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A Forecasting Study on Electricity Consumption in Indian Textile Industries: An Economic Analysis

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Abstract

Electricity as an important input plays a vital role from each and every economic movements for the development of the country at global level. Textile industry is not differed from this context; it provides outputs to trade at International markets. In India, textile industry is one among the important industries which supports economic development and trade balance. Hence, supply and demand for electricity in Indian textile industries are the signified economic processes to attain maximum output. Hence, the study emphasised electricity consumption and its cost which effects from consumption per unit of electricity for the Indian textile industry. This study brought out secondary data collected from various published articles and reports. It covers 30 years of forecasted data collected from 2001 to 2030 (Estimated). And data have been analysed by statistical tools such as correlation and regression. Findings of the study has highlighted that there is close relationship within and between the dependent and independent variables. Finally, the study has been concluded with effective policy recommendations with an overview of study.

Keywords: Electricity, Consumption, Cost, Production, Textile.

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1. Introduction

Demand for electricity became most important economic anent as a public facility because, as we know that electricity is a common gadget in the household sector. Later, the use of electricity differed based on the efficiency and purposes of the sectors. Textile industry is one among them signified electric power for efficient consumption in the production process

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which become commercial output for the development. Stream power and stream engine were the important sources to drive new textile machinery and the current progress of electricity consumption in textile industry was made by industrial revolution to gain maximum outputs (H. G. Greg ,R. H. Harral and J. B. Ashworth, 2009). Energy is also one of the major cost factors for the production and management process of textile industry. During the time of price volatility for the electricity consumption, the aim of textile industry is to maximize the energy efficiency. Mostly, textile industry gives priority to cost based energy efficiency which is available in large quantities for long time. Electricity and fuel are the common energy used in textile industry according to the size, structure and efficiency of production process (Ali Hasanbeigi and Lynn Price, 2012). Even the textile industry is one of the major energy consuming industries; it holds a record of lowest efficiency in the energy consumption. Electricity efficiency is performed in different production process of textile industry such as, 38 percent of energy is used for chemical processing, 34 percent for spinning, 15 percent for wet processing, 23 percent of energy for weaving and five percent for miscellaneous purposes. For the manufacturing processes of yam and cloth, the textile industry has consumes around 3/4 to 4/5 of electrical energy while 15 to 20 percent of energy consumed by various machines to the processes (Aravin Prince. P).

1.1 An Overview of Indian Textiles

Among the different industries, textile industry in India is one among them to boost up the economic level by trade and it contributes 27 percent of foreign exchange earnings. Clothing sector in textile industry contributes about 14 percent of total industrial production and 3 percent of gross domestic product of the country. And eight percent of total excise revenue collection is presented by textile industry. Textile industry in India is a largest single industry and (amongst the biggest in the world) actively 35 million people employed and give direct employment for 20 million people to produce 20 percent of total industrial production and generate 21 percent of total employment opportunity in the country. There are about 1227 textile mills with a capacity of 29 million spindles and supports to one-third of total value of cloth export from the country. Textile industry in India is mostly small scale having spinning, weaving, finishing, and apparel-making enterprises and about 276 composite mills in India is mostly owned by public sector and many deemed financially (sick) (M.Dhanabhakyam and A.Shanthi).

1.2 Problems and Sources of Electricity in Indian Textile Industry

Developing country India gives much more important for the generation of power from traditional and alternative sources to meet future demand for energy. But, industrial sector in India consumes highest power, while textile industry consumes third highest energy which means 49 percent of total energy production. Different energy sources have been utilized for the production process in four directions of India such as western regions generates power from thermal, northern regions use hydroelectric power, southern regions consumes renewable source and eastern regions use coal for power generation. Although, 51.4 percent of the total power production is from southern India. Indian textile industry use non-renewable sources of

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energy which makes flawless power which is too expensive. Coal, natural gas, oil, and other fossil fuels are the major energy sources but, cost and lack of availability are the main causes to the fluctuation of quantity generation of electricity in Indian textile industry. Power shortage is a major problem in an industry and to overcome it, production of energy is a major task of textile industry to meet its domestic demand (Fibre2Fashion). This study aims forecasting statistics to bring out current and future electricity consumption and its cost which effects from consumption per unit of electricity for the Indian textile industry.

