Faris Nasif Alshubiri[1]

ANALYSIS OF ECONOMIC DEVELOPMENT BASED ON KIBS INTERACTION: EVIDENCE FROM SULTANATE OF OMAN

This paper analyses the economic development indicators related to based on knowledge-intensive business services. This study uses 5 indicators of health, education, electricity, transport & communications and tourism as independent variables for economic performance, while 7 dependent variables include: loans approved, total merchandise imports, total merchandise exports, average daily production of oil, total government expenditure, total government revenues and gross domestic product at current prices in Sultanate of Oman, 2006–2013. The stepwise regression shows statistical significance at the levels 1% and 5% for all 5 indicators. The researcher recommends to increase integration and expansion of these services as one of the economy's rapid development indicators to promote capital investment and innovation support.

Keywords: *knowledge-intensive business services (KIBS); economic development; stepwise regression; Sultanate of Oman.*

JEL classification: O30; O1; L1.

Фаріс Насіф Альшубірі

АНАЛІЗ ЕКОНОМІЧНОГО РОЗВИТКУ, ЗАСНОВАНОГО НА НАУКОМІСТКИХ БІЗНЕС-ПОСЛУГАХ: ЗА ДАНИМИ СУЛТАНАТУ ОМАН

У статті проаналізовано показники економічного розвитку з акцентом на наукомісткі бізнес-послуги. Досліджено вплив 5 незалежних змінних економічної результативності (охорона здоров'я, освіта, електрифікація, транспорт та комунікації, туризм) на 7 залежних змінних, що відбивають економічний розвиток країни (обсяг кредитування, обсяг торгового імпорту, обсяг торгового експорту, середньодобова норма видобутку нафти, державні видатки, державні прибутки та ВВП у чинних цінах). Аналіз взаємозв'язку проведено за даними Султанату Оман за період 2006–2013 роки. Ступенева регресія виявила статистичну значущість на рівнях 1% та 5% для всіх індикаторів розвитку. Авторські рекомендації за результатами аналізу включають подальше розширення та інтеграцію наукомістких послуг з метою залучення інвестиційного капіталу та підтримки інноваційних процесів.

Ключові слова: *наукомісткі бізнес-послуги; економічний розвиток; ступенева регресія; Султанат Оман.*

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Фарис Насиф Альшубири

АНАЛИЗ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ, ОСНОВАННОГО НА НАУКОЁМКИХ БИЗНЕС-УСЛУГАХ: ПО ДАННЫМ СУЛТАНАТА ОМАН

В статье проанализированы показатели экономического развития с акцентом на наукоёмкие бизнес-услуги. Исследовано влияние 5 независимых переменных экономической результативности (здравоохранение, образование, электрификация, транспорт и коммуникации, туризм) на 7 зависимых переменных, отражающих экономическое развитие страны (объём кредитования, объём торгового импорта, объём торгового экспорта, среднесуточная норма выработки нефти, государственные расходы, государственные прибыли и ВВП в текущих ценах). Анализ взаимосвязи проведён по данным Султаната Оман за период 2006–2013 годы. Ступенчатая регрессия выявила статистическую значимость

[1] Dhofar University, Salaleh, Sultanate of Oman.

на уровнях 1% и 5% для всех 5 индикаторов развития. Авторские рекомендации по результатам анализа включают дальнейшее расширение и интеграцию наукоёмких услуг в целях привлечения инвестиционного капитала и поддержки инновационных процессов.
Ключевые слова: *наукоёмкие бизнес-услуги; экономическое развитие; ступенчатая регрессия; Султанат Оман.*

Introduction. KIBS sector includes economic and social activities, and to succeed in the growth of these activities the sectors interact with each other to get new knowledge and skills to implement it. Providers of such services must be very well aware of the degree of professional and technical knowledge. KIBS includes sectors of "smaller" services, like legal services, accounting, engineering and marketing as well as public relations within community. There are many definitions of KIBS sector, often it is seen as social services which bring more added value than other customer service (Landry and Amara, 2010). KIBS sector represents non-routine work in terms of features and qualities. These services play a vital role in any economy and development of these services enhance the shift to postindustrial stage. Growth in KIBS is measured not only by the increase in the number of employees or sales, but also through the expansion of activities and services provided to clients and their impact on economic performance (Muller and Doloreux, 2009).

