Investigating the Impact of Sustainable Development Supply Chain on Economic Performance: An Empirical Study of Sultanate of Oman

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***Abstract*— This study aims to investigate the impact of sustainable development supply chain (SDSC) on economic performance. This study used three elements of SDSC consists of social , economic and environmental, each element measured by three variables as independent variables to show the impact on economic performance measured by GDP and FDI in 9 governorates of Sultanate of Oman over the period 2005 -2013. The statistical descriptive results show Al-Batinah, Dhofar and Muscat governorates have first rank in social element variables. Al-Batinah and Muscat governorates have first rank in economic and environmental elements variables. But Al Wusta governorate has the last rank in all three elements of (SDSC). The regression analysis results show that social SDSC variables are more significant on GDP than FDI variable, in economic SDSC variables are only significant on FDI variable. Finally, environmental SDSC variables are more significant on FDI than GDP variables at 1%, 5% and 10% significant level. Multiple regression analysis tests found there is as significant impact only in environmental SDSC variables on FDI variable. The researchers recommend the need to limit domestic spending and enhance the contribution of small and medium-sized firms in the development and strengthening local value added.**

***Keywords*—** *Sustainable Development, Supply Chain, GDP, FDI, Economic Performance, Sultanate of Oman.*

1. Introduction

Supply chain is network responsible for the production and distribution of products from organizations to consumer and these operations requires quality in the management to exploit the resources optimally reflected positively on profitability [1]. Many studies have focused on the topic of supply chain such as [2] explained the theoretical framework of how implementation supply chain management to take advantage of opportunities to achieve sustainable development effectiveness. Ref [3] explained that the environmental and social variables are key drivers in the development at the current time in terms of the environmental component is the engine of economic element if the environment is suitable, it affects the human capacity operating in a market economy and exercised an important role in sustainable development and the welfare of society. Firms are trying to adopt the concept of sustainable development strategies to improve the economic, social and environmental performance as these expensive strategies but achieved high returns on investment [4], because the economy is now going through a critical phase at the macro level, sustainable development processes is important to reduce costs to improve sustainable development practices [5]. Ref [1] explained the supply chain management as an ongoing process of coordination and improvement in the organization's operations.

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Ref [6] defined supply chain as an integration of all activities and resources at different levels of the point of origin to the consumption. Supply chain is the flow of information, money and the decisions to bring value to the consumer .The goal of the supply chain is flows of resource management across the production chain and controls them through an integrated system of suppliers to achieve value for the consumer and to achieve satisfaction on demand [7]. Supply chain focused on integration of production units, improves services and lower cost which increases the effectiveness and efficiency as the cooperative behavior in the production process is required in the complex process in the supply chain, this process needs to be leader in the supply chain resource management to have sustainable development in country[8]. Sustainable development is development that corresponds to the current needs and without any promises to meet future needs [9], but it became the modern interpretation takes into account the necessity of taking the future needs. Sustainable is the institutional commitment to contribute in community and economic development to improve the quality of life, create economic and societal value [10]. Sustainable is long-term development and improve economic stability to give balance on the health and social sector [11]. In light of the drop in oil prices it became important to have integrity in all industrial sectors at this stage to support the economic performance, so the goal of this study is investigating the impact of sustainable development supply chain on economic performance of Sultanate of Oman. The importance of this study is taking from the pressure on industrial firms to enter the global concept which requires challenging competitive environment for a stable market. This study contributed to building the framework of a theoretical illustration on the concept of sustainable development supply chain in the integration of its elements to find the impact on economic performance through its contribution to the gross demotic product (GDP) and foreign direct investment (FDI) by quantitative diagnosis of industrial sectors in three elements classified of social, economic and environmental level as part of an integrated system. This study organized after present introduction explain the literature review, methodology, empirical results and discussion and finally, conclusion.

2. Literature Review

The definition of sustainable development that appears in the Brundtland statement is the most extensively used definition and the majority of researchers and practitioners cite it. *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs* [12, p. 43].

