CHAPTER – V

RESEARCH METHODOLOGY AND ANALYSIS

Sr. No.	Title
01	**Research Design and Tools**
	1 1 Data Sources
	1 2 Data Types
	1 3 Communication approach and data analysis
02	**Sampling and sample size determination**
	2.1 Population determination
	2 2 The sampling frame
	2 3 Sample size determination
03	**Design of questionnaire**
	3.1 Data collection objectives
	3 2 Questionnaire design
04	**Administration of questionnaires**
	4.1 Data compilation
	4 1.1 Validation of data
	4.1 2 Data editing
	4 1 3 Data computerization
05	**Data analysis**
	5 1 Respondents constructs
	5.2 Statistical analysis
06	**Result Summary**
	References

01 RESEARCH DESIGN AND TOOLS

1.1 Data Sources

Primary data :

Data sources identified and considered for primary survey for the research to measure the relative influence of the set of variables / attributes selected for the study are the Indian Ports and connected logistic services agencies engaged in handling of liquid chemicals cargo at various Ports. For this purpose, the data sources identified were categorized / grouped as under:

A. Major, Minor and Intermediate Ports in India.

B. The regulatory bodies

C. Importers, exporters, traders and users of port services.

D. Operators and logistic services providers.

In general, the companies those have specialized single servicing, vertical and irrelevant segment of the market are excluded.

Secondary data :

Data source on POL products and chemical products handled at various Indian ports between 1997-2001/2 and the available published and unpublished (secondary) data on the regulation and activities of Major and minor ports in India.

1.2 Data Types

The data types considered for interpretation and analysis in the research study primarily focuses to invite the opinions, perceptions and motives to draw and derive the inferences.

The data types have been identified primarily on the marketing variables of three types - (1) competitive priorities (2) customer centric and (3) perceived views on service quality and cost efficacy.

1.3 Communication approach and analysis

With a view to generate the primary literature from the survey through questionnaire, the data source groups were approached on all India basis. The data source groups were (1) ports (2) regulators (3) importers / exporters / traders / users of port services and (4) port connected logistic services providers.

The basis for analysis on the data types from the data sources broadly designed to assess the business competition and other contexts, the correlation perspectives in the market place and the customer orientation.

02 SAMPLING AND SAMPLE SIZE DETERMINATION

2.1 Population determination

The population determination was carried out for the four categories / groups of primary data source on following basis.

Nature of data source / category	Basis of determination
A. Ports	Considering 12 Major ports, and one corporatized port (Ennore Port) and 185 minor and intermediate ports as per the published reports, the population size taken as 198.

B.	Regulators	The port regulatory authority under the regulatory Acts and Statutes for major and minor / intermediate ports, the population size taken as 6 which consists of State Maritime Boards and Indian Port Authorities.
C.	Importers / Exporters / Traders and Users of port services	The basis of population determination is on the fair assessment basis considering the POL companies (majority Public Sector Undertakings) and chemical companies (including traders). There are no published data available to evidence the population size of this category Moreover, the data sources available under this category have chances of overlapping / duplication. Therefore, the population size has been determined in the range of 400-600.
D.	Ports connected logistic services providers	The secondary data for this category of data source has been derived from the available trade association publications. Considering the registered and unregistered port connected logistic agencies in India, the population size estimated in the rage of 600-800.

Accordingly, total data source population size was considered in the range of 1204-1604

2.2 The sampling frame

The sample was framed for the respective category / group of the data source in proportion to its population size (the population being not so large) in the range of 5 75% (lowest) to 33.33% (highest) of the population size, which was considered adequate to represent the respective category / group and for the overall study.

2.1 Sample size determination

Based on the sample frame, the sample size was determined for the respective data source category / group as under:

	Nature of source category	Sample size (Nos.)
A.	Ports	22
B.	Regulators	2
C.	Importers / Exporters / Traders and Users of port services	38
D.	Ports connected logistic services providers	46
	TOTAL	108

03 DESIGN OF QUESTIONNAIRE

3.1 Data collection objectives

The design of questionnaire was primarily to generate primary data that could be analyzed to draw inferences, which would throw light on the following data collection objectives ·

1. To obtain impressions about the presence or absence of marketing practices at ports handling liquid cargo.

2. To obtain the opinions on the factors determining market place and customer service priorities.
3. To obtain perceptions on the relationships, if any, between the customer centric variables and competitive strengths.
4. To obtain opinions on the priorities towards marketing stances.
5. To obtain the opinions on the nature of competition at Indian Ports.

3.2 Questionnaire design

The questionnaire was designed to address the array of issues on business level and organizational aspects, perspective on market place, competition, customer orientation and marketing practice implementation (as per Appendix 04).

The questions in the questionnaires were grouped into 3 sub-groups to ascertain / analyze the same for further analysis of responses to facilitate and draw the inferences and ascertain the presence or absence of correlation, if any and also make it meaningful for statistical tests.

04 ADMINISTRATION OF QUESTIONNAIRES

The questionnaires were mailed to key persons of 108 select medium and large Port and Port based agencies in India. These agencies were selected to represent the cross-section of size, industry type, and performance. Some experts opinions were taken to obtain horizontal and cross industry views.

The response, however, was low and slow initially. Follow-up letters were sent and phone calls made to many in order to remind them of the questionnaire. Duplicate copies of the questionnaire were mailed to many agencies. Finally, the number of valid questionnaires the researcher used for

this study and analysis were 48.

4.1 Data compilation

4.1.1 Validation (verification) of data

The responded questionnaires were compiled. Same were assessed and sorted to category / group responses

4.1.2 Data editing process

The category / group-wise responses finally edited were as under:

Category (Group)	Nos. of Responses	% to sample size	% to population size
A	8	36.36	4.04
B	1	50.00	16.67
C	19	50.00	4.75-3.17
D	20	43.48	3.33-2.5
Total	48	44.44	3.99-2 99

4.1.3 Data computerization

The response data of the questionnaires were entered into a computer and data formatted to work sheets for further analysis (worksheets for sub-groups and overall aggregates – Appendix 03).

05 DATA ANALYSIS

5.1 Respondents constructs

The survey was undertaken to understand the competitiveness and the related contexts on selective basis for Port related infrastructure agencies in India engaged in handling liquid cargo. The questionnaire comprised of questions on business profile, Competitive health check for quality service dimension, Managing innovation for

competitive advantage and Customer concerns. The three dimensional questions were– those which required the agencies to rate and prioritize various aspects vis-à-vis their marketing concerns (on a defined scale); those that required the agencies to rate the nature of past and future perceptions in marketing efforts and business dynamics in order to improve the competitiveness of; and those that required the agencies to give information on various performance parameters for customer satisfaction.

The sample consisted of agencies that have been generally performing well and representing the selected domain for the study.

In general, the Infrastructure competition in India is yet to evolve a structured form. It has not been established whether the chemical industry in particular, the downtrend in the recent past was an implication of a larger international phenomenon or whether it is due to a restructuring of the Indian chemicals and infrastructure environment in the face of new competition or whether it is reflective of any decline in competitiveness.

The question that wants an answer to, is how competitive are the Port Infrastructure agencies in Indian Market Place?

To answer the above questions and to find meaningful solutions, it is required to understand the environment under which Port Infrastructure agencies are operating and the issues that those Indian Port Infrastructure Agencies are grappling with.

Whether these agencies are fundamentally changing the way their service provider operations and customer relationship management

are organized, needs to be examined. Moreover, the perception of the Port based agencies about their own operations needs to be evaluated vis-à-vis the perception of external commentators.

In essence, it needs to examine the process of change in these Port based Infrastructure agencies and their impact on the competitiveness in order to comment on the health of this sector. This has been the prime focus to undertake this perspective study on the marketing practices on its structure, nature and level of adequacies and on the competitiveness of market for the Indian Port Infrastructure.

The survey and analysis presents an aggregate picture of the trends, the marketing practices as well as the service capabilities that have been developed by Indian Ports and by the port based Infrastructure agencies engaged in handling of liquid cargo.

5.2 Statistical and descriptive analysis

A scan of all the responses question-wise was carried out to understand the response value and to draw the inferences. Also, the desired statistical and descriptive analysis was carried out objectively to test the survey results. The scan outcome and the findings are as under:

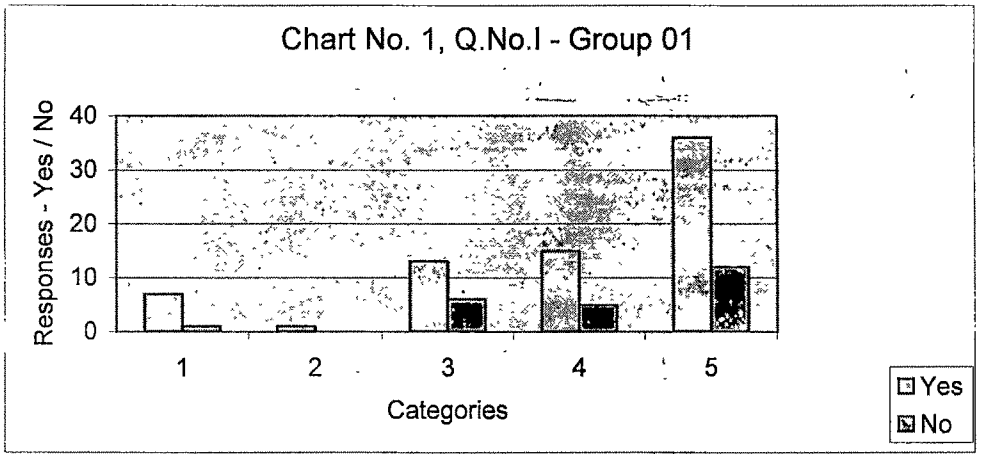
A. Descriptive analysis :

GROUP 01

Q.No.I Whether presence of competition and need for Marketing efforts for quality service & cost efficacy is there or not ?

Various categories (A,B,C & D) were asked on Yes or No dimension to respond on the presence or absence of competition and need for marketing efforts for quality service & cost efficacy.

The responses are presented in graph No. 1 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

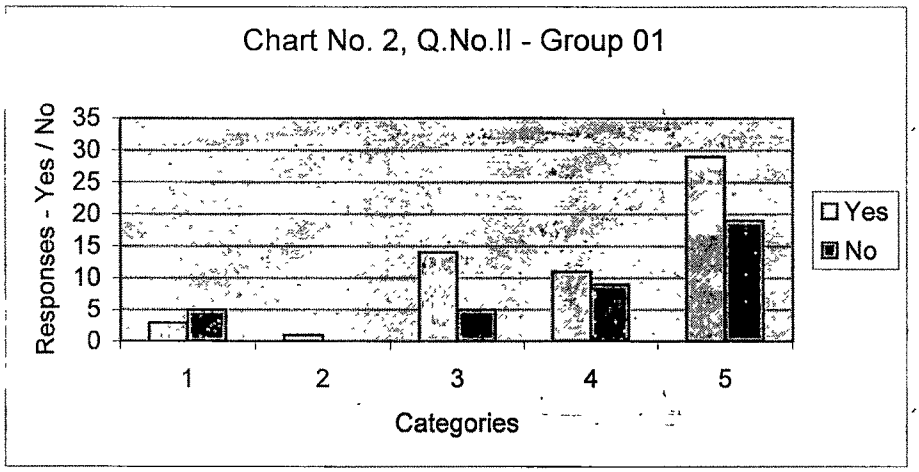
Category	Nos. of response	Yes (%)	No (%)
A	8	87.5	12.5
B	1	100	NIL
C	19	68.4	31.6
D	20	75	25
Overall	48	75	25

It can be inferred that majority respondents confirm need of the presence of competition for marketing efforts for quality service and cost efficacy.

Q.No. II Whether presence of good marketing to improve quality of service and cost efficacy for user requirements is there or not ?

Various categories (A,B,C & D) were asked on Yes or No dimension to respond on the presence or absence of good marketing to improve quality of service & cost efficacy for user requirements.

The responses are presented in graph No. 2 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

Category	Nos of response	Yes (%)	No (%)
A	8	37.5	62.5
B	1	100	NIL
C	19	73.68	26.32
D	20	55	45
Overall	48	60.42	39.58

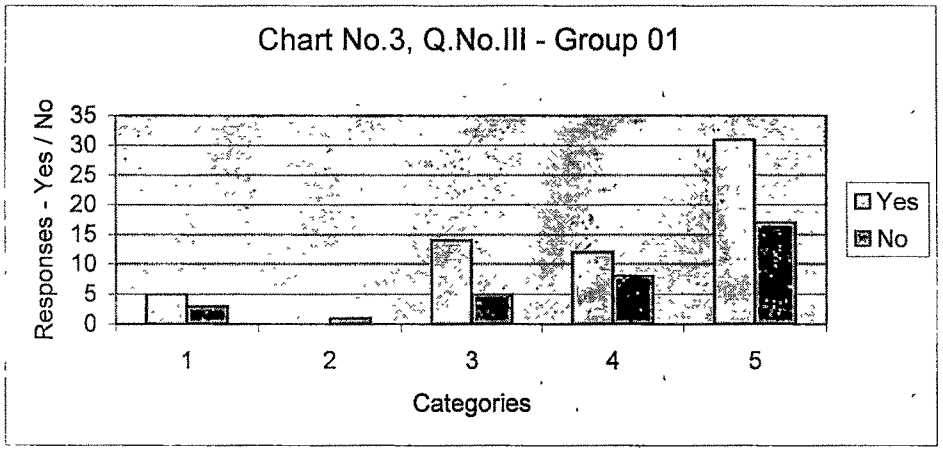
It can be inferred that category-A has negatively opined by 62.56% on the presence of good marketing for improvement in quality of service and cost efficacy. The other

categories however opined 100%, 73.68% and 55% respectively that presence of good marketing is required for improvement in quality service and cost efficacy. Considering overall responses, 60.42% opined presence of good marketing for improvement in quality of service and cost efficacy.

Q No. III Whether the respondent supports privatization in Ports ?

Various categories (A,B,C & D) were asked on Yes or No dimension to respond whether they support privatization in ports or not.

The responses are presented in graph No. 3 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

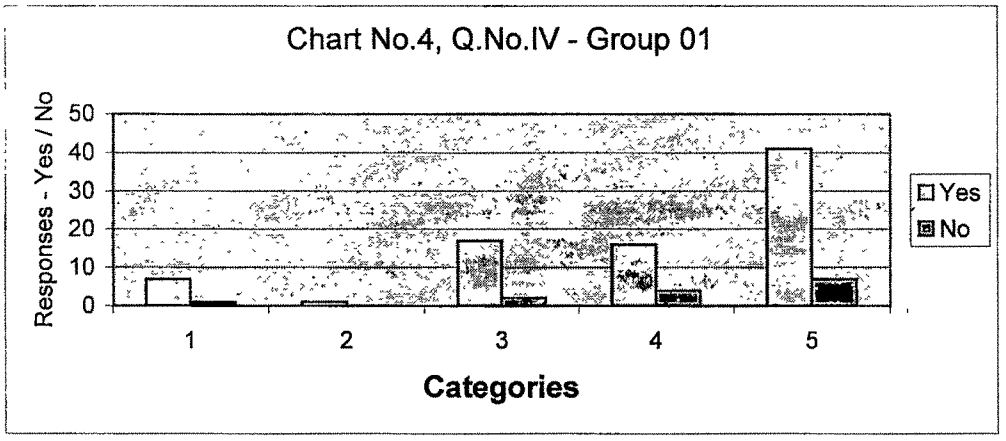
Category	Nos. of response	Yes (%)	No (%)
A	8	62.5	37.5
B	1	NIL	100
C	19	73.68	26.32
D	20	60	40
Overall	48	64.58	35.42

It can be inferred that category-B has negatively opined by 100% and do not support port privatization. The other categories (A, C & D) however supported port privatization by 62.5%, 73.68% and 60% respectively. Considering overall responses, 64.58% supports the port privatization.

