision of King Abdul Aziz ibn Saud after oil exploration by developed nations like the United States (Simmons, 2005: p1). The urgent energy demands caught the world's attentions due to oil reserves. This has put the Saudis at the center of the world's economic stage. This economic move by the Saudi king caused nation to improve the quality of life and people started moving towards splendid new cities (p2). Since 1938, Saudis luckily got this lifeline of the world's economy, thus enjoying an economic growth since the last seven decades (Simmons, 2005: p5) by fuelling highly developed nations. Saudi oil & gas production and related industries are contributing at the average of 90% of GDP since last many decades (SAMA, 2013) because energy is the paramount concern of modern economies even in the presence of alternate energy resources. Saudis can continue using natural resources to develop the research capacity.
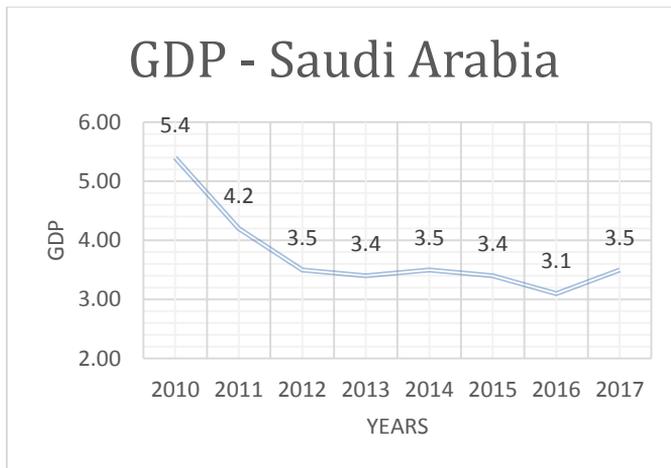
2.1 Social Challenges

Saudi social challenges demand to understand the unique composition of society, a defusing economic role of the oil industry to boost the current state of Saudi economy. The population of Saudi Arabia is increasing and it is expected that in the future, with an average annual increase of 4%, Saudi population may surpass the figure of 37 million people by year 2030. This population will be 28.8% more than the current Saudi population. This will trigger

economic and social challenges for the Saudi economy. Recently, the Human Development Index (HDI) has ranked Saudi Arabia at the 57th position among 187 economies with a decent HDI increase in the last three decades at the rate of 1% (UNDP, 2017). The subsequent social figures of HDI indicate that since 1980, Saudi life expectancy statistics has improved by 11.9 years (the quality of life) with school enrolment statistics improved by 3.6 years and expected years of schooling statistics have improved by 8.3 years (education). However, health indicators are good. In reality, Saudi gross national income per capita has also decreased by 34% due to increasing population. Saudi spending on education and training is 21% of the total budget. Nevertheless, this indicator shows that education is on top priority of Saudi government since the last few years. This situation puts a question mark on the quality of the Saudi education system even at gross-route level. Consequently, to address socio-economic issues, the Saudi elites need to set the business priority which ensures continuous commitment towards improved socio-economic indicators.

2.2 Economic Challenges

Saudis have achieved the clear economic goal of sustainable growth, while remaining regionally competitive through a four dimensional strategy i.e. mega initiatives from the private and public sector, the introduction of targeted government controlling rules, strict sector selection of investment and an iteration of targeted reforms since the last decade (Colombo, 2013:p69). This has resulted in respectable economic growth of 1.7 in 2018. More recently, mega projects of six-economic cities with potential investment of $373 billion in the last five years, have raised the economic confidence and ranking of Saudi economy among foreign and local investors (Ramady, 2014:p69). The other side of the picture is however alarming for Saudi economy. To have a real look of performing Saudi economy, we can just slash the economical contribution oil from GDP and visualize the economic conditions of Saudi Arabia. We can identify the economic growth remained at below 10%, ranging from 7.46 per cent to 14.79 per cent since last 7 years of economic figure.