The spotlight on running the sustainability of manufacturing process has augmented in current decades. Demands from outside (external) and inside (internal) agents; such as environmental laws and regulations, interested parties demand for sustainable goods and services, manage risks and acquiring environmental and social image to get the advantage initiatives to competitors, force business to take appropriate steps [13]. Ref [14] explains that the growing demand from several parties has enforced business to initiate the integration of Sustainable supply chain management (SSCM) to raise their connected performance. Ref [15] analyzes the connection between environment of corporations and their operations like strategy, finance, product design, and customer relations. It is very serious to move promote all issues in a regular way to intersect sustainability, environment and supply chain management [16]. In a study of [17] proposed that supply chain partnership and improved supply chain performance association should be advanced and examined empirically. Ref [18] determined and reviews 191 papers and come to conclusion that the economic and environmental issues of the supply chain are by far the scope that are the most studied among the papers reviewed (73.3%), and that papers combine sustainable dimensions only began to come out from 2002 onwards. Many studies have assessed the association of supply chain collaboration and firm performance like [19] and found that there is a positive relationship between collaboration and economic performance of SSCM. Some researchers point out that clients and dealers are conscious of the significance of partnership in their supply chain as it mechanically improves their economical outcomes. The implementation of collaboration at company levels determines environmental and social issues. Another paper has examined the collaboration in terms of environmental approach that impacts on sustainable supply chain performances [20].

2.1 Elements of Sustainable Development Supply Chain

The axes of sustainability express them with elements, indicators and variables through symbols of 3Es' (Environmental, Economic and Equity (social) and 3Ps (Planet, Profits and people) of sustainability [21].

The social component of sustainable development supply chain reflect the elements of social responsibility, such as improving work ethic, job security and stability, workers' rights, employment, domestic and international career opportunities realized in addition to interest institutional culture at all social sectors to achieve justice also includes citizens ,political, economic and newly rights became include corporate governance [22]. The environmental component of sustainable development supply chain includes increased efficiency, production and reduce costs and risks in the firms and thus increase profits, these activities come through energy saving , exploitation of resources optimally , improve transportation and communication station technology to achieve sustainable development. The environmental component is interested in how to protect natural resources and raw materials to convince the consumer needs also searching of availability electricity and water resources to the production process and keep track of environmental warnings around the world [23].

Sustainable economic development supply chain refers to economic growth for the protection of environmental resources and individuals also suggest consumption of resources is to achieve efficiency in the long term positive returns on investment and creation economic value to maintain the survival of the institutions as there are the impact of the financial agent on the costs, profits and determine how the effectiveness of cash flows achieve liquidity to the owners [24].

3. Methodology of Study

The quantitative formula used to analysis the impact of sustainable development supply chain on economic performance of Sultanate of Oman.

3.1 Data Population & Variables Selection

The population of this study listed in statistical economic bulletin of national center for statistics and information reports [25] in all nine governorates as follows : Dhofar Governorate (G1) ,Muscat Governorate (G2), Musandam Governorate (G3), Al Wusta Governorate.(G4) , Al Dakhliyah Governorate (G5) , Adh Dhahirah Governorate (G6), Al Buraymi Governorate (G7), Ash Sharqiyah Governorate (G8) ,Al-Batinah Governorate (G9) in Sultanate of Oman after mixed Ash Sharqiyah and Al-Batinah governorates in one governorate because no data available separate before 2010 .

This study applied in nine sectors measured sustainable development supply chain as an independent variables classifies by three elements of social, economic and environmental, each element measured by three independent variables as mention later to show the impact of growth of GDP and FDI as dependent variables of Oman listed in statistical bulletin of central bank of Oman [26] over the nine years from period 2005 -2013. No data available after 2013 in these guides' reports and this is the limitation of study

The three elements measured the sustainable development supply chain as independent variables are as following:

Social Sustainable Development Supply Chain (SSDSC) measured by three elements as follows: social measured by social houses (SOH), health measured by doctors. No (DO) and housing measured by housing units granted to the low - income citizens (HUGLI).

Economic Sustainable Development Supply Chain (ESDSC) measured by three elements as follows: economy & finance measured by banks & branches (BAB), agriculture & fisheries measured by extension field's set-up in private farms (No.) (EFSUIPF) and tourism measured by parks & garden (PG).

Environmental Sustainable Development Supply Chain (ENSDSC) measured by three elements as follows: transport & communications, measured by total main telephones lines (TMTL), electricity

measured by production (BR-E) and water measured by production (BR-W).