2. Data Sources and Methodology

The study has been signified secondary data collected from different articles published by renowned journals, online newspapers, government and non-government data banks like TERI and private and public websites etc. Collected insufficient data have been further calculated by authors and forecasted by statistical methods to bring out the data up to stipulated year. Data have been covered for 30 years collected from 2001 and forecasted up to 2030. Collected and calculated data have been tabulated and presented graphically with coefficients of correlation and regression analysis. This study has given importance to the electricity consumption in Indian textile industries even though many more energies are in the process. This is because; as we know that the alternative energy electricity is popular among different industrial processes for attaining maximum output. Also the study has emphasised electricity consumption in Indian textile on types of cloths and working hours apart from collected and forecasted data on fabric production, electricity consumption, cost per unit and total annual cost for electricity consumption from 2001 to 2030.

Generally, a report says that the level of electricity consumption differ for types of clothes. Hence, quality of cloths determines the electricity consumption in textile industries and also aims to develop the sector in attaining maximum total of fabric production. Mainly, 0.45-0.55 kWh electric energy need to produce a meter of cloth and to produce one kilogram of fabric 92 MJ electric power requires said by New Zealand Merino Wool LCA.

Table.1. Electricity Consumption on Types of Cloths

Types of clothes	Energy use in MJ per KG of Fiber	Energy use in MJ per KG of Fabric	TOTAL energy use in MJ per KG of fabric to produce fiber + weave into cloth
Flax	10	92	102
Cotton	55	92	147
Wool	63	92	155
Viscose	100	92	192
Polypropylene	115	92	207
Polyester	125	92	217
Acrylic	175	92	267
Nylon	250	92	342

Source: O Ecotextiles, 2009.

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Table.1. expresses the amount of electricity consumption for different types of cloths. There are around eight different types of cloths commonly produced in the textile industry. Electricity consumption data have given based on the kilogram production of fiber and fabric in the volume of MJ. Though, for the production of per kilogram of fabric electricity use in MJ is in same amount. Finally, to produce nylon type of cloth highly 342 MJ of electricity energy is required while 102 MJ of the same require to produce flax type is cloth.

Moreover, the level of electricity consumption also differs based on different internal industrial process. There are around ten important industrial processes which help effectively for the maximum output. The main aim of textile industries is to produce high volume of yarn from cotton followed by the six stages of production process which is usually split into three systems such as, card sliver, combed sliver and ring spinning system. The card sliver system consists of blow room and carding machine which functions to convert the raw cotton into thick yarn (sliver).The combed sliver system has drawn frame and comber machine functions to ensure the uniformity in thickness of the sliver by the draw frame and to remove the unwanted short fibre in the sliver by the comber machine. Ring spinning system consists of Speed frame and Ring frame machine which functions to convert sliver (thick thread) into yarn (thin thread). Ring frame will be the final product of the spinning mill.

Electricity consumption in the textile industry is in increasing trend due to technological advances in manufacturing processes and equipment. Hence, energy cost is around 15 - 20 percent on the production cost and also it is a cost next to raw material cost. During the production process, at the load end of the machines power has been changing from 0.8 to 0.96 and also the range of voltage differs from 395 VAC to 430 VAC to produce one kilogram of yarn. A result is, average electricity consumption was 8.45 units in the year of 2010 (Y. Dhayaneswaran and L. Ashokkumar, 2013).

Table.2. Electricity Consumption in Different Process

Textile Process	Electricity Consumption in Different Process of Textile Industry in India (in Mega.Wh (Converted from kWh))									
	Per hour	8-hour Process in a day			10-hours Process in a day			12-hour Process in a day		
		Per day (Per hour × 8)	Per month (Per day × 30)	Per year (Per month × 12)	Per day (Per hour × 10)	Per month (Per day × 30)	Per year (Per month × 12 months)	Per day (Per hour × 12)	Per month (Per day × 30)	Per year (Per month × 12 months)
Blow room	0.0336	0.2688	8.064	96.768	0.336	10.08	120.96	0.4032	12.096	145.152
Carding	0.1043	0.8344	25.032	300.384	1.043	31.29	375.48	1.2516	37.548	450.576
Draw	0.008	0.06	2.09	25.099	0.087	2.614	31.37	0.104	3.137	37.648