I. Miles et al. (1995) define KIBS as services that include economic activities reflecting knowledge accumulation or creativity. The role of KIBS sector is exchange and transfer knowledge between organizations. Production process in organizations is the key element in business excellence, especially in sophisticated services, R&D, marketing research and effective management of activities. KIBS is the intermediary between customers providing knowledge and services in exchange for loyalty (Leiponen, 2006). The economy of services and industrial economy are the outputs of economic growth increasing employment in the community reflected in industrial sectors, while KIBS is the sector which is the input to business sectors.

Thus, KIBS distinguishes between the types of knowledge as well as all the information not included in actual production processes where contacts, relationships and forecasting are important complementary KIBS services (Miles et al., 1995).

Finally, KIBS does not include traditional services while it includes activities which interact through many systems at the level of national economy, including technical accounting systems, and even psychological and biological systems. This study considers the interaction between all the sectors of industry as well as the numbers of activities in different years and how each sector is related to others sectors. The objective of this study is to understand and analyze the economic development indicators based on KIBS interaction and economic performance in Sultanate of Oman.

Literature review. The review of literature shows that there are many studies on KIBS system and its impact on various economic sectors and in different countries and periods.

M. Toivonen (2004) proved the need for skills in the development of business models and for KIBS sector which inter alia strategically coordinate and deepens the relations between domestic and foreign companies through knowledge exchange. The results of (Bryson and Rusten, 2005) refer to KIBS sector that covers the development of relations between clients, suppliers and brokers to integrate economic activities.

H. Chesbrough et al. (2006) showed that interaction of inputs and outputs of knowledge leads to creativity in production processes where the responsibility is distributed between all parties and this contributes to promotion of growth. H. Aslesen and A. Isaksen (2007) stressed that many organizations join KIBS because of its potential and capabilities in concentration in the areas which contain many services contributing to knowledge transfer. V. Ojanen et al. (2009) pointed out that the success of many projects depends not only on research and development but on whether a firm adopts KIBS. A. Musolesi and J. Huiban (2010) noted that organizations interact with each other and exchange knowledge because KIBS gives more value to their product.

M. Savic et al. (2014) indicated the positive effect of knowledge on the effectiveness of R&D through creative integration within the framework of the KIBS concept and this is reflected in the increase of internal and external knowledge sources. S. Herstad and B. Ebersberger (2014) found that KIBS helps many workers keep their jobs and increases effectiveness and efficiency of work as such which has its positive reflection on the economy overall. B. Fischer (2015) focused on the concept of KIBS as being positively reflected on the economic value of industries, exports and energy as well as size of foreign trade. R. Figueiredo et al. (2015) explained the concept of KIBS as being essential in any economy where creativity is "part of the building" contributing to added value of GDP. D. Feser and T. Proeger (2015) noted the cooperation in the field of internal knowledge exchange between small firms with large firms within the concept of KIBS as leading to positive results in firms' performance.

Research methodology. The data for this study was collected from the Annul Statistical Economic Bulletin (2014) issued by the National centre for statistics and information, Sultanate of Oman.

1. Population of the study. The population of this study includes 12 economic sectors from the economic statistical bulletin (2014). This study includes only 5 independent economic development indicators selected as follows: health sector, tourism sector, education sector, transport & communications sector, and electricity. These sectors were selected due to their big size in Omani economy for the period of 2006 to 2013. Each independent variable was measured by the following variables (Table 1).

