



OPINION OF LOGISTICS INTERMEDIARIES ON THE DECISION PROCESS IN CHOOSING AIRLINES

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ABSTRACT

KEYWORDS:
Quick Response, Hindrances, Logistics intermediaries, Decision process.

The purpose of the study is to find out the opinion of logistics intermediaries on the decision process in choosing airlines. The study was focused to find whether there is any relationship with the profile of freight forwarders and the services rendered by them. Through factor analysis six factors were identified such as Judgement evaluation, Quick Response, Competitive pricing, Decision process, Convenience and Hindrances. The factors of opinion of logistics intermediaries on the decision process in choosing airlines were tested with the profile of the freight forwarders.

INTRODUCTION

The Logistics industry is heavily competitive in nature, as it is a service industry. Every freight forwarder / Logistics intermediaries provides their best service to retain and to attract customers. In this scenario, the company wants to evaluate and improve the performance. India's growing economy and willingness to adopt new reforms has invited major investments to India and have led to the entry of new airlines and launch of new destinations by existing airlines. The Indian air cargo sector is poised to undergo significant growth in the coming years. The international and domestic freight traffic have shown growth of 10.8 percent and 7.0 percent respectively resulting into overall increase of 9.3 percent in total freight traffic during the period (April-January) 2016-17 as compared to (April-January) 2015-16. Hence the opinion of Logistics intermediaries on the decision process in choosing airlines is depended on the quality of services provided by the airlines.

REVIEW OF LITERATURE

Cadotte, Woodruff and Jenkins (1987) defined CS as the emotional response of the customers. Helms and Mayo (2008) defined CS or dissatisfaction as the derivation from the customers' experience with a service encountered and the comparison of that experience to a given standard. In marketing literature, service satisfaction can be classified as an emotional feeling by the consumers after experiencing a certain service which in turn leads to an individual overall attitude towards purchasing of service (Oliver, 1981). Hence, customer emotional response, feeling, personal experience will determine the satisfaction and dissatisfaction of the service delivered.

Leonard and Sasser (1982) and Rabin (1983) stated that the quality of goods and services has become a recognized issue in the marketing context. Therefore, organization has to understand and achieve SQ to satisfy the customers' expectations and needs (Chen, et al., 2010). At the same time, SQ is at the forefront of many carriers' marketing strategies (Lorenzoni & Lewis, 2004).

OBJECTIVES OF THE STUDY

The objective of the study is to find the opinion of logistics intermediaries in the decision process of choosing airlines

NEED FOR THE STUDY

The present day business is mounting in terms of air cargo through various airlines. The freight forwarder / logistics intermediaries are striving hard to achieve the business volume to a greater extent. The present study aims at analyzing the opinion of the logistics intermediaries, in terms of choosing airlines and their decision.

METHODOLOGY

Research methodology is an approach to receive the needed information by discovering the data from various sources which may be primary and secondary. The adopted methodology is primary data collection

Sampling Size

The Questionnaire was distributed to 400 Logistics intermediaries all over Tamilnadu and only 329 returned which were valid and the remaining 71 were rejected.

DATA ANALYSIS AND INTERPRETATION

This section analyses the agreeability towards the factors influencing Logistics intermediaries in selection of airlines. For the purpose of the study the following statements were included.

- There is a minimum level of service on which I won't negotiate.
- The select of a airline is made hastily using information that I already have,
- A low price can reimburse for an inferior level of service.
- The first thing I do is to decide which airlines can afford the necessary service.
- The decision process is one of successively eradicating inferior options.
- If there is more than one airline contributing comparable price and service, I will split my cargo between the airlines.
- Price is one of the most imperative deliberations.
- Personal contacts are a significant factor in the selection of an airline.
- I weigh up all the merits and demerits of all the airlines that might be capable of providing the service.
- If the current airline is performing suitably, there is no need to change.
- A record of frequent delays in shipment would eliminate an airline from consideration for future contracts.
- I am prepared to pay a higher price to guarantee that the consignment arrives on time for future contracts.
- A shipping manager is refereed by the success of his shipping assessments.

