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Analysis and Performance of Textile Weaving In Pakistan 2001-2010

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Analysis and Performance of Textile Weaving In Pakistan 2001-2010

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I. Introduction

Pakistan is a fourth largest producer of cotton in the world and has basic structure of textile and in the Asia Pakistan are the eight largest producers of textile commodities. 30 % population of Pakistan is working in the textile and creates employment for 15 million peoples. Pakistan has only two textile mills at the time of independence but by the time progressed gradually at this stage only due the fertile land and infrastructure favorable to that sector and technology improvement. . 56% exports of Pakistan are depends on this sector. Bulk of textile products is exported in the world from Pakistan to Other countries. Srilanka, Bangladesh turkey growing up by the time in this sector. Affordable prices and quick supply of gas, electricity, water, petrol and diesel are main factors so trade development authority of Pakistan (TDAP) decided to grow the exports so make the environment in which these factors should to be affordable and reachable.

The lacing together of threads and yarns to form cloth has developed over thousands of years of discovery and experimentation. The origin and development of woven cloth is closely tied to the history of mankind. Thousands of years ago we developed the skills necessary to turn the raw materials around us into cloth for clothing and shelter. Production of fabric is original means of weaving, two distinct set of yarn and threads are interlaced to form fabric or cloth. For making cloths/fabric using looms in which warp thread and weft thread are filling. Cloth generally woven on looms which hold the warp and weft thread. Early looms required two people to create the shed, and one person to pass through the filling. Early looms wove a fixed length of cloth but later ones allowed warp to be cut out as the floor progressed. There are 90,000 looms are in operation in which 30,000 are working and 60,000 loom on yarn. There are three different sectors in weaving sector, integrated, independent weaving units and power looms unit and different types of looms hand looms, power looms and mill weaving In concept, McKay's work remains at the moment the last word on the subject of comparative efficiency in weaving in Bangladesh.

a) Early Methods For Weaving

- Development of String
- Development of Frames and Treadles
- Fly Shuttle
- Jacquard Machine

Industry categorized in following sectors:

1. Cotton Ginning Sector
2. Cotton Spinning Sector
3. Weaving & Made-up Sector
4. Art Silk and Synthetic Weaving Industry
5. Filament Yarn Manufacturing Industry
6. Cotton Cloth
7. Textile Down-Stream Industry.

United state of America is the largest market of our textile and the major share of our textile goes to America because our marginal share in 1970 was 0.08% but in 1997 only 1.0% increase in our textile marginal share. Faisalabad, Gujranwala and Jalalpur Jattan are the major cities for weaving clothes because of suitable infrastructure. According to annual report by state bank of Pakistan (SBP), the sector has strong implications on socio-economic conditions of the country given its role in employment generation. Devastating floods affected textile production in Pakistan in FY11. During second half of the year, surge in global cotton prices provided

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earning opportunities in the form of unprecedented high export prices, which in turn induces production activities. The crop loss in Pakistan and Australia, unfavorable weather in china, declining US inventories and exports cap by India also surged prices. Around 12% of Pakistan's total fabric exports are destined for Turkey. The fabric export to Bangladesh may continue to support this sector in Pakistan.

II. Literature Review

The economic history review in (AUG, 2002) approximately hundred thousand handloom weavers surviving in south Asia due to the main focus on labor intensive technology.[1]

Economic and political weekly (AUG, 1998) more new tools and methods in textile weaving created the problem for the old institutional set-up. Labor demand decreasing approximately 7 workers out of 10 were hired because of capital intensive technology and females in the family are not able to work outside which was huge loss so the fly shuttle installed on small scale, old methods are more beneficial from new processes.[2]

All Pakistan textile mills association (APTMA) represents 396 textile mills in Pakistan in which 44 weaving, 315 spinning and 37 are composite unite, weaving mills have sizeable number of air-jest looms. International clothes production of Pakistan increasing by the time according to (APTMA) e.g. in 2000 (1028.5) in 2001(1067.6) in 2002(1746) in 2003(1687) in 2004(1868) in 2005 (3090) in 2006 (3203) and total growth in world is 13%. And world's growth rate in production of clothes is about 5%.[3]