GDP - Saudi Arabia

(GDP values: 2010: 5.4, 2011: 4.2, 2012: 3.5, 2013: 3.4, 2014: 3.5, 2015: 3.4, 2016: 3.1, 2017: 3.5)

Figure 1. Labour force in private Sector by Nationality
Source: Compiled based on data from SAMA Annual Report (2017: p12)

Based on the above figure, we can say that if Saudis do not develop as per the international standards to meet future economic challenges of the labour market, this may lead to energy crisis around the globe and a big shock of Saudi economy.

2.3 Employment Challenges

Education has been a top priority for Saudi government since the last decade, yet the economy is unable to enjoy its fruits. One of the major cause of an unemployment among the Saudi youth is the higher employment rate of non-Saudis including (e.g. Indians, Siri-Lankans, and Pakistanis etc.). Employment preferences of the private companies are to hire non-Saudi graduates (see, Figure 2). These employment figures put a question mark on education quality being delivered at Saudi's and demand revised national education policy and priorities by the Saudi government.

According to the Ministry of Manpower's annual report (2017), major Saudi unemployed force, which needs attention, are Bachelor degree holders (46.2%) then Secondary (34.9%) and finally Diploma holders (9.5%). However, the current Saudi unemployment rate may result in an overall decrease of 43.4% if only Saudis are employed.

Figure 2. Labour force in private Sector by Nationality
Source: (Compiled from Ministry of Labour Statistical Data)

Hence as a critical issue it is highlighted that non-Saudis who are about 32% of the Saudi population have about 100 per cent employability among the Saudi government and the private sector whereas the total unemployment among non-Saudis is about 12 per cent with an overall average of 4.5 per cent among both Saudis and non-Saudis (see Appendix for more details).

2.4 Saudization Challenges

Al-Harbi (1997) defines Saudization as 'Saudi government efforts to replace the expatriate labour force with a trained and qualified local labour force in a planned manner that will ensure the continuity of work'. To promote Saudization effort of government, every Saudi citizen is equally responsible as the Saudi government is to strengthen the Saudi economy. The usual unemployment rate of any developed nation remains well controlled under ten percent. So, stated employment trend, is not among the Saudi nationals, where the unemployment has reach 12 percent overall and specially 28 percent among the Saudi youth (see Figure B: Appendix). The Saudi government has taken initiatives to combat the Saudi unemployment through replacing the foreign workers with Saudis (Al-Dosary & Rahman, 2005). However, these efforts are not sustainable. This is because at one side ego and culture of Saudi nation is too high to adopt the low profile labour job, while for topnotch technical

managerial positions they are not ready yet. Consequently, the private sector is still preferring to hire the non-Saudis.

In the former section Saudi fault-lines including social, economic, employment and Saudization are highlighted. Subsequent section explores knowledge economy, and the role of education and related themes in the light of historic literature. The final part recommends a typology by providing micro-macro recommendations to achieve Saudi mixed-economy vision through human capital development.

3. Literature Review

This part reviews the classical literature in order to address the research questions stated earlier with two objectives. The first objective is to define the related research terms. Second is to elaborate historical work about knowledge economy, human capital, Islamic culture and need of quality education for Saudi society.

Historically, many studies must have been carried out to observe the relationship between human capital, and economic growth in developed (Ployhart & Moliterno, 2011) and under developing economies (Ali, Chaudhry, & Farooq, 2012) using proxy measures of various education statistics (Barro & Lee, 1993). Studies have proven statistical significant association between the investment in education and the national economic future (Mulligan & Sala-i-Martin, 2000; Nafukho, Hairston, & Brooks, 2004).

However, the case of Saudi Arabia is different (Shin, Lee, & Kim, 2012) due to unique culture and dependency on natural resources. Therefore economists and educationists are worried to make Saudi human capital (youth) globally competitive that can take active part in the Saudi economy (Al-Dosary & Rahman, 2005; Al-Harbi, 1997; Colombo, 2013). In Saudi Arabia, it is needed to undertake a study that could help the education policy makers to identify relevant human capital factors that are contributing for real economic growth with and through the people and what else is possible to meet future challenges. Gylfason's (2001) study claims that two types of risks are associated with natural resource based economy like Saudi Arabia. These risks can hinder the financial growth and human capital development. First, national human resource becomes locked in low-skill intensive industries like Saudis are struck with Oil & Gas jobs and related skills. Second, the

risk is that the authorities of natural resource based economy become overconfident and thus deny to work harder on latest technology. Therefore, the nation ignores the need for quality education and becomes negligent towards the development of human capital. If we take the case of Saudi economy, this risk has been realized.

