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The Role of Helping Hands in Industrial Development from Stakeholders' Perception: A Survey Conducted At Vitthal Udyonagar in Anand District of Gujarat State, India

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ABSTRACT: In this paper the role of various government agencies is studied. The estate under consideration is situated in Anand district of Gujarat state, India. Government of Gujarat is helping in multidimensional way to the industrialists of the state as well. In this case, various aspects were studied to draw conclusions and have organization's effectiveness leading to highest industrial productivity and hence profitability. The main objective is to assess to what extent industrialist getting and / or availing the know-how including financing resources from all these agencies and to what extent they help moving growth faster than ever. In this way Industrial performance will improve and organization will generate more revenues and hence improve profitability. To test whether, there exists any correlation between government agencies and industrial growth of this area. Higher industrial growth with higher productivity, profitability, will improve living standard of the people. The industrialists will also become economically sound will get motivated for further business and expansion of the existing businesses due to healthy industrial organizations and conducive working environment of the surroundings.

KEYWORDS: Industrial growth, performance, productivity, profitability, correlation, living standard.

I. INTRODUCTION

State of Gujarat has been carved on 1st May; 1960. State government had decided to make Anand as a separate district with effect from date 1-10-1997. It is a bifurcation from Kheda district into two districts Kheda and Anand. District Anand consists of Eight Talukas viz. 1) Anand, 2) Umreth, 3) Sojitra, 4) Petlad, 5) Borsad, 6) Ankalav, 7) Khambhat, and 8) Tarapur. Anand - Origin of operation flood - the white revolution. There are six industrial estates and one industrial park. Anand district is home to approximately 1500 small scale industries in sectors like, engineering, food & agriculture, tobacco stemming, wood products and minerals which are fast becoming the supporting pillars of the economy (see Table1).

Tab.1. Industrial Estates, District Anand (2010)

Sr. No.	Estates	Area (Hectors)	Working units	Major industry
1	Vitthal Udyog Nagar	330	995	Engineering
2	Umreth	11	62	Engineering
3	Petlad	12	72	Saw mills
4	Sojitra	11	70	Chemicals

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5	Borsad	19	112	Chemicals
6	Kansari	38	185	Rice mills
	Total	421	1496	

Source: Industrial Outline of District Anand, District Industries Centre, Anand (2010).

II. INDUSTRIAL ESTATES OF THE DISTRICT

Umreth GIDC: Main engineering units, major job works, under development and more entrepreneurs to be encouraged for establishing various units.

Petlad GIDC: Rangaipura GIDC: About 90 percent of total are saw mills, remaining 10 percent wire netting industries and others. It is considered as 100% running GIDC, next to Kandala in wood working and supply.

Sojitra GIDC: Established on18 may 1985 with 53 plots, mainly saw mills and food processing units. Others electrical-electronics-switchgears; building materials; ceramics processing; are among few industries, it seen almost empty with large to small plots idle /silent. There is no sign of growth sweep.

Borsad-Vasana GIDC (Notified): 115 plots and 80 running units: Among these; Paper- board mills, Tobacco processing, Ice factories, Rice mills are in majority.

Kansari - Khambhat GIDC: The major units cluster is rice mills and paddy processing units working on traditional methods and there is lot of potentials for expansions of agricultural processing on large scale. The modernization will help improving performance of the units. This GIDC is undeveloped compared to others estates of the district.

V.U.Nagar GIDC: Largest among all estates of the district. There are mainly engineering units, nearly more than fifty percent, with a few large-scale units. Small-scale units are ancillary types and independent in operations. Other units are: Electrical/ Electronics; Paints-Varnishes; Chemicals; Pharmaceuticals, Agriculture/ Cattle & Poultry feeds/ Agrochemical; Packaging, Saw mills, Building materials; Plastics, Rubber, Services /Trading etc.. Mainly small scale engineering units and are of ancillary types and independent in operations.