Table 1. **Independent variables – economic development indicators,** *author's*

Independent variables	Variable 1	Variable 2	Variable 3	Variable 4
Health sector (HS)	Nursing staff (NU)	Doctors (DO)	Hospitals (HO)	
Tourism sector (TS)	Total hotels revenues (THR)	Parks & garden (PAG)	Total hotels & motels (THAM)	
Education sector (EDS)	Students/teacher (ST)	Teachers (TE)	Students (STU)	Schools (SC)
Transport & communications sector (TCS)	Accidents (AC)	Total Internet subscribers (TIS)	Total mobile subscribers (TMS)	Total main telephones lines (TMTL)
Electricity sector (ES)	Distribution (DIS)	Production (PRO)		

Economic performance (*EP*) is the dependent variable measured through 7 variables: *LA* – loans approved; *TMIR* – total merchandise imports; *TME* – total merchandise exports; *ADPO* – average daily production of oil; *TGE* – total government

expenditures; *TGR* – total government revenues; *GDP* – gross domestic product at current prices.

2. Variables and model. The model of this study is as follows economic performance:

$$EP_{it} = \beta_0 + \beta_1 HS_{it} + \beta_2 TS_{it} + \beta_3 EDS_{it} + \beta_4 TCS_{it} + \beta_5 ES_{it} + \varepsilon_{it}, \quad (1)$$

where *EP = LA, TMIR, TME, ADPO, TGE, TGR* and *GDP*.

3. Hypotheses. Based on the literature review, the researcher has developed the hypotheses and the empirical methodology as follows:

H1.There is no statistically significant impact of all health sector variables (*NU, DO* and *HO*) on each economic performance variable.

H2.There is no statistically significant impact of all tourism sector variables (THR, PAG and THAM) on each economic performance variable.

H3.There is no statistically significant impact of all education sector variables (*ST, TE, STU* and *SC*) on each economic performance variable.

H4.There is no statistically significant impact of all transport & communications sector variables (*AC, TIS, TMS* and *TMTL*) on each economic performance variable.

H5.There is no statistically significant impact of all electricity sector variables (*DIS* and *PRO*) on each economic performance variable.

Empirical results and discussion.

1. Statistical descriptive analysis & discussion. Tables 2 and 3 show the results of statistical descriptive analysis for all 5 independent variables and 7 dependent ones for the period 2006 to 2013. The results of this analysis show the minimum, maximum, mean and standard deviation of each indicator.

Table 2. **Statistical descriptive analysis of independent variables of economic development indicators,** *author's*

Independent indicators	Variables	Minimum	Maximum	Mean	Std. deviation
Health sector	NU	9615.0	15624.0	12296.0	2126.8
	DO	4578.0	7049.0	5640.4	853.9
	HO	58.0	65.0	61.1	2.9
Tourism sector	THR	111.0	179.1	145.2	24.0
	PAG	115.0	165.0	136.1	18.9
	THAM	172.0	248.0	211.1	27.9
Education sector	ST	11.0	14.0	12.2	1.11
	TE	44055.0	61754.0	51583.2	6286.2
	STU	623389.0	644515.0	630938.6	7332.5
	SC	1259.0	1529.0	1386.1	115.4
Transport & communications	AC	7253.0	9869.0	8202.7	888.4
	TIS	63843.0	119398.0	87914.8	18367.0
	TMS	1818024.0	5277591.0	3742987.0	1278894.6
	TMTL	261207.0	304545.0	281716.7	16953.9
Electricity sector	DIS	10495.0	20958.0	14946.2	3846.5
	PRO	13258.0	24444.0	17984.4	4016.3

Through examining the numbers in Tables 2 and 3 for all economic sectors we can note that the annual report of the Central Bank of Oman for the year 2014 that GDP at current prices grew by 4.5% revealed, with managed non-oil activities to

achieve growth of 10%, but also showed a sharp decline in the employment of expatriates in the private sector growth rate of 15.9% in 2013 to 3% in 2014. GDP grew at current prices by meager 2.5% in 2013, and was in a slowdown mainly due to the drop in oil prices at global markets, as a result, GDP grew at current rates by 5% in 2014, and within the GDP oil activities recorded a decline of 2.1%, while non-oil activities were able to achieve the growth rate of 10.3%. The number of jobs created by the sector during the five-year period (2010–2014) grew by 13% on average. The year 2014 has seen a decline in the growth rate in jobs in the private sector reaching 3.5%, as compared with 15% a year earlier, which refers to the private sector's ability to generate more job opportunities for citizens.