- Given the choice between a traditional decision and potentially more profitable but chancier decisions, I would take the conservative option.
- My selection of an airline is guided by my acquaintance and knowledge rather than a formal process of appraisal.
- Only a small number of factors affect the final resolution
- When evaluating options, I have a clear idea of the maximum price that I can afford to pay no matter how good the service.
- Conserving the reputation of my company and the goodwill of clients is the most significant deliberation.
- For a particular trade I prefer to convey a long-term contract with a single airline than to deal with several airlines on a consignment basis.
- Airline select judgments can usually be left to logistics intermediaries
- When considering options, I tend to overlook services that are troublesome and /or difficult to use.
- A shipping manager should be prepared to take intermittent risks.
- We choose the shipping line first, and then choose the airline from those assisted by the shipping line.
- We agree the airline to ship from/to, then select the shipping line only from those serving airline.
- Neither because they are decided on separately.

RELIABILITY STATISTICS

Cronbach's alpha test of reliability is performed, and only those items are selected which have a Cronbach's alpha of at least 0.844 or more (Table 1).

Table 1- Reliability Statistics (Cronbach's Alpha)

S.No	Construct	Items	Cronbach's alpha	Overall Cronbach's Alpha
1	Judgement Evaluation	7	0.914	0.844
2	Quick Response	6	0.844	
3	Competitive pricing	3	0.754	
4	Decision process	3	0.734	
5	Convenience	3	0.704	
6	Hindrances	2	0.717	

Source: computed from primary data

To determine the underlying structure, the correlation matrix was initially examined to determine how appropriate it was for factor analysis. Factor analysis was performed with twenty five statements related to forwarders perspective towards decision process in choosing an airline. The Kaiser-Meyer-Olkin (KMO) value for the collected data was 0.865 which was higher than the recommended minimum of 0.6 (Kaiser, 1974), indicating that the sample size was adequate

for applying factor analysis, and significant Bartlett's test of sphericity supported the use of factor analysis to extract independent variables associated with logistics intermediaries perspective towards decision process in choosing an airline. The degree of common variance among the 25 variables is mediocre which reflects that if a factor analysis is concluded, the factors extracted will account for fair amount of variance but not a substantial amount.

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	4332.644
	df	300
	Sig.	.000

Source: computed from primary data

Agreeability of Decision process in choosing a airline : Perspective	Initial	Extraction
There is a minimum level of service on which I won't negotiate.	1.000	.753
The select of a airline is made hastily using information that I already have,	1.000	.725
A low price can reimburse for an inferior level of service.	1.000	.691
The first thing I do is to decide which airlines can afford the necessary service.	1.000	.689
The decision process is one of successively eradicating inferior options.	1.000	.629
If there is more than one airline contributing comparable price and service, I will split my cargo between the airlines.	1.000	.605
Price is one of the most imperative deliberations.	1.000	.767
Personal contacts are a significant factor in the selection of an airline.	1.000	.600
I weigh up all the merits and demerits of all the airlines that might be capable of providing the service.	1.000	.655
If the current airline is performing suitably, there is no need to change.	1.000	.726
A record of frequent delays in shipment would eliminate an airline from consideration for future contracts.	1.000	.434
I am prepared to pay a higher price to guarantee that the consignment arrives on time for future contracts.	1.000	.650
A shipping manager is refereed by the success of his shipping assessments.	1.000	.349
Given the choice between a traditional decision and potentially more profitable but chancier decisions, I would take the conservative option.	1.000	.511
My selection of an airline is guided by my acquaintance and knowledge rather than a formal process of appraisal.	1.000	.398
Only a small number of factors affect the final resolution	1.000	.556
When evaluating options, I have a clear idea of the maximum price that I can afford to pay no matter how good the service.	1.000	.779
Conserving the reputation of my company and the goodwill of clients is the most significant deliberation.	1.000	.853
For a particular trade I prefer to convey a long-term contract with a single airline than to deal with several airlines on a consignment basis.	1.000	.374
Airline select judgments can usually be left to logistics intermediaries	1.000	.819
When considering options, I tend to overlook services that are troublesome and /or difficult to use.	1.000	.833
A shipping manager should be prepared to take intermittent risks.	1.000	.857
We choose the shipping line first, and then choose the airline from those assisted by the shipping line.	1.000	.656
We agree the airline to ship from/to, then select the shipping line only from those serving airline.	1.000	.806
Neither because they are decided on separately.	1.000	.631

Extraction Method: Principal Component Analysis.