It is reported that nine GIDCs out of eleven GIDCs of Charotar districts (Kheda+Anand), almost breathing last-position and running only on papers. The units in Vitthal Udyognagar and Nadiad are lively running and Borsad, Sojitra, Matar, Kapadvanj, Thasara, Balasinore, Khambhat, Petlad and Umreth industrial estates are either sick or about to closed or already closed and estates are becoming like desert and conditions have become more severe.(Sandesh-Ahmedabad-Kheda-Anand,15 march,2008).

In V.U.Nagar G.I.D.C., now there is no enough land available neither for expansion / development of existing units nor for establishing new industrial units. Therefore a proposal of demand of additional 300 to 500 hectors of land is put before government of Gujarat for consideration. It will serve dual purposes of development of industries and provides more job opportunities to the people, which is the primary goal of origin of this industrial estate since its inception by the visionaries of this project.

2.1 Vitthal Udyog Nagar - An industrial estate at a glance:

This industrial area is adjoining to educational areas, Vallabh Vidyangar and New Vallabh Vidyanagar has the two complimenting activities viz. *learning* and its *application a*re located adjacent to each other, it has created an atmosphere of mutual help and development. There is a close and healthy co-operation and co-ordination among all units. This has fostered a rapid development of this industrial complex. This co-ordinate effort was aided by the fact that the Gujarat Industrial Development Corporation (GIDC) set up an industrial estate at Vitthal Udyognagar. The research study is based on this scenario and industrial units registered with Vitthal Udyognagar Industries Association (VIUA). The broad classification of industries of the estate under study is as shown in Table 2.

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Since 1965, this industrial area has developed by leaps and bounds and now it is one of the largest engineering estates of the Anand district. With the growth of the industrial estate its problems also grew. Competition, development of technology, reliance on old methods and human skills, government policies and associated rules and regulations, recurrent power cuts year after year; have all contributed their bit. This has resulted in reduced profitability of the industries (small and big), leading to widespread sickness and closure of units.

Tabel.2. Members Industries (1980 through 2010)*

Sr. No.	Year	Engineering & Allied	Others	Total
1	1980	101	119	220
2	1990	178	178	356
3	1994	210	300	510
3	1995	207	162	369
4	2002	206	238	444
5	2007	311	281	592
6	2010	335	276	611

*Source: VIUA Directory: 1980, 1990, 1995, 2002, 2007&2010
Note: i) Classifications within broad category of the members' industries,
ii) The figures are varies, as records are of different time period with changing scenario.

2.2 Literature review:

Physical Infrastructure: Industrial estate development program is taken up wherever there is demand and good scope for starting new industries. Care is taken to select the government lands to cheaper cost or private lands at reasonable cost through private committee and facilitated according to the requirement of the entrepreneurs to set up industries in Gujarat state all the basic infrastructure facilities like roads, street lights, water, drainage facilities etc. are provided in the industrial estates. Provision is also made for future accommodation and other amenities. GIDC is also maintaining all the industrial estates to keep the infrastructure facilities in good condition. Developed plots were also made available in the industrial estates. Now land is in scarcity IN V.U.Nagar and new G.I.D.C. is the demand of the day.

Prospects for Industrial Development: The industrial development in the district has not reached the optimum level so far, lack of initiation and entrepreneurship, shortage of skilled persons, poor living standard of the people in the country side, inadequacy in basic facilities and amenities are reasons for the slow growth of the industries in districts. Exploitation of natural resources, optimum use of available resources and exploitation of new markets for the products in the district, a number of small scale industries based on agricultural, dairy, electronics and IT products can be established in the district. As the construction activity is increasing constantly manufacturing of bricks, wooden furniture, steel furniture, fabrication items, electrical appliances etc. is having a vast scope in the district.

Criteria for identifying candidate industries: The selection of candidature industries is being proposed for the district is based on the following criteria:

1. Availability of various raw materials,
2. Present status of industrialization,
3. Availability of skilled persons and working force,
4. Technology up gradation and likely to be available in future.
5. Technology up gradation and likely to be available in future,
6. Market potentiality.

III. OBJECTIVE OF THE STUDY

The main aim of the study is to identify the role of helping hands from stakeholders view points on industrial productivity in an industrial estate under consideration.