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frame	715	97	16	2	15	5	4	58	4	8
Comber	0.0308	0.2464	7.392	88.704	0.308	9.24	110.88	0.3696	11.088	133.056
Speed frame	0.0848	0.6784	20.352	244.224	0.848	25.44	305.28	1.0176	30.528	366.336
Ring frame	0.588	4.464	133.92	1,607.04	5.88	176.4	2,116.8	7.056	211.68	2,540.16
Auto coner	0.0682	0.5456	16.358	196.416	0.682	20.46	245.52	0.8184	24.552	294.624
H.plant & WCS	0.1426	1.1408	34.224	410.688	1.426	42.78	513.36	1.7112	51.336	616.032
Compressor	0.0841	0.6728	20.184	242.208	0.841	25.23	302.76	1.0092	30.276	363.312
Lighting & others	0.0353	0.2824	8.472	101.664	0.353	10.59	127.08	0.4236	12.708	152.496
Total	1.180415	9.20332	276.0896	3,313.1952	11.80415	354.1245	4,249.494	14.15928	424.9494	5,099.3928

Source: Y. Dhayaneswaran and L. Ashokkumar, 2013 Note: Data on different working hours are computed by authors

Table.2. reveals the electricity consumption in different internal process of textile industry. Among the ten textile process, the process ring frame has highly consumed 0.588 MWt of electricity while draw frame consumes 0.0087 MWt in the same year. Thus, the total of 9.20332 MWt of electricity has consumed per hour in a day. Further, data have been calculated by authors for eight, ten and twelve hours as working hours in a day. In India, some textile industries are functioning eight hours, ten hours and 12 hours and also some of them functioning six days or seven days in a week. A report says that, most of the workers are in six days in a week and 20 percent of labours working seven days in a week. Three-quarters usually worked around eight hours per day but, 20 percent of labours reported that they worked more than ten hours while 12 percent reported that working 12 hours and more (International Labour Organization (ILO), 2015). Therefore, maximum hours and days in week have taken for this calculation. According to hour based electricity consumption in textile industry, while an industry works eight hours per day, its annual electricity consumption calculated around 3313.1952 MWt and if industry works for ten hours in a day, its annual electricity consumption comes around 4249.494 MWt. Futher, if it is working twelve hours per days its total electricity consumption measured about 5099.3928 MWt.

2.1Electricity Consumption and Tariff

Electricity became most common in different industries even to the primary sector which provides basic necessities to rest of the same. Consumption of electricity in textile industry is

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trending up year by year due to invention and innovations of equipment and adoption of new policies for the production target. Hence, tariff for electricity consumption in an industry is also results high and becomes basic and common resources for the production process. According to the report of the textile association, a mill with high load is pays Rs.7.30 per unit for electricity consumption but, when we compare with the price of two decades ago it is high and increasing rapidly found by forecasting analysis in the below table.3 (TNN, 2019)

Table.3 explains the statistics of production of fabric, electricity consumption and cost per unit from 2001 to 2030 (Estimated). The above statistical reports have been generated by forecasting analysis method to predict the on-going textile industry process to develop in future. According to the increasing ratio of production, the level of electricity consumption differs in trend. Cost per unit of electricity consumption in 2001 was Rs.3.50 and expected to become Rs.6.37 in 2030. But, in 2019 cost per unit for the industry is Rs.7.50 due to various development changes. A temporary estimated cost can be increased more than the analysed report. Annual cost for electricity consumption is also moving up as increasing level of production and electricity consumption up to the estimated year 2030.

3.Result and Discussion

It is a necessary step to formulate in the research work to identify the outcomes of research problems in scientific and mathematical design. This part consists of graphical presentations and tabulation with a result ofappropriate statistical tools. Textile industry in India used some technical and non-technical productive factors as we know that electricity is one among them seriously used for gaining maximum outputs. Textile industries need to fulfil maximum expenses for the expected outcomes. Hence, data on cost per unit and annual cost for electricity consumption signified for this data analysis and brought out here in detail.

Table.3. Electricity and Costs for the Production Process in Textile Industry

Year	Total Fabric Production (Million.Sq.Mtr)	Electricity Consumption (in gigawatt)	Cost per Unit of Electricity (INR) (Data Estimated from source)	Annual Total Cost for Electricity Consumption (in crores)
2001	35595	8065.20	3.50	2822820.00
2002	37198	7877.38	3.60	2835856.80
2003	38800	8147.00	3.69	3006243.00
2004	40403	8230.93	3.79	3119522.47
2005	42006	8619.55	3.89	3353004.95
2006	43609	9260.99	3.99	3695135.01
2007	45212	9195.78	4.09	3761074.02
2008	46814	9432.62	4.19	3952267.78
2009	48417	9669.46	4.29	4148198.34
2010	50020	9906.29	4.39	4348861.31

