

## **CHAPTER VI**

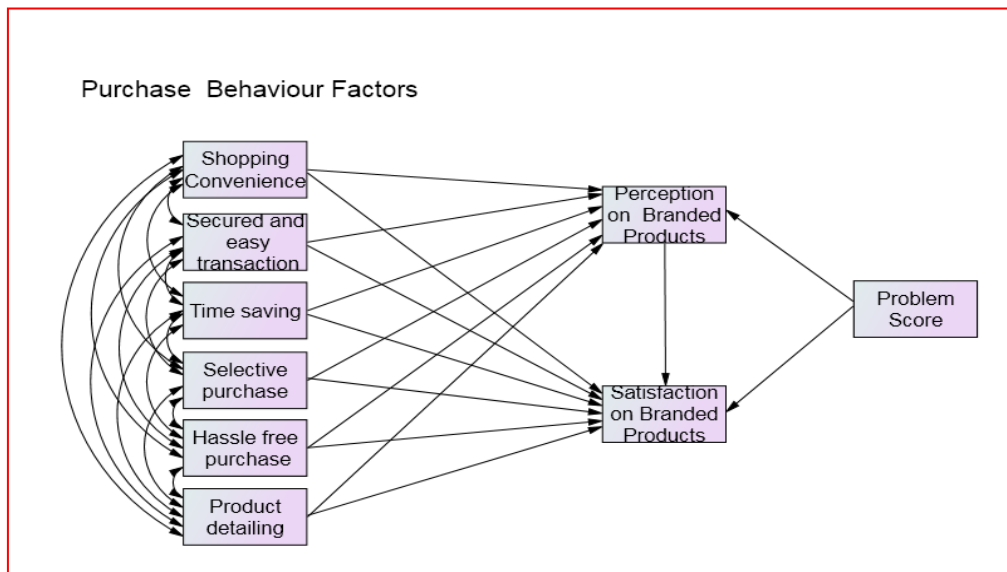
### **PATH ANALYSIS FOR BRANDED AND NON-BRANDED PRODUCTS**

#### **6.1 RELATIONSHIP BETWEEN PURCHASE BEHAVIOUR FACTORS, PERCEPTION AND SATISFACTION OF BRANDED PRODUCTS PURCHASED ONLINE.**

The third objective of the study is to find the relationships between several purchase behaviour factors with respect to branded products purchased online, the perception and satisfaction of the respondents who purchased these products. The problems faced by the respondents through online purchase process was also studied as a factor which might affect the perception and satisfaction. The purchase behaviour factors namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing are assumed to influence the perception and satisfaction of the respondents towards branded products purchased online. Also problem score found out to measure the extent of problems faced by the respondents, is assumed to influence the perception and satisfaction of the respondents.

Purchase behaviour factors, perception and problem scores have been hypothesized to influence the satisfaction scores of the respondents. The influence of perception on satisfaction have been studied with the assumption that purchase behaviour factors have both direct and indirect effect on satisfaction. The hypothesized path analysis model explaining the relationship between these factors are shown below.

**Path Model showing relationship between Purchase Behaviour, Perception and Satisfaction of Branded Products Purchased online**



**Fig. 6.1**

The arrows leading from the purchase behaviour factors, namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing measure the direct effects of these factors on perception and satisfaction factors. The direct effects of perception on satisfaction as well as problems on perception and satisfaction are shown by the leading arrows from the perception and problem score factors to the satisfaction factor. It is also assumed that purchase behaviour factors have indirect effect on satisfaction that is perception factor acts as a mediating variable to measure the indirect effect of purchase behaviour on satisfaction. The factor scores of purchase behaviour and the scores of perception, satisfaction and problems were used in this model to understand their inter-relationships.

The following specific objectives helped to develop path analysis model.