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IV. RESEARCH METHODOLOGY

Structured questionnaires were distributed among the stake holders with a request to respond the questions set to study the perceptions about helping hands and role played by them. Total where about 1000 industrial units are working. Total 250 questionnaires were distributed among the employees of the organization. Of 250 questionnaires 156 questionnaires found usable and 94 were unusable due to incompleteness and inconsistency in responding. The estate under consideration was studying. It's a dual benefit and interest of industries and society for industrial productivity leading to better quality of life and living standards of human beings. As it is well accepted fact that Industry-Institute-Interaction can play vital role.

V. STATISTICAL ANALYSIS

Tab.3: First step to test reliability of questionnaire is checked by computing Cranach' Alpha. Reliability test for structured questionnaire gives the value of Cronbatch' Alpha (α) was 0.925, implying that the questionnaire is reliable. The value of α less than 0.50 is considered with poor reliability (see table 3).

Tab.3. Reliability Statistic

Cronbach's Alpha(α)	Cronbach's Alpha Based on Standardized Items	N of Items
0.925	0.931	11

Tab. 4. The Cronbach's Alpha (α) and interpretation

Sr.No.	Cronbach's Alpha	Internal Reliability
1	≥ 0.90	Excellent
2	≥ 0.80	Good
3	≥ 0.70	Acceptable
4	≥ 0.60	Questionable
5	≥ 0.50	Poor
6	< 0.50	Unacceptable

Tab.4: While increasing the value of alpha is partially dependent upon the number of items in the scale, it should be noted that this has diminishing returns. It should also be noted that an alpha of 0.8 is probably a reasonable goal. It should also be noted that while a high value of Cronbach's alpha (α) indicates good internal consistency of the items in the scale.

Tab.5. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.889
Bartlett's Test of Sphericity	Approximate Chi-Square	1694.435
	Degree of freedom	55
	Significance level	0.000

Tab.5: Second step to test appropriateness of the factor analysis is to carryout Bartlett's test and computing KMO value to decide the appropriate of the factor analysis. Prior to running the factor analysis, the KMO measure of sampling adequacy and the Bartlett's test of sphericity were conducted. The value of the KMO is 0.889, which is sufficiently large (> 0.5), and supporting the appropriateness of using factor analysis to explore the underlying factors of helping hands on industrial productivity. The Bartlett's test of sphericity was highly significant ($p<0.000$) as significance level is 0.000, rejecting the null hypothesis that the 11 important attributes are uncorrelated in the population.

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Tab.6: The number of factors based on Eigen values: Factor analysis is carried out using principal component method with varimax rotation. On the basis of Eigen values 1 or more the factors are retained. There are two factors which explain 73.049% of total variance, good for statistical analysis. This reduces the number of variables into two manageable dimensions (see table 6).

Tab.6. Total Variance Explained

Factor	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.833	62.118	62.118	6.833	62.118	62.118
2	**1.202**	**10.931**	**73.049**	**1.202**	**10.931**	**73.049**
3	0.916	8.326	81.375			
4	0.611	5.556	86.931			
5	0.477	4.337	91.268			
6	0.344	3.130	94.398			
7	0.200	1.818	96.217			
8	0.146	1.329	97.546			
9	0.119	1.085	98.631			
10	0.103	0.938	99.569			
11	0.047	0.431	100.000			

Extraction Method: Principal Component Analysis.

Fig.1: The number of factors based on scree plot: The scree plot is a plot of the Eigen values against the number of factors in order of extraction. The shape of the plot is used to determine the number of factors. Typically, the plot has a distinct break between the steep slopes of factors; with large Eigen values and a gradual trailing off associated the rest of the factors. The gradual trailing off is known as the scree. Experimental evidence indicates that determine the numbers of factors (see figure 1).the point at which the scree begins denotes the true point to determine the number of factors