Source: computed from primary data

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.890	27.560	27.560	6.890	27.560	27.560	5.195	20.779	20.779
2	3.876	15.502	43.062	3.876	15.502	43.062	3.241	12.965	33.744
3	1.835	7.342	50.404	1.835	7.342	50.404	2.288	9.153	42.897
4	1.528	6.111	56.514	1.528	6.111	56.514	2.095	8.381	51.278
5	1.184	4.734	61.249	1.184	4.734	61.249	1.843	7.373	58.651
6	1.033	4.131	65.380	1.033	4.131	65.380	1.682	6.729	65.380
7	.933	3.730	69.110						
8	.889	3.556	72.666						
9	.757	3.027	75.693						
10	.703	2.811	78.503						
11	.627	2.507	81.010						
12	.572	2.287	83.297						
13	.523	2.094	85.391						

14	.487	1.949	87.340						
15	.460	1.839	89.179						
16	.419	1.674	90.853						
17	.387	1.547	92.400						
18	.376	1.505	93.905						
19	.308	1.232	95.138						
20	.295	1.179	96.316						
21	.264	1.055	97.371						
22	.250	1.001	98.372						
23	.194	.774	99.146						
24	.137	.547	99.694						
25	.077	.306	100.000						

Extraction Method: Principal Component Analysis.

Source: computed from primary data

Agreeability of Decision process in choosing an airline : Forwarders perspective		Component						Labeled as
		1	2	3	4	5	6	
FP22	A shipping manager should be prepared to take intermittent risks.	.900						Judgement evaluation I (20.779)
FP20	Port select judgments can usually be left to logistics intermediaries	.873						
FP17	When evaluating options, I have a clear idea of the maximum price that I can afford to pay no matter how good the service.	.852						
FP10	If the current port is performing suitably, there is no need to change.	.841						
FP12	I am prepared to pay a higher price to guarantee that the consignment arrives on time for future contracts.	.788						
FP14	Given the choice between a traditional decision and potentially more profitable but chancier decisions, I would take the conservative option.	.666						
FP19	For a particular trade I prefer to convey a long-term contract with a single port than to deal with several ports on a consignment basis.	.545						

FP21	When considering options, I tend to overlook services that are troublesome and /or difficult to use.		.766			Quick response needs II (33.744)
FP18	Conserving the reputation of my company and the goodwill of clients is the most significant deliberation.		.761			
FP9	I weigh up all the merits and demerits of all the ports that might be capable of providing the service.		.726			
FP16	Only a small number of factors affect the final resolution		.675			
FP11	A record of frequent delays in shipment would eliminate an airline from consideration for future contracts.		.622			
FP13	A shipping manager is refereed by the success of his shipping assessments.		.546			
FP15	My selection of an airline is guided by my acquaintance and knowledge rather than a formal process of appraisal.	Not Rotated				
FP7	Price is one of the most imperative deliberations.		.845			Competitive pricing III (42.897)
FP8	Personal contacts are a significant factor in the selection of an airline.		.740			
FP6	If there is more than one port contributing comparable price and service, I will split my cargo between the ports.		.693			
FP4	The first thing I do is to decide which ports can afford the necessary service.			.789		Decision process IV (51.278)
FP3	A low price can reimburse for an inferior level of service.			.780		

FP5	The decision process is one of successively eradicating inferior options.				.623			
FP24	We agree the port to ship from/to, then select the shipping line only from those serving port.					.861	Convenience V (58.651)	
FP25	Neither because they are decided on separately.					.668		
FP23	We choose the shipping line first, then choose the port from those assisted by the shipping line.					.652		
FP1	There is a minimum level of service on which I won't negotiate.						.833	Hindrances VI (65.380)
FP2	The select of an airline is made hastily using information that I already have,						.763	
Eigen values		6.890	3.876	1.835	1.528	1.184	1.033	Rotated sum of squared loadings
% of Variance		27.560	15.502	7.342	6.111	4.734	4.131	
Cumulative %		20.779	33.744	42.897	51.278	58.651	65.380	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 7 iterations.								