Q No. IV Whether the respondent considers quality of service essential for customer care and as a good marketing practice or not ?

Various categories (A,B,C & D) were asked on Yes or No dimension to give opinion whether quality of service is essential or not for customer care and as a good marketing practice.

The responses are presented in graph No. 4 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

Category	Nos. of response	Yes (%)	No (%)
A	8	87.5	12.5
B	1	100	NIL
C	19	89.47	10.53
D	20	80	20
Overall	48	85.42	14.58

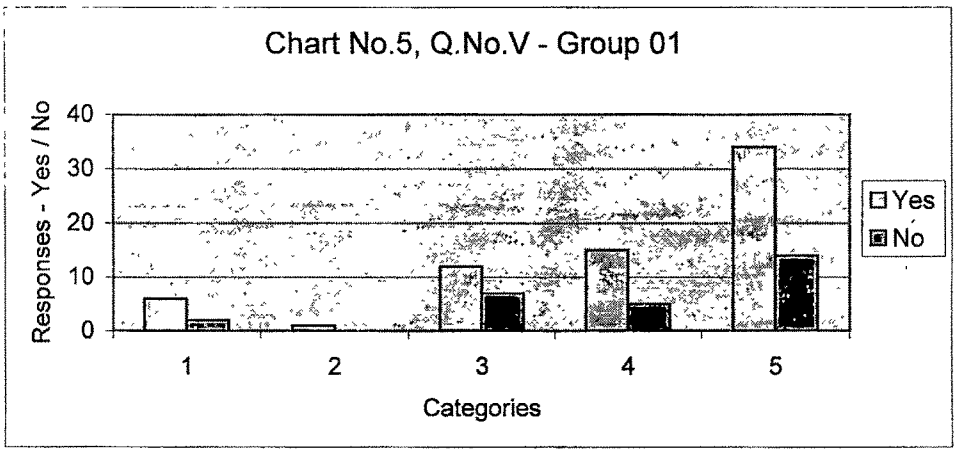
It can be inferred that all categories consider that quality of service is essential for customer care and also as a good marketing practice. It is significant to note that all (above 80%) perceives strength in quality of service as a good marketing practice

Q.No. V Will the Quality certification in Port Infrastructure services help to market port facilities / services?

Various categories (A,B,C & D) were asked on Yes or No dimension to give their opinion whether or not quality certification in port infrastructure will help to market port facilities / services.

The researcher considers (like in other manufacturing and service industries, where the ISO certification helped as a marketing tool to market the products and services), it essential to know by this question, opinion of the respondents whether quality certification will help in marketing port facilities.

The responses are presented in graph No. 5 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

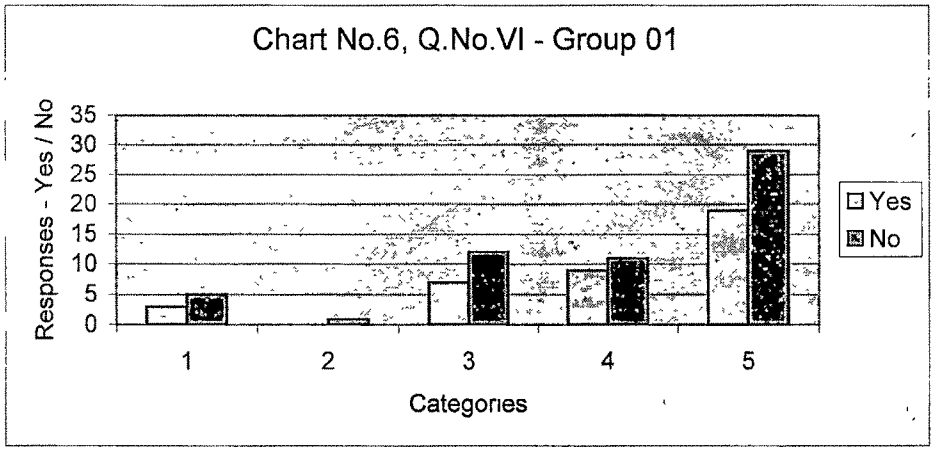
Category	Nos. of response	Yes (%)	No (%)
A	8	75	25
B	1	100	NIL
C	19	63.16	36.84
D	20	75	25
Overall	48	70.83	29.17

It can be inferred that all categories consider that quality certification will help in marketing of port facilities. Since overall response is beyond 70%, it can also be inferred that relatively this aspect is important in marketing of port infrastructure facilities and the marketer should take into consideration the aspects of quality certification in devising its marketing plan and practice

Q.No VI Do you consider MNC's presence beneficial in Port based Infrastructure Project ?

Various categories (A,B,C & D) were asked on Yes or No dimension a pertinent question whether they consider presence of multinational companies in port infrastructure projects beneficial or otherwise.

The responses are presented in graph No. 6 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

Category	Nos. of response	Yes (%)	No (%)
A	8	37.5	62.5
B	1	NIL	100
C	19	36.84	63.16
D	20	45	55
Overall	48	39.58 250	60.42

Interestingly all categories except Category-B do not consider the presence of MNC's as beneficial for port infrastructure projects. Category-A (62.5%), C (63.16%) & D (55%) consider presence of MNC's not beneficial for port infrastructure projects. However Category-B the ports & port regulator consider the same as beneficial in port projects.

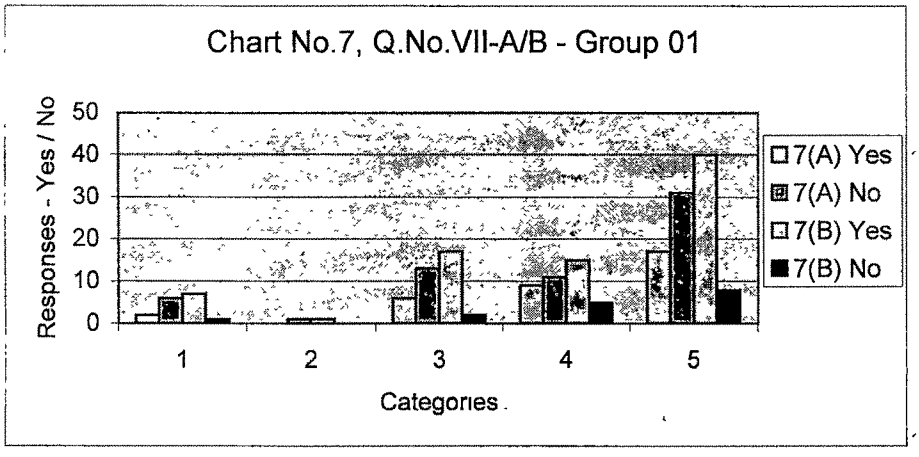
Q.No.VII Can following create a market place for exchange of goods and services for Port based infrastructure industries?

A. Attractive M&A.

B Synergism benefitting port developers & users

Various categories (A,B,C & D) were asked on Yes or No dimension on a split question in A & B, whether attractive M&A (mergers and acquisition) and synergism benefiting port developers & users can create market place or not for port based infrastructure industries.

The responses are presented in graph No. 7 A / B hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

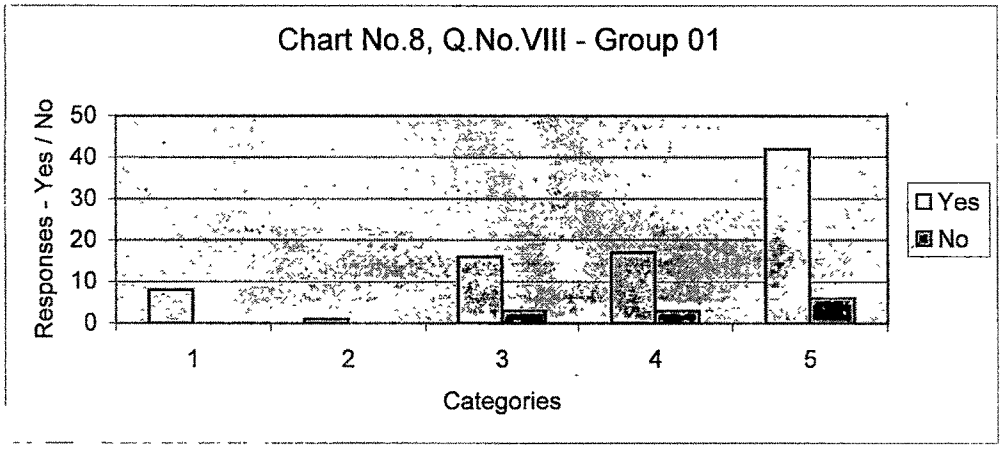
Category	Nos. of response	7A		7B	
		Yes (%)	No (%)	Yes (%)	No(%)
A	8	25	75	87.5	12.75
B	1	NIL	100	100	NIL
C	19	31.58	68.42	89.47	10.53
D	20	45	55	75	25
Overall	48	35.42	64.58	83.33	16.67

The graph reveals that all the categories are not supporting the attractive merger and acquisition process in port projects and opines that it will not help to create market place for the port projects. Contrary to this, synergism for port developers and users have been considered by all the categories a most favoured reform, which can create market place for port projects. It can be seen that more than 80% has supported synergism, which can help to create market place in port projects.

Q No. VIII Do you consider that special economic zone for import / export of liquid cargo will help the industries and the port based infrastructure project ?

Various categories (A,B,C & D) were asked on Yes or No dimension whether or not special economic zone for the liquid cargo will help industries and port infrastructure projects Views were invited by this question in the background of the regulatory reforms in port sector and measures for economic growth in the country.

The responses are presented in graph No. 8 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

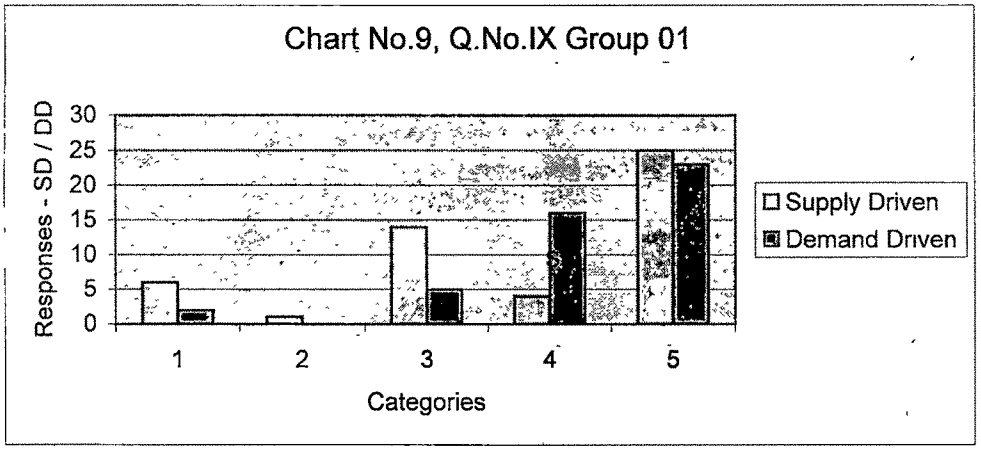
Category	Nos. of response	Yes (%)	No (%)
A	8	100	NIL
B	1	100	NIL
C	19	84.22	15.78
D	20	85	15
Overall	48	87.5	12.5

The response scans and the chart above reveals that all categories view special economic zone as an essential reform to give boost to international trade, chemical industries and ports and port based infrastructure projects. It is indicative from the very high response to the Yes dimension.

Q.No. IX Indicate present market for port and port infrastructure services whether it is supply driven or demand driven ? 1 indicates supply driven and 2 indicates demand driven.

It was considered essential to know the nature of the market whether it is market driven or demand driven. Opinions of the respondents were invited by assigning (1) one if it is supply driven and by assigning (2) two if it is demand driven.

The responses are presented in graph No. 9 hereunder:



The graph and the responses reveals that category wise percentage response either in Yes or No are as under:

Category	Nos. of response	Supply Driven (%)	Demand Driven (%)
A	8	75	25
B	1	100	NIL
C	19	73.68	26.32
D	20	20	80
Overall	48	52.08	47.92

The responses scans reveals uniformity in the opinions about the present market as supply driven amongst Category A, B &C; whereas Category D considers the present market as demand driven. Considering overall responses position, 52 08% opines that it is supply driven and 47.92% opines that it is demand driven. It can be inferred from this that though opinion defers amongst several port entities, there is relative dilution from the natural monopoly (port – supply forces) to the competitive (demand forces) environment.

B. Statistical Analysis : GROUP 02 & 03

Based on the responses distribution of the Group-02 and Group-03 Questions, a further statistical analysis applying statistical tools and measures was carried out Considering the aspect of relevancy to the observed values for drawing inferences and derive significance of the variables under study, following statistical measures and tests were carried out.

a. To understand the correlation, if any between category of the respondents and between some of the variables, correlation coefficients were calculated.

b To understand the level of significance Multivariate factor analysis (Principal Component Analysis - using rotation method: Varimax with Kaiser normalization) was carried out.

c. The rank sum test using Kendall's coefficients of concordance (W) Test method.

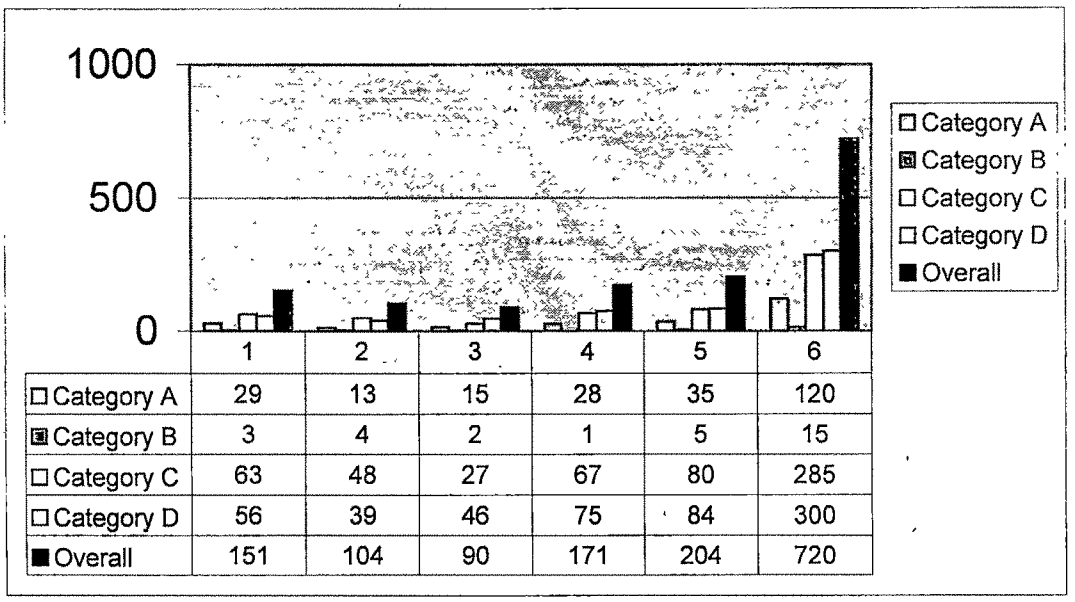
GROUP 02

Q.No. I

Essentials of good marketing services in order of priority (1 to 5), wherein 1 indicates highest priority and 5 indicates lowest priority.

