Chapter VII

Hypotheses Validation

As discussed in the Chapter III following hypotheses were formulated.

i. The present distribution channels design does not seem to be helping the manufacturers in sales.

ii. The automobile manufacturers seem to be planning to change their present channels of distribution.

iii. There may not be any association between the number of dealers of each manufacturer and the sales.

These hypotheses were considered as the principal instruments in the study of distribution channels design automobile industry passenger vehicles segment. The data, as stated earlier in Chapter VI were collected from the twenty manufacturers (Eight 2-wheeler manufacturers and twelve 4-wheeler manufacturers) and their 65 dealers in Pune region. On the basis of the data analysed, in the earlier chapters the validity of the hypotheses was tested statistically.

7.1 (i). Hypothesis: The present distribution channels design does not seem to be helping the manufacturers in sales

The researcher wanted to examine the association between present channels of distribution and the Sales and also find the direction of this relationship. The present channels of distribution were exclusive

dealers. All the dealers were exclusive in terms of brand of vehicles sold. The other factors of exclusiveness were:

i.   Territory of operation,

ii.   Vehicles serviced by the dealer and,

iii.   Spare parts stocked /sold.

These variables which were identified as the independent variables were analysed for association with continuous variable Sales in the years 2000, 2001, 2002, 2003 which were identified as the dependant variables.

The hypothesis was statistically stated as:

H_0= Exclusive channels of distribution are not associated with the sales.

Vs

H_1= Exclusive channels of distribution are inversely associated with the sales.

7.1.1 Test statistic

The association to be tested was between the variables, one of which was a qualitative variable (Exclusiveness of the dealers) and the other was a continuous variable (Sales), and the test statistic 'Spearman's Rank correlation Rho R' was calculated.

Table 7.1

Association of exclusiveness factor, 'Exclusive in terms of territory of operation' and sales during the years 2000-2003 (Spearman's rho Correlations)

	Sales 00	Sales 01	Sales 02	Sales 03
Correlation Coefficient (R)	-.024	-.039	-.104	-.201
Sig. (p) (1- tailed)	.057@	.442	.396	.225

Table 7.2

Association of exclusiveness factor, 'Exclusive in terms of vehicles serviced with sales during the years 2000-2003 (Spearman's rho Correlations)

	Sales 00	Sales 01	Sales 02	Sales 03
Correlation Coefficient (R)	0.298	- 0.229	- 0.215	- 0.259
Sig. (p) (1- tailed)	0.031*	0.059@	0.057@	0.020*

Table 7.3

Association of exclusiveness factor, 'Exclusive in terms of spare parts stocked/ sold with sales during years 2000,-2003 (Spearman's rho Correlations)

	Sales 00	Sales 01	Sales 02	Sales 03
Correlation Coefficient (R)	- 0.358	- 0.188	- 0.202	- 0.184
Sig.(p) (1- tailed)	.012*	.100	.070@	.074@

* Correlation is significant at the .05 level (1-tailed).

@The correlation is borderline significant.

\# Sales are in number of vehicles during the years 2000, 2001, 2002, 2003.

7.1.2 Decision

The Spearman's Correlation coefficient 'R' is significant at 5% level.

∵ 'Spearman's Correlation coefficient' $R \neq 0$

and $R < 0$,

Hypothesis H_0, was rejected and H_1. was accepted.

7.1.3 Conclusion

This implied that there is an inverse association between exclusiveness of dealers in terms of, vehicles serviced, spare parts stocked/sold and sales during the year 2000, 2001, 2002, and 2003.

If the dealers are exclusive in terms of vehicles serviced, spare parts sold /stocked then it is likely that the sales may be lower than expected.

The hypothesis, 'The present distribution channels design does not seem to be helping the manufacturers in sales' is validated.

7.2 ii. Hypothesis: The automobile manufacturers seem to be planning to change their present channels of distribution

The researcher was interested in finding out whether the manufacturers were thinking of changing the present channels of distribution in the changing scenario of the automobile industry in India. The variables identified for testing this hypothesis

i.   Manufacturers of vehicles (vehicle type) 2-wheeler and 4-wheeler and

ii.   Their plans to change present channels of distribution.

The independent variable was the vehicle manufacturers and the dependent variable was their plans to change the present channels of distribution.

The hypothesis was statistically stated as:

H_0= Vehicle type is not associated with plan to change the present channels of distribution.

Vs

H_1= Vehicle type is associated with change in the present channels of distribution.

7.2.1 Test statistic

The variables were of qualitative type (discrete). To test the association between these variables Chi-Square test was applied.

Table 7.4 Chi-Square Test			
	Value	df	Asymp. Sig. (2-sided)
Pearson's Chi-Square	3.333	1	.05
Likelihood Ratio	4.006	1	.045

7.2.2 Decision

∴ Pearson Chi-square (Chi-square value 3.333, p=0.05) is significant

We reject hypothesis H_0 and accept H_1.

7.2.3 Conclusion

This implied that is there is a significant association between the manufacturers and their plans to change present channels of distribution. The hypothesis 'The automobile manufacturers seem to be planning to change their present channels of distribution' is validated.

7.3   iii.   Hypothesis: There may not be any association between the number of dealers of each manufacturer and the sales.

The researcher wanted to find out whether there existed any association between the number of dealers of each manufacturer and the sales. The sales data ending in the financial year 2000, 2001, 2002, and 2003 were collected. The researcher was also of interest to find the direction of the association. The independent variable was the number of dealers of each manufacturer and the dependent variable was the Sales, during the years 2000, 2001, 2002 and 2003.

The hypothesis was statistically stated as:

Hypothesis

H_0= There is no association between the number of dealers of a manufacturer and the sale in the year 2000, 2001, 2002 and 2003

Vs

H_1= There is a positive association between the number of dealers of each manufacturer and the sales

7.3.1 Test statistic

The sales were not normally distributed, hence the sales data were transformed using mathematical function, monotonic in nature i.e.

log_e. To test the association between the number of dealers of a manufacturer and the sales Pearson's correlation technique (R) was applied.

Table 7.5.
Pearson's correlation coefficient between the number of dealers in Pune region and the sales in the year 2000, 2001 2002, 2003.

Pearson's Correlation	nsales00	nsales01	nsales02	nsales03
Correlation coefficient	$R = 0.717$	$R = 0.728$	$R = 0.703$	$R = 0.693$
Significance (1-tailed)	$p = .002$	$p = .001$	$p = .001$	$p = .000$

7.3.2 Decision

$\therefore$ Correlation Coefficient $R \neq 0$,

and $\qquad$ $R > 0$,

Hypothesis H_0 was rejected and alternative hypothesis H_1 was accepted.

7.3.3 Conclusion

There was a positive association between the number of dealers of each manufacturer in Pune region and the corresponding sales of vehicles.

The hypothesis 'there may not be any association between the number of dealers of each manufacturer and the sales' is rejected.

The validations of the hypotheses lead to certain suggestions for the passenger vehicle manufactures and their dealers. The suggestions are discussed in the following chapter VIII (Suggestions).