Another study in Pakistan Economic Survey (1999-2000) In Pakistan's textile industry highlighting is on the spinning activity. Major portion of thread produced of good quality is exported rather than utilize large part of it for produce high value-added products like fabric, or clothing. This is an important structural weakness of our textile industry. This thread is imported by other countries like Japan, Hong Kong and South Korea who have well flourish textile industry change it into high value-added products and get much higher prices in international market. These countries do not cultivate cotton, but they have well-established textile industry because they have invested in modern manufacturing technology as well as in skilled staff. Their competent methods of production have enabled them to defeat the handicap of imported thread. But in Pakistan textile industry make decline due to be deficient in of investment and well qualified workforce in spite of having advantage of cotton and labor.[4]

Pakistan is the major textile product supplier in the world market with share (30% yarn trade, about 8% cotton) so the 56% of the country's total exports but decline in exports of cotton of about 15% in terms of quantity and value(SMEDA, 2005).[5]

McKay (1984) has afterward used data from Wasow et al. in estimate relative competence of HL and PL techniques on the basis of the addition of internal rates of return (IRR) and household resource cost (DRC).[6]

According to the Pakistan textile mills association (PTMA) the cotton prices in Pakistan changing in every year increasing or decreasing every year data shows (2002-2011), in 2002-3 the average price of cotton was(2235), 2004-5(2166),2006-7(2388),2008-2009(4155),2010-2011(9002).[7]

(Textile journal) Textile industry is the major sources of exports earnings for Pakistan. Its share in the total merchandise exports of Pakistan is still above 50%. It fell from 2.6% in 1970 to 1.9% in 1980 as far as share in world total in concerned but since it rising and reach 2.7% in 1997. Cloth exports relatively new for Pakistan but its share in the total merchandise exports of Pakistan is around 22% but in the world total from a marginal share of 0.08% in 1970 its share has risen to only 1.0% in 1997.[8]

Consumption of Cotton, Man-made (Synthetic) Fibers in Textile

Productions of Pakistan (in Percentage)

Years Cotton Man-made.[9]

YEARS: COTTON: MAN-MADE

1980-81 : 0.92 : 0.08

1984-85 : 0.90 : 0.10

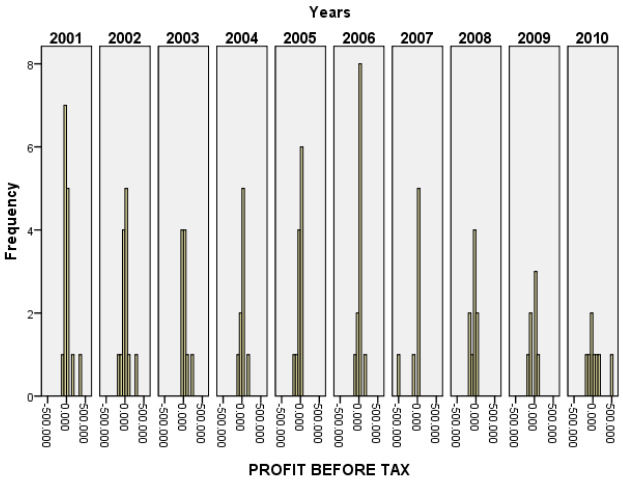
1995-96 : 0.88 :0.11

III. Methodology

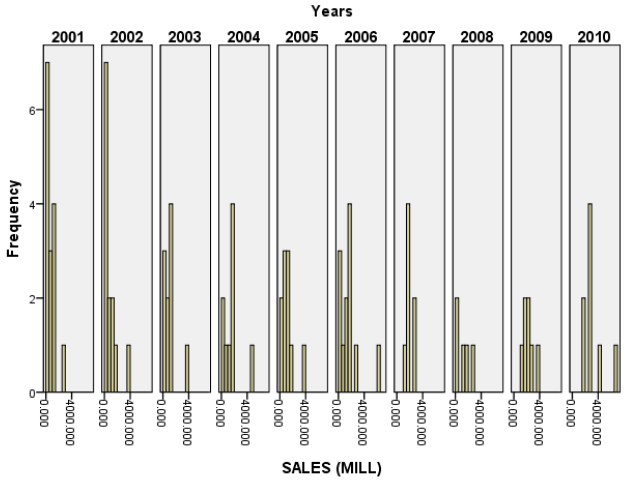
Secondary data of Textile weaving has been used in this research from Karachi stock exchange. Different tests have been applied for getting the appropriate result. Histograms are showing that in which year sales and profit after tax are on their maximum level. Least significant difference test (LSD) is showing the difference of one year mean from the other year's means. ANOVA is used for comparing the means of different variables from year 2001-2010. Multi linear regression has been used by taking the Sales as dependent by taking paid up capital, no of share, equity, Profit after tax, bank charges and total asset as independent variable. For profit after tax (dependent) sales, paid up capital, no of share, equity, bank charges and total asset are being used as independent variable. All the tests have been used for investigating the performance of Pakistani textile weaving industry over the last decade (2001-2010)