Source: computed from primary data

All the variables extracted under group 1 are related to opinion of logistics intermediaries. Therefore, factor 1 is named as 'Judgement Evaluation'. The variables extracted under factor 2 are related to responses; hence it is named as 'Quick Response'. The third factor is named as 'Competitive pricing', fourth factor as 'Decision process', the fifth factor is named

as 'Convenience' and the sixth factor is named as 'Hindrances'. The factors thus extracted were tested for reliability. The factor Judgement Evaluation scored 0.914, Quick Response scored 0.844, Competitive pricing scored 0.754, Decision process scored 0.734, Convenience scored 0.704 and Hindrances scored 0.717. All the factors were found to be reliable.

Figure 1 Forwarders Perspective towards Decision process in choosing an airline

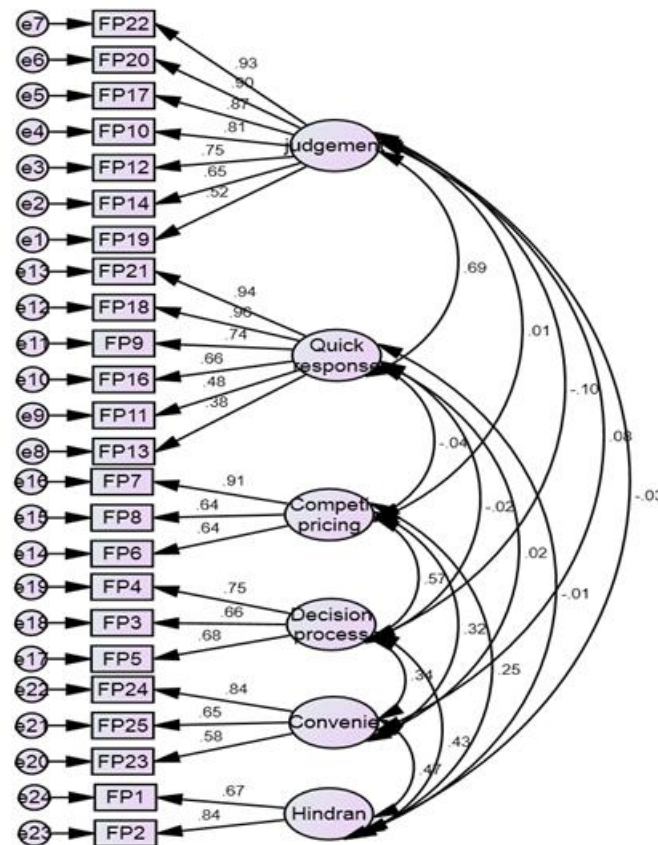


Fig 1 CFA of factors forwarders perspective towards decision process in choosing an airline.

ASSESSING OVERALL MEASUREMENT MODEL FITNESS

The results shown in the below table provide a quick overview of the model fit, which includes the value (490.416), together with its degrees of freedom (237) and probability value (0.000). In the table NPAR stands for

Number of Parameters, and CMIN (χ^2) is the minimum discrepancy and represents the discrepancy between the unrestricted sample covariance matrix S and the restricted covariance matrix. Df stands for degrees of freedom and P is the probability value.

Table 6 AMOS output showing Model Fit

S.No	Model	NPAR	χ^2	DF	P	CMIN/DF
1	Default model	63	490.416	237	.000	2.069
2	Saturated model	300	.000	0		
3	Independence model	24	4391.484	276	.000	15.911

Source: computed from primary data

In SEM a relatively small chi-square value supports the proposed theoretical model being tested. In this model the χ^2 value is 490.416 and is small compared to the value of the independence model (4391.484). Hence the χ^2 value is good.

Although the χ^2 seems good, it is also appropriate to check the value of χ^2 divided by df (Wheaton, Muthen, Alwin and Summers, 1977) as the χ^2 statistic is particularly sensitive to sample sizes (that is, the probability of model rejection increases with increasing sample size, even if the model is minimally false), and hence chi-square (χ^2) divided by degrees of freedom is suggested as a better fit metric (Bentler and Bonnett, 1980). It is recommended that this metric not exceed five for models with good fit (Bentler, 1989). For the current CFA model, as shown in the above table, χ^2/df was 2.069 ($\chi^2 = 490.416$; $df = 237$), suggesting acceptable model fit.