Table 3. **Statistical descriptive analysis of dependent variables of economic performance,** *author's*

Dependent variables	Minimum	Maximum	Mean	Std. deviation
Loans approved	101.1	143.2	123.56	15.8
Total merchandise imports recorded	4190.1	13201.0	8338.85	2810.0
Total merchandise exports	8299.5	21696.9	14606.5	4987.5
Average daily production of oil	710.4	942.0	828.61	87.05
Total government expenditure	4936.1	13949.5	9001.66	3383.2
Total government revenue	4979.9	14216.9	8940.02	3455.6
Gross domestic product at current prices	14151.2	30061.3	22650.29	6032.4

The report shows the average crude oil Omani price reached in 2014 about 103 USD per barrel as compared with 106 USD per barrel back in 2013. The record production of crude oil in the Sultanate rose in 2014, and with respect to natural gas, the total production decreased by 4% in 2014 as compared to 2013. The proportion of the total amounted to oil and gas revenues to GDP in 2014 accounted for 38%, and contributed about 84% in the total government expenditures and 64.5% of the total merchandise export revenues during 2014.

The report attributed the growth of monetary aggregates in the Sultanate during 2014 to the policy adopted by the Central Bank of Oman, which aimed to ensure the appropriate level of liquidity in the banking sector and maintain smooth functioning of markets, increasing economic growth rates, and the continued growth in Omani economy increased broad money by 15% in 2014 as compared with the increase of 9.5% in the previous year. Similarly, the expansion of total bank credit, which includes both conventional and Islamic banking units reached 15% in 2013 as compared with 9% in 2013, the rate. Bank deposits also grew at higher rate of 13.9% in 2014 as compared with 10.9% in 2013. The liquidity position remained comfortable throughout 2013 and 2014 as evident from large turnout of weekly auctions of deposit certificates of the Central Bank of Oman. Due to comfortable liquidity conditions, interest rates decreased significantly. The results show many activities in industry grew in the recent years due to KIBS interaction between these activities although oil prices decline and the government support for these activities kept the economic growth relatively increased.

2. Stepwise regression analysis and discussion. Table 4 shows stepwise regression testing to investigate which variables have the impact between all independent variables of health sector as economic development indicators variables, on dependent

variable as economic performance, divided into 7 variables. The study results show that the nursing staff variable impact on TME, ADPO, TGE and GDP and doctors variables impact on LA, TMIR and TGR is statistically significant at the levels 1% and 5% where the t-value = 7.457, 8.711, 12.497, 6.628, 3.206, 6.389 and 10.901 respectively and sig = 0.000, 0.000, 0.000, 0.001, 0.018, 0.001 and 0.000 as was the R = 0.950, 0.963, 0.981, 0.938, 0.795, 0.934 and 0.976 respectively while the R^2 = 0.903, 0.927, 0.963, 0.880, 0.631, 0.872 and 0.952 respectively. But both doctors and hospitals variables are only significant on LA at 1% level, where t-value = 6.321, -4.303, sig = 0.001, 0.008, R = 0.960, R^2 = 0.922.

Table 4. **Stepwise regression of health sector factors and economic performance,** *author's*

Dep. V	Constant	Coefficients			Model summary		ANOVA	
		NU	DO	HO				
	TV-Sig	TV-Sig	TV-Sig	TV-Sig	R	R^2	F-test	Sig
LA	-1.072-0.325		3.206-0.018		0.795	0.631	10.281	0.018
	3.956-0.011		6.321-0.001	-4.303-0.008	0.960	0.922	29.409	0.002
TMIR	-2.679-0.037		6.389-0.001		0.934	0.872	40.817	0.001
TME	-2.831-0.030	7.457-0.000			0.950	0.903	55.608	0.000
ADPO	8.299-0.000	8.711-0.000			0.963	0.927	75.882	0.000
TGE	-5.653-0.001	12.497-0.000			0.981	0.963	165.185	0.000
TGR	-5.594-0.001		10.901-0.000		0.976	0.952	118.838	0.000
GDP	-1.322-0.234	6.628-0.001			0.938	0.880	43.931	0.001