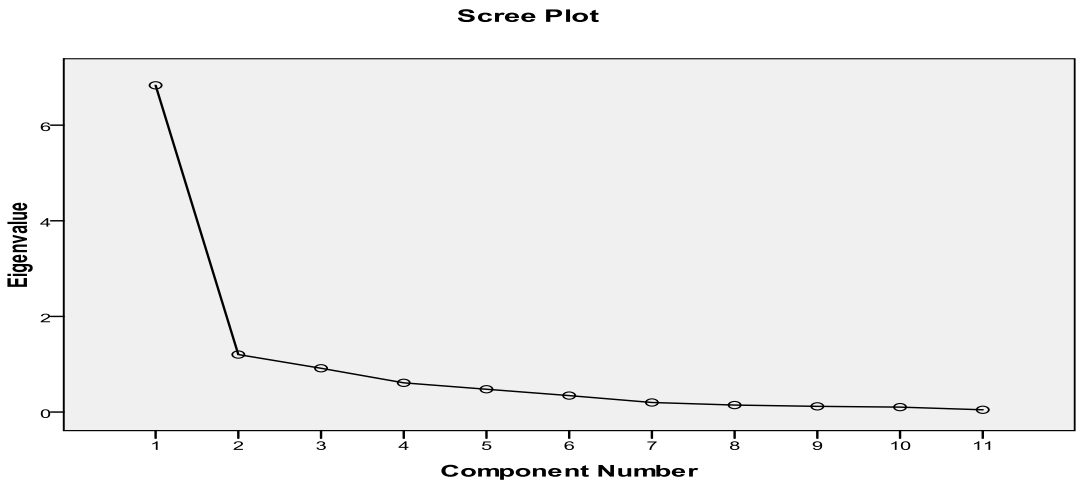

Figure 1: The number of factors with the help of scree plot

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Tab. 7. Grouping of variables extracted from factor analysis

Variables	Items	Factors		Extraction Communalities
		1	2	
2	Gujarat Industrial. Investment Corporation (GIIC)	**0.862**		0.756
3	Gujarat Small Industrial Corporation (GSIC)	**0.911**		0.848
4	Gujarat State Financial Corporation(GSFC)	**0.934**		0.886
5	Gujarat Infrastructure. Development Board(GIDB)	**0.946**		0.913
6	Industrial Extension Bureau(INDEXTb)	**0.763**		0.696
7	Industries Commissionerate(IC)	**0.745**		0.736
9	National Industry Policy(NIP)	**0.694**		0.698
10	State Industry Policy(SIP)	**0.599**		0.620
1	Gujarat Industrial Development Corporation(GIDC)		**0.636**	0.652
8	District Industries Centre(DIC)		**0.652**	0.645
11	Vitthal Udyog Nagar Industries Association(VUIA)		**0.752**	0.585

Tab.7: (Extraction communalities-last column): The percentage of total variance explained by the common factors referred to as communality. Communalities represent the proportion of the variance in the original variables that is accounted for by the factor solution. The factor solution should explain at least half of each original variable's variance, so the communality value for each variable should be 0.60 or higher. The variable number 11 with < 0.6 communality is not associated with any factors. This term may be interpreted as a measure of "uniqueness." A low communalities figure indicates that the variable is statistically independent and cannot be combined with other variables. The variable 11 with commonalty 0.585 is near to 0.6 communality and assumed its association with factor 2 as factor lodging of variable 11 is 0.752 is > 0.6 (see table7).

Tab.8. Statistics: Grand Mean, Standard Deviation and Variance

Variable	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	Total	Mean
N	156	156	156	156	156	156	156	156	156	156	156	1716	156
Mean	3.17	2.78	2.72	**2.71**	2.72	2.71	2.83	2.96	2.83	2.90	**4.24**	32.57	2.96
Std. Dev.	1.05	0.85	0.83	0.79	0.82	0.80	0.79	0.85	0.88	0.89	0.10	9.54	0.87
Variance	1.10	0.73	0.68	0.62	0.68	0.65	0.63	0.71	0.77	0.78	0.10	8.34	0.76
Minimum	1	1	1	1	1	1	1	1	1	1	1	11	1
Maximum	5	5	5	5	5	5	5	5	5	5	5	55	5

Tab.8: Shows that maximum value of mean for variable 11 is 4.24 and minimum value of mean for variable 4 is 2.71.The value of Grand mean is 2.96.The attributes are measured on 5- point likert scale as: Excellent (05), Good (04), Satisfactory (03), Average (02) and Poor (01).This mean of the mean2.96 implies that overall perceptions by all the respondents is lying between (2) & (3), i.e. between average and satisfactory agreement level which is not up to the mark to draw conclusion on this single criteria.