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2011	51623	10143.13	4.49	4554265.37
2012	53226	10379.97	4.59	4764406.23
2013	54828	10616.81	4.68	4968667.08
2014	56431	10853.65	4.78	5188044.70
2015	58034	11090.49	4.88	5412159.12
2016	59637	11327.33	4.98	5641010.34
2017	61239	11564.17	5.08	5874598.36
2018	62842	11801.01	5.18	6112923.18
2019	64445	12037.85	5.28	6355984.80
2020	66048	12274.69	5.38	6603783.22
2021	67651	12511.53	5.48	6856318.44
2022	69253	12748.27	5.58	7113534.66
2023	70856	12985.21	5.67	7362614.07
2024	72459	13222.05	5.77	7629122.85
2025	74062	13458.89	5.87	7900368.43
2026	75665	13695.73	5.97	8176350.81
2027	77267	13932.57	6.07	8457069.99
2028	78870	14169.41	6.17	8742525.97
2029	80473	14406.25	6.27	9032718.75
2030	80473	14643.09	6.37	9327648.33

Source: 1. Jatinder S. Bedi and Caesar B. Cororaton, 2. TERI, 2007, 3.Danish A. Hashim, 2004 (Estimated from 1993-94 to 1997-98)

Figure.1. explains the association between total fabric production and electricity consumption in different years. To produce maximum volume of fabric every year, electricity input is meant to be necessary. Especially when yearly target of fabric productionmoves up, inputs for the production target also should be increased. Hence, data on fabric production and electricity consumption from the year 2001 to estimated year 2030 is in upward slopes and also in perfect linear. Therefore, the graphical presentation says that the relationship between the variable factors is perfectly strong by 99.7 percent.

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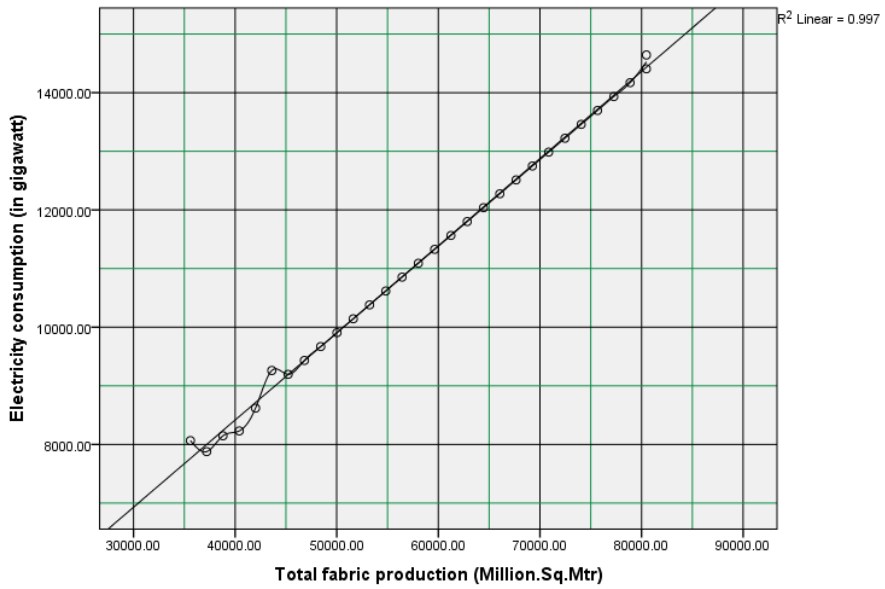

Figure. 1

Table.4. Correlation Results on Fabric Production and Electricity Consumption

Correlation on Total fabric production (TFP) and Electricity Consumption (EC)						
Variables	Mean	Std. Deviation	Pearson Correlation		Sig. (2-tailed)	N
			TFP	EC		
Total fabric production (Million.Sq.Mtr)	58781.86	14021.71	1	.999**	.000	30
Electricity consumption (in gigawatt)	11208.90	2087.29	.999**	1	.000	30

Note: **.Correlation is significant at the 0.01 level (2-tailed).

Table.4. expresses the statistical report on the relationship between independent variables such as fabric production and electricity consumption. To highlight the report, study has been formulated hypothesis for the variables,

H_o= There is a negative correlation between fabric production and electricity consumption.

H_1= There is a positive correlation between fabric production and electricity consumption.