The health sector must be developed further in order to commensurate with the increasing needs for health services in all parts of the Sultanate. We must also focus on the fundamentals that affect more than one sector such as IT infrastructure for innovations and system infrastructure, logistics and the added value in various sectors, as well as focus on energy, particularly renewable one.

Table 5 shows stepwise regression testing to investigate which variables have the impact between all independent variables of tourism sector as economic development indicators variables on dependent variable – economic performance, divided into 7 variables. The results show that the total hotels revenues variable impacts on LA, TMIR, TME and GDP is statistically significant at the 1% level, where the t-value = 4.234, 12.097, 7.326 and 7.499 respectively and sig = 0.005, 0.000, 0.000 and 0.000 as was the R = 0.866, 0.980, 0.948 and 0.951 respectively, while the R^2 = 0.749, 0.961, 0.899 and 0.904 respectively. But parks & gardens variable is only statistically significant for TGR at the sig level 1%, where the t-value = 5.849 and sig = 0.001, R = 0.922, R^2 = 0.851. Finally, total hotels & motels variable is only statistically significant for ADPO and TGE at the sig level 1%, where the t-value = 9.913 and 6.693 and sig = 0.000 and 0.001, R = 0.971 and 0.939, R^2 = 0.942 and 0. 882. The focus on tourism should have realistic goals in the light of its modest contribution to GDP, important remain the traditional sectors in all cases, so it is necessary to focus on agriculture and fisheries, with the expected participation of the resources available. To

pay more attention to tourism as one of key sources of gross domestic product, integrated plan for internal tourism was developed in the Sultanate with replanning of all tourist sites in Oman with a comprehensive plan for heritage development sites. Thus, in the future citizens and residents will prefer not to travel to neighboring countries but spend at home. And also of an integrated plan for foreign tourism development tourists should be elaborated covering external needs.

Table 5. **Stepwise regression of the factors of tourism sector and economic performance,** *author's*

Dep. V	Constant	Coefficients			Model Summary		ANOVA	
		THR	PAG	THAM				
	TV-Sig	TV-Sig	TV-Sig	TV-Sig	R	R^2	F-test	Sig
LA	-1.479-0.190	4.234-0.005			0.866	0.749	17.930	0.005
TMIR	-4.974-0.003	12.097-0.000			0.980	0.961	146.335	0.000
TME	-2.929-0.026	7.326-0.000			0.948	0.899	53.674	0.000
ADPO	4.466-0.004			9.913-0.000	0.971	0.942	98.272	0.000
TGE	-3.843-0.009			6.693-0.001	0.939	0.882	44.801	0.001
TGR	-3.380-0.015		5.846-0.001		0.922	0.851	34.175	0.001
GDP	-1.775-0.126	7.499-0.000			0.951	0.904	56.237	0.000

Table 6 used stepwise regression to investigate which variables have impact from all the independent variables of the education sector economic development indicators variables on the dependent variable of economic performance, divided into 7 variables. The results show that teachers factor is statistically significant except for LA, ADPO at the 1% level, where the t-value = 5.90, 7.35, 14.83, 12.14 and 6.40 respectively and sig = 0.001, 0.000, 0.000, 0.000 and 0.001 as was R = 0.924, 0.949, 0.987, 0.980 and 0.934 respectively, while R^2 = 0.853, 0.900, 0.973, 0.961 and 0.872 respectively. But the students/teacher variable is only statistically significant for LA at the sig level 5%, where the t-value = -3.058 and sig = 0.022, R = 0.781, R^2 = 0.609 and the schools variable is statistically significant for ADPO at t-value = 14.87, sig = 0.000, R = 0.982, R^2 = 0.974. Also, both teachers and schools variables are statistically significant for TGR at t-value = 8.89 and -2.854, sig = 0.000 and 0.036, R = 0.993, R^2 = 0.985. Finally, there is no significance from students variable for economic performance. The education sector is still in need for further expansion and development, education output feeds all other sectors and in order to reach a paradigm shift in productivity, the cultural aspect has to be taken into consideration. When we say that we aspire in knowledge-based economy in order to achieve economic diversification, we must set behaviors and cultural contents in media and the at labor market in line with this vision. As we employ teachers with certain academic qualifications, we must give them responsibilities to build on the cultural background for productivity growth.