IV. Empirical Result

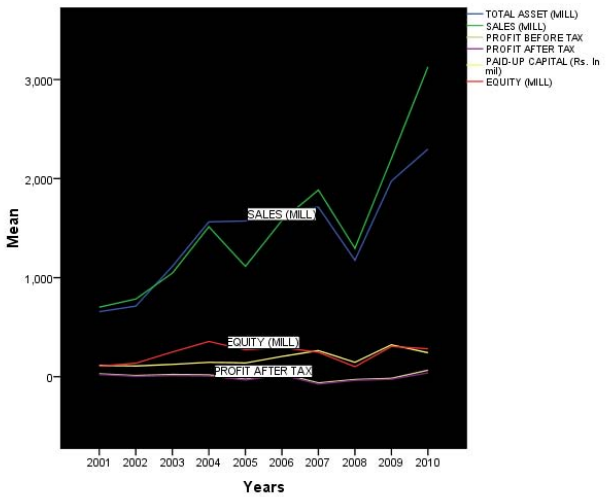
A histogram is one of the basic quality tools. It is used to graphically summarized and show the distribution and variation of a process data set.



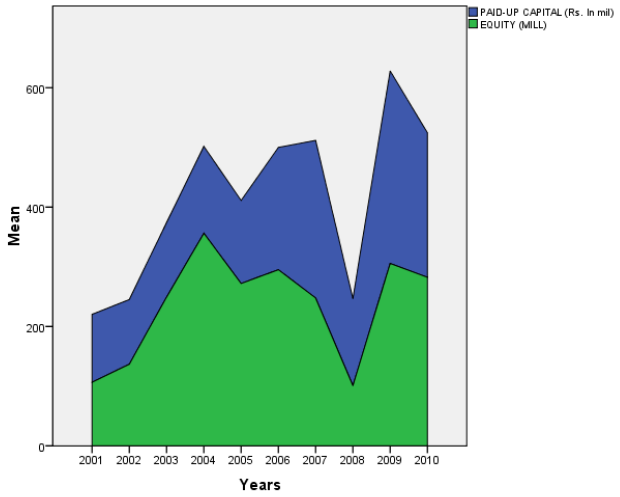
This hastogram are showing the movement of companies profit after tax as we can see profit is high in 2001 then it is decresing in next two years then it's gain a boost in 2004 and it's increasing even it's went on its peak point in 2006 and then it is decreasing again in next four year. In 2010 it is on it's minimum level.



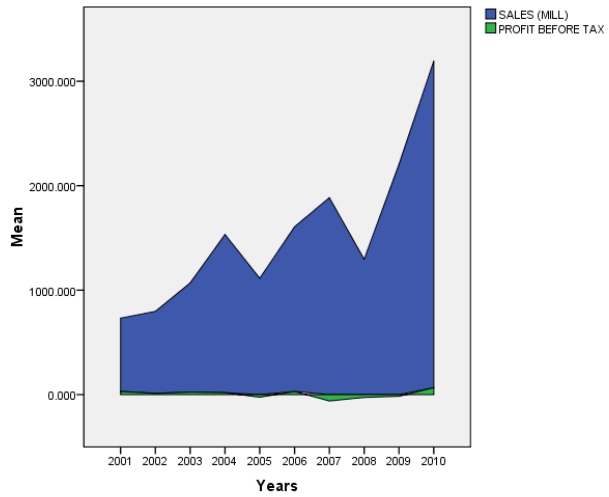
In this graph the scenario is totally change. It graph is representing companies sales level of decade. This graph is telling that companies sales are maximum in 2001 and 2002 then it is decreasing and remain same almost in next five years and it's decline again in 2008 and 2009 and in 2010 it's recovering again. In 2008 and 2009, electricity crisis were very high in Pakistan so may be that was a reason that companies production were reduced and in the result of their sales were also declining.



In this line chart, there are six variables. This graph is showing that profit after tax and before tax has zero or less than zero mean throughout the decade. Sale is increasing then decreasing in the mid it's again having a boost then in 2007 it's decreasing, from 2008 line is moving upward.