Report clearly says that there is significant in 2-tailed correlation analysis because, Pearson correlation between fabric production and electricity consumption reports that the correlation between the variables is 99.9 percent. Hence, this study rejected the null hypothesis and accepted the alternative hypothesis and it results that there is a high degree positive correlation between fabric production and electricity consumption.

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Table.5. Regression Results on Fabric Production and Electricity Consumption

Regression on Total Fabric Production (TFP) and Electricity Consumption (EC)					
R	R Square	Adjusted R Square		Std. Error of the Estimate	
.999[a]	.997	.997		727.78364	
a. Predictors: (Constant), Electricity consumption (in gigawatt)					
ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	5686817018.79	1	5686817018.79	10736.54	.000[b]
Residual	14830732.677	28	529669.024		
Total	5701647751.46	29			
a. Dependent Variable: Total Fabric Production (Million.Sq.Mtr) b. Predictors: (Constant), Electricity consumption (in gigawatt)					
Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-16417.500	737.805		-22.252	.000
Electricity consumption (in gigawatt)	6.709	.065	.999	103.617	.000
a. Dependent Variable: Total fabric production (Million.Sq.Mtr)					

Table.5. expounds the regression report on the volume of relationship of dependent variable to independent variable. Here, electricity consumption as independent and fabric production as dependent variable brought out the perfect significant to each other. The regression model summery resulted that relationship between the variables is strong by R^2 value that is 99.7 percent along with adjusted R^2 at the same.

Null–Hypothesis ($H_{0)}$ =There is no variations between the fabric production and electricity consumption.

Alternative Hypothesis ($H_{1)}$ = There is significant variations between the fabric production and electricity consumption.

Analysis of Variance explains the fabric of production and electricity consumption is strongly significant by the sig.value .000. Hence, this study rejected null hypothesis and accepted alternative hypothesis. Result of the analysis proved that there are significant variations between the fabric production and electricity consumption.

H_0 = There is no perfect relationship between the fabric production and electricity consumption.

H_1 = There is a perfect relationship between the fabric production and electricity consumption.

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Regression analysis sharply reported that there is perfect relationship between the fabric production and electricity consumption by the standardized coefficients at 99.9 percent along with expected significant .000. Hence, this study accepted alternative hypothesis and rejected the null hypothesis.

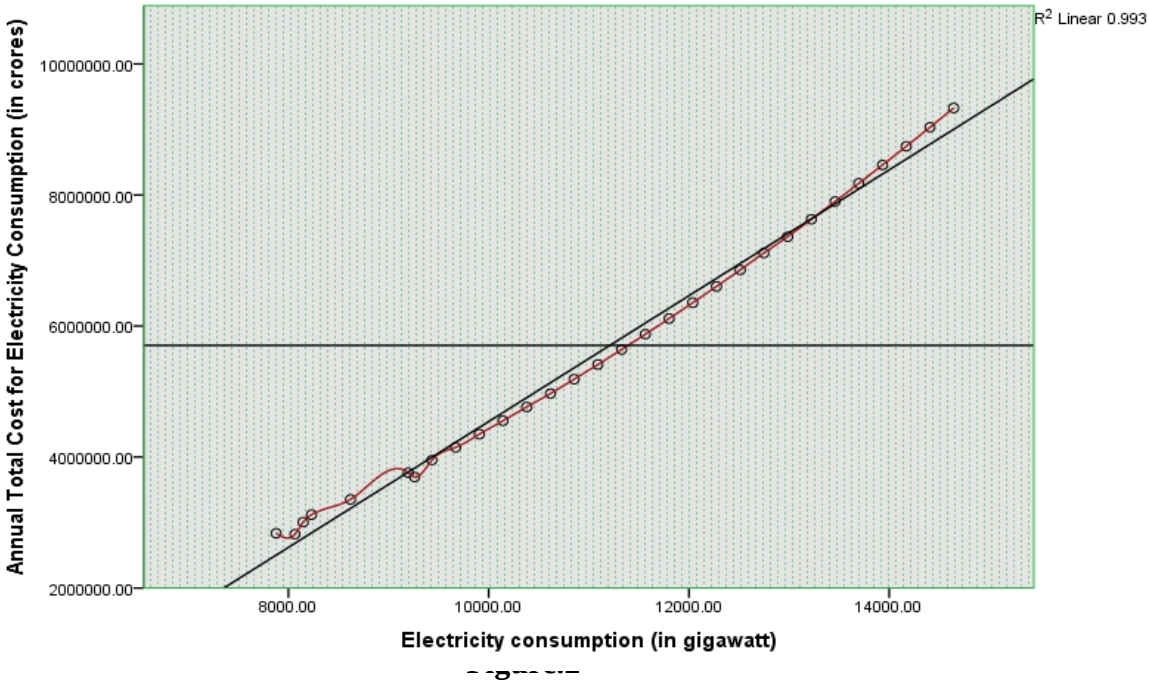

Figure.2. expresses the association between electricity consumption annual costs for