Table 7 shows stepwise regression investigating which variables have impact between all the independent variables of the transport & communications sector the economic development variables on the dependent variable of economic perform-

ance, divided into 7 variables. The results show that the total mobile subscribers variable is statistically significant for variables except LA at the sig level 1%, where t-value = 4.30, 5.00, 8.97, 5.46, 4.87 and 5.57 respectively and sig = 0.005, 0.002, 0.000, 0.002, 0.003 and 0.001, while R = 0.869, 0.898, 0.965, 0.912, 0.893 and 0.915 respectively, R^2 = 0.755, 0.807, 0.931, 0.833, 0.798 and 0.838 respectively. But both accidents and total mobile subscribers variables are only statistically significant for ADPO and TGR at the sig level 1%, where t-value = 2.64, 10.60, 2.76 and 6.88 and sig = 0.046, 0.000, 0.039 and 0.001, R = 0.985 and 0.959, R^2 = 0.971 and 0.920. The total main telephones lines variable is only statistically significant for LA at t-value = 3.43, sig 0.014, R = 0.814, R^2 = 0.662. Finally, there is no significance of the total Internet subscriber's variable impact on economic performance.

Table 6. **Stepwise regression from factors of education sector on economic performance,** *author's*

Dep. V	Constant	ST	Coefficients			Model summary		ANOVA	
			TE	STU	SC				
	TV-Sig	TV-Sig	TV-Sig	TV-Sig	TV-Sig	R	R^2	F-test	Sig
LA	4.278-0.005	-3.058-0.022				0.781	0.609	9.35	0.022
TMIR	-3.201-0.019		5.90-0.001			0924	0.853	34.81	0.001
TME	-4.122-0.006		7.35-0.000			0.949	0.900	54.15	0.000
ADPO	-2.416-0.052				14.87-0.000	0.982	0.974	221.33	0.000
TGE	-9.115-0.000		14.83-0.000			0.987	0.973	219.91	0.000
TGR	-7.560-0.000		12.14-0.000			0.980	0.961	147.43	0.000
	-2.529-0.053		8.89-0.000		-2.854-0.036	0.993	0.985	165.55	0.000
GDP	-2.750-0.033		6.40-0.001			0.934	0.872	40.96	0.001

Sultanate of Oman plans to become the leader in regional and global logistics, particularly implementing a strategic project of the railway network, the implementation costs of which are up to 15 bln USD. The current progress of this project includes a number of large international ports in the Sultanate, including the ports of Salalah and Duqm and Sohar. Duqm is one of the most important seaport projects implemented in the maritime sector in the Sultanate and is one of the main axes to supplement the national economy in the coming years in terms linking to the outside world due to its strategic location overlooking the Arabian Sea. Constructing stay dry aquarium complex to repair ships became of paramount importance after it was able to accommodate different types of vessels and marine carriers for maintenance and repair services since the official opening in 2012. In the field of land transport there is a comprehensive plan with the cost of 40 mln Rials to connect various development projects in the state to contribute to smooth flow of traffic and easy switch between them.