The graph is showing that paid up capital is increasing then in 2002 it's increasing rapidly in 2004 it's decreasing and so on its continuously increasing and decreasing till the end of decade. It is interesting that equity is also changing according to paid up capital.



This area chart is showing the trend of sale. It's increasing but in 2004 and 2007 it's decrease for one year. Sale is on its peak in 2009 and 2010 but interesting thing is that although company are selling their in products in millions but they are showing their profit after tax and before tax zero or less than zero. May be they are not showing their real profit because they don't want to pay tax or they want to get tax rebate.

	Years	Mean	S.D	CV
Paid up capital (Rs in millions)	2001	113.717	59.10052	51.97
	2002	108.323	61.85334	57.10
	2003	124.849	66.71258	53.43449
	2004	145.545	86.75751	59.60872
	2005	136.9453	132.1691	96.51235
	2006	204.8800	173.5108	84.68898
	2007	264.0334	187.6956	71.08783
	2008	211.4770	177.4472	83.90854
	2009	322.6144	263.6002	81.70751
	2010	242.1805	179.1412	73.9701
	total	171.429	148.8516	86.829

	Years	Mean	S.D	CV
No of share	2001	11.372	5.910052	51.97173
	2002	10.832	6.185335	57.10072
	2003	12.485	6.671258	53.43449
	2004	14.555	8.675751	59.60872
	2005	13.695	13.21691	96.51235
	2006	12.293	16.74342	136.2051
	2007	26.4033	18.76956	71.08783
	2008	11.7487	16.84103	143.3435
	2009	32.2614	26.36002	81.70751
	2010	24.2181	17.91412	73.9701
	total	14.983	15.0349	100.3457
	Years	Mean	S.D	CV
Equity (mill)	2001	106.549	377.4583	354.2564
	2002	136.855	380.9438	278.3566
	2003	249.285	407.9064	163.6307
	2004	356.196	568.2594	159.5356
	2005	271.9326	538.23	197.9277
	2006	295.1125	469.6598	159.1461
	2007	247.646	213.3904	86.1674
	2008	100.850	175.9385	174.4555
	2009	305.525	288.7392	94.50606
	2010	282.331	480.8149	170.3016
	total	228.872	411.2911	179.7033
	Years	Mean	S.D	CV
Total Asset (mill)	2001	656.624	622.622	94.82168
	2002	712.807	922.8998	129.474
	2003	1114.853	1192.512	106.9659
	2004	1563.760	1755.711	112.2749
	2005	1572.145	2012.735	128.0247
	2006	1681.693	2126.77	126.466
	2007	1712.185	690.3488	40.31977
	2008	1176.293	854.4066	72.63552
	2009	1975.601	754.4496	38.18837
	2010	2298.508	1058.091	46.03381
	total	1357.542	1386.482	102.1318

Mean is known as average and standard deviation tells us that how much variation exist from mean. And coefficient of variation tells us about consistency. Paid up capital and no of share were more consistent in 2001 whereas equity was in 2007 and total asset was in 2009.

	Years	Mean	S.D	CV
Sales (mill)	2001	702.350	782.4262	111.401
	2002	784.750	1076.1145	137.128
	2003	1045.7769	1103.621	105.531
	2004	1514.2205	1346.636	88.933
	2005	1113.8330	1024.398	91.970
	2006	1577.564	1717.9946	91.826
	2007	1885.551	572.436	30.359

	2008	1295.866	1107.529	85.466
	2009	2203.768	776.108	35.217
	2010	3128.341	1656.314	52.945
	total	1406.491	1315.6897	93.544
	Years	Mean	S.D	CV
Profit Before tax (mill)	2001	29.729	105.375	354.447
	2002	12.168	114.822	943.619
	2003	23.034	72.795	316.036
	2004	18.636	63.446	340.455
	2005	-21.654	60.439	-279.109
	2006	29.940	62.793	209.730
	2007	-60.986	189.277	-310.363
	2008	-54.302	76.355	-140.612
	2009	-15.850	88.326	-557.271
	2010	65.621	197.988	301.715
	total	3.434	108.9712	3172.997
	Years	Mean	S.D	CV
Profit After tax (mill)	2001	21.128	96.487	456.672
	2002	3.243	105.565	3254.844
	2003	11.283	63.934	566.645
	2004	6.998	44.724	639.136
	2005	-28.806	65.330	-226.791
	2006	16.282	68.562	421.080
	2007	-74.202	189.986	-256.04
	2008	-55.259	77.396	-140.06
	2009	-25.902	62.832	-242.57
	2010	38.253	175.218	458.05
	total	-5.463	101.120	-1851.028