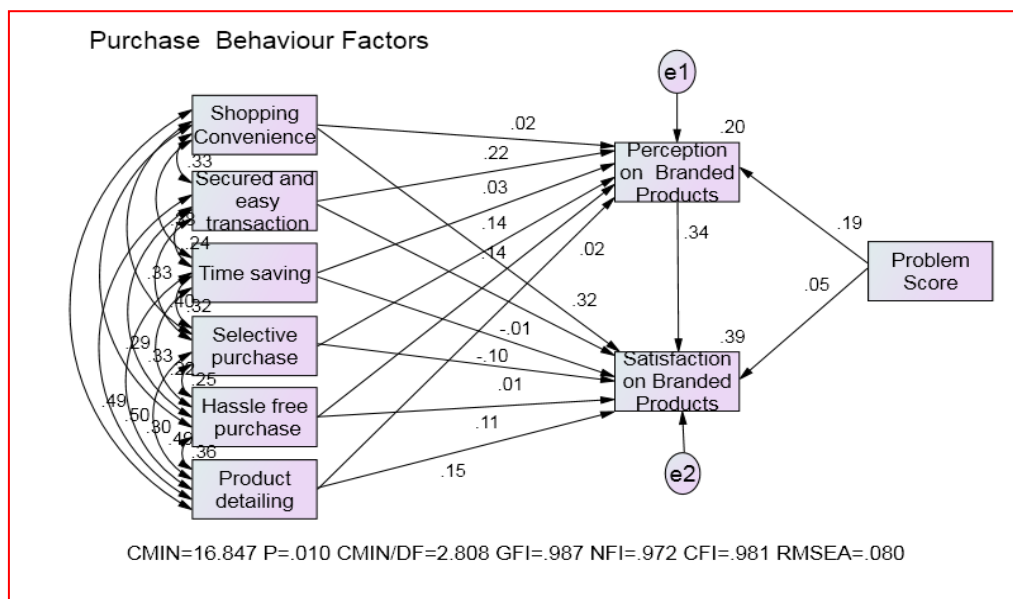
1. To examine how the purchase behaviour factors namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing influence the perception and satisfaction of respondents regarding branded products purchased online.
2. To examine how the perception factor explains the satisfaction factor.
3. To examine how the problem factor affects perception and satisfaction factor.
4. To establish a causal relationship of purchase behaviour, perception and satisfaction of branded products purchased online among the respondents.

Once the overall goodness of fit of the model is established, the following hypotheses has been tested.

- H<sub>01</sub>. There is a direct positive relationship between purchase behaviour factors and perception of branded products purchase online.
- H<sub>02</sub>. There is a direct positive relationship between purchase behaviour factors and satisfaction of branded products purchase online.
- H<sub>03</sub>. There is a direct negative relationship between perception and problems faced.
- H<sub>04</sub>: There is a direct negative relationship between satisfaction and problems faced.
- H<sub>05</sub>: There is a direct positive relationship between perception and satisfaction of branded products purchased online.
- H<sub>06</sub>. There is a mediation effect played by perception between purchase behaviour and satisfaction of the respondents.

The results of path analysis which shown in the model given below explain the relationship between purchase behaviour factors, knowledge, perception and usage factors.

**Path Model showing relationship between Purchase Behaviour, Perception, Satisfaction and Problems Faced**



**Fig. 6.2**

The above diagram shows the relationship between purchase behaviour factors, perception, satisfaction and problem factors. The path coefficients are standardized regression coefficients. The curved arrows represent the co-variances between any two independent variables. The model assumes a covariate relationship between the Purchase Behaviour factors. The regression estimates produced by AMOS for Unstandardized regression are given below. The regression coefficients were estimated by Maximum Likelihood method. AMOS ver.20 was used to estimate the path coefficients.

The following model fit statistics were used to test the goodness of fit of the model.

**CMIN:** CMIN given by AMOS is a chi-square statistic, which compares the tested statistics with the theoretical model. A non-significant chi-square value indicate that the data fits the model well.

**CMIN/DF:** A relative chi-square measure is an index of how much data fit to the model has been reduced by one or more paths. The index having a value of 3 or below 3 says the data best fits the model, whereas a value between 3 and 5 is good.

**GFI:** The Goodness of Fit Index explains the proportion of the variance in the sample variance-covariance accounted by the model. This should be above 0.90 and below 1 for a good model fit. A value of 1 is considered as saturated model.

**NFI:** Normed Fit Index, is simply the difference between the chi-square values of two models (default and independent) divided by the chi-square value of independent model. The NFI value being above 0.90 is considered to be good fit.

**CFI:** The Comparative Fit index uses a similar approach and is said to be a good index which can be used even for small sample. The value above 0.90 is considered to be good fit.

**RMSEA:** The Root Mean Square Error of Approximation, estimates lack of fit compared to the saturated model. RMSEA value of 0.05 or less indicates good fit and value between 0.05 and 0.08 indicates the model fit is adequate.

The model fit statistics estimated by AMOS for the path model developed are given below.