01. Quality of deliverable services
02. Timely service
03. Price
04. Flexibility
05. Service customization / dimension

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6
Category A	29	13	15	28	35	120
Category B	3	4	2	1	5	15
Category C	63	48	27	67	80	285
Category D	56	39	46	75	84	300
Overall	151	104	90	171	204	720

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables		**Priority (Rank) value (category wise)**				
		A	B	C	D	**Overall**
01	Quality of deliverable services	4	3	3	3	**3**
02	Timely service	1	4	2	1	**2**
03	Price	2	2	1	2	**1**
04	Flexibility	3	1	4	4	**4**
05	Service customization / dimension	5	5	5	5	**5**

GROUP 02 QUESTION NO.I STASTICAL ANALYSIS

Notes

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Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 00

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	3 00	151 00	60 4000	55 9357
VAR00002	5	4.00	104 00	41 6000	39 2849
VAR00003	5	2 00	90 00	36 0000	34 2564
VAR00004	5	1 00	171 00	68 4000	64 7055
VAR00005	5	5 00	204 00	81 6000	75 8769
Valid N (listwise)	5				

Factor Analysis

Notes

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Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	4100 (4 004K) bytes
	Elapsed Time	0 00 00 05

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005
Correlation	VAR00001	1 000	994	.970	995	998
	VAR00002	994	1 000	959	990	993
	VAR00003	970	959	1 000	988	984
	VAR00004	995	990	988	1 000	999
	VAR00005	998	993	.984	999	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite

Communalities

	Raw Initial	Rescaled Initial
VAR00001	3128 800	1 000
VAR00002	1543 300	1 000
VAR00003	1173 500	1 000
VAR00004	4186 800	1 000
VAR00005	5757.300	1 000

Extraction Method Principal Component Analysis.

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	15708 300	99 484	99 484
	2	67 737	429	99 913
	3	11 272	7 139E-02	99 985
	4	2 391	1 514E-02	100 000
	5	1 516E-12	9 599E-15	100 000
Rescaled	1	15708 300	99 484	99 484
	2	67 737	429	99 913
	3	11 272	7 139E-02	99 985
	4	2 391	1 514E-02	100 000
	5	1 516E-12	9 599E-15	100 000

Extraction Method Principal Component Analysis.

a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	199
VAR00002	098
VAR00003	073
VAR00004	266
VAR00005	366

Extraction Method. Principal Component Analysis.
Rotation Method Varimax with Kaiser Normalization

a Coefficients are standardized

Component Score Covariance Matrix

Component	1
1	1 000

Extraction Method. Principal Component Analysis
Rotation Method Varimax with Kaiser Normalization

NPar Tests

Notes

Output Created		01-JAN-2002 00 14 15
Comments		
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	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	13107 cases
	Elapsed Time	0 00 00 11

a Based on availability of special working memory

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	60 4000	55 9357	3 00	151 00
VAR00002	5	41 6000	39.2849	4 00	104 00
VAR00003	5	36 0000	34 2564	2 00	90 00
VAR00004	5	68 4000	64 7055	1.00	171 00
VAR00005	5	81 6000	75 8769	5 00	204 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	3 20
VAR00002	2 00
VAR00003	1 60
VAR00004	3 20
VAR00005	5 00

Test Statistics

N	5
Kendall's W(a)	704
Chi-Square	14 080
df	4
Asymp. Sig.	007

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

1. Using KENDALL'S – W method of concordance, the variable 03 i.e. price holds the highest degree of importance to form the most essential factor for good marketing services, whereas the variable 05 i.e. service customization / dimension holds the least degree of importance. The other factors like timely service, quality of deliverable services and flexibility fall in the moderate degree of importance. The coefficient of concordance (W) is 0.704 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=4 is 14.080 which is very close to the level of significance value of 9.49 with d.f=4, and it indicates that there is a very high degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is very high correlation between the variable no.1 (quality of deliverable services) with variable no. 5 (service customization / dimension) of 0.998, between the variable no. 2 (timely service) with variable no. 1 (quality of deliverable services) of 0.994; between the variable no. 3 (price) with variable no.4 (flexibility) of 0.988; between variable no. 4 (flexibility) with variable no. 5 (service customization / dimension) inter se of 0.999. There is least correlation observed between variable no. 3 (price) with variable no. 2 (timely service) of 0.959. Overall, the variables are highly correlated.
4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of

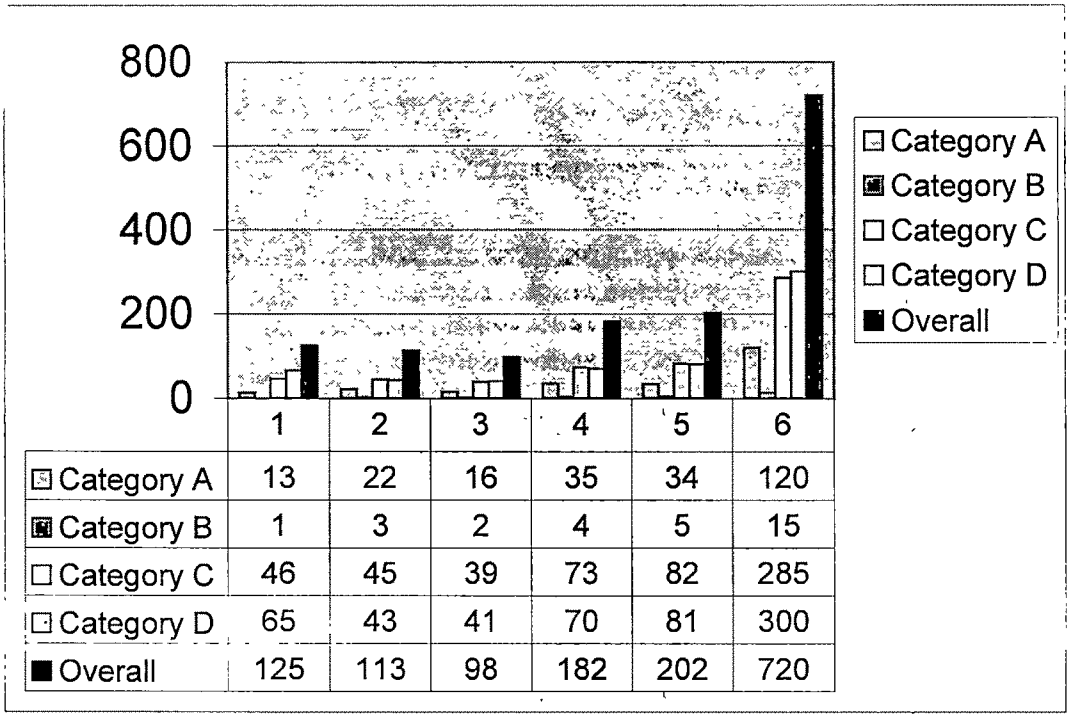
the significance for the ranking decisions.

Q.No. II

What contributes always to customer satisfaction in order of priority (1 to 5), wherein 1 indicates highest strength and 5 indicates the lowest strength ?

01. Low Price
02. Performance Quality
03 On time service
04. Service reliability
05. Continued services

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6
Category A	13	22	16	35	34	120
Category B	1	3	2	4	5	15
Category C	46	45	39	73	82	285
Category D	65	43	41	70	81	300
Overall	125	113	98	182	202	720

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	**Priority (Rank) value (category wise)**				
	A	B	C	D	**Overall**
01 Low Price	1	1	3	3	**3**
02 Performance Quality	3	3	2	1	**2**
03 On time Service	2	1	1	2	**1**
04 Service Reliability	5	4	4	4	**4**
05 Continued Services	4	5	5	5	**5**
	262				

GROUP 02 QUESTION NO.II STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 19 23
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 28

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	1 00	125 00	50 0000	49 0816
VAR00002	5	3 00	113 00	45.2000	41 5957
VAR00003	5	2 00	98 00	39 2000	36 6838
VAR00004	5	4 00	182 00	72 8000	67 2585
VAR00005	5	5 00	202 00	80 8000	75 2110
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 20 27
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	4100 (4 004K) bytes
	Elapsed Time	0 00 00 00

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005
Correlation	VAR00001	1.000	977	988	978	984
	VAR00002	977	1 000	998	1 000	999
	VAR00003	988	998	1 000	998	1 000
	VAR00004	978	1 000	.998	1 000	999
	VAR00005	984	999	1 000	999	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = .000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	2409 000	1 000
VAR00002	1730.200	1 000
VAR00003	1345 700	1 000
VAR00004	4523 700	1 000
VAR00005	5656 700	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	15584 904	99 487	99 487
	2	78 769	503	99 990
	3	1 567	1 001E-02	100 000
	4	6 002E-02	3 831E-04	100 000
	5	-2 063E-14	-1 317E-16	100 000
Rescaled	1	15584 904	99 487	99 487
	2	78 769	503	99 990
	3	1 567	1 001E-02	100 000
	4	6 002E-02	3 831E-04	100 000
	5	-2 063E-14	-1 317E-16	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	153
VAR00002	111
VAR00003	.086
VAR00004	290
VAR00005	363
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1.000
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created		01-JAN-2002 00 21 00
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	13107 cases
	Elapsed Time	0 00 00 06
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	50 0000	49 0816	1 00	125 00
VAR00002	5	45 2000	41 5957	3 00	113 00
VAR00003	5	39 2000	36 6838	2 00	98 00
VAR00004	5	72 8000	67 2585	4 00	182 00
VAR00005	5	80.8000	75 2110	5 00	202 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	2 20
VAR00002	2 40
VAR00003	1 40
VAR00004	4 20
VAR00005	4 80

Test Statistics

N	5
Kendall's W(a)	824
Chi-Square	16 480
df	4
Asymp. Sig.	002

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

1. Using KENDALL'S – W method of concordance, the variable 03 i.e. on time service holds the highest degree of importance which contributes the most towards customer satisfaction, whereas the variable 05 i.e. continued services holds the least degree of importance. The other factors like performance quality, low price and service reliability fall in the moderate degree of importance The coefficient of concordance (W) is 0.824 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=4 is 16.486 which is very close to the level of significance value of 9.49 with d.f=4, and it indicates that there is a very high degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is perfect correlation between the variable no.3 (on time service) with variable no. 5 (continued services) and between the variable no. 4 (service reliability) with variable no. 2 (performance quality). There is very high degree of correlation between variable no. 1 (low price) with variable no. 3 (on time service) of 0.988. There is least correlation observed between variable no 4 (service reliability) with variable no. 1 (low price) of 0.978. Overall, the variables are highly correlated.
4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

Q.No. III

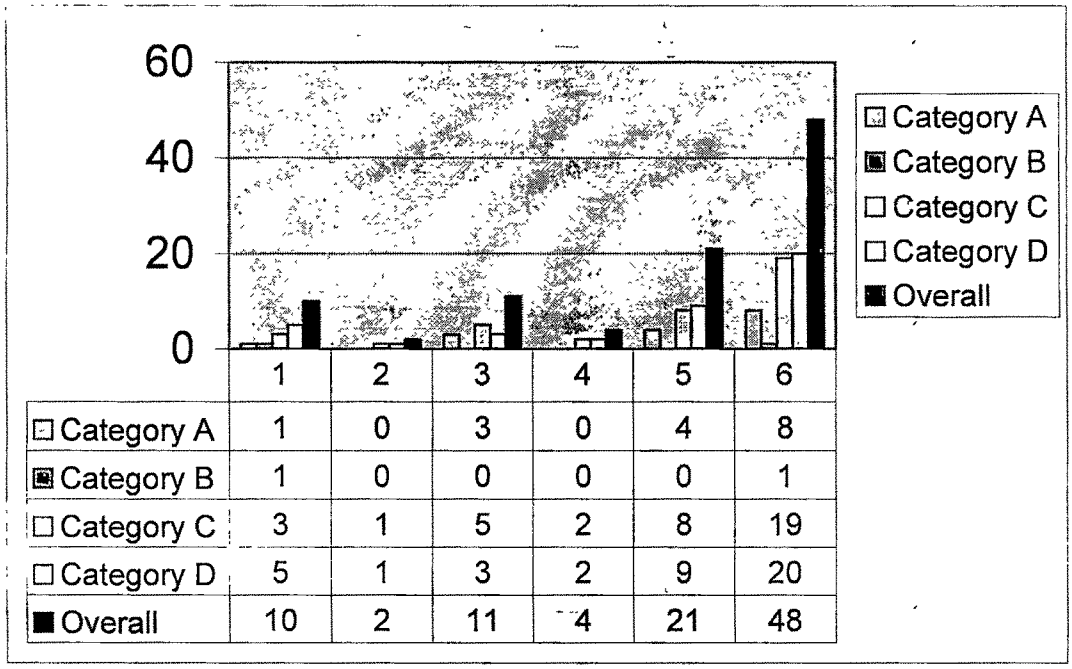
What is present business environment in Indian operating Ports & Terminals?