The concept of 'Knowledge Economy' was introduced by Peter Drucker back in 1969 (Drucker, 2011: p4). The word 'Knowledge' is what we apply in daily life, means just processed data and information can become knowledge if applied (p.269). It is also a fact that acquired knowledge can be applied gradually. According to Drucker (2011) if the person has a unique set of skills to perform a task then, he is called a 'Knowledge worker'. This type of worker needs specific type of job called 'Knowledge Job'. The economies always have different percentages of work force (manual and knowledge workers) and industries (an optimal mix of goods and service). Thus, if most part of national income is being generated through Knowledge workers then the economy can be said to be a knowledge economy. The examples of such knowledge based economies are Indian, American, and upcoming economies are China. The time has arrived for Saudis to match or exceed the pace of West economies for acquiring knowledge and gradually achieve the target of the mixed Saudi economic model.

Building upon the concepts of knowledge worker in the previous segment, we need to understand human capital theory to realize the human as a capital which is equally important as land, labour and money supply. According to scholars, human capital theory is routed in economics at macro-level and in organizational behaviour at micro-level. Nonetheless the human capital's roots can also be traced in the theory of Adam Smith, when he talked about the free market economy in his classical book about wealth of the nation by focusing labour as a key aspect to run the national economy (Ployhart & Moliterno, 2011: p127). The Human capital theory thus talks about 'the gains of education and training as a form of investment in human resources' (Nafukho, et al., 2004: p546). It is believed that the human's learning capacities, if utilized effectively can result in value addition of the individual, organization and society at large (Nafukho, et al., 2004). Human capital can be referred as the concept that supports knowledge

creation by labour in economy and promote people to transfer and better utilize their knowledge to meet the economic objectives of the national economy which in turn can call as social capital (Davenport, Thomas, & Cantrell, 2002). Classically, economists are using three main approaches to quantify human capital in an economy i.e. cost, income and output based approaches (Ployhart & Moliterno, 2011) to see the macro effect of general education returns on economy. Cost based approach (Jorgenson & Fraumeni, 1989) is used to quantify human capital by assuming the cost paid for the knowledge acquisition by an individual in an economy. Income based approach (Mulligan & Sala-i-Martin, 2000) uses returns on an investment obtained from the labour market to quantify the human capital worth in the economy. Outcome based approach (Barro & Lee, 1993) is the classical measure for human capital. It uses overall, literacy, school enrollment, years of schooling etc as a proxy measure for human capital. The next section presents the research methodology, data collection procedures and sources of data for time series data from various sources.

4. Methodology

Time series data is adopted from SAMA 2013 the annual statistics 49th report and databank of world-bank. Some of the data is available from 1970-2012 (with the maximum of 43 observations). This data is available for few variables to quantify human capital indices completely. Saudi Gross domestic products' (GDP) figures both of Oil based and Non-oil based are also available from 1970 till date. Thus, the basic time series observation of important variables of human capital proxy measures are available to run few models. The models for higher education, technical education and other variables have about 16 observations thus we are unable to estimate the econometric models for those cases. Econometrics models have been used by employing the Ordinary Least Squares (OLS) regression model using time series data. Other sources of data include world health organization, the World Bank and OECD (2013) databases.

4.1 Measurements of Concepts

The study is using independent variables named Saudi Education Enrollment Index (SEEI), Saudi Infant Mortality Rate (SIMR), Saudi Gross Fixed Capital Formation (SGFCF), and Saudization

coefficient for culture (SCFC) to capture the effect of human capital, whereas Saudi human resource development investment (SHRDI) is being used as Control Variable. The study is covering the effect of general education in the Saudi economy in relation to dependent variables including GDP total, GDP (service sector) and per capita income as recommended by classical studies (Becker, 1964; Jorgenson & Fraumeni, 1989; Idris & Manganaro, 2017; Mulligan & Sala-i-Martin, 2000; Saint-Paul, 1994).