CMIN	= 16.847 (P<0.05)
DF	= 6
CMIN/DF	= 2.808
GFI	= 0.987
NFI	= 0.972

CFI = 0.981

RMSEA = 0.080

The results show that all the goodness of fit indices namely, GFI, NFI and CFI satisfy the criterion value of being above 0.90. The Chi-square value is significant ( $P < 0.05$ ) but CMIN/DF value is within the admissible limit of less than 5. The RMSEA value is 0.08 and can be considered as admissible. Since all the goodness of fit indices are within the recommended limits, it can be inferred that the model is good.

The model shown above gives the standardized regression weights of the respective factors and also squared multiple correlations. The regression weights show that these coefficients are comparable since they are independent of units of measurement. Among the purchase behaviour factors, all the six factors have direct positive relationship with the perception factor. However, it was found that shopping convenience, selective purchase, hassle free purchase and product detailing have positive effect on satisfaction whereas secured and easy transaction and time saving have negative effect on satisfaction factor. When the effects of purchase behaviour factors on perception are considered, the contribution of secured and easy transaction was more on perception factor (0.22), followed by selective purchase (0.14) and hassle free purchase (0.14) than other factors. Shopping convenience (0.02) and product detailing (0.02) are the least contributing factors to perception on branded products.

The purchase behaviour factors, namely, shopping convenience, selective purchase and hassle free purchase and product detailing have direct positive effect on satisfaction factor. Shopping convenience (0.320) is found to have more effect on satisfaction followed by product detailing (0.150) with least contributing factors being selective purchase (0.01) and secured and easy transaction (-0.01).

It is seen from the model that, perception has direct positive effect on satisfaction (0.34). Problem score has direct positive effect on both perception (0.19) and satisfaction (0.05).

The magnitude and direction of relationship between purchase behaviours, perception, satisfaction and usage are studied in detail with the unstandardized regression weights produced by AMOS which are given below.

**Table 6.1**  
**Perception and Satisfaction on Branded Products -**  
**Regression Weights for the path model**

Variable To	Path	Variable From	Estimate	S.E.	C.R.	P	Sig
Perception on Branded Products	<---	Secured and easy transaction	.295	.086	3.438	.000	**
Perception on Branded Products	<---	Time saving	.045	.091	.492	.623	Ns
Perception on Branded Products	<---	Selective purchase	.295	.131	2.251	.024	*
Perception on Branded Products	<---	Shopping Convenience	.022	.075	.294	.769	Ns
Perception on Branded Products	<---	Problem Score	.075	.021	3.647	.000	**
Perception on Branded Products	<---	Hassle free purchase	.301	.125	2.400	.016	*
Perception on Branded Products	<---	Product detailing	.041	.138	.295	.768	Ns
Satisfaction on Branded Products	<---	Problem Score	.038	.036	1.082	.279	Ns
Satisfaction on Branded Products	<---	Perception on Branded Products	.647	.100	6.497	.000	**
Satisfaction on Branded Products	<---	Shopping Convenience	.731	.126	5.790	.000	**
Satisfaction on Branded Products	<---	Time saving	-.295	.153	-1.932	.053	Ns
Satisfaction on Branded Products	<---	Product detailing	.549	.233	2.356	.018	*
Satisfaction on Branded Products	<---	Hassle free purchase	.459	.214	2.149	.032	*
Satisfaction on Branded Products	<---	Secured and easy transaction	-.028	.148	-.190	.849	Ns
Satisfaction on Branded Products	<---	Selective purchase	.026	.223	.119	.905	Ns

The above estimates are unstandardized regression estimates. The values given above are the regression estimates of the respective independent variables. Standard errors of respective regression coefficients are given as S.E. Critical ratio is given as C.R, which is the ratio of regression estimate values to S.E. Probability (P) shows which regression coefficients significantly contribute to the dependent variables. The ‘Sig.’ under \*\*/\* indicates the respective regression weights are

significant at less than 1 per cent or 5 per cent respectively. Ns indicates the regression weights are not significant.

The table shows that, purchase behaviour factors, among the six factors, secured and easy transaction, selective purchase and hassle free purchase have significant effect on perception on branded products purchased online. Hence, the hypothesis **H<sub>01</sub>** that **‘There is a direct positive relationship between purchase behaviour factors and perception on branded products purchased online’** was accepted with respect to these three factors only.

Shopping convenience, product detailing and hassle free purchase are found to have significant effect on satisfaction on branded products at either 1 per cent or 5 per cent level. Hence, the hypothesis **H<sub>02</sub>** that **‘There is a direct positive relationship between purchase behaviour factors and satisfaction of branded products purchased online’** is accepted for these three factors.