Tab. 9. Analysis of Variance (ANOVA)

Sources of Variation	Sum of Squares (SS_x)	Degree of Freedom (DF)	Mean Square(MS)	F - Ratio (F)	F- Probability (Significance)
Between Groups	738.748	155	4.766	8.635	0.000
Within Group Residual	863.636	1560	0.554		

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Total	1602.384	1715	0.934		

Grand Mean = 2.96

Tab.9 Analysis of Variance (ANOVA): The results of conducting the statistical analysis are presented in the above table. The value of SS_x denoted by main effects is 738.748 with 155 degree of freedom: that of SSerror denoted by residual is 863.636 with 1560 degree of freedom. Therefore, The value of MS_x = 738.748/155 =4.766. The value of MS_{error} = 863.636/1560= 0.554. The value of F = 4.766/0.544 = 8.635 with degrees of freedom 155 and 1560. Resulting in a probability of 0.000.Because the associated probability is less than the significance level of 0.05, the null hypothesis of equal population means is rejected. Alternatively, it can be seen from statistical tables that the critical value of F for 155 and 1560 degrees of freedom is less than the calculated value of F (8.635), the null hypothesis is rejected.

Tab.10. Means, Std. Devi. and Correlation(r) of role of helping hands in industrial development

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1. GIDC	3.17	1.05	**1**										
2. GIIC	2.78	0.85	**0.58****	**1**									
3. GSIC	2.72	0.83	0.54**	**0.86****	**1**								
4. GSFC	2.71	0.79	0.52**	**0.79****	**0.86****	**1**							
5. GIDB	2.72	0.82	0.53**	**0.83****	**0.88****	**0.94****	**1**						
6. INDEXTb	2.71	0.80	0.55**	0.59**	0.69**	**0.76****	**0.80****	**1**					
7. IC	2.83	0.74	0.58**	0.58**	0.68**	**0.75****	**0.75****	**0.77****	**1**				
8. DIC	2.96	0.85	0.57**	0.44**	0.48**	0.46**	0.46**	0.55**	**0.70****	**1**			
9. NIP	2.83	0.88	0.57**	0.60**	0.65**	0.65**	0.68**	0.60**	0.64**	**0.60****	**1**		
10. SIP	2.90	0.88	0.55**	0.52**	0.55**	0.58**	0.57**	0.51**	0.58**	**0.62****	**0.87****	**1**	
11. VUIA	4.24	1.00	0.33**	0.08	0.09	0.06	0.09	0.19*	0.16	0.20*	0.12	0.11	**1**

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

* Correlation is significant at the 0.05 level (2-tailed).

Tab.10: Using Pearson's product moment correlation the results are shown. In examining the correlations, it is found that variables are significantly correlated with each other (p=0.01). The nature of the underlying latent construct of impacts of helping hands on productivity was assessed using correlation with the help of SPSS software factor analysis.

Tab.11. Correlations(r) among various variables

Sr.No.	Variables	Correlation	Status
1	GIDC ↔. GIIC	0.58	Associated
2	GIIC↔GSIC	0.86	Strongly associated
3	GSIC↔GSFC	0.86	Strongly associated
4	GSFC↔GIDB	0.94	Strongly associated
5	GIDB↔INDEXTb	0.80	Strongly associated
6	INDEXTb↔IC	0.77	Strongly associated
7	IC↔ DIC	0.70	Strongly associated
8	DIC ↔NIP	0.60	Associated
9	NIP↔ SIP	0.87	Strongly associated
10	SIP↔VUIA	-	Not associated

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Table 11: Considering that significant correlations existed, a change in variable structure was expected. The rotation resulted in two factors, thus indicating two dimensional natures of construct of helping hands on productivity. The table shows correlations among various attributes helping improving industrial performance. For example GIDC is correlated with GIIC and the value of correlation (r) = 0.58 at significant level at $\alpha = 0.01$ and so on.