3.2 Models of Study

Many studies discussed the sustainability of supply chain such as [21] and [24]. In this study three equations are developed to investigating the impact of sustainable development supply chain that classified based on social, economic and environmental to show the impact on economic performance as presented below:

Social Sustainable Development Supply Chain (SSDSC)

Foreign Direct Investment (FDI_{it}) = $\alpha_0 + \beta_1$ $HUGLI_{it}$ + $\beta_2 DO + \beta_3 SOH_{it} + €_{it}$ ---------- (Eq.1)

Growth Gross Domestic Product (GDP_{it}) = $\alpha_0 + \beta_1$ $HUGLI_{it}$ + $\beta_2 DO + \beta_3 SOH_{it} + €_{it}$ ------- (Eq.2)

Economic Sustainable Development Supply Chain (ESDSC)

Foreign Direct Investment (FDI_{it}) = $\alpha_0 + \beta_1$ $EFSUIPF_{it}$ + $\beta_2 PG + \beta_3 BAB_{it} + €_{it}$ ---------- (Eq.3)

Growth Gross Domestic Product (GDP_{it}) = $\alpha_0 + \beta_1$ $EFSUIPF_{it}$ + $\beta_2 PG + \beta_3 BAB_{it} + €_{it}$ ----- (Eq.4)

Environmental Sustainable Development Supply Chain (ENSDSC)

Foreign Direct Investment (FDI_{it}) = $\alpha_0 + \beta_1$ $PR\text{-}E_{it}$ + β_2 PR-W + β_3 $TMTL_{it}$ + $€_{it}$ ---------- (Eq.5)

Growth Gross Domestic Product (GDP_{it}) = $\alpha_0 + \beta_1$ $PR\text{-}E_{it}$ + β_2 PR-W + β_3 $TMTL_{it}$ + $€_{it}$ ----- (Eq.6)

Dependent Variable is economic performance measured by growth of Gross demotic product (GDP) and foreign direct investment (FDI).

4. Empirical Results and Discussion

4. 1 Statistical Descriptive Analysis

4.1.1 Analysis the Social Sustainable Development Supply Chain Variables

Tables 1-3 show the results analysis of social sustainable development supply chain variables. Table 1, shows the results of housing sector and found Al-Batinah governorate (G9) has the first rank in housing units granted to the low - income citizens and Al Wusta governorate (G4) has last rank .The results interpreted that real estate market in Oman is grow, particularly in integrated tourism complexes such as (The Wave and Muscat Hills), these two projects allow for non-GCC to purchase a property. Although of falling prices but the prices now in balanced due to the high-end designs and outstanding sites. Also, the tax laws in Oman help to attract investment and business, through offerings of low taxes and the availability of tax exemptions and thus keep a low public debt (less than 10% of GDP in 2014.

Table 1: Analysis of Statistical Descriptive in Housing Sector.

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
HUGLI	48.66667	11.66667	16.77778	3.888889	32.77778	25.25	23.625	60.22222	63.77778
Rank	3	8	7	9	4	5	6	2	1

Table 2 shows the analysis social sector and found Dhofar governorate (G1) has the first rank in social houses and Al Wusta governorate (G4) has last rank. This result shows that government increased social activities to conviction of social responsibility towards the community and new economic measures improved such as wages and social benefits.

Table 2: Analysis of Statistical Descriptive in Social Sector

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
SOH	132.4444	17.11111	13.77778	0.888889	42.66667	44.75	45.375	77.44444	67.77778
Rank	1	7	8	9	6	5	4	2	3

Table 3 shows the analysis health sector and found Muscat governorate (G2) has first rank in numbers of doctors and Al Wusta governorate (G4) has last rank The health sector classified based on the size of the population, where the government is concerned with the provision of medical services to members of the community with interest in how to provide all health services to maintain national savings within the country instead of out of the money abroad for reasons of treatment.

Table -3: Analysis of Statistical Descriptive in Health Sector.

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
DO	198.4444	675.4444	67.88889	28.33333	357.1111	150.125	58.125	356.7778	614.1111
Rank	5	1	7	9	3	6	8	4	2

4.1.2 Analysis of Economic Sustainable Supply Chain Variables

Tables 4-6 show the analysis the economic sustainable development supply chain variables results. The table 4 shows the results of economy & finance sector and found Muscat governorate (G2) has first rank in banks & branches and Al Wusta governorate (G4) has last rank. These results interpreted that Omani banks have evolved increased its assets by 11% in 2014 compared to previous year where it was activated and private sector deposits.