The regression coefficient of problem score regressed on perception which shows that the regression weight is positive, which proposes that problem score is found to have significant but positive effect on perception of branded products purchased online. Hence, the hypothesis **H<sub>03</sub>** that **‘There is a direct negative relationship between purchase behaviour factors and problem score’** is not accepted.

The regression coefficient of problem score on satisfaction is 0.038 which shows a direct positive relationship between these two and the probability level shows that the regression coefficient is not significant and hence the hypothesis **H<sub>04</sub>** that is **‘There is a direct negative relationship between satisfaction and problems faced’** is not accepted.

The regression coefficient of perception on branded products on satisfaction is 0.647 which shows that there exists a direct positive relationship between these two factors and the probability level shows that the regression coefficient is significant at 1% level and hence the hypothesis **H<sub>05</sub>** that **‘There is a direct positive relationship between perception and satisfaction of branded products purchased online’** is accepted.

**Table 6.2**

**Perception and Satisfaction on Branded Products - Direct, Indirect and Total Effects (Unstandardized)**

	Problem Score	Product Detailing	Hassle free purchase		Shopping Convenience	Selective purchase	Time saving	Secured and easy transaction	Perception on Branded Products
<b>Direct Effects</b>									
Perception on Branded Products	.075	.041	.301		.022	.295	.045	.295	---
Satisfaction on Branded Products	.038	.549	.459		.731	.026	-.295	-.028	.647
<b>Indirect Effects</b>									
Perception on Branded Products	---	---	---		---	---	---	---	---
Satisfaction on Branded Products	.049	.026	.195		.014	.191	.029	.191	---
<b>Total Effects</b>									
Perception on Branded Products	.075	.041	.301		.022	.295	.045	.295	---
Satisfaction on Branded Products	.087	.575	.654		.745	.217	-.267	.163	.647

*Source: Computed*

**Estimates of Direct Effects**

The direct effects are the coefficients associated with the single-headed arrows in a path diagram. In unstandardized model, the purchase behaviour factors namely product detailing (0.041), hassle free purchase (0.301), shopping convenience (0.022), selective purchase (0.295), time saving (0.045) and secured and easy transaction (0.295) have direct positive effects on perception of branded products. That is, due to the direct effects of purchase behaviour factors, when these scores go up by 1, perception score increases by the respective values of the coefficients of purchase behaviour factors. Similarly, the direct effects of purchase behaviour factors namely, Product detailing, hassle free purchase, shopping convenience and selective purchase have direct positive effects on satisfaction of branded products. That is, the increase in score of these purchase behaviour factors will proportionately increase the satisfaction of the respondents. In the case of problem score, both perception and satisfaction have



been positively influenced by problem score since the regression coefficients of problem score for these two factors are positive. Perception on branded products purchased online has direct positive effect (0.647) on satisfaction of branded products purchased online.

### Estimates of Indirect Effects

The above table 6.2 also explains the indirect effect of each of the column factor of purchase behaviour on each row factors. The table shows that the indirect effects of all the six factors of purchase behaviour have positive effect on Satisfaction.

**Table 6.3**

### Direct Effects of the Purchase Behaviour Factors before Mediation and After Mediation

Dependent Variable	Path	Purchase Behaviour Factors (Independent)	Before Mediation		After Mediation	
			Estimate	P	Estimate	P
Satisfaction on Branded Products	<---	Shopping Convenience	.730	.000	.731	.000
Satisfaction on Branded Products	<---	Time saving	-.276	.095	-.295	.053
Satisfaction on Branded Products	<---	Product detailing	.521	.039	.549	.018
Satisfaction on Branded Products	<---	Hassle free purchase	.715	.002	.459	.032
Satisfaction on Branded Products	<---	Secured and easy Transaction	.209	.182	-.028	.849
Satisfaction on Branded Products	<---	Selective purchase	.281	.239	.026	.905

Source: Computed

The results show that when the direct effects of the purchase behaviour factors before mediation were considered, it is seen that the effects of all the purchase behaviour factors except secured and easy transaction facilities have sign and almost same values of regression coefficients with little difference. However, there were no changes in the significance of these variables. That is shopping convenience, product detailing and hassle free purchase remained significant before and after mediation. Similarly secured and easy transaction and selective purchase remained not significant before and after mediation. This shows that, the introduction of perception has no particular impact on satisfaction of branded products purchased through online as

mediating variable. Hence, the hypothesis **H<sub>06</sub>** that ‘**There is a mediation effect played by perception between purchase behaviour and satisfaction of the respondents’ is not accepted.**