01. Monopolistic

03. Imperfect competition

05. Users' sovereign

The Graphical presentation of the points value to the nature and level of competition in the present business environment and rank type values are as under:



	1	2	3	4	5	6
Category A	1	0	3	0	4	8
Category B	1	0	0	0	0	1
Category C	3	1	5	2	8	19
Category D	5	1	3	2	9	20
Overall	10	2	11	4	21	48

Based on the responses, the present status of competition in the current business environment, in order of rank value assigned is as under:

Variables	**Priority (Rank) value (category wise)**				
	A	B	C	D	**Overall**
01 Monopolistic	3	1	3	2	**3**
02 Perfect competition	0	0	5	5	**5**
03 Imperfect competition	2	0	2	3	**2**
04 Fierce competition	0	0	4	4	**4**
05 Users' Sovereign	1	0	1	1	**1**

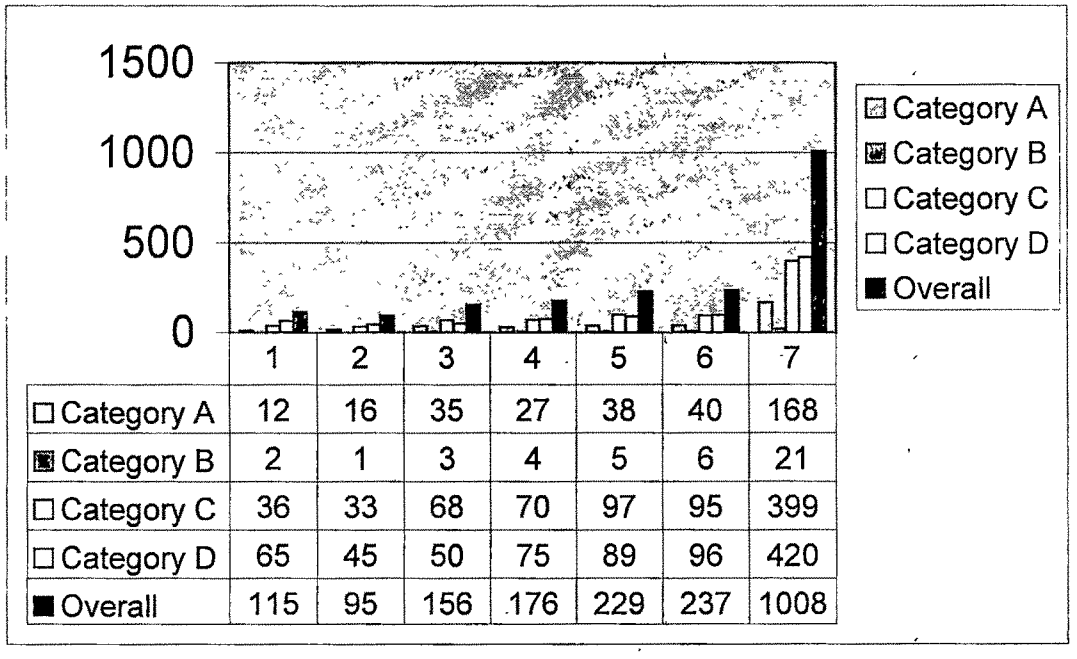
Inferences The variable 05 i.e. users' sovereign holds the highest value of response which indicates that the present business environment in Indian operating ports & terminals is dominated by the users and that there is no perfect competition. It can also be inferred that the nature of competition is imperfect but dominated by the users.

Q.No. IV

In the opinion of the respondent which are the best marketing practices to keep the customers of Ports & Terminals satisfied in all respects ?

01. Customer concern the highest priority
02. Quality service dimension.
03. Matching with competition health check.
04. Low price capabilities.
05. Flexibility
06. Continued services

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6	7
Category A	12	16	35	27	38	40	168
Category B	2	1	3	4	5	6	21
Category C	36	33	68	70	97	95	399
Category D	65	45	50	75	89	96	420
Overall	115	95	156	176	229	237	1008

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	Priority (Rank) value (category wise)				
	A	B	C	D	**Overall**
01 Customer concern is the highest Priority	1	2	2	3	**2**
02 Quality service dimension	2	1	1	1	**1**
03 Matching with competition health Check	4	3	3	2	**3**
04 Low price capabilities	3	4	4	4	**4**
05 Flexibility	5	5	6	5	**5**
06 Continued Services	6	6	5	6	**6**

GROUP02-QUESTION NO.IV STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 25 53
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 var00006 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 00

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	2 00	115 00	46 0000	45 5906
VAR00002	5	1 00	95 00	38 0000	35 9722
VAR00003	5	3 00	156 00	62 4000	57 5004
VAR00004	5	4 00	176 00	70 4000	66 0780
VAR00005	5	5 00	229 00	91 6000	85 5675
VAR00006	5	6 00	237 00	94 8000	88 1913
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 26 44
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 var00006 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 var00006 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	5544 (5 414K) bytes
	Elapsed Time	0 00 00 00

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006
Correlation	VAR00001	1 000	990	926	977	962	970
	VAR00002	990	1 000	969	995	988	993
	VAR00003	926	969	1 000	984	993	990
	VAR00004	977	995	984	1 000	998	999
	VAR00005	962	988	993	998	1 000	999
	VAR00006	970	993	990	999	999	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = .000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	2078 500	1 000
VAR00002	1294 000	1 000
VAR00003	3306 300	1 000
VAR00004	4366 300	1 000

VAR00005	7321 800	1 000
VAR00006	7777 700	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	25921 726	99 148	99 148
	2	213 028	815	99 962
	3	9 470	3 622E-02	99 999
	4	376	1 440E-03	100 000
	5	2 720E-13	1 040E-15	100 000
	6	-3 518E-13	-1 346E-15	100 000
Rescaled	1	25921 726	99 148	99 148
	2	213 028	815	99 962
	3	9 470	3 622E-02	99 999
	4	376	1 440E-03	100 000
	5	2 720E-13	1 040E-15	100 000
	6	-3 518E-13	-1 346E-15	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted.

Rotated Component Matrix(a)

a Only one component was extracted. The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	.078
VAR00002	050
VAR00003	126
VAR00004	168
VAR00005	282
VAR00006	300
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method: Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created		01-JAN-2002 00 27 15
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 var00006 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	11915 cases
	Elapsed Time	0 00 00 05
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	46 0000	45 5906	2 00	115 00
VAR00002	5	38 0000	35.9722	1 00	95 00
VAR00003	5	62 4000	57 5004	3 00	156 00
VAR00004	5	70 4000	66 0780	4 00	176 00

VAR00005	5	91 6000	85 5675	5 00	229 00
VAR00006	5	94 8000	88 1913	6 00	237 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	2 00
VAR00002	1.20
VAR00003	3 00
VAR00004	3 80
VAR00005	5 20
VAR00006	5 80

Test Statistics

N	5
Kendall's W(a)	918
Chi-Square	22 943
df	5
Asymp. Sig.	000

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

1. Using KENDALL'S – W method of concordance, the variable 02 i.e. on Quality service dimension holds the highest degree of strength which contributes the most to form the best marketing practice for customers satisfaction in port and terminal services, whereas the variable 06 i.e. continued services holds the least degree of strength. The other factors like the customer concern, matching with competition health check, low price capabilities and flexibility fall in the middle and moderate degree of strength. The coefficient of concordance (W) is 0.918 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=5 is 22.943 which is higher to the level of significance value of 11.07 with d.f=5, and it indicates that there is good degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is very high correlation between the variable no.1 (customer concern the highest priority) with variable no. 2 (quality service dimension) of 0.990, between the variable no. 2 (quality service dimension) with variable no. 4 (low price capabilities) of 0.995; between the variable no. 3 (matching with competition health check) with variable no. 5 (flexibility) of 0.993; between variable no. 4 (low price capabilities) with variable no. 6 (continued services) inter se of 0.999 and between variable no. 5 (flexibility) with variable no. 6 (continued services) inter se of 0.999. There is least correlation observed between variable no. 1 (customer concern the highest priority) with variable no. 3 (matching with competition health check) of 0.926. Overall, the variables are highly correlated.

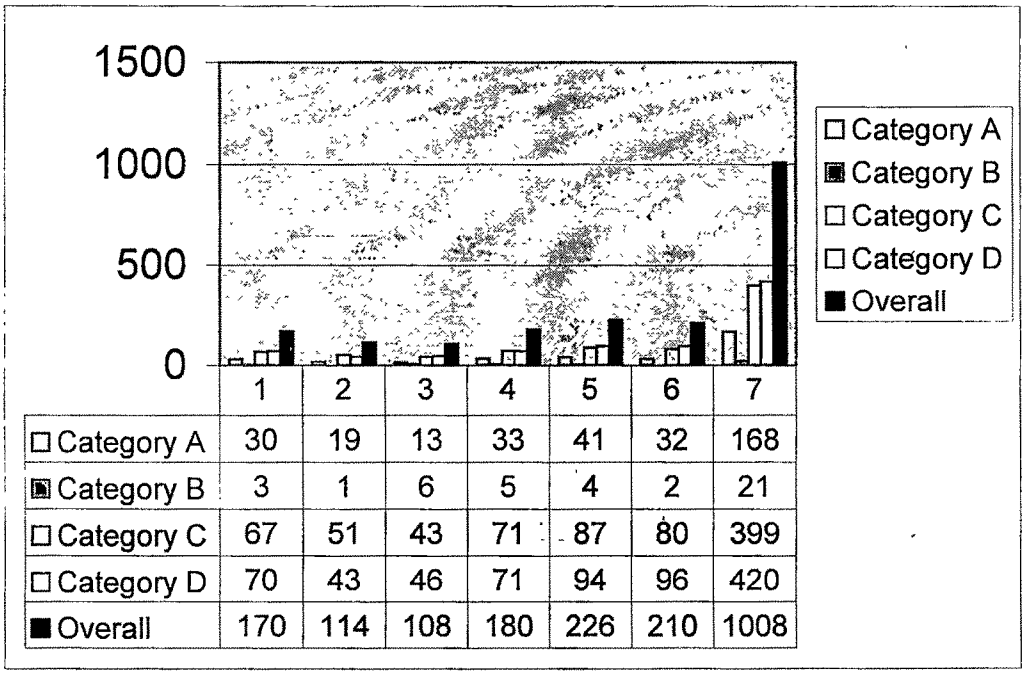
4 The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

Q.No. V

Respondent's opinion : Which sound information makes the marketing decisions sound ? (in order of priority 1 to 6, wherein 1 indicates most sound and 6 indicates lowest one).

01. Marketing philosophy
02. User / customer expectations
03. Competitors' strength & weaknesses.
04. Opportunities.
05. Threats.
06. Market risks

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6	7
Category A	30	19	13	33	41	32	168
Category B	3	1	6	5	4	2	21
Category C	67	51	43	71	87	80	399
Category D	70	43	46	71	94	96	420
Overall	170	114	108	180	226	210	1008

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	**Priority (Rank) value (category wise)**				
	A	B	C	D	**Overall**
01 Marketing Philosophy	3	3	3	3	**3**
02 User / customer expectations	2	1	2	1	**2**
03 Competitors' strengths and Weaknesses	1	6	1	2	**1**
04 Opportunities	5	5	4	4	**4**
05 Threats	6	4	6	5	**6**
06 Market risks	4	2	5	6	**5**

GROUP 02-QUESTION NO.V STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 31 23
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 var00006 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 00

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	3 00	170.00	68 0000	63 3995
VAR00002	5	1 00	114.00	45.6000	43 0442
VAR00003	5	6 00	108 00	43 2000	40 3200
VAR00004	5	5 00	180 00	72 0000	66 4756
VAR00005	5	4 00	226 00	90 4000	84 1386
VAR00006	5	2 00	210 00	84 0000	79 7872
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 32 19
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE: User-defined missing values are treated as missing
	Cases Used	LISTWISE. Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 var00006 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 var00006 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	5544 (5 414K) bytes
	Elapsed Time	0 00 00 00

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006
Correlation	VAR00001	1 000	996	996	1 000	1 000	998
	VAR00002	996	1 000	992	997	995	990
	VAR00003	996	992	1 000	995	995	996
	VAR00004	1 000	997	995	1 000	999	996
	VAR00005	1 000	.995	995	999	1 000	998
	VAR00006	998	990	996	996	998	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	4019 500	1 000
VAR00002	1852 800	1 000
VAR00003	1625 700	1 000
VAR00004	4419 000	1 000

VAR00005	7079 300	1 000
VAR00006	6366 000	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	25305 406	99 776	99 776
	2	37 371	147	99 923
	3	13 834	5 455E-02	99 978
	4	5 689	2 243E-02	100 000
	5	2 285E-13	9 008E-16	100 000
	6	-9 829E-13	-3 875E-15	100 000
Rescaled	1	25305 406	99 776	99 776
	2	37 371	147	99 923
	3	13 834	5 455E-02	99 978
	4	5 689	2 243E-02	100 000
	5	2 285E-13	9 008E-16	100 000
	6	-9 829E-13	-3 875E-15	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	159
VAR00002	073
VAR00003	064
VAR00004	174
VAR00005	280
VAR00006	251
Extraction Method Principal Component Analysis Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method Principal Component Analysis Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created		01-JAN-2002 00 32 47
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 var00006 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	11915 cases
	Elapsed Time	0 00 00 06
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	68 0000	63 3995	3 00	170 00
VAR00002	5	45 6000	43 0442	1 00	114 00
VAR00003	5	43 2000	40 3200	6 00	108 00
VAR00004	5	72 0000	66 4756	5 00	180 00

VAR00005	5	90.4000	84 1386	4 00	226 00
VAR00006	5	84 0000	79 7872	2.00	210 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	3 00
VAR00002	1 60
VAR00003	2 20
VAR00004	4 40
VAR00005	5 40
VAR00006	4 40

Test Statistics

N	5
Kendall's W(a)	616
Chi-Square	15 400
df	5
Asymp. Sig.	009

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

1. Using KENDALL'S – W method of concordance, the variable 03 i.e. sound information about Competitors' strength and weakness holds the highest degree of perceived strength which contributes the most to form a sound marketing decision, whereas the variable 06 i.e. sound information about threats from the competitors holds the least degree of perceived strength for the marketing decisions. This also implies that knowledge of competitor's strength helps the most for strategic marketing decisions ignoring the threats. The other factors like customer expectations, marketing philosophy, knowledge about opportunities and market risks do help for sound marketing decisions. The knowledge about the customer expectations holds high considerations second to the competitor/s strengths. The coefficient of concordance (W) is 0.616 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=5 is 15.40 which is very close to the level of significance value of 11.07 with d.f=5, and it indicates that there is very high degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is perfect correlation between variable no. 1 (marketing philosophy) with variable no. 4 (opportunities). There is very high correlation between the variable no.2 (user / customer expectations) with variable no. 4 (opportunities) of 0.997, between the variable no. 3 (competitors strength and weaknesses) with variable no. 6 (market risks) of 0.996; between the variable no. 4 (opportunities) with variable no. 5 (threats) inter se of 0.999 and between variable no. 6 (market risks) with variable no. 5 (threats) of 0.998. There is least

correlation observed between variable no. 2 (user / customer expectations) with variable no. 6 (market risks) of 0.962. Overall, the variables are highly correlated.

4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

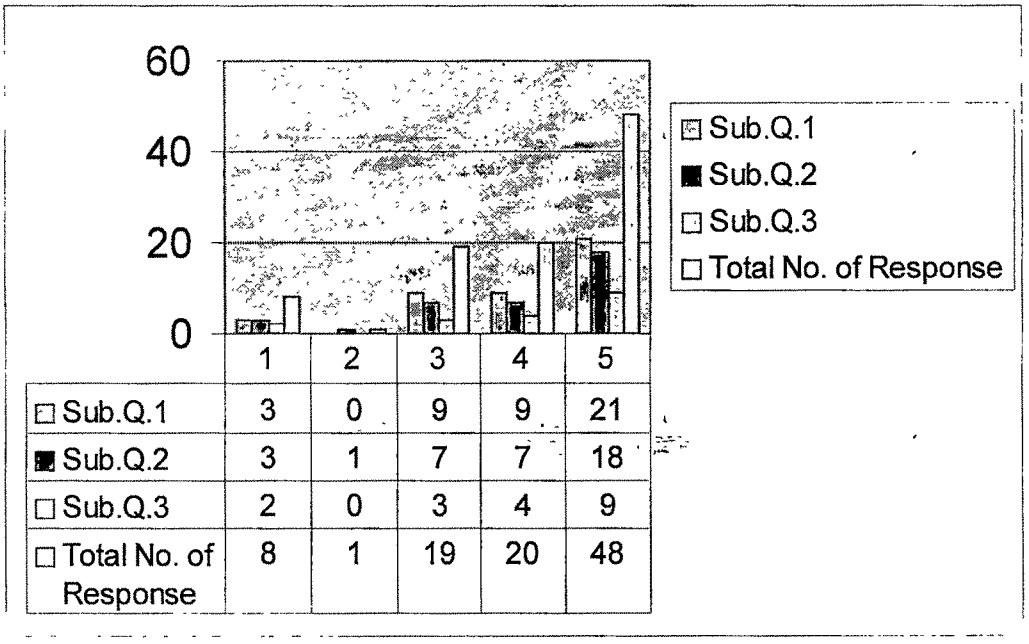
Q.No. VI

What is your opinion on marketing alliance on pool basis ?