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Table 4: Analysis of Statistical Descriptive in Economy & Finance Sector

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
BAB	41.66667	154.2222	9.222222	7.444444	48	21.375	12.625	57.33333	96.77778
Rank	5	1	8	9	4	6	7	3	2

The table 5, show the results of agriculture & fisheries sector and found Al-Batinah governorate (G9) has the first rank in extension field's set-up in private farms (No.) and Al Wusta governorate (G4) has last rank These results explained that Oman is trying to increase fish farming projects to take investment opportunities, and try to find a new fishing port by one port in each coastal city, as well as finding stores for cooling and provide fish transport and marketing organization and follow the ongoing policies to preserve the natural resources to achieve sustainable development.

Table 5: Analysis of Statistical Descriptive in Agriculture & fisheries Sector

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
EFSUIPF	63.22222	192.2222	280.2222	0	590.2222	631.625	263.125	585.3333	1130
Rank	8	7	5	9	3	2	6	4	1

The table 6, show the results of tourism sector and found Muscat governorate (G2), has the first rank in parks & garden and Al Wusta governorate (G4) has last rank .This result interpreted that Sultanate of Oman have archaeological sites recognized by UNESCO and the beaches, mountains and old markets in addition to the royal opera house in Muscat and the southern city of Salalah subtropics, which attracts tourists from the Gulf Cooperation Council (GCC).

Table 6: Analysis of Statistical Descriptive in Tourism Sector.

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
PG	27.11111	62.44444	7.555556	1	11	4.5	7	10.66667	26.66667
Rank	2	1	6	9	4	8	7	5	3

4.1.3 Analysis of Environmental Sustainable Supply Chain Variables

Table's from7-9 shows the analysis of environmental sustainable development supply chain variables results. The table 7 shows the results of electricity sector and found Al-Batinah governorate (G9) has the first rank in production and Al Wusta governorate (G4) has last rank. These results interpreted that electricity sector is classified as sensitive sectors in any economic country because of that a lot of industries need this service ,also the government of Oman has started interest of manufacturing industries in light of the drop oil prices

Table 7: Analysis of Statistical Descriptive in Electricity Sector.

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
PR-E	1794.333	11482.37	404.5778	67.55556	1201.333	8515.75	8515.75	2051	12942.02
Rank	5	2	7	8	6	3	3	4	1

Table 8 shows the results of water sector and found Musact governorate (G2) has first rank in production and Al Wusta governorate (G4) has last rank. In this result, note that Oman is abundant water for the presence of coastal cities interested in the provision of water for industrial and agricultural and population services.

Table 8: Analysis of Statistical Descriptive in Water Sector.

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
PR-W	6270.111	22314.96	810.2444	214.1111	1471.889	1034.1	889.9625	3892	17440.86
Rank	3	1	8	9	5	6	7	4	2

The table 9, shows the results of transport & communications sector and found Al-Muscat governorate (G2) has first rank in total main telephones lines and Al Wusta governorate (G4) has last rank These results explained the process of the development of transport and communications became prominent in the Sultanate as the Omani rail network project under construction in 2018, which will extend 2,244 kilometers, these projects are part of the transport system connecting all GCC countries, also expected that the railway network promotes, the country's location as a point the centrality of trade and logistics in the region.There is also interest in development of ports to take advantage of the geographical reality that is characteristic of the Sultanate of Oman, where the Omani ports have become major points of entry to the Gulf market. Road projects in different parts of the country has also increased, which helps to improve the transport infrastructure on the increase in GDP in the coming years and including the establishment of airports, roads and set up Duqm refinery and tenders in the field of water desalination and build a new facility for aluminum in Sohar.

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Table 9: Analysis of Statistical Descriptive in. Transport & Communications Sector

G	G1	G2	G3	G4	G5	G6	G7	G8	G9
TMTL	22379.44	137739.8	3261	382.2222	23795.22	11237.13	10009.13	25803	60514
Rank	5	1	8	9	4	6	7	3	2

4.2 Analysis of Regression Test Results

The regression test run in three elements of social, economic and environmental measured sustainable development supply chain as independent variables and applied in all nine governorates of Sultanate of Oman to show the impact of economic performance measured in both two variables GDP and FDI. The tables from 10 -18, show only significant results in the variables applied in nine governorates at *Significant at p <0.10 ** Significant at p< 0.05 and *** Significant at p< 0.01.