Sale is more consistent in 2007 whereas profit before tax and profit after tax are more consistent in 2006 because in this year these variables are having least coefficient of variation values.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
PAID-UP CAPITAL (Rs. In mil)	Between Groups	442780.551	9	49197.839	2.491	.013
	Within Groups	1994468.121	101	19747.209		
	Total	2437248.671	110			
NO. OF SHARE	Between Groups	4534.944	9	503.883	2.462	.013
	Within Groups	23947.236	117	204.677		
	Total	28482.180	126			

EQUITY (MILL)	Between Groups	704189.181	9	78243.242	.438	.911
	Within Groups	15366043.635	86	178674.926		
	Total	16070232.816	95			
TOTAL ASSET (MILL)	Between Groups	26268269.758	9	2918696.640	1.605	.126
	Within Groups	156353204.596	86	1818060.519		
	Total	182621474.354	95			
SALES (MILL)	Between Groups	44911195.514	9	4990132.835	3.590	.001
	Within Groups	119537540.850	86	1389971.405		
	Total	164448736.364	95			
PROFIT BEFORE TAX	Between Groups	125248.563	9	13916.507	1.208	.300
	Within Groups	1059915.920	92	11520.825		
	Total	1185164.483	101			
PROFIT AFTER TAX	Between Groups	104091.914	9	11565.768	1.146	.339
	Within Groups	938894.192	93	10095.636		
	Total	1042986.107	102			
(BANK) / FINANCIAL CHARGES	Between Groups	193652.829	9	21516.981	4.400	.000
	Within Groups	420601.028	86	4890.710		
	Total	614253.857	95			

V. Hypothesis

Sales:

H_0:u2001=u2002=u2003=u2004=u2005=u2006=u2007=u2008=u2009=u2010

H_1: At least one mean is significantly different

Profit after tax:

H_0:u2001=u2002=u2003=u2004=u2005=u2006=u2007=u2008=u2009=u2010

H_1: At least one mean is significantly different

As the p-value of sale, paid up capital, bank charges and no. of share is less than 0.05 so it means that null hypothesis (H_0) will be rejected and H_1 will be accepted. It means that at least one mean is significantly different. But p-value of Total asset, profit after tax, profit before tax, and equity is greater than 0.05 so it means that we will accept H_0 and reject H_1.

Multiple Comparisons

SALES (MILL)
LSD

Years	Years	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2007	2001	1183.201267*	539.659248	.031	110.39419	2256.00835
	2002	1100.801385*	552.709889	.050	2.05049	2199.55228
	2010	-1242.790250*	610.175196	.045	-2455.77839	-29.80211
2009	2001	1501.418838*	539.659248	.007	428.61176	2574.22592
	2002	1419.018956*	552.709889	.012	320.26806	2517.76985
	2003	1157.991671*	581.002998	.049	2.99594	2312.98741
2010	2001	2425.991517*	516.150352	.000	1399.91858	3452.06446
	2002	2343.591635*	529.780429	.000	1290.42300	3396.76027
	2003	2082.564350*	559.234804	.000	970.84235	3194.28635
	2004	1614.120694*	572.876682	.006	475.27954	2752.96185
	2005	2014.508250*	559.234804	.001	902.78625	3126.23025
	2006	1550.777417*	538.123941	.005	481.02243	2620.53241
	2007	1242.790250*	610.175196	.045	29.80211	2455.77839
	2008	1832.475050*	672.116587	.008	496.35150	3168.59860

The least significant difference (LSD) is used for checking the significant difference between mean of different years. This test is showing that mean of 2001 is different from 2007, 2009 and 2010. It is also showing the result of other years as mean of 2008 is different from 2010. It is verifying that p-value of sale is less than 0.05

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	516796.106	5	103359.221	20.191	.000[a]
	Residual	460727.148	90	5119.191		
	Total	977523.254	95			
2	Regression	516193.283	4	129048.321	25.456	.000[b]
	Residual	461329.972	91	5069.560		
	Total	977523.254	95			
3	Regression	515672.002	3	171890.667	34.240	.000[c]
	Residual	461851.252	92	5020.122		
	Total	977523.254	95			

Multi linear regression is used for this test. Overall model is significant.