01. Very good 02. Advisable

03. Not preferable

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5
Sub.Q.1	3	0	9	9	21
Sub.Q.2	3	1	7	7	18
Sub.Q.3	2	0	3	4	9
Total No. of Response	8	1	19	20	48

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	**Priority (Rank) value (category wise)**				
	A	B	C	D	**Overall**
01 Very good	1	0	1	1	**1**
02 Advisable	1	1	2	2	**2**
03 Not preferable	2	0	3	3	**3**

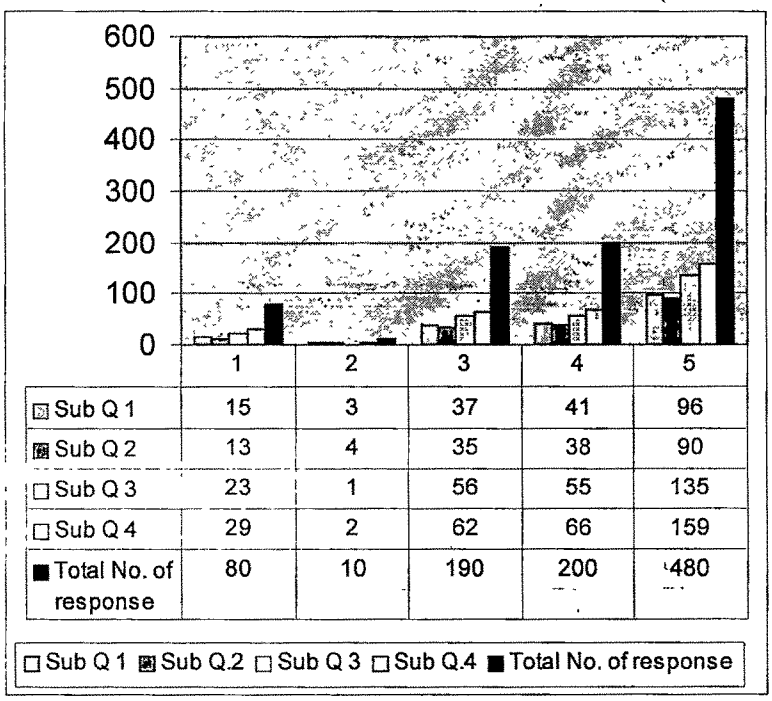
Based on the respondents constructs and opinions, marketing alliance on pool basis as marketing strategy do benefit in marketing the port facilities and holds a very good rating.

Q.No. VII

In your opinion what can better demonstrate commitment to customer ? (to rank in order of 1, 2, 3 & 4 to indicate highest, considerable, moderate and poor strengths respectively.

01. Meeting user needs.
02. Adhering to Quality & service policy.
03. Meeting good business practices
04. Meeting all perspectives.

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5
Sub Q 1	15	3	37	41	96
Sub Q 2	13	4	35	38	90
Sub Q 3	23	1	56	55	135
Sub Q 4	29	2	62	66	159
Total No. of response	80	10	190	200	480

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	**Priority (Rank) value (category wise)**				
	A	B	C	D	**Overall**
01 Meeting user needs	2	3	2	2	**2**
02 Adhering to quality and service policy	1	4	1	1	**1**
03 Meeting good business practices	3	1	3	3	**3**
04 Meeting all perspectives	4	2	4	4	**4**

GROUP 02- QUESTION NO.VII STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 36 06
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 05

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	3 00	96 00	38.4000	35 8022
VAR00002	5	4 00	90 00	36 0000	33 4440
VAR00003	5	1 00	135.00	54 0000	50 8331
VAR00004	5	2 00	159 00	63 6000	59 3742
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 36 50
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	2872 (2 805K) bytes
	Elapsed Time	0 00 00 05

Correlation Matrix

		VAR00001	VAR00002	VAR00003	VAR00004
Correlation	VAR00001	1 000	1 000	998	999
	VAR00002	1 000	1 000	997	998
	VAR00003	.998	997	1 000	999
	VAR00004	999	998	999	1 000
Sig. (1-tailed)	VAR00001		000	000	000
	VAR00002	.000		.000	000
	VAR00003	000	000		000
	VAR00004	000	000	000	

Covariance Matrix(a)

a Determinant = 6891 328

KMO and Bartlett's Test(a)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		609
Bartlett's Test of Sphericity	Approx. Chi-Square	39 165
	df	6
	Sig.	000
a Based on correlations		

Communalities

	Raw	Rescaled

	Initial	Initial
VAR00001	1281 800	1 000
VAR00002	1118 500	1 000
VAR00003	2584.000	1 000
VAR00004	3525 300	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	8501 648	99 907	99 907
	2	5 709	6 709E-02	99 974
	3	2 178	2 559E-02	99 999
	4	6 520E-02	7 662E-04	100 000
Rescaled	1	8501 648	99 907	99 907
	2	5 709	6 709E-02	99 974
	3	2 178	2 559E-02	99 999
	4	6 520E-02	7 662E-04	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	151
VAR00002	131
VAR00003	304
VAR00004	415
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created		01-JAN-2002 00 37 22
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	14563 cases
	Elapsed Time	0 00 00 06
a Based on availability of special working memory.		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	38 4000	35.8022	3 00	96 00
VAR00002	5	36.0000	33 4440	4 00	90 00
VAR00003	5	54 0000	50 8331	1 00	135 00
VAR00004	5	63 6000	59 3742	2 00	159 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	2 20
VAR00002	1 60
VAR00003	2 60
VAR00004	3 60

Test Statistics

N	5
Kendall's W(a)	424
Chi-Square	6 360
df	3
Asymp. Sig.	095

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

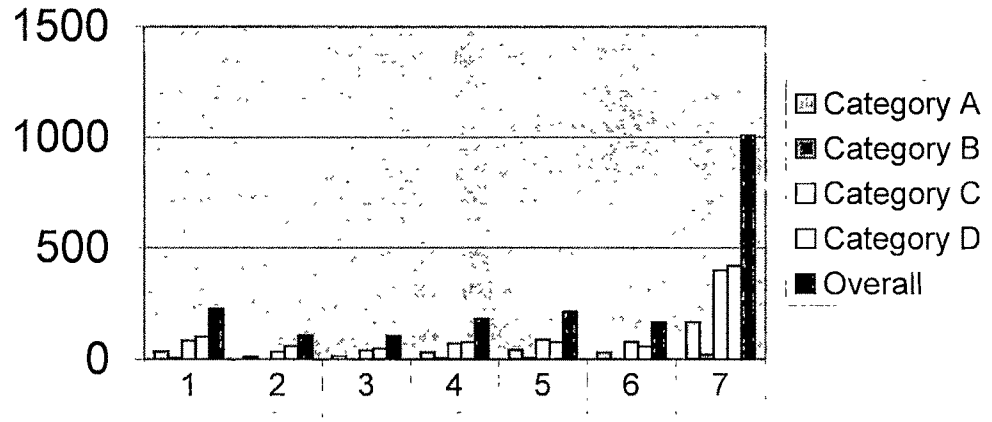
1. Using KENDALL'S – W method of concordance, the variable 02 i.e. adhering to quality and service policy demonstrate the highest commitment to the customers, whereas variable 04 i.e. meeting all perspectives is poorly perceived to demonstrate the commitment to the customer. The other variables i.e. meeting user needs and meeting good business practices have considerable and moderate perceived strengths respectively to demonstrate the commitment towards the customer. The coefficient of concordance (W) is 0.424 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=3 is 6.360 which is less than the level of significance value of 7.82 with d.f=3, and it indicates that very high degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is perfect correlation between variables except that there is least correlation observed between variables of 0.999. Overall, the variables are highly correlated.
4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

Q.No. VIII

Rank in order of preference 1 to 6 out of following customer driven E-commerce applications & services, which you prefer in Port based Infrastructure services.

01. Which is digitized
02 Enable to enhance the way to do business.
03. Adaptability.
04. To facilitate bringing together information.
05 Sparing innovation
06. Supporting collaboration across enterprises and its supply / value chain.

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6	7
Category A	36	13	14	32	43	30	168
Category B	5	1	2	4	6	3	21
Category C	84	35	42	71	89	78	399
Category D	102	60	48	76	76	58	420
Overall	227	109	106	183	214	169	1008

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	Priority (Rank) value (category wise)				
	A	B	C	D	**Overall**
01 Which is digitized	5	5	5	5	**6**
02 Enable to enhance the way to do Business	1	1	1	3	**2**
03 Adaptability	2	2	2	1	**1**
04 To facilitate bringing together information	4	4	3	4	**4**
05 Sparing innovation	6	6	6	4	**5**
06 Supporting collaboration across enterprises and its supply / value chain.	3	3	4	2	**3**

GROUP 02-QUESTION NO.VIII STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 41 46
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 var00006 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 06

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	5 00	227 00	90 8000	85 2743
VAR00002	5	1 00	109 00	43 6000	42 9278
VAR00003	5	2 00	106 00	42 4000	40 3584
VAR00004	5	4 00	183.00	73.2000	68 1080
VAR00005	5	6 00	214 00	85 6000	78 6467
VAR00006	5	3 00	169.00	67 6000	63 3822
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 42 43
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 var00006 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 var00006 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	5544 (5 414K) bytes
	Elapsed Time	0 00 00 06

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006
Correlation	VAR00001	1 000	989	999	998	989	982
	VAR00002	989	1 000	988	979	956	945
	VAR00003	999	.988	1 000	997	987	984
	VAR00004	998	979	.997	1 000	995	991
	VAR00005	989	956	.987	995	1 000	998
	VAR00006	982	945	984	991	998	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	7271.700	1 000
VAR00002	1842 800	1 000
VAR00003	1628.800	1 000
VAR00004	4638 700	1 000

VAR00005	6185 300	1 000
VAR00006	4017 300	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	25352 031	99 091	99 091
	2	219 688	859	99 950
	3	12.625	4 935E-02	99 999
	4	255	9 976E-04	100 000
	5	5 381E-13	2 103E-15	100 000
	6	-1 278E-12	-4 997E-15	100 000
Rescaled	1	25352 031	99 091	99 091
	2	219 688	859	99 950
	3	12 625	4 935E-02	99 999
	4	255	9 976E-04	100 000
	5	5 381E-13	2 103E-15	100 000
	6	-1 278E-12	-4 997E-15	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	286
VAR00002	071
VAR00003	064
VAR00004	183
VAR00005	243
VAR00006	157
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created		01-JAN-2002 00 43 13
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 var00006 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	11915 cases
	Elapsed Time	0 00 00 05
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	90.8000	85.2743	5.00	227 00
VAR00002	5	43 6000	42 9278	1 00	109 00
VAR00003	5	42 4000	40 3584	2 00	106 00
VAR00004	5	73 2000	68 1080	4 00	183 00

VAR00005	5	85 6000	78 6467	6 00	214 00
VAR00006	5	67 6000	63 3822	3 00	169 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	5 40
VAR00002	1 60
VAR00003	1.60
VAR00004	3 90
VAR00005	5 50
VAR00006	3 00

Test Statistics

N	5
Kendall's W(a)	876
Chi-Square	21 897
df	5
Asymp. Sig.	001

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

1. Using KENDALL'S – W method of concordance, the variable 03 i.e. adaptability holds the highest degree of preference for customer driven e-commerce applications and practices in infrastructure services, whereas the variable 01 i.e. e-commerce which is being digitized has the least preference. The e-commerce practice which is customer driven and which can enable to enhance to do the business is preferred second to the adaptability. The other elements fall into moderate preference category. The coefficient of concordance (W) is 0.876 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=5 is 21.897 which is higher to the level of significance value of 11.07 with d.f=5, and it indicates that there is good degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is high degree of correlation between variable no. 1 (which is digitized) with variable no. 3 (adaptability) of 0.999, between the variable no.2 (enable to enhance the way to do business) with variable no. 1 (which is digitized) of 0.989, between the variable no. 3 (adaptability) with variable no. 1 (which is digitized) of 0.999; between the variable no. 4 (to facilitate brining together information) with variable no. 1 (which is digitized) of 0.998 and between variable no. 5 (sparing innovation) with variable no. 6 (supporting collaboration across enterprises and its supply / value chain) inter se of 0.998. There is least correlation observed between variable no. 2 (enable to enhance the way to do business) with variable no. 6 (supporting collaboration across enterprises and its

supply / value chain) of 0.945. Overall, the variables are highly correlated.

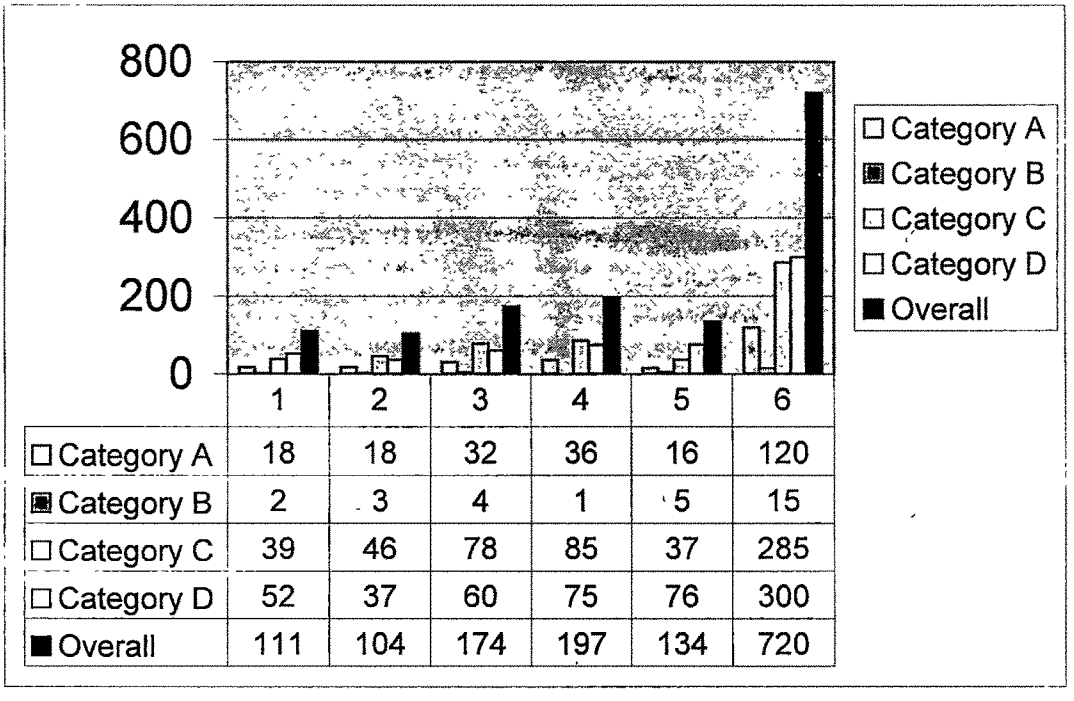
4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

Q.No. IX

Rank in order of priority 1 to 5 following drivers for growth of marketing port services. Rank 1 indicates highest perceived strength and Rank 5 indicates the lowest perceived strength.