The other different common model-fit measures used to assess the models overall goodness of fit are Goodness of Fit Index (GFI) obtained is 0.893, AGFI is 0.865, NFI, RFI, CFI, TLI are 0.888, 0.870, 0.938 and 0.928 respectively. RMSEA is 0.057 and RMR is 0.082. The Confirmatory factor analysis showed an acceptable overall model fit and hence, the theorized model fit well with the observed data.

The factors of ‘Forwarders perspective towards decision process in choosing an airline’ are tested with profile of logistics intermediaries through ANOVA.

H0 : There is no significant difference in Judgement Evaluation factor among the profile of logistics intermediaries.

Table 7 ANOVA							
Source of Variance		Sum of Squares	df	Mean Square	F	Sig.	Result
Airline preferred	Between Groups	48.124	27	1.782	1.524	.050	NS
	Within Groups	352.089	301	1.170			
	Total	400.213	328				
Nature of the firm in employed	Between Groups	8.546	27	.317	1.296	.153	NS
	Within Groups	73.485	301	.244			
	Total	82.030	328				
Years of service	Between Groups	30.767	27	1.140	.919	.584	NS
	Within Groups	373.081	301	1.239			
	Total	403.848	328				
Mode of operation	Between Groups	7.011	27	.260	1.061	.387	NS
	Within Groups	73.700	301	.245			
	Total	80.711	328				
Area of operation	Between Groups	20.194	27	.748	1.338	.126	NS
	Within Groups	168.225	301	.559			
	Total	188.419	328				

Source: computed from primary data

*Significant at 0.05 level NS – Not Significant

From the table it can be concluded that there is no significant difference in Judgement evaluation factor among the profile of logistics intermediaries as the p value is greater than 0.05.

H0: There is no significant difference in Quick Response factor among the profile of logistics intermediaries.

Table 8 ANOVA							
Source of variance		Sum of Squares	df	Mean Square	F	Sig.	Result
Airline preferred	Between Groups	27.349	23	1.189	.973	.501	NS
	Within Groups	372.864	305	1.223			
	Total	400.213	328				
Nature of the firm in employed	Between Groups	4.321	23	.188	.737	.806	NS
	Within Groups	77.709	305	.255			
	Total	82.030	328				
Years of service	Between Groups	22.178	23	.964	.771	.768	NS
	Within Groups	381.670	305	1.251			
	Total	403.848	328				
Mode of operation	Between Groups	3.053	23	.133	.521	.968	NS
	Within Groups	77.658	305	.255			
	Total	80.711	328				
Area of operation	Between Groups	11.599	23	.504	.870	.640	NS
	Within Groups	176.820	305	.580			
	Total	188.419	328				

Source: computed from primary data

*Significant at 0.05 level NS – Not Significant

From the table it can be concluded that there is no significant difference in Quick response factor among the profile of logistics intermediaries as the p value is greater than 0.05.

H0: There is no significant difference in Competitive pricing factor among the profile of logistics intermediaries.

Source of variance		Sum of Squares	df	Mean Square	F	Sig.	Result
Airline preferred	Between Groups	8.056	12	.671	.541	.887	NS
	Within Groups	392.156	316	1.241			
	Total	400.213	328				
Nature of the firm in employed	Between Groups	3.961	12	.330	1.336	.197	NS
	Within Groups	78.069	316	.247			
	Total	82.030	328				
Years of service	Between Groups	18.633	12	1.553	1.274	.233	NS
	Within Groups	385.215	316	1.219			
	Total	403.848	328				
Mode of operation	Between Groups	2.380	12	.198	.800	.650	NS
	Within Groups	78.331	316	.248			
	Total	80.711	328				
Area of operation	Between Groups	13.348	12	1.112	2.008	.023	S
	Within Groups	175.071	316	.554			
	Total	188.419	328				

Source: computed from primary data

*Significant at 0.05 level NS – Not Significant

From the table it can be concluded that there is no significant difference in Competitive pricing factor among the profile of logistics intermediaries as the p value is greater than 0.05 but Competitive pricing factor is significant with the 'Area of operation' as the p value is less than 0.05.