electricity consumption in different years. To produce maximum volume of fabric in every year, electricity as input used with minimum cost per Unit of consumption. Although, annual total cost for electricity consumption is in moving up when the volume of fabric production changes towards upward in every year. Thus, increasing ratio of input for the production also leads to increasing the maximum cost for the same. Data on electricity consumption and annual cost for electricity consumption from the year 2001 to estimated year 2030 is in upward slopes and also in perfect linear. Therefore, the graphical presentation explains at last that the relationship between the variable factors is perfectly strong by 99.3 percent.

Table.6. Correlation Results on Electricity Consumption and Annual Cost for Electricity Consumption

Correlation on Electricity Consumption (EC) and Annual Total Cost for Electricity Consumption (ATCE)						
Variables	Mean	Std. Deviation	Pearson Correlation		Sig. (2-tailed)	N
			EC	ATCE		
Electricity consumption (in gigawatt)	11208.9	2087.29	1	.996**	.000	30

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Annual Total Cost for Electricity Consumption (in crores)	5703903.2	2012129.90	.996**	1	.000	30

**. Correlation is significant at the 0.01 level (2-tailed).

Table.6. reveals the statistical report on the relationship between electricity consumption annual costs for electricity consumption. To highlight the report, study has been formulated hypothesis for the variables,

H_0= There is a negative correlation between electricity consumption annual cost for electricity consumption.

H_1= There is a positive correlation between electricity consumption annual cost for electricity consumption.

Report clearly says that there is significant in 2-tailed correlation analysis because, Pearson correlation between electricity consumption annual cost for electricity consumption reports that the correlation between the variables is 99.6 percent strong each other. Hence, this study rejected the null hypothesis and accepted the alternative hypothesis and it results that there is a positive correlation between electricity consumption annual costs for electricity consumption.

Table.7. Regression Results on Electricity Consumption and Annual Cost for Electricity Consumption

Regression on Electricity Consumption (EC) and Annual Total Cost for Electricity Consumption (ATCE)			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.996[a]	.993	.993	171489.689512
a. Predictors: (Constant), Electricity consumption (in gigawatt)			

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	116587892045851.3	1	116587892045851.3	3964.39	.000[b]
Residual	823443981051.8	28	29408713608.9		
Total	117411336026903.2	29			

a. Dependent Variable: Annual Total Cost for Electricity Consumption (ATCE)
b. Predictors: (Constant), Electricity consumption (in gigawatt)

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-5063383.4	173851.02		-29.12	.000
Electricity consumption (in gigawatt)	960.6	15.25	.996	62.96	.000

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a. Dependent Variable: Annual Total Cost for Electricity Consumption (ATCE)

Table.7. explains the regression report on the volume of relationship of dependent variable to independent variable. Here, electricity consumption as independent and annual cost for electricity consumption as dependent variable resulted that there is perfect significant to each other. The regression model summery resulted that relationship between the variables is strong by R^2 value that is 99.3 percent along with adjusted R^2 at the same.

H_0 = There is no variations between electricity consumption and annual cost for electricity consumption.

H_1 = There is significant variations between electricity consumption annual cost for electricity consumption.

Analysis of Variance explains the electricity consumption and annual cost for electricity consumption is strongly significant by the sig.value .000. Hence, this study rejected null hypothesis and accepted alternative hypothesis. Result of the analysis proved that there is a significant variation between electricity consumption and annual cost for electricity consumption.

H_0 = There is no perfect relationship between electricity consumption and annual cost for electricity consumption.

H_1 = There is a perfect relationship between electricity consumption and annual cost for electricity consumption.

Regression analysis clearly reported that there is perfect relationship between electricity consumption and annual cost for electricity consumption by the standardized coefficients at 99.6 percent along with expected significant .000. Hence, this study accepted alternative hypothesis and rejected the null hypothesis.