01. Awareness of the concept of competitive import / export facilities.
02. Growth in consumer base.
03. Availability of facilities.
04. Global Trade practices.
05. Threat of substitution.

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6
Category A	18	18	32	36	16	120
Category B	2	3	4	1	5	15
Category C	39	46	78	85	37	285
Category D	52	37	60	75	76	300
Overall	111	104	174	197	134	720

Based on the priority values assigned by the respondents, the ranking distribution is as under:

Variables	Priority (Rank) value (category wise)				
	A	B	C	D	**Overall**
01 Awareness of the concept of import / export facilities	2	2	2	2	**2**
02 Growth in consumer base	2	3	3	1	**1**
03 Availability of facilities	3	4	4	3	**4**
04 Global trade practices	4	1	5	4	**5**
05 Threat of substitution	1	5	1	5	**3**

GROUP 02-QUESTION NO. IX STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 46 44
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 06

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	2 00	111 00	44 4000	41 8844
VAR00002	5	3 00	104 00	41.6000	38 6691
VAR00003	5	4 00	174 00	69.6000	64 7673
VAR00004	5	1 00	197 00	78.8000	74.0081
VAR00005	5	5 00	134 00	53.6000	52 4814
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 47 36
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	4100 (4 004K) bytes
	Elapsed Time	0 00 00 00

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005
Correlation	VAR00001	1 000	981	978	987	986
	VAR00002	981	1 000	1.000	999	937
	VAR00003	978	1 000	1 000	998	930
	VAR00004	987	999	998	1 000	947
	VAR00005	986	937	930	947	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	1754 300	1 000
VAR00002	1495 300	1 000
VAR00003	4194 800	1 000
VAR00004	5477 200	1 000
VAR00005	2754.300	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	15380 425	98 115	98 115
	2	291 849	1 862	99 977
	3	3 307	2 110E-02	99 998
	4	319	2 032E-03	100 000
	5	-2 178E-13	-1 390E-15	100 000
Rescaled	1	15380 425	98 115	98 115
	2	291 849	1 862	99 977
	3	3 307	2 110E-02	99 998
	4	319	2 032E-03	100 000
	5	-2 178E-13	-1 390E-15	100 000

Extraction Method Principal Component Analysis

a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	113
VAR00002	097
VAR00003	271
VAR00004	355
VAR00005	.173

Extraction Method. Principal Component Analysis
Rotation Method Varimax with Kaiser Normalization

a Coefficients are standardized

Component Score Covariance Matrix

Component	1
1	1 000

Extraction Method· Principal Component Analysis
Rotation Method Varimax with Kaiser Normalization

NPar Tests

Notes

Output Created		01-JAN-2002 00 48 06
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	13107 cases
	Elapsed Time	0 00 00 00

a Based on availability of special working memory

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	44 4000	41.8844	2 00	111 00
VAR00002	5	41 6000	38 6691	3 00	104 00
VAR00003	5	69 6000	64 7673	4 00	174 00
VAR00004	5	78 8000	74 0081	1.00	197 00
VAR00005	5	53 6000	52 4814	5 00	134 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	2 10
VAR00002	2 10
VAR00003	3 80
VAR00004	4 00
VAR00005	3 00

Test Statistics

N	5
Kendall's W(a)	329
Chi-Square	6 586
df	4
Asymp. Sig.	159

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis:

1. Using KENDALL'S – W method of concordance, the variable 02 i.e. growth in consumer base holds the highest degree of perceived strength as the most important driver in marketing port facilities, whereas the variable 04 i.e. global trade practices holds the least degree of perceived strength as the driver of growth and for the marketing decisions. This also implies that value creation through growth in consumer base is considered to be the most important driver of the port business. The other driving factors like awareness of import – export facilities, threat of substitution and facilities available though important, fall in the moderate category of perceived strengths. The coefficient of concordance (W) is 0.329 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.
2. Chi-square test : From the analysis, the value of X^2 (0.05) with d f=4 is 6 586 which is very low than the level of significance value of 9.49 with d.f=4, and it indicates that there is a very high degree of agreement between the theoretical values (mean) and the observed values (the experimental values).
3. Correlation analysis : From the responses distribution and analysis, it is observed that there is perfect correlation between the variable no.2 (growth in consumer base) with variable no. 3 (availability of facilities) inter se. There is very high degree of correlation between the variable no. 1 (awareness of concept of competitive import / export) with variable no. 4 (global trade practices) of 0.987, between variable no. 4 (global trade practices) with variable no. 2 (growth in consumer base) of 0.999 and between variable no. 5 (threat of substitution) with variable no. 1 (awareness of concept of competitive import / export) of 0.986. There is least correlation observed between variable no. 3 (availability of

facilities) with variable no. 5 (threat of substitution) of 0 930. Overall, the variables are highly correlated.

4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

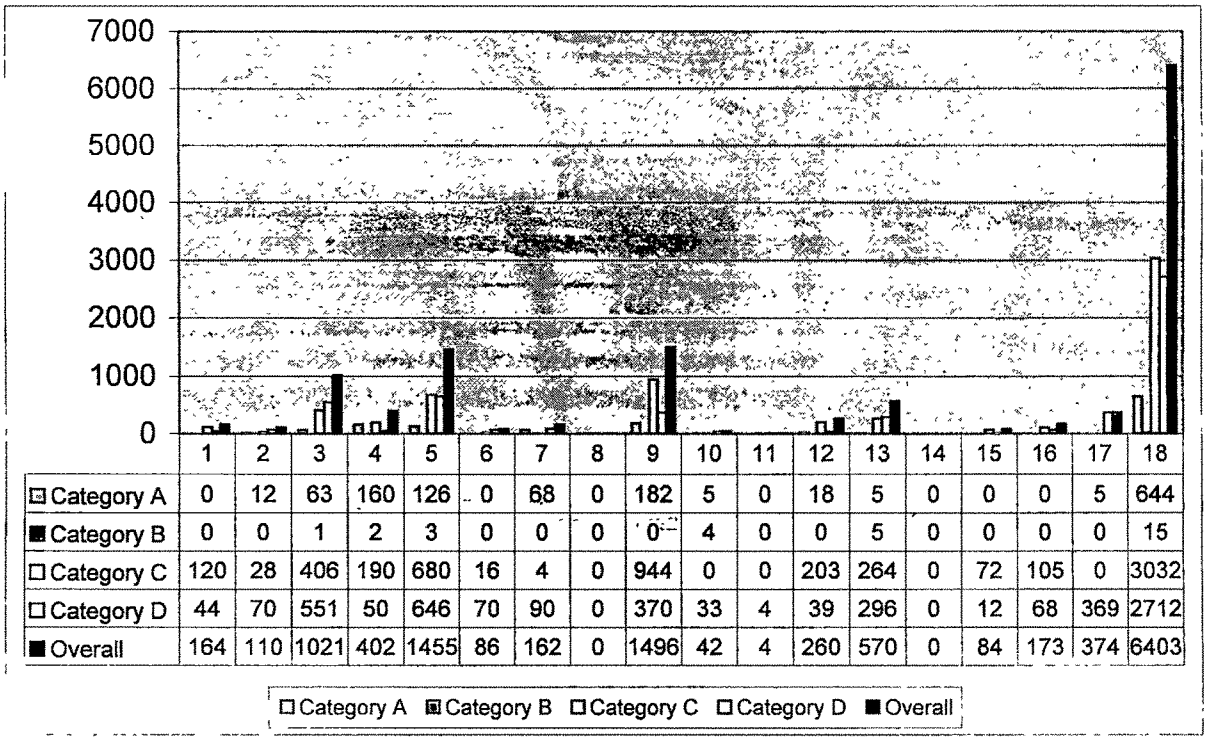
GROUP 03

Q.No. I

In your opinion what are the factors determining the need for good marketing practice for customer satisfaction.

01. No demurrage	02. No hidden charges
03. Quality service	04. Presence of competition.
05. Cost consciousness	06. Minimum product losses.
07. Adequate standards of safety & hazards control.	08. Statute compliance
09. Uninterrupted service	10. Volume of business.
11. Period of service	12. Global industry practice
13. Maritime synergies.	14. Penalties / compensation practice.
15. Performance incentives.	16. Business prudence
17. Back-up Infrastructure facilities.	

The Graphical presentation of the responses distribution and the ranking priorities are as under:

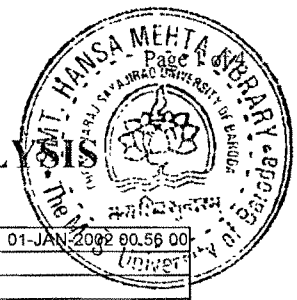


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Category A	0	12	63	160	126	0	68	0	182	5	0	18	5	0	0	0	5	644
Category B	0	0	1	2	3	0	0	0	0	4	0	0	5	0	0	0	0	15
Category C	120	28	406	190	680	16	4	0	944	0	0	203	264	0	72	105	0	3032
Category D	44	70	551	50	646	70	90	0	370	33	4	39	296	0	12	68	369	2712
Overall	164	110	1021	402	1455	86	162	0	1496	42	4	260	570	0	84	173	374	6403

Based on priority values assigned by the respondents, the ranking distribution is as under:

Variables	**Priority value (category wise)**				
	A	B	C	D	**Overall**
01. No demurrage	-	-	-	-	-
02. No hidden charges	-	-	-	-	-
03. Quality service	5	1	3	2	3
04. Presence of competition.	2	2	-	-	5
05. Cost consciousness	3	3	2	1	2
06. Minimum product losses.	-	-	-	-	-
07. Adequate standards of safety & hazards control.	4	-	-	-	-
08. Statute compliance	-	-	-	-	-

09.	Uninterrupted service	1	-	1	3	1
10.	Volume of business	-	4	-	-	-
11.	Period of service	-	-	-	-	-
12.	Global industry practice	-	-	5	-	-
13.	Maritime synergies.	-	5	4	5	4
14.	Penalties / compensation practice.	-	-	-	-	-
15.	Performance incentives.	-	-	-	-	-
16.	Business prudence	-	-	-	-	-
17.	Back-up Infrastructure facilities.	-	-	-	4	-



GROUP 03- QUESTION NO.I STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 00 56 00
Comments		
Input	Filter	<none>
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	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00009 var00010 var00011 var00012 var00013 var00015 var00016 var00017 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 05

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	00	164 00	65 6000	73 6804
VAR00002	5	00	110 00	44 0000	45 4093
VAR00003	5	1 00	1021 00	408 4000	412 5819
VAR00004	5	2 00	402 00	160 8000	155 3422
VAR00005	5	3 00	1455 00	582 0000	574 2399
VAR00006	5	00	86 00	34 4000	40 7284
VAR00007	5	00	162 00	64 8000	67 0612
VAR00009	5	00	1496 00	598 4000	614 1586
VAR00010	5	00	42 00	16 8000	19 2536
VAR00011	5	00	4 00	1 6000	2 1909
VAR00012	5	00	260 00	104 0000	118 9264
VAR00013	5	5 00	570 00	228 0000	235 7658
VAR00015	5	00	84 00	33 6000	41 0463
VAR00016	5	00	173 00	69 2000	73 5439
VAR00017	5	00	374 00	149 6000	202 5841
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 00 56 50
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00009 var00010 var00011 var00012 var00013 var00015 var00016 var00017 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00009 var00010 var00011 var00012 var00013 var00015 var00016 var00017 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	28260 (27 598K) bytes
	Elapsed Time	0 00 00 00

Correlation Matrix(a)

	VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006	VAR00007	VAR00009	VAR00010	VAR00011	VAR00012	VAR0001
VAR00001	1 000	751	875	834	932	652	493	987	499	476	987	91
VAR00002	751	1 000	976	694	937	979	886	784	942	925	664	9
VAR00003	875	976	1 000	768	989	932	800	892	852	835	806	9
VAR00004	834	694	768	1 000	837	532	700	910	488	383	870	7
VAR00005	932	937	989	837	1 000	867	757	949	773	745	883	9
VAR00006	652	979	932	532	867	1 000	838	667	967	977	539	9
VAR00007	493	886	800	700	757	838	1 000	594	904	833	438	7

Correlation	VAR00009	987	784	892	910	949	667	594	1 000	543	497	983	91
	VAR00010	499	942	852	488	773	967	.904	543	1 000	981	389	8(
	VAR00011	476	925	835	383	745	977	833	497	981	1 000	349	7(
	VAR00012	987	664	806	870	883	539	438	983	389	349	1 000	8(
	VAR00013	912	951	995	762	992	905	735	915	804	794	846	1 0(
	VAR00015	986	631	782	825	861	514	371	967	348	320	996	8(
	VAR00016	981	861	951	815	981	786	616	974	653	637	942	9(
	VAR00017	477	927	838	392	748	978	840	501	983	1 000	352	7(

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	5428 800	1 000
VAR00002	2062 000	1 000
VAR00003	170223 800	1 000
VAR00004	24131 200	1 000
VAR00005	329751 500	1 000
VAR00006	1658 800	1 000
VAR00007	4497 200	1 000
VAR00009	377190 800	1 000
VAR00010	370 700	1 000
VAR00011	4 800	1 000
VAR00012	14143 500	1 000
VAR00013	55585 500	1 000
VAR00015	1684 800	1 000
VAR00016	5408 700	1 000
VAR00017	41040 300	1 000

Extraction Method Principal Component Analysis

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	965130 733	93 413	93 413
	2	61911 290	5 992	99 406
	3	6129 442	593	99 999
	4	10 935	1 058E-03	100 000
	5	1 176E-10	1 138E-14	100 000
	6	1 119E-11	1 083E-15	100 000
	7	5 115E-12	4 951E-16	100 000
	8	3 183E-12	3 081E-16	100 000
	9	1 001E-12	9 690E-17	100 000
	10	3 596E-13	3 480E-17	100 000
	11	3 120E-15	3 020E-19	100 000
	12	-4 030E-14	-3 900E-18	100 000
	13	-2 969E-13	-2 874E-17	100 000
	14	-3 939E-11	-3 812E-15	100 000
	15	-1 147E-10	-1 110E-14	100 000
Rescaled	1	965130 733	93 413	93 413
	2	61911 290	5 992	99 406
	3	6129 442	593	99 999
	4	10 935	1 058E-03	100 000
	5	1 176E-10	1 138E-14	100 000
	6	1 119E-11	1 083E-15	100 000
	7	5 115E-12	4 951E-16	100 000
	8	3 183E-12	3 081E-16	100 000
	9	1 001E-12	9 690E-17	100 000
	10	3 596E-13	3 480E-17	100 000
	11	3 120E-15	3 020E-19	100 000
	12	-4 030E-14	-3 900E-18	100 000
	13	-2 969E-13	-2 874E-17	100 000
	14	-3 939E-11	-3 812E-15	100 000
	15	-1 147E-10	-1 110E-14	100 000