4.1.2 Independents and Control

Human capital is the independent variable for the research study. The measures that are included to represent Saudi human capital are Saudi Infant Mortality Rate (SIMR), Saudi Gross Fixed Capital Formation (SGFCF), Saudi Education Enrollment Index (SEEI) and Saudization coefficient for culture (SCFC). However, due to unavailability of data, two indices are not included. These indices are Gini coefficient and Head count ratio. Alternatively, Saudization coefficient for culture (Al-Harbi, 1997) is added to avoid model miss-specification error (Cheung & Lai, 1995).

Saudi educational enrolment index is computed through sub-variables (i.e. Saudi school enrolment at the primary, intermediate and secondary level) in ratio to the total population in each year. The data for Saudi Infant Mortality Rate (SIMR), is accessed from the database of world health organization titled "children mortality estimates". The total number of babies dying under 5 years age divided by the total number of babies born in particular year gives the Saudi infant mortality rate. The data for Saudi Gross Fixed Capital Formation (SGFCF), is adopted from the World Bank database titled 'world development indicator'. There are eight fields in the database for SGFCF, however for Saudi Arabia only one filed is available i.e. 'Gross fixed capital formation (% of GDP)' the same is adopted as a measure for model estimation. *SCFC* corresponds to 'Saudization coefficient for culture'. The variable can be computed in two ways. The first way to compute SCFC is by calculating the percentage of Saudi labour (increase/decrease) in relation to total manpower in the Saudi economy. Alternatively SCFC can be reflected by estimating the foreign population trend to stay in Saudi Arabia or leave back to home town. For our case the data of Saudi employment trend is just 15 years old. Therefore to estimate this

variable we are using foreign population trend as proxy for Saudization coefficient for culture. Lastly, Saudi human resource development investment (SHRDI) is introduced as control variable that quantifies the Saudi public expenditures on education and has been controlled statistically.

4.1.3 Dependent Variables

The study adopted three dependent variables to test the role and effect of general and higher education. These variables include GDP total, Service sector based GDP (Mulligan & Sala-i-Martin, 2000) and Saudi per capita income (Saint-Paul, 1994). The reason for using three dependent variables is to confirm the role of human capital using alternate economic measures. GDP is a wide measure to show the economic activity and output of the country (Ali, Chaudhry, & Farooq, 2012). We are using Gross Domestic Product (GDP) as a dependent variable for this study. However, for the Saudi economy, major contributions come from Oil, therefore we have divided GDP into Oil based GDP and non-oil based GDP in order to identify the real effect of human capital. The Augmented Dickey–Fuller test is used to identify unit root in dependent variables (Cheung & Lai, 1995). The results of values of test i.e. Overall GDP=-1.614; Service sector GDP=-1.5001 and Saudi per capita = -1.4113, depict that the data of dependent variables are appropriate for conducting regression analysis on time series data.

5. Data Analysis

This section consists of two parts. First part presents the descriptive analysis of variables of interests, while the second part highlights the regression analysis of time series data for Saudi socio-economic variables.

5.1 Descriptive Analysis

Descriptive study gives details about quantitative features of data used in our study. Refer to Table 1, socio-economic data consists of annual observation from 1970 to 2017. The financial figures used originally are in Saudi riyal. However, to standardise the figures, Logs have been applied to variables containing numerical figures like the Saudi gross domestic product (GDP), per capita income to standardise the equation estimates and beta values.

Table1
Descriptive Statistics of Variables

	Minimum	Maximum	Mean	Std. Deviation
1. SIMR	7.40	125.00	43.94	35.27
2. SGFCF	8.92	30.06	20.29	04.16
3. SEEI	18.07	67.39	44.13	15.53
4. SCFC	10.79	32.05	22.28	07.09
5. LG_SGDP	3.95	5.99	05.25	00.49
6. LG_PC	3.11	4.40	03.93	00.28
7. SUER	7.03	12.40	08.46	01.58
8. LOG_GDP	4.38	6.44	05.65	00.46

Note: SIMR: Saudi Infant Mortality Rate, SGFCF: Saudi Gross Fixed Capital Formation, SEEI: Saudi Education Enrolment Index, SCFC: Saudization coefficient for culture, LG_SGDP: Log of Service sector GDP, LG_PC: Log of Per capita Income, SUER: Saudi Unemployment Rate. LG_SGDP: Log of Service over all GDP.