4.2.1 Regression Analysis of Social Sustainable Development Supply Chain Variables

Table's 10-12 shows the results of regression analysis of social sustainable development supply chain variables. Table 10 shows the regression analysis of housing sector measured by housing units granted to the low - income citizens on both two dependent variables GDP and FDI and found housing sector variable is more impact significant only on GDP at 5% significant level in four governorates. Correlation test is high between variables as 0.792, 0.709, 0.746 and 0.717. But R^2 are 0.627, 0.502, 0.566 and 0.514.

Table 10: Analysis the Regression Results of Housing Sector.

GDP		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	Variable					St-Error	B
Musandam	HUGLI	0.792	0.627	-3.429	0.011**	0.111	-0.382
Adh Dhahirah	HUGLI	0.709	0.502	-2.462	0.049**	0.094	-0.231
Al Buraymi	HUGLI	0.746	0.566	-2.743	0.034**	0.078	0.215
Al-Batinah	HUGLI	0.717	0.514	-2.722	0.030**	0.032	-8.80E-02

Table 11 shows the regression analysis of health sector measured by numbers of doctors and found health sector is more impact and significant on GDP in five governorates than FDI in only one Al Dakhliyah governorate at 5% significant level. Correlation test is high between variables as 0.604, 0.766, 0.832, 0.594, 0.800 and 0.773. But R^2 for variables are between 0.353 and 0.692.

Table 11: Analysis the Regression Results of Health Sector.

GDP		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	Variable					St-Error	B
Musandam	DO	0.604	0.364	-2.003	0.085*	0.307	-0.514

Al Wusta	DO	0.766	0.587	-3.156	0.016**	0.684	-2.160
Al Buraymi	DO	0.832	0.692	-3.674	0.010**	0.150	-0.551
Ash Sharqiyah	DO	0.594	0.353	-1.953	0.092*	0.051	-0.101
Al-Batinah	DO	0.800	0.640	-3.528	0.010**	0.030	-0.104
FDI							
Al Dakhliyah	DO	0.773	0.588	3.224	0.015**	1.61	3.744

Table 12 shows the regression analysis of social sector measured by social houses on both two dependent variables GDP and FDI and found social sector variable has impact and significant only on GDP in three governorates at 5% and 10% significant level. Correlation test is high between variables as 0.621, 0.725 and 0.705. But R^2 are 0.385, 0.526 and 0.496.

Table 12: Analysis the Regression Results of. Social Sector

GDP		**R**	**R^2**	**T- Value**	**Sig**	**Un standardized Coefficient**	
Governorate	**Variable**					**St-Error**	**B**
Musandam	SOH	0.621	0.385	2.093	0.075*	0.139	0.291
Al Dakhliyah	SOH	0.725	0.526	2.785	0.027**	0.088	0.245
Al-Batinah	SOH	0.705	0.496	-2.627	0.034**	0.033	-8.74E-02

The results show that the health sector is the most important sensitive sector of social sustainable development supply chain variables to keep the community a healthy society contributes to develop the process of sustainable development by increasing the number of doctors and health instruments in accordance with international standards. This result consistent with [22] that social sustainable achieved by adopt improving ethics, job security and stability.

4.2.2 Regression Analysis of Economic Sustainable Development Supply Chain Variables

Tables from 13-15 shows the results of regression analysis of economic sustainable development supply chain variables. Table 13 shows the regression analysis of agriculture & fisheries sector measured by extension field's set-up in private farms (No.) on both two dependent variables GDP and FDI and found agriculture & fisheries sector variable is impact significant only on FDI at 5% and 10% significant level in two governorates. Correlation test is high between variables as 0.733 and 0.603. But R^2 are 0.537 and 0.364.