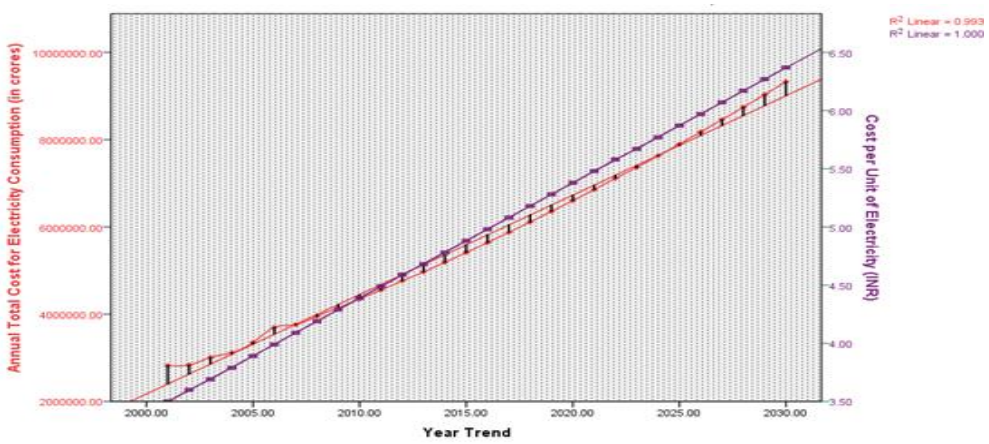

Figure. 3

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Figure.3. expresses multiple linear regressions on the association between annual cost for electricity consumption and cost per unit of electricity in different years. Electricity is one among the major input of fabric production in textile industry. Hence, cost for the electricity consumption has determined as cost per unit so, when the consumption level increases, cost per unit also will be increased simultaneously. Therefore, annual total cost for electricity consumption is in moving up when the volume of fabric production changes towards upward in every year. Increasing ratio of electricity consumption for the production also leads to increasing the cost per unit and further annual total cost for the same. Data on cost per unit and annual cost for electricity consumption from the year 2001 to estimated year 2030 is in upward slopes and also in perfect linear. Therefore, the graphical presentation explains at last that the relationship between the variable factors is perfectly strong by 99.3 percent for cost per unit and 100 percent for annual cost for electricity consumption.

Figure.4. explains multiple linear regressions on the association between fabric production and electricity consumption in different years. To meet the maximum output the textile industry next of others has used the amount of unit of electricity. Electricity is one among the major input of fabric production in textile industry. When the volume of productivity increases, the level of electricity consumption has also increased every year. Therefore, electricity consumption is trending up year by year while the volume of fabric production increases upward. Data on electricity consumption and fabric production from the year 2001 to estimated year 2030 is in upward slopes and also in perfect linear. Therefore, the graphical presentation explains at last that the relationship between the variable factors is perfectly strong by 99.8 percent for electricity consumption and 100 percent for fabric production every year.