Descriptive statistics exhibit that the average log value of GDP is 5.65 with standard deviation of 0.46 (See Table 1). The average Saudi education enrolment index mean value is 44.13 with standard deviation of 15.53 across the sample. The Saudis unemployment rate ranges from 7.03 to 12.40 across the sample. Saudization coefficient for culture represents the ratio of foreign population in Saudi Arabia. This variable shows that foreign population has increased from 10.79 to 32.05 percent recently but the employment rate is almost 100 percent among the non-Saudi workforce.

5.2 Saudi Human Capital's Impact

The estimated impact of Saudi human capital has been illustrated in the Table 2. Regression coefficients of R^2 i.e. 0.951 (Model A), 0.895 (Model B), 0.785 (Model C) depict that our models are robust. Saudi human capital indices explain 95.1 per cent (Model A), 89.5 per cent (Model B), 78.5 per cent (Model B) variations in Service Sector GDP, over all GDP and in Saudi per capita income respectively. The value of Durbin Watson (DW) statistic ranges from 1.94 to 1.97 indicating that there is no problem of autocorrelation in the models. Moreover, Granger Causality is used for this study to test forecasting power of time series variables X_t to Granger-cause Y_t (Grange, 1988). The study's results imply that

SIMR, SGFCF, SEEI and SCFC predicts SGDP, GDP and SPCI which are unidirectional causations for Saudi socio-economic variables.

The profound look on the results demonstrates that human capital indices are playing a critical role in the economy of Saudi Arabia. At *first*, SEEI beta coefficient shows that there is a significant positive impact of education enrolment index across all three models as statistically significant values of standardized beta range from 0.390 to 1.124 across three models. Refer to Table 2, Saudi educational achievement has statistically significant impact on Saudi economic indices including Service Sector GDP (Beta=0.390; p<0.01), overall GDP (Beta=0.941; p<0.01) and in Saudi Per Capita Income (Beta=1.124; p<0.05) respectively. *Second*, beta coefficient of SIMR confirms that there is a significant negative impact across all three models. Standardized beta values range from -0.950 to -1.1477 across three models. This is another positive sign that education is improving the quality of life in the Saudi society and infant mortality rate has decreased gradually in the last four decades. Saudi infant mortality rate has statistically significant impact on Saudi economic indices including service sector's GDP (Beta=-00.950; p<0.01), overall GDP (Beta=-1.0585; p<0.01) and on Saudi per capita income level (Beta=-1.477; p<0.01) correspondingly.

Thirdly, beta coefficient of SCFC proves significant negative impact on all three dependent variables as standardized beta ranges from -0.459 to -2.004 across three models. SCFC have statistically significant negative effect on Saudi economic indices including service-sector-GDP (Beta=-00.950; p<0.01), GDP (Beta=-1.0585; p<0.01) and Saudi per capita income (Beta=-1.477; p<0.01) correspondingly. However, this is neither the healthy sign for Saudi economy nor for Saudi human capital performance. This shows mistrust of the Saudi labour market on Saudi workforce.

Table 2
Impact of Saudi Human Capital

Saudi Human Capital Formulation	Model A	Model B	Model C
1. Saudi infant mortality rate (SIMR)	-0.950** (0.003)	-1.058** (0.003)	-1.477* (.002)
2. Saudi gross fixed capital formation (SGFCF)	0.228** (0.005)	0.225** (0.006)	0.353** (0.006)
3. Saudi education enrolment index (SEEI)	0.390** (0.04)	0.941** (0.006)	1.124* (0.006)
4. Saudization coefficient for culture (SCFC)	-0.495 (0.016)	- 1.163** (0.022)	- 2.004** (0.021)
Intercept / Constant	5.373** (0.445)	6.299** (0.602)	4.872** (0.559)
R-Square	0.956**	0.905**	0.785**
Adjusted R-square	0.951	0.895	0.762
DW Statistic	1.97	1.94	1.96