H0 : There is no significant difference in Decision process factor among the profile of logistics intermediaries.

Source of variance		Sum of Squares	df	Mean Square	F	Sig.	Result
Airline preferred	Between Groups	26.353	12	2.196	1.856	.039	S
	Within Groups	373.860	316	1.183			
	Total	400.213	328				
Nature of the firm in employed	Between Groups	3.249	12	.271	1.086	.371	NS
	Within Groups	78.781	316	.249			
	Total	82.030	328				
Years of service	Between Groups	14.450	12	1.204	.977	.470	NS
	Within Groups	389.398	316	1.232			
	Total	403.848	328				
Mode of operation	Between Groups	2.251	12	.188	.756	.696	NS
	Within Groups	78.460	316	.248			
	Total	80.711	328				
Area of operation	Between Groups	12.615	12	1.051	1.890	.035	S
	Within Groups	175.805	316	.556			
	Total	188.419	328				

Source: computed from primary data

*Significant at 0.05 level NS – Not Significant

From the table it can be concluded that there is no significant difference in Decision process factor among the profile of logistics intermediaries as the p value is greater than 0.05 but Decision process factor is significant with the 'Airline preferred' and 'Area of operation' as the p value is less than 0.05.

H0 : There is no significant difference in Convenience factor among the profile of logistics intermediaries.

Source of variance		Sum of Squares	df	Mean Square	F	Sig.	Result
Airline preferred	Between Groups	15.932	12	1.328	1.092	.366	NS
	Within Groups	384.281	316	1.216			
	Total	400.213	328				
Nature of the firm in employed	Between Groups	3.224	12	.269	1.077	.379	NS
	Within Groups	78.806	316	.249			
	Total	82.030	328				
Years of service	Between Groups	27.766	12	2.314	1.944	.029	S
	Within Groups	376.082	316	1.190			
	Total	403.848	328				
Mode of operation	Between Groups	2.613	12	.218	.881	.567	NS
	Within Groups	78.098	316	.247			
	Total	80.711	328				
Area of operation	Between Groups	9.749	12	.812	1.437	.148	NS
	Within Groups	178.671	316	.565			
	Total	188.419	328				

Source: computed from primary data

*Significant at 0.05 level NS - Not Significant

From the table it can be concluded that there is no significant difference in Convenience factor among the profile of logistics intermediaries as the p value is greater than 0.05 but Convenience factor is significant with the 'Years of service' as the p value is less than 0.05.

H0 : There is no significant difference in Hindrances factor among the profile of logistics intermediaries.

Source of variance		Sum of Squares	df	Mean Square	F	Sig.	Result
Airline preferred	Between Groups	5.257	8	.657	.532	.832	NS
	Within Groups	394.956	320	1.234			
	Total	400.213	328				
Nature of the firm in employed	Between Groups	2.380	8	.298	1.195	.301	NS
	Within Groups	79.650	320	.249			
	Total	82.030	328				
Years of service	Between Groups	3.151	8	.394	.315	.960	NS
	Within Groups	400.697	320	1.252			
	Total	403.848	328				
Mode of operation	Between Groups	2.426	8	.303	1.240	.275	NS
	Within Groups	78.285	320	.245			
	Total	80.711	328				
Area of operation	Between Groups	12.649	8	1.581	2.879	.004	S
	Within Groups	175.770	320	.549			
	Total	188.419	328				

Source: computed from primary data

*Significant at 0.05 level NS - Not Significant

From the table it can be concluded that there is no significant difference in Hindrances factor among the profile of logistics intermediaries as the p value is greater than 0.05 but Hindrances factor is significant with the 'Area of operation' as the p value is less than 0.05.

CONCLUSION

The logistics intermediaries were so particular while taking decision towards selection of airlines, the air line should provide various services which are affirmative for the shipment of the cargo in terms of Quick response, convenience and without hindrances. The logistics intermediaries would choose those airlines which are without any interruptions in the movement of cargo to the destination.

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