**Total Effects - Estimates**

The combined direct and indirect effect of each column variable on each row variable is called total effect. For example, total effect of product detailing on satisfaction is 0.575. This is the sum of the direct effect and indirect effect (0.549+0.026=0.575) it had on satisfaction score. The results show that the total effects of five of the six purchase behaviour factors on satisfaction of branded products is positive. The total effect of time saving factor on satisfaction is negative. That is increase in the purchase behaviour combined with perception will improve the satisfaction of branded products purchased through online by the respondents.

**Table 6.4  
Perception and Satisfaction on Branded Products - Direct, Indirect and Total Effects (Standardised)**

	<b>Problem Score</b>	<b>Product Detailing</b>	<b>Hassle free purchase</b>	<b>Shopping Convenience</b>	<b>Selective purchase</b>	<b>Time saving</b>	<b>Secured and easy transaction</b>	<b>Perception on Branded Products</b>
<b>Direct Effects</b>								
Perception on Branded Products	.192	.021	.140	.019	.142	.029	.217	---
Satisfaction on Branded Products	.051	.145	.111	.324	.007	-.100	-.011	.337
<b>Indirect Effects</b>								
Perception on Branded Products	---	---	---	---	---	---	---	---
Satisfaction on Branded Products	.065	.007	.047	.006	.048	.010	.073	---
<b>Total Effects</b>								
Perception on Branded Products	.192	.021	.140	.019	.142	.029	.217	---
Satisfaction on Branded Products	.116	.152	.158	.330	.054	.090	.063	.337

Similar to unstandardized regression weights, the relative contribution of standardized direct, indirect and total effects of each of column variable on the row variables are shown above. The standardized regression weights are free from units of measurements and hence, they are comparable. For example, it can be said that the direct effect of secured and easy transaction (0.217) on perception is relatively higher than selective purchase (0.142) or hassle free purchase (0.140) and the direct effects

of other factors. The variable, shopping convenience has low direct effect (0.019) on perception.

The direct effect of shopping convenience (0.324) on satisfaction is higher than other purchase behaviour factors. However, it could also be seen that perception on branded products on satisfaction is also higher (0.337) than the direct effects of purchase behaviour factors.

Purchase behaviour factors also have indirect effect on satisfaction. The indirect effect of secured and easy transaction (0.073) contributes more to satisfaction. The indirect effect of shopping convenience is least (0.006) compared to other factors.

From the standardized total effects, it can be observed that overall, secured and easy transaction (0.217) has more effect on perception followed by problem score (0.192). The total effect of shopping convenience is lesser (0.019) on perception when compared to other purchase behaviour factors.

The total effects of purchase behaviour factors on satisfaction are also given above. It is seen that the total effect of shopping convenience (0.330) contributes more to Satisfaction when compared with other purchase behaviour factors. However, perception is seen to contribute more (0.337) to satisfaction than the purchase behaviour factors.

### **Summary**

Path analysis was attempted to find the influence of purchase behaviour factors namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing on perception and satisfaction factors of branded products purchased online. Further, the effects of perception on satisfaction and the effects of problems faced on perception and satisfaction have also been studied. The mediation effects of perception factors between purchase behaviour and satisfaction score were also studied. The path model developed with these factors were tested for goodness of fit. The fit statistics namely CMIN, GFI, NFI, CFI and RMSEA were employed for the validity of the model. The goodness of fit statistics were within the admissible limits and it was inferred that the model was good.

Finally, the path coefficients were estimated and both direct, indirect and total effects of exogenous and endogenous variables were found out. The unstandardized and standardized regression weights were calculated. The results showed that the purchase behaviour factors. Secured and easy transaction, selective purchase and

hassle free purchase had significant effect on perception on branded products. Shopping convenience, product detailing and hassle free purchases were found to have significant effect on satisfaction of branded products. Perception on branded products on satisfaction was significant. While problems faced (Problem Score) had significant positive effect on perception, it did not have any significant effect on satisfaction.

The introduction of the mediating variable, perception had little effect on Satisfaction. The effects of purchase behaviour factors more or less remained the same even after introduction of mediating variable (Perception).

The standardized regression coefficients were found out to examine