Notes: N=43; Significance: **$p<0.001$; *$p<0.01$; +$p<0.05$; Durbin Watson (DW)
Model A:- Log- Service Sector-GDP (SGDP)
Model B:- GDP: Log-Overall-GDP (GDP)
Model C:- Log- Saudi Per Capita Income (SPCI)
Model D: Saudi Unemployment Rate (SUER)
Dependent Variables: SGDP, GDP and SPCI
Independent Variables: SIMR,SGFCF,SEEI and SCFC
The data is collected from 1970-2017
Control Variable: Saudi human resource development investment (SHRDI)
Standard Error is given in parenthesis

Model A:
$$Log(GDP) = \beta_0 + \beta_1\,(SIMRt) + \beta_2\,(SGFCFt) + \beta_3\,(SEEIt) + \beta_4\,(SCFCt) + \epsilon$$

Model B:
$$log(SGDP) = \beta_0 + \beta_1\,(SIMRt) + \beta_2\,(SGFCFt) + \beta_3\,(SEEIt) + \beta_4\,(SCFCt) + \epsilon$$

Model C:
$$log(SPCI) = \beta_0 + \beta_1\,(SIMRt) + \beta_2\,(SGFCFt) + \beta_3\,(SEEIt) + \beta_4\,(SCFCt) + \epsilon$$

Model D:
$$log(SUER) = \beta_0 + \beta_1\,(SIMRt) + \beta_2\,(SGFCFt) + \beta_3\,(SEEIt) + \beta_4\,(SCFCt) + \epsilon$$

Finally, beta coefficient of SGFCF shows significant positive impact with standardized beta values varying from 0.225 to 0.353 across three models. SGFCF have statistically significant impact on Saudi economic indices i.e. service-sector GDP (Beta=0.228; p<0.01), overall GDP (Beta=0.225; p<0.01) and on Saudi per capita income (Beta=0.228; p<0.01) likewise. However, the Model D is not presented in the Table 2, because the results are insignificant on the Saudi unemployment rate of all the variables excluding Saudi Education Enrolment Index. The reason of the insignificant result also shows that the unemployment trends are quite artificial or the quality element is missing among Saudi human capital.

6. Conclusion

Research is conducted with the objectives to explore socio-economic issues of Saudi economy, to identify the role of Saudization to ensure the economic future and to underscore the effect of Saudi human capital indices on economic indicators. A typology based on four econometric models has been crafted to understand the bonding between human capital and economic indicators. The qualitative discovery regarding Saudi socio-economic fault-lines has concluded that as the Saudi population will grow, oil consumption will reach to its peak by 2030, to meet the local energy demands. Accordingly, necessitates of the Saudis to modernize the oil industry, provide equal social services and develop service sector to create jobs for youth are critical through

mix-economy model instead of pure knowledge based economy. It has also been identified that Saudization can be used to overcome the artificial unemployment issue of Saudi youth. Statistical results illustrate that three human capital indices are playing a critical role in Saudi economics as theorized. However, Saudization is not yet effective.

Saudi gross fixed capital formation and education enrolment index have a positive effect on GDPs and per capita income. The negative rate of Saudi infant mortality is a good indicator of quality of life in Saudi Arabia. Notwithstanding, Saudization coefficient for culture is negatively effecting the economic indices which is alarming. This is because the Saudi government needs to import the quality of human capital at all levels to win the trust of the private sector to address the unemployment issue across genders.

In future, scholars can collect data using a primary survey from Saudi youth about the main resistance in job hunting, requirements for additional skill-set, need for employability in the private sector and motivation to go extra-miles for the national cause. Similarly, private sector recruiters can be surveyed to ask about missing Saudi human capital features i.e. knowledge, skills and abilities needed among Saudi youth and reasons for preferring foreign worker.