Extraction Method Principal Component Analysis

a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	005
VAR00002	002
VAR00003	172
VAR00004	022
VAR00005	340
VAR00006	001
VAR00007	003
VAR00009	380
VAR00010	000
VAR00011	000
VAR00012	013
VAR00013	057
VAR00015	002
VAR00016	006
VAR00017	029
Extraction Method Principal Component Analysis Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method Principal Component Analysis Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created		01-JAN-2002 00 57 50
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00009 var00010 var00011 var00012 var00013 var00015 var00016 var00017 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	6553 cases
	Elapsed Time	0 00 00 00
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	65 6000	73 6804	00	164 00
VAR00002	5	44 0000	45 4093	00	110 00
VAR00003	5	408 4000	412 5819	1 00	1021 00
VAR00004	5	160 8000	155 3422	2 00	402 00
VAR00005	5	582 0000	574 2399	3 00	1455 00
VAR00006	5	34 4000	40 7284	00	86 00
VAR00007	5	64 8000	67 0612	00	162 00
VAR00009	5	598 4000	614 1586	00	1496 00
VAR00010	5	16 8000	19 2536	00	42 00
VAR00011	5	1 6000	2 1909	00	4 00
VAR00012	5	104 0000	118 9264	00	260 00
VAR00013	5	228 0000	235 7658	5 00	570 00
VAR00015	5	33 6000	41 0463	00	84 00
VAR00016	5	69 2000	73 5439	00	173 00
VAR00017	5	149 6000	202 5841	00	374 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	5.90
VAR00002	6.80
VAR00003	12.40
VAR00004	10.60
VAR00005	13.80
VAR00006	5.20
VAR00007	7.50
VAR00009	12.70
VAR00010	5.60
VAR00011	2.50
VAR00012	7.90
VAR00013	11.40
VAR00015	4.10
VAR00016	6.30
VAR00017	7.30

Test Statistics

N	5
Kendall's W(a)	.621
Chi-Square	43.504
df	14
Asymp. Sig.	.000

a Kendall's Coefficient of Concordance

Inferences based on statistical analysis :

1 Using KENDALL'S – W method of concordance, out of 17 variables, the respondents assign in order of ranking the highest importance to the variable 01 i.e. uninterrupted service, followed by second highest degree of importance to cost consciousness holds the highest degree of perceived strength as the most important driver in marketing port facilities, whereas the variable 04 i.e. global trade practices holds the least degree of perceived strength as the driver of growth and for the marketing decisions This also implies that value creation through growth in consumer base is considered to be the most important driver of the port business The other driving factors like awareness of import – export facilities, threat of substitution and facilities available though important, fall in the moderate category of perceived strengths. The coefficient of concordance (W) is 0.621 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents

2 Chi-square test From the analysis, the value of X^2 (0 05) with d f=14 is 43 504 which is higher than but closer to the level of significance value of 23 68 with d f=14, and it indicates that there is a good degree of agreement between the theoretical values (mean) and the observed values (the experimental values)

3. Correlation analysis . From the correlation matrix it is revealed that most of the variables inter se have good correlation with each other beyond 0 7 There is good degree of correlation within variables to a r value in excess of 0.9 It is observed that the least correlation exits between variable no. 15 (performance incentive) with variable no. 11 (period of service). Overall there is good correlation.

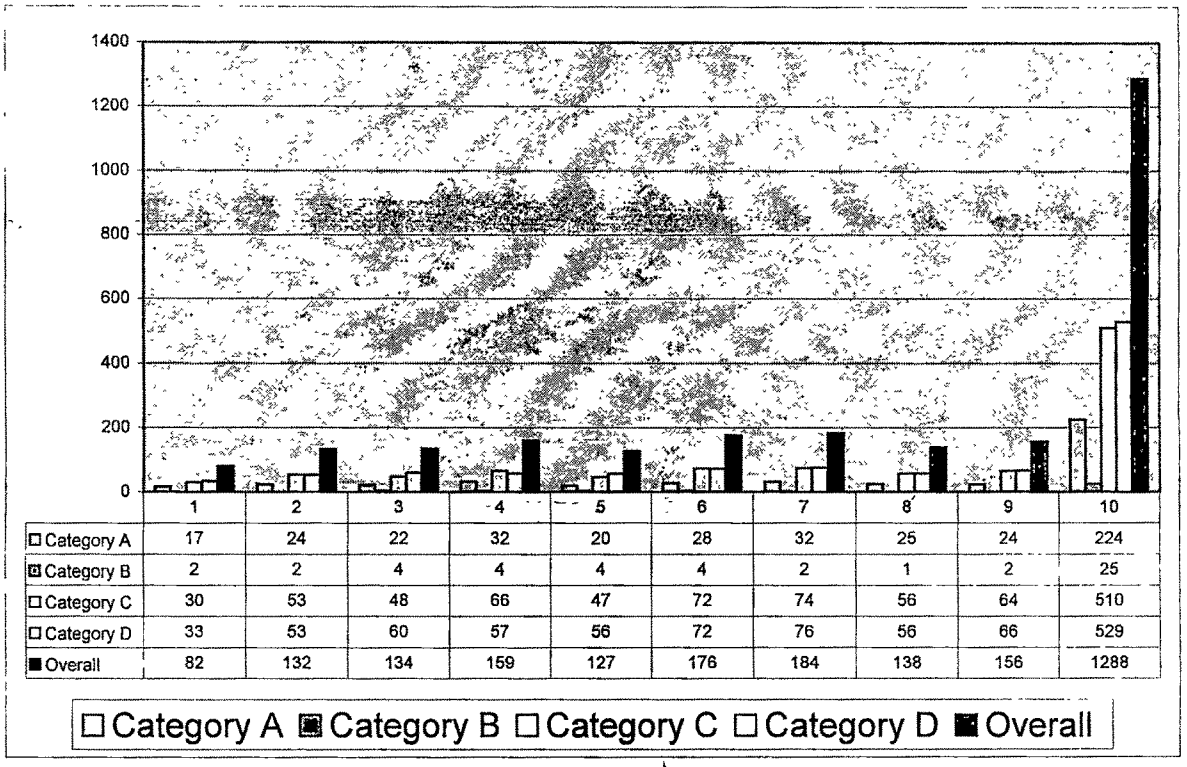
4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

Q.No. II

What is your weightage of following factors for an ideal port services company ? (in order of 100%, 50% and 25% wherein 100% (4) is highest, 50% (2) is moderate and 25% (1) the lowest weightage).

01. Human Resources Development.
02. Logistics & information services.
03. Environment
04. Safety & Hazards control.
05. Health
06. Cost consciousness
07. Client care
08. Sophistication / mechanization / automation of services
09. Healthy marketing strengths & practices.

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6	7	8	9	10
Category A	17	24	22	32	20	28	32	25	24	224
Category B	2	2	4	4	4	4	2	1	2	25
Category C	30	53	48	66	47	72	74	56	64	510
Category D	33	53	60	57	56	72	76	56	66	529
Overall	82	132	134	159	127	176	184	138	156	1288

Based on the priority ranking assigned, the priority / rank distribution is as under:

Variables	**Priority value (category wise)**				
	A	B	C	D	**Overall**
01. Human Resources Development.	7	2	9	8	**9**
02. Logistics & information services.	4	2	6	7	**7**
03. Environment	5	1	7	4	**6**
04. Safety & Hazards control.	1	1	3	5	**3**
05. Health	6	1	8	6	**8**
06. Cost consciousness	2	1	2	2	**2**
07. Client care	1	2	1	1	**1**
08. Sophistication / mechanization / automation of services	3	3	5	6	**5**
09. Healthy marketing strengths & practices.	4	2	4	3	**4**

GROUP 03- QUESTION NO.II STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 01 03 52
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Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00008 var00009 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 06

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	5	2 00	82 00	32 8000	30 1115
VAR00002	5	2 00	132 00	52 8000	49 2006
VAR00003	5	4.00	134 00	53 6000	49 9880
VAR00004	5	4 00	159 00	63 6000	58 5261
VAR00005	5	4 00	127 00	50 8000	47 3994
VAR00006	5	4 00	176 00	70 4000	65 8847
VAR00007	5	2 00	184 00	73 6000	69 0130
VAR00008	5	1 00	138 00	55 2000	51 7368
VAR00009	5	2 00	156 00	62 4000	58 9474
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 01 04 43
Comments		
Input	Filter	<none>
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	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE· User-defined missing values are treated as missing
	Cases Used	LISTWISE· Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00008 var00009 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00008 var00009 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	11172 (10 910K) bytes
	Elapsed Time	0 00 00 00

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006	VAR00007	VAR00008	VAR00009
Correlation	VAR00001	1 000	998	996	.996	996	996	998	998	996
	VAR00002	998	1.000	996	998	997	999	1 000	1 000	999
	VAR00003	996	996	1 000	989	1 000	996	997	996	997
	VAR00004	996	998	989	1 000	990	996	996	997	994
	VAR00005	996	997	1 000	990	1.000	998	998	997	998
	VAR00006	.996	999	996	996	.998	1 000	1 000	999	1 000
	VAR00007	998	1 000	997	996	998	1 000	1 000	1 000	1 000
	VAR00008	998	1 000	996	997	997	999	1 000	1 000	999
	VAR00009	996	999	997	994	.998	1 000	1 000	999	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite.

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	906.700	1 000
VAR00002	2420 700	1 000
VAR00003	2498 800	1 000
VAR00004	3425 300	1 000
VAR00005	2246 700	1 000
VAR00006	4340 800	1 000
VAR00007	4762 800	1 000
VAR00008	2676.700	1 000
VAR00009	3474 800	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	26694 696	99 781	99 781
	2	44 237	165	99 946
	3	11 718	4 380E-02	99 990
	4	2 649	9 900E-03	100 000
	5	4 244E-12	1 587E-14	100 000
	6	5 888E-13	2 201E-15	100 000
	7	1 636E-13	6 116E-16	100 000
	8	-1.651E-13	-6 173E-16	100 000
	9	-2 110E-12	-7 888E-15	100 000
Rescaled	1	26694 696	99 781	99 781
	2	44 237	165	99 946
	3	11 718	4 380E-02	99 990
	4	2 649	9 900E-03	100 000
	5	4.244E-12	1 587E-14	100 000
	6	5 888E-13	2 201E-15	100 000
	7	1 636E-13	6 116E-16	100 000
	8	-1.651E-13	-6 173E-16	100 000
	9	-2 110E-12	-7 888E-15	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	.034
VAR00002	091
VAR00003	093
VAR00004	128
VAR00005	084
VAR00006	163
VAR00007	178
VAR00008	100
VAR00009	130
Extraction Method Principal Component Analysis Rotation Method. Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method Principal Component Analysis Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created	01-JAN-2002 01 05 15
Comments	

Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00004 var00005 var00006 var00007 var00008 var00009 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	9362 cases
	Elapsed Time	0 00 00 05
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	32.8000	30 1115	2.00	82 00
VAR00002	5	52 8000	49.2006	2.00	132 00
VAR00003	5	53 6000	49 9880	4 00	134 00
VAR00004	5	63 6000	58 5261	4 00	159 00
VAR00005	5	50 8000	47 3994	4 00	127 00
VAR00006	5	70 4000	65 8847	4 00	176 00
VAR00007	5	73 6000	69.0130	2 00	184 00
VAR00008	5	55 2000	51 7368	1.00	138 00
VAR00009	5	62 4000	58 9474	2 00	156 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	1 50
VAR00002	3 40
VAR00003	4 70
VAR00004	7 00
VAR00005	3 40
VAR00006	7 70
VAR00007	7 80
VAR00008	4 10
VAR00009	5.40

Test Statistics

N	5
Kendall's W(a)	651
Chi-Square	26 038
df	8
Asymp. Sig.	001
a Kendall's Coefficient of Concordance	

Inferences based on statistical analysis ·

1 Using KENDALL'S – W method of concordance, out of 9 variables, the respondents assign in order of weightage highest importance to the variable 07 i e client care followed by second highest degree of importance to variable number 06 cost consciousness which holds the very high degree of importance as one of the factors determining the ideal status of a port services company. Variable 01 i e Human Resources Development has been assigned the least weightage. The other factors like safety and hazards control, healthy marketing strengths and practices, sophistication / mechanization / automation of services, environment aspects and health respectively assigned weightage ranking of 3, 4, 5, 6, 7 & 8 respectively and fall in the medium / moderate category The coefficient of concordance (W) is 0.651 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.

2. Chi-square test : From the analysis, the value of X^2 (0 05) with d f=8 is 26.038 which is higher than but closer to the level of significance value of 15 51 with d.f=8, and it indicates that there is a good degree of agreement between the theoretical values (mean) and the observed values (the experimental values)

3 Correlation analysis From the correlation matrix it is revealed that most of the variables inter se have good correlation with each other beyond 0 7 There is good degree of correlation within variables to a r value in excess of 0.9 It is observed that the least correlation exits between variable no. 4 (safety & hazards control) with variable no. 3 (environment) of r value = 0.989 Overall there is good correlation.