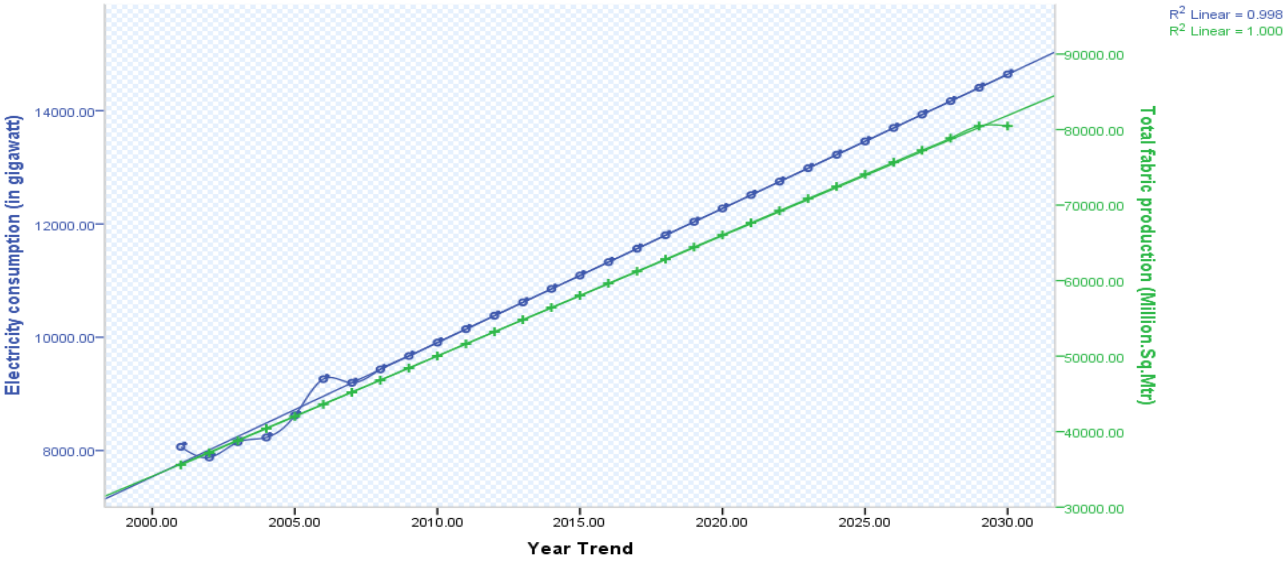

Figure. 4

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Table.8. Multiple Regression Results on Fabric Production and Electricity Consumption with Year Trend

Multiple Regression on Total Fabric Production (TFP) and Electricity Consumption (EC)					
R	R Square	Adjusted R Square		Std. Error of the Estimate	
1.000[a]	1.000	1.000		.166752	
a. Predictors: (Constant), Electricity consumption (in gigawatt), Total Fabric Production (Million.Sq.Mtr)					
ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	2246.74	2	1123.37	40400.14	.000[b]
Residual	.751	27	.028		
Total	2247.50	29			
a. Dependent Variable: Year Trend b. Predictors: (Constant), Electricity consumption (in gigawatt), Total fabric production (Million.Sq.Mtr)					
Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1977.02	.731		2705.64	.000
Total fabric production (Million.Sq.Mtr)	.001	.000	.849	12.310	.000
Electricity consumption (in gigawatt)	.001	.000	.151	2.189	.000
a. Dependent Variable: Year Trend					

Table.8. Reveals the regression report on the volume of relationship of dependent variable to independent variable. Here, Year trend as dependent, electricity consumption and fabric production as independent variables brought out that there is perfect significant to each other. The multiple regression modelssummary resulted that relationship between the independent and dependent variables is strong by R^2 value that is 100 percent along with adjusted R^2 at the same.

H_0 = There is no variations among the year trend, electricity consumption and fabric production.

H_1 = There is significant variations among the year trend, electricity consumption and fabric production.

Analysis of Variance resulted that the year trend, electricity consumption and fabric production is strongly significant by the sig.value .000. Hence, this study rejected null

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hypothesis and accepted alternative hypothesis. Result of the analysis proved that there is a significant variation among the year trend, electricity consumption and fabric production.

H_0=There is no perfect relationship among the year trend, electricity consumption and fabric production.

H_1 = There is a perfect relationship among the year trend, electricity consumption and fabric production.

Regression analysis sharply reported that there is perfect relationship among the year trend, electricity consumption and fabric productionby the standardized coefficients at 84.9 percent for fabric production and 15.1 for electricity consumption along with expected significant .000. Hence, this study accepted alternative hypothesis and rejected the null hypothesis.

4.Policy Recommendations

Policies and developmental programmes are such a key to determine future economic conditions of the country. Effective policies and recommendations will lead to expected outcome of society in developing aspects. Moreover, this study has found major findings and expressed few recommendations to policy makers for the welfare of future economy.

- Power shortage is a critical problem in the production process while it depends on electricity for entire process. So, the supply and generation of power must be enriched and provided to such Industries for the perfect completion of the process.
- Electricity consumption differs based on the types of Cloths. Hence, the policy makers can recommend the type of cloth for which affordable to provide sufficient supply of electricity.
- Electricity consumption is changing depending upon the total working hours so, the policy makers can implement affordable working hours for the welfare of all progressive process.
- Due to increasing electricity cost per unit, the small scale textile industry in India faces losses. So, the government should take necessary steps to recover such losses.
- Moreover, government must seek such advantages for the job protection and welfare of the employees.

Conclusion

Electricity contributes great improvements in all developmental activities of the country in the world. Now, it became very significant even to do our regular work at home. Hence, according to the rational expectation, the level of electricity consumption is improved in all over the sectors of the country. Textile industry in the world is contributes many economic activities for the development. Developing country like India also emphasised in progress of textile industry and started up a number of provisions for the improvements. Supply of and demand for electricity is one among them and now it became very significant in production process which also creates more demand. Hence, this study has been forecasted current and future electricity consumption and its cost per unit of consumption. Moreover, relationship

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and co-relationship between and among the independent and dependent variables are the major findings of the study.

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