6.1 Recommendations for the Saudi labour market

The Saudis needs to understand that instead of importing knowledge-workers from America and Europe and low profile workers from South Asia, they require to adopt the Prophet Muhammad's (PBUH) Sunnah. The Prophet set the best examples to adopt any profile of a job without ego. At home he used to mend his shoes and at market he used to be a best sales man. In Quran (53:39) Allah says: {وَأَن لَّيْسَ لِلْإِنسَانِ إِلاَّ مَا سَعَى} means 'Man earns what he struggles for'. Therefore although, Saudi government is investing in education is reasonably high. At the same time Saudi workforce must understand the ground realties of true Islamic values.

Saudi government needs to revise the national policy for force employment quota in private and public sector, but this may not be possible if Saudi youth is incompetent as compared to foreign nationals. Consequently, medication is needed to improve Saudi

economic health. The quality for education needs to be improved to win the confidence of a private investor. Major concern causing unemployment in female youth and employment of people aging above 60 years old need to be addressed. Government should start funding Saudi female entrepreneurs for business e.g. female reserved shops etc. Moreover, logically the males and females aged above 60 must be restricted to continue employment in order to increase employment opportunities for young blood. Saudi must understand that producing graduates is not the solution to unemployment. There is a dire need to identify and prioritize the relevant education need by industry through academia-industry integration for sustainable financial growth in the private sector.

Saudi society and education system needs to be co-evolved in this century. The Saudi nation must change to manage global economic competition. The most interesting application of the results is the rediscovery of Saudi youth and to modernise the local culture as per real Islamic values about doing a job. Youth is vibrant and confident, possessing higher expectations but also need to be equipped with a unique and modern skill set to attract private sector at local level and then globally in the future.

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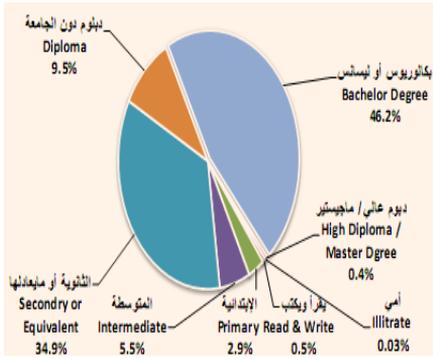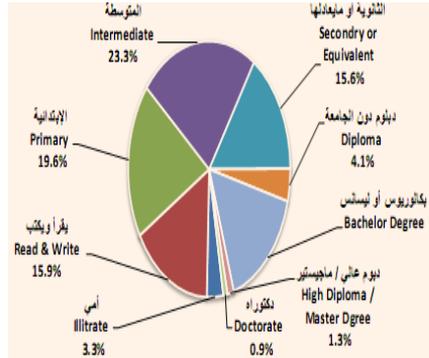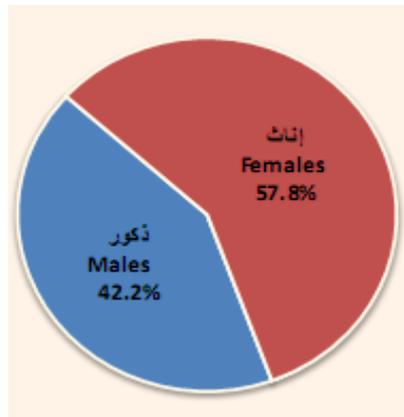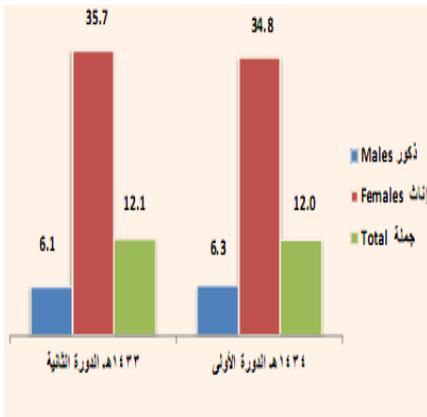
APPENDIX

Figure A: Saudi
Unemployment

Figure B: Non-Saudi Labour
Force

Source: Ministry of Manpower Annual Reports (2017)
Figure 3. Female unemployment among Saudi labour force.

Source: Ministry of Manpower Annual Report (2017)
Figure 4. Female unemployment among Saudi labour force.