4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and

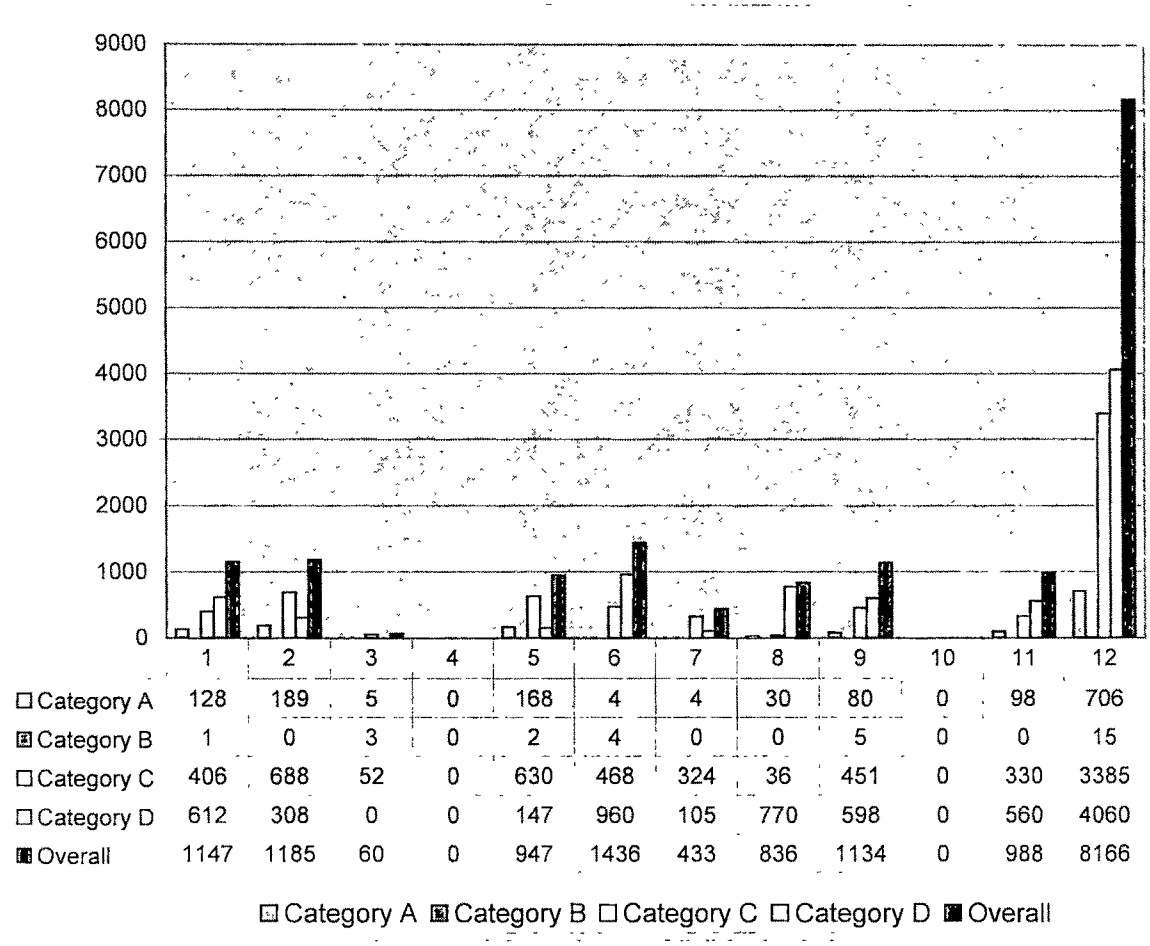
goodness of fit of the variables and the respondents on the data for the test of the significance for the ranking decisions.

Q.No. III

Rank following advertising medium as the excellent in order of priority of 1 to 5 for marketing of port based services. Rank 1 indicates highest excellence and 5 lowest excellence

01 TV / Audio / Video shows	02. Newspapers
03 Magazines	04 Radio
05. Conferences & seminars	06. Workshops
07. Banners / hoardings	08. Leaflets.
09 Presentation	10 Digital library
11 Customer orientation	

The Graphical presentation of the responses distribution and the ranking values are as under:



	1	2	3	4	5	6	7	8	9	10	11	12
Category A	128	189	5	0	168	4	4	30	80	0	98	706
Category B	1	0	3	0	2	4	0	0	5	0	0	15
Category C	406	688	52	0	630	468	324	36	451	0	330	3385
Category D	612	308	0	0	147	960	105	770	598	0	560	4060
Overall	1147	1185	60	0	947	1436	433	836	1134	0	988	8166

Based on the priority values assigned by the respondents, the ranking distribution is as under

Variables	**Priority value (category wise)**				
	A	B	C	D	**Overall**
01 TV / Audio / Video shows	3	1	5	3	**3**
02. Newspapers.	1	-	1	5	**2**
03 Magazines	-	3	-	-	**-**
04 Radio	-	-	-	-	**-**
05 Conferences & seminars	2	2	2	-	**-**
06 Workshops	-	4	3	1	**1**
07. Banners / hoardings	-	-	-	-	**-**
08 Leaflets	-	-	-	2	**-**
09 Presentation	5	5	4	4	**4**
10. Digital library	-	-	-	-	**-**
11 Customer orientation	4	-	-	5	**5**

GROUP 03- QUESTION NO.III STASTICAL ANALYSIS

Notes

Output Created		01-JAN-2002 01 11 43
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing
	Cases Used	All non-missing data are used
Syntax		DESCRIPTIVES VARIABLES=var00001 var00002 var00003 var00005 var00006 var00007 var00008 var00009 var00011 /STATISTICS=MEAN STDDEV MIN MAX
Resources	Elapsed Time	0 00 00 00

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std Deviation
VAR00001	5	1 00	1147 00	458 8000	452 4618
VAR00002	5	00	1185 00	474 0000	470 3121
VAR00003	5	.00	60 00	24 0000	29 4024
VAR00005	5	2 00	947 00	378 8000	395 6320
VAR00006	5	4 00	1436 00	574 4000	623 1122
VAR00007	5	00	433 00	173 2000	195 9048
VAR00008	5	00	836 00	334 4000	428 6243
VAR00009	5	5 00	1134 00	453 6000	454 0433
VAR00011	5	.00	988 00	395 2000	396 0217
Valid N (listwise)	5				

Factor Analysis

Notes

Output Created		01-JAN-2002 01 12 45
Comments		
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	MISSING=EXCLUDE: User-defined missing values are treated as missing
	Cases Used	LISTWISE Statistics are based on cases with no missing values for any variable used
Syntax		FACTOR /VARIABLES var00001 var00002 var00003 var00005 var00006 var00007 var00008 var00009 var00011 /MISSING LISTWISE /ANALYSIS var00001 var00002 var00003 var00005 var00006 var00007 var00008 var00009 var00011 /PRINT INITIAL CORRELATION SIG DET KMO ROTATION FSCORE /CRITERIA MINEIGEN(1) ITERATE(25) /EXTRACTION PC /CRITERIA ITERATE(25) /ROTATION VARIMAX /METHOD=COVARIANCE
Resources	Maximum Memory Required	11172 (10 910K) bytes
	Elapsed Time	0 00 00 06

Correlation Matrix(a)

		VAR00001	VAR00002	VAR00003	VAR00005	VAR00006	VAR00007	VAR00008	VAR00009	VAR00011
Correlation	VAR00001	1 000	897	667	816	982	834	878	997	999
	VAR00002	897	1 000	921	987	818	973	578	911	875
	VAR00003	667	921	1 000	966	568	958	239	702	634
	VAR00005	816	987	966	1 000	719	975	441	835	788
	VAR00006	982	818	568	719	1 000	772	933	982	989
	VAR00007	834	973	958	975	.772	1 000	491	864	811
	VAR00008	878	578	239	441	933	491	1 000	859	900
	VAR00009	997	.911	702	835	982	864	859	1 000	995
	VAR00011	999	875	634	788	.989	811	900	995	1 000

a This matrix is not positive definite

Covariance Matrix(a,b)

a Determinant = 000
b This matrix is not positive definite

Communalities

	Raw	Rescaled
	Initial	Initial
VAR00001	204721 700	1 000
VAR00002	221193 500	1 000
VAR00003	864 500	1 000
VAR00005	156524 700	1 000
VAR00006	388268 800	1 000
VAR00007	38378 700	1 000
VAR00008	183718 800	1 000
VAR00009	206155 300	1 000
VAR00011	156833 200	1 000
Extraction Method Principal Component Analysis		

Total Variance Explained

		Initial Eigenvalues(a)		
	Component	Total	% of Variance	Cumulative %
Raw	1	1397176 562	89 755	89 755
	2	154751 829	9 941	99 696
	3	4724 013	303	100 000
	4	6 796	4 366E-04	100 000
	5	7 585E-11	4 873E-15	100 000
	6	2 160E-11	1 387E-15	100 000
	7	-6 481E-12	-4 163E-16	100 000
	8	-5 109E-11	-3 282E-15	100 000
	9	-1 925E-10	-1 237E-14	100 000
Rescaled	1	1397176 562	89 755	89 755
	2	154751 829	9 941	99 696
	3	4724 013	303	100 000
	4	6 796	4 366E-04	100 000
	5	7 585E-11	4 873E-15	100 000
	6	2 160E-11	1 387E-15	100 000
	7	-6 481E-12	-4 163E-16	100 000
	8	-5 109E-11	-3 282E-15	100 000
	9	-1 925E-10	-1 237E-14	100 000
Extraction Method Principal Component Analysis				
a When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution				

Component Matrix(a)

a 1 components extracted

Rotated Component Matrix(a)

a Only one component was extracted The solution cannot be rotated

Component Score Coefficient Matrix(a)

	Component
	1
VAR00001	146
VAR00002	144
VAR00003	000
VAR00005	094
VAR00006	273
VAR00007	024
VAR00008	113
VAR00009	148
VAR00011	112
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	
a Coefficients are standardized	

Component Score Covariance Matrix

Component	1
1	1 000
Extraction Method Principal Component Analysis	
Rotation Method Varimax with Kaiser Normalization	

NPar Tests

Notes

Output Created	01-JAN-2002 01 13 20
Comments	

Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	5
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used
Syntax		NPAR TESTS /KENDALL = var00001 var00002 var00003 var00005 var00006 var00007 var00008 var00009 var00011 /STATISTICS DESCRIPTIVES /MISSING LISTWISE
Resources	Number of Cases Allowed(a)	9362 cases
	Elapsed Time	0 00 00 00
a Based on availability of special working memory		

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
VAR00001	5	458 8000	452 4618	1.00	1147.00
VAR00002	5	474 0000	470 3121	00	1185 00
VAR00003	5	24 0000	29 4024	00	60 00
VAR00005	5	378 8000	395 6320	2 00	947 00
VAR00006	5	574 4000	623 1122	4 00	1436 00
VAR00007	5	173 2000	195 9048	00	433 00
VAR00008	5	334.4000	428 6243	00	836 00
VAR00009	5	453 6000	454 0433	5 00	1134 00
VAR00011	5	395 2000	396 0217	00	988 00

Kendall's W Test

Ranks

	Mean Rank
VAR00001	6 20
VAR00002	6 50
VAR00003	2 80
VAR00005	5.80
VAR00006	6 90
VAR00007	2 20
VAR00008	3 70
VAR00009	6 40
VAR00011	4.50

Test Statistics

N	5
Kendall's W(a)	416
Chi-Square	16 652
df	8
Asymp. Sig.	.034
a Kendall's Coefficient of Concordance	

Inferences based on statistical analysis ·

1 Using KENDALL'S – W method of concordance, out of 11 variables, the respondents assign in order of priority highest importance to the variable 06 i.e workshops followed by second highest degree of importance to variable number 02 i.e. newspapers as one of the factors determining the excellence as advertising medium for marketing of port based services. Variable 11 i e. Customer orientation has been assigned the least priority no 5. The other factors like TV /Audio / Video Show and Presentation respectively have been assigned the priority ranking of 3 & 4 respectively, which fall in the medium / moderate category. The other factors have not been assigned any importance in the priority ranking. The coefficient of concordance (W) is 0 416 which is less than 1 and greater than zero and implies agreed situation for ranking by the respondents.

2 Chi-square test : From the analysis, the value of X^2 (0.05) with d.f=8 is 16.652 which is little higher than the level of significance value of 15.51 with d f=8, and it indicates that there is higher degree of agreement between the theoretical values (mean) and the observed values (the experimental values)

3 Correlation analysis : From the correlation matrix it is revealed that most of the variables inter se have good correlation with each other beyond 0.7 There is good degree of correlation within variables to a r value in excess of 0.9 It is observed that the least correlation exits between variable no. 8 (leaflets) with variable no 3 (magazines) of 0.239 Overall there is good correlation

4. The component score co-efficient matrix (a) – standardized – of the principal component analysis, reveals that there is high degree of agreement and goodness of fit of the variables and the respondents on the data for the test of

the significance for the ranking decisions

06 RESULT SUMMARY

Based on the descriptive and statistical analysis of the survey results, following are the findings and the observations vis-à-vis the objectives of the study

Sr. No	Survey objectives	Findings and observations
1.	To obtain impressions about the presence or absence of marketing practices at ports handling liquid cargo.	From the respondents constructs on the presence or absence of competition and need for marketing efforts, it implies the need and presence of marketing practices. It is further supported from the respondents opinion that market is supply driven in the context of liquid cargo handling and the divert trend from the natural monopoly of ports to the competitive forces i.e demand forces
2.	To obtain the opinions on the factors determining market place and customer service priorities.	The dimension of customer service has been opined to be the priority and the related responses reveals that the price and timely service holds the highest priorities to the customer. The quality service dimension and knowledge about competitor's strength and weaknesses holds the importance
3	To obtain perceptions on the relationships, if any, between the customer centric variables and competitive strengths	An inference can be drawn from the fact that there is a perception of positive relationship from the respondents on the customer concerns when related to the competitive aspects, more so the customer expectations holds the very high importance

4.	To obtain opinions on the priorities towards marketing stances.	The respondents believe and opine that uninterrupted service followed by cost effective and quality of services are the most important factors for determining a good marketing practice for the customer satisfaction.
5.	To obtain the opinions on the nature of competition at Indian Ports.	There are diverted views on the nature of competition present at Indian Ports. However, majority of the respondents except in Category B i e the regulators opine that the users are largely dominating at Indian Ports (handling chemical cargo). Port regulators however continuous to hold their monopolistic view. The researcher's independent view based on the literatures scan is that the competition at Indian Ports is imperfect in relation to liquid cargo handling.

Marketing strategies and practices.

The survey highlights the strategies and practices adopted by Indian Ports and logistic services providers to improve their competitiveness These strategies and practices are viewed in two parts : the priorities of the agencies and the views on programmes implemented to achieve these priorities.

These priorities and programmes have been evaluated on a scale where 1 represents the highest value (except otherwise defined or stated) in terms of importance or strengths or payoffs etc. and the upper larger number represents the lower value (e.g., in the case of largest number it indicates least degree of importance or much weaker degree of strength).

Priorities and strengths

Indian Ports & logistic services providers have given considerable and relative importance to four sets of issues Quality remains the number one competitive priority. The priority for Quality and Structural Change (which includes ability to change service mix, Quality delivery capabilities and low price capabilities) has been scaled moderate to high. This is good news and indicates that the industry is recognizing the importance of bringing about basic changes in marketing practices and processes The same is true for operations related changes. The top three priorities assigned are improving conformance to quality, improving service reliability and customer satisfaction The broader distribution with greater emphasis on structural changes reflects shrinking of distribution networks perhaps as a measure of cost control and improve customer service. This may be supported by a greater emphasis on "low price strategy" by Indian Ports and logistic service providers – perhaps an outcome of increase in competition. Services customisation has gained its moderate importance. Similar effect has been found on the increased emphasis on multiple / flexible practices with higher importance of broad service concepts

If perceived strengths are examined, the picture is similar to the degree of importance though it is disturbing that despite a low perceived strength in innovation, the agencies are not paying adequate importance to this factor. Perceived strengths on most factors like service reliability, performance quality, conformance quality, on-time service, volume change, customer satisfaction etc have been found relatively moderate.

In view of the competitive gap between perceived importance and strength, the factors like low price, design changes, service durability, and continued services are the prime concerns for managing the change. This is another indication of a shift in competition

About the other perceptions, there are two possible interpretations of "much stronger" and "much weaker" competitive practices looking to the average score with respect to the service dimension, timely delivery, flexibility, quality, price and service capabilities.

The survey result reveals that the marketing practices and strategy of most agencies are still not addressing certain fundamental issues of competition need to change service mix rapidly, need to introduce new service chain based on indigenous user needs, need to use process innovation and quality improvement process to reduce cost of operations and consequently price of the services.