Table 13: Analysis the Regression Results of Agriculture & fisheries Sector

FDI		**R**	**R^2**	**T- Value**	**Sig**	**Un standardized Coefficient**	
Governorate	**Variable**					**St-Error**	**B**
Al Buraymi	EFSUIPF	0.733	0.537	2.636	0.039**	0.477	1.258
Al-Batinah	EFSUIPF	0.603	0.364	-2.000	0.086*	0.146	-0.291

Table 14 shows the regression analysis of economy and finance sector measured by banks and branches on both two dependent variables GDP and FDI and found economy and finance sector variable is impact significant only on FDI at 5% and 10% significant level in four governorates. Correlation test is high between variables as 0.622 and 0.701. But R^2 are between 0.387 and 0.492.

Table 14: Analysis the Regression Results of. Economy & Finance Sector

FDI		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	**Variable**					**St-Error**	**B**
Muscat	BAB	0.668	0.447	-2.378	0.049**	5.590	-13.292
Al Dakhliyah	BAB	0.633	0.400	-2.162	0.067*	16.965	-36.672
Adh Dhahirah	BAB	0.701	0.492	-2.411	0.053*	53.022	-127.837
Al-Batinah	BAB	0.622	0.387	-2.104	0.073*	3.802	-8.001

Table 15 shows the regression analysis of tourism sector measured by parks & garden on both two dependent variables GDP and FDI and found tourism sector variable is impact and significant only on FDI variable at 10% significant level in two governorates. Correlation test is 0.683 and 0.646. But R^2 are 0.466 and 0.418

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Table 15: Analysis the Regression Results of Tourism Sector.

FDI		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	**Variable**					**St-Error**	**B**
Al Buraymi	PG	0.683	0.466	-2.289	0.062*	78.492	-179.682
Al-Batinah	PG	0.646	0.418	-2.242	0.060*	37.128	-83.289

The results indicate the economic and financial sector's is the most important sector in economic sustainable development supply chain reflected on foreign direct investment and so in light of the drop in oil prices, the government interest in all economic sectors (industrial and service) to increase the contribution of these sectors to the gross domestic product growth and economic value added. This result matching with study of [19] that there is a relationship between economic performance and sustainable development.

4.2.3 Regression Analysis of Environmental Sustainable Development Supply Chain Variables.

Tables from 16-18 shows the results of regression analysis of environmental sustainable development supply chain variables. Table 16 shows the regression analysis of electricity sector measured by production and found electricity sector variable is impact and significant on FDI at 5% and 10% in five governorates and more than GDP is only in two governorates at 5% significant level. Correlation test

is high between variables as 0.623 and 0.793. But R^2 are 0.388 and 0.629.

Table 16: Analysis the Regression Results of Electricity Sector.

GDP		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	**Variable**					**St-Error**	**B**
Muscat	PR-E	0.764	0.583	-3.131	0.017**	0.000	-7.63E-04
Musandam	PR-E	0.761	0.580	-3.107	0.017**	0.007	-2.19E-02
FDI							
Al Dakhliyah	PR-E	0.793	0.629	-3.448	0.011**	0.541	-1.865
Adh Dhahirah	PR-E	0.623	0.388	-1.951	0.099*	0.047	-9.14E-02
Al Buraymi	PR-E	0.623	0.388	-1.951	0.099*	0.047	-9.14E-02
Ash Sharqiyah	PR-E	0.749	0.561	-2.991	0.020**	0.107	0.320
Al-Batinah	PR-E	0.672	0.452	-2.402	0.047**	0.013	-3.22E-02

Table 17 shows the regression analysis of water sector measured by production on both two dependent variables GDP and FDI and found water sector variable is impact and significant on FDI at 5% and 10% in four governorates only in FDI. Correlation test is high between variables as 0.639 and 0.753. But R^2 are between 0.408 and 0.566.

Table 17: Analysis the Regression Results of Water Sector.

FDI		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	**Variable**					**St-Error**	**B**
Al Dakhliyah	PR-W	0.753	0.566	3.023	0.019**	0.343	1.036
Adh Dhahirah	PR-W	0.639	0.408	-2.034	0.088*	0.161	0.327
Ash Sharqiyah	PR-W	0.719	0.518	-2.537	0.044**	0.033	-8.45E-02
Al-Batinah	PR-W	0.718	0.516	-2.732	0.029**	0.005	-1.34E-02

Table 18 shows the regression analysis of transport & communications sector measured by total main telephones lines on both two dependent variables GDP and FDI and found transport & communications sector variable is impact and significant on FDI at 5% and 10% in four governorates only in FDI. Correlation test is high between variables as 0.632 and 0.798. But R^2 are between 0.400 and 0.637.