Model fitness: It is observed that there are 33(60%) non redundant residuals with absolute values greater than 0.05. Extraction Method used is Principal Component Analysis and Reproduced communalities and Residuals are computed between observed and reproduced correlations. There are 33 (60.0%) no redundant residuals with absolute values greater than 0.05. Lower the percentage of 'the non-respondent residuals with absolute values greater than 0.05', higher is the acceptability of the model fit. The values of residuals are 60%, which is higher than 50%, so the model is considered little weak, data explain to a large extent (Tables are not shown).

VI. RESEARCH LIMITATIONS

Though the research work was carried out successfully and the desired results were had at the end of the research there were certain constraints pertaining to the conduct of the research study in the organization. The times factor a very crucial part to carry out the research successfully and had desired results but as usual industries are always short of time, affect to the extent in this study. There were limitations to provide past records, financial data for the study and use and there were no such mechanism to keep up to date records. Initially, they have lot of reservation to give information of the questionnaire because that of researcher was assumed as government's agent collecting information for investigation and troubling. Of course this clot s were by giving written avowal from researcher and written appealing letter from general secretary of the Vitthal Udyog Nagar Industries Association (VUIA).Things got thinner after all these efforts and information with the exceptions were collected for this analysis and research studies.

VII. RESULTS AND DISCUSSION

Factor analysis helps us in reduction of data from 11 variables into two factors which described total variance explained by 73.049%. These are interpretable by two factors as: Factor1: Growth Helpe**rs** and Factor2: Growth Boosters. These various government agencies have their defined role to play in enhancing industrial development of the state including, Availability of basic resources, Finance, know-how, subsidies, incentives, production, planning and control phases for smooth running of the organization and health and wealth of both industries and industrialists ultimately leading to higher industrial productivity and helps improving living standard of the people.

Tab.12. Factor Extracted from Factor Analysis

Factor 1: Growth Helpers are: GIIC: Gujarat Industrial Investment Corporation, **GSIC**: Gujarat Small Industrial Corporation, **GSFC:** Gujarat State Financial Corporation, **GIDB:** Gujarat Infrastructure. Development Board, **INDEXTb**: Industrial Extension Bureau, **IC**: Industries Commissionnerate, **NIC**: National Industry Policy, **SIP:** State Industry Policy.

Factor 2: Growth Boosters are: GIDC: Gujarat Industrial Development Corporation, **DIC**: District Industries Centre, **VUIA**: Vitthal Udyog Nagar Industries Association.

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Tab. 12. Factor Extracted from Factor Analysis

Extracted Factor	Naming Factor	Variables associated with Factor	Description of Factor
Factor 1	**Growth Helpers**	**GIIC**, **GSIC**, **GSFC**, **GIDB**, **INDEXTb**, **IC:** Industries Commissionnerate, **NIC**: National Industry Policy, **SIP:** State Industry Policy.	These are all government agencies for helping industrialists to move growth to the defined target by utilizing whatever available resources and these helping hands are supposed to augment whatever is lagging, in scarcity to bring everything in the line with the changing global industrial scenario to make in-line pace with the changes of the days.
Factor 2	**Growth boosters**	**GIDC**, **DIC**: District Industries Centre, **VUIA**: VitthalUdyog Nagar Industries Association.	**GIDC & DICs** are considered as most responsible AUTHORITIES for the development of all the industrial estates of the Gujarat state. These are also called backbone of industrial growth. **VUIA:** Act as local leader resolving all day to day issues and feasible problems of the administration and execution of the strategies of the interest of all as well as of individuals.

VIII. CONCLUSION

The study mainly focused on finding out the major attributes of the role of the various helping hands to industrial growth of the state and its impacts on industrial productivity as perceived by the respondents of the organizations of the estate under study. The methodology adopted was structured questionnaire and the factor analysis was used using SPSS. The study shows that there are two major factors that explain 11 variables by these two factors and interpreting correctly. These factors contribute to the Growth of the industries as helpers /as growth machines and growth boosters. The knowledge of these factors is very useful in planning strategies and policy accordingly. So these attributes are of vital use in enhancing the business. The main aim is to boost industrial productivity.

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