Table 7. **Stepwise regression of factors of transport & communications sector and economic performance,** *author's*

Dep. V	Constant	AC	Coefficients			Model Summary		ANOVA	
			TIS	TMS	TMTL				
	TV-Sig	TV-Sig	TV-Sig	TV-Sig	TV-Sig	R	R^2	F- Test	Sig
LA	-2.189-0.071				3.43-0.014	0.814	0.662	11.768	0.014
TMIR	0.676-0.524			4.30-0.005		0.869	0.755	18.513	0.005
TME	0.535-0.612			5.00-0.002		0.898	0.807	25.089	0.002
ADPO	20.222-0.000			8.97-0.000		0.965	0.931	80.475	0.000
	2.405-0.061	2.64-0.046		10.6-0.000		0.985	0.971	83.747	0.000
TGE	-0.027-0.979			5.46-0.002		0.912	0.833	29.835	0.002
TGR	-0.056-0.957			4.87-0.003		0.893	0.798	23.715	0.003
	-2.739-0.041	2.76-0.039		6.88-0.001		0.959	0.920	28.850	0.002
GDP	2.119-0.078			5.57-0.001		0.915	0.838	31.037	0.001

Table 8 used stepwise regression to investigate which variables impact between all the independent variables of the electricity sector as economic development indicators variables on the dependent variable of economic performance, divided into 7 variables. The results show that the distribution variable on all the independent variables is statistically significant, for all except LA and ADPO at the sig level of 1%, where t-value = 5.527, 7.346, 11.918, 10.173 and 6.619 respectively and sig = 0.001, 0.000, 0.000, 0.000 and 0.001, R = 0.914, 0.949, 0.980, 0.972 and 0.938 respectively while R^2 = 0.836, 0.900, 0.959, 0.945 and 0.880 respectively. However, production variable is only statistically significant for LA and ADPO at the sig level 5% and 1%, where t-value = 2.910 and 10.696 and sig = 0.027 and 0.000, R = 0.765 and 0.975, R^2 = 0.585 and 0.950. Other benefits were enjoyed in the field of electricity and water supply the cost of the related project amounted to more than 16 mln Riyals.

Table 8. **Stepwise regression from the factors of electricity sector on economic performance,** *author's*

Dep. V	Coefficients			Model summary		ANOVA	
	Constant	DIS	PRO				
	TV-Sig	TV-Sig	TV-Sig	R	R^2	F-test	Sig
LA	-0.220-0.833		2.910-0.027	0.765	0.585	8.467	0.027
TMIR	-0.428-0.684	5.527-0.001		0.914	0.836	30.543	0.001
TME	-0.888-0.409	7.346-0.000		0.949	0.900	53.958	0.000
ADPO	14.320-0.000		10.696-0.000	0.975	0.950	114.399	0.000
TGE	-2.652-0.038	11.918-0.000		0.980	0.959	142.048	0.000
TGR	-2.417-0.052	10.173-0.000		0.972	0.945	103.489	0.000
GDP	-0.861-0.422	6.619-0.001		0.938	0.880	43.811	0.001

Conclusion. The government of Oman plays the vital role in economic growth changes as reflected in the performance of all economic sectors and activities, and if we have to look for reasons, we find that one of the reasons is the ability of most economic activities to integrate different economic units and to participate in science and knowledge exchange between firms of various economic sectors, which is part of the KIBS concept. In other words, KIBS define accumulation of knowledge and information used by firms in their production of products and services contributing to community employment process with the emphasis on customer participation in the desired product design.

This study included 5 economic indicators based on KIBS for the Sultanate of Oman, the period from 2006 to 2013, to measure the impact on 7 variables of economic performance. Stepwise regression was used for each indicator and the results show statistical significance at the levels of 1% and 5% for the health indicator (nursing staff and doctors variables), tourism indicator (total hotels revenues), education indicator (teachers variable), transport & communications indicator (total mobile subscribers variable) and electricity indicator (distribution variable) for most of dependent variables.

The author recommends to increase attention to the quality of education that would reflect on all eventually economic sectors. There is also a need to create conditions for economic diversification, work more on the issue of natural resources exploitation, search for new sources of added value to GDP. There must be also a clear mechanism of strategic planning and methods also advanced for continuous development. The government also needs to work on the optimal use of natural resources and to set realistic goals concerning tourism development.

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