Table 18: Analysis the Regression Results of. Transport & Communications Sector

FDI		R	R^2	T- Value	Sig	Un standardized Coefficient	
Governorate	Variable					St-Error	B
Al Dakhliyah	TMTL	0.792	0.627	3.433	0.011**	0.039	0.132
Adh Dhahirah	TMTL	0.798	0.637	3.244	0.018**	0.028	8.939E-02
Ash Sharqiyah	TMTL	0.683	0.467	-2.476	0.042**	0.018	-4.47E-02
Al-Batinah	TMTL	0.632	0.400	-2.159	0.068*	0.004	-8.27E-03

The results indicate that the electricity sector is the most important sector in environmental sustainable development supply chain variables and the most effective in influencing foreign investment, which contributes directly to sustainable development in many of the manufacturing and service industries. This result is consistent with study of [13] that sustainable development focused on environmental laws.

4.3 Multiple Regression Test (MRT)

Table 19 shows the multiple regression analysis of each element of sustainable development supply chain on GDP and found all elements are insignificant on GDP, although there is a strong correlation between the element of environmental sustainable development and GDP

Table 19: MRT of. Each Element of Sustainable Development Supply Chain on GDP

GDP	R	R^2	F- Value	Sig
Elements of Sustainable Development Supply Chain				
Social	0.204	0.042	0.073	0.972
Economic	0.361	0.132	0.250	0.858
Environmental	0.798	0.637	2.922	0.139

Table 20 shows the multiple regression analysis of each element of sustainable development supply chain on FDI and found there is a significant impact of environmental element on FDI at 5% significant level, with Sig = 0.031, F- value = 6.919, R^2 = 0.806 and strong relationship at R= 0.898, but other elements of social and economic are insignificant although there is a strong correlation at correlation 0.756 and 0.727 respectively.

Table 20: MRT of. Each Element of Sustainable Development Supply Chain on FDI

FDI	R	R^2	F- Value	Sig
Elements of Sustainable Development Supply Chain				
Social	0.756	0.571	2.220	0.204
Economic	0.727	0.528	1.865	0.253
Environmental	0.898	0.806	6.919	0.031**

The results in table 19 and 20 explained that the environmental element is a prominent and important role in the development of sustainable development supply chain, where it was a significant impact on foreign direct investment in the 9 governorates in the Sultanate of Oman, while does not have any significant impact on GDP, despite the correlation is high.

5. Conclusion

This study aims to investigate the impact of sustainable development supply chain (SDSC) classified at three elements of social, economic and environmental, each element measured by three variables as independent variables on economic performance measured by GDP and FDI in 9 governorates of Sultanate of Oman from the period 2005-2013. The statistical descriptive results are shows that Al-Batinah governorate (G9) has first rank in housing sector, Dhofar governorate (G1) has first rank in social sector and Muscat governorate (G2) has first rank in health sector of social sustainable development supply chain. In second element the Muscat governorate (G2) has first rank in economy & finance and tourism sectors, Al-Batinah governorate (G9) has first rank in agriculture & fisheries sector of economic sustainable development supply chain. Finally, Al-Batinah governorate (G9) has first rank in electricity and Muscat governorate (G2), has first rank in water and transport & communications sectors of environmental sustainable development supply chain but Al Wusta governorate.(G4) has the last rank in all three elements of sustainable development supply chain.

The regression analysis results show that social SDSC variables are more significant on GDP than FDI variable, in economic SDSC variables are only significant on FDI variable. Finally, environmental SDSC variables are more significant on FDI than GDP variables at 1%, 5% and 10% significant level. Multiple regression analysis tests found there is as significant impact only in environmental SDSC variables on FDI variable. The economic diversification and sustainable development in Oman require efficient management and human resources able to respond to economic production factors that related for technology as a key role in leading the economic growth.The researchers recommend the need to limit domestic spending and enhance the contribution of small and medium-sized firms in the development and strengthening local value added,. In future research can be used other economic variables for the diagnosis and analysis of the economic sectors to show its impact on economic performance.

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