Profit after tax is taken as dependent variable where as paid up capital, equity, bank charges, total asset and sale are independent variable.

PAT = b_0+b_1 paid up capital$+b_2$Equity$+B_3$bank charges$+b_4$sale$+b_5$Total asset

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.567	11.448		.050	.961
	TOTAL ASSET (MILL)	-.103	.012	-1.414	-8.745	.000
	EQUITY (MILL)	.234	.033	.950	7.148	.000
	SALES (MILL)	.060	.011	.779	5.630	.000

a. Dependent Variable : Profit After Tax

Backward method is used for this model, as model is showing that total assets, equity and sales are best describing the profit after tax.

$PAT=b_0+b_1 Total\ asset+b_2 Equity+b_3 Sales$

$PAT=.567+ (-.103)\ Total\ asset+.234 Equity+.060 Sales$

Model is showing that these variables have positive impact on Profit after tax.

VI. Sales as Dependent

Sale is used as dependent variable whereas profit after tax, total asset, no of share, bank charges and equity are used as independent variables.

ANOVA[d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	139928351.421	5	2.799E7	102.719	.000[a]
	Residual	24520384.943	90	272448.722		
	Total	164448736.364	95			
2	Regression	139909491.789	4	3.498E7	129.708	.000[b]
	Residual	24539244.574	91	269662.028		
	Total	164448736.364	95			
3	Regression	139885429.438	3	4.663E7	174.643	.000[c]
	Residual	24563306.926	92	266992.467		
	Total	164448736.364	95			

Multi linear regression is used for this test. Overall model is significant.

$Sale=B_0+B_1$ Profit after tax$+B_2$ Total Asset$+B_3$ no. of shares$+B_4$ bank charges$+B_5$ Equity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	290.808	74.411		3.908	.000
	TOTAL ASSET (MILL)	.507	.062	.534	8.140	.000
	(BANK) / FINANCIAL CHARGES	6.335	1.077	.387	5.880	.000
	PROFIT AFTER TAX	3.197	.526	.246	6.078	.000

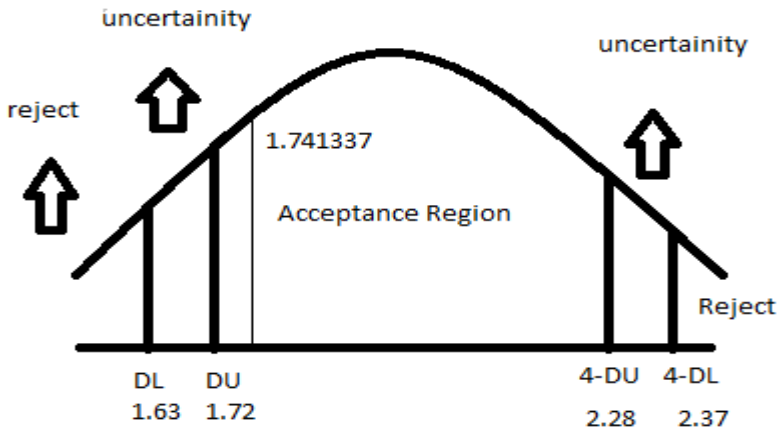
Auto Correlation :

H_0: P=0 (no auto correlation)

H_1: P is not equal to —0‖ (auto correlation)

Equity and total asset:

$$d = \frac{\sum_{t=2}^{T}(e_t - e_{t-1})^2}{\sum_{t=1}^{T} e_t^2},$$



Since the calculated value of —d‖ lies in acceptance region. So H_1 will be rejected and H_0 will be accepted and it is notifying that there is no evidence of auto correlation.

VII. Conclusion

At the start of decade companies in this sector were in many numbers but with the passage of the time they were started to shut their businesses. But in the mid so many companies came into this sector but when the electricity crisis started in the past, they again shut their businesses. The same thing is happened with profit of companies. At start companies were earning profit respectively high from the other years, then it's started to decline and in the mid of the decade profit were on their peak level and then its again started to fall till the end of the decade. Sale was high in start but then it decreased and remains same till the end. The one thing which is interesting that companies were selling their products in million but they were almost on breakeven point that means they were on no profit level. There is almost monopoly in this sector because only 10 to 20 companies are there in this sector but almost half of sale and total asset were in hand of 2 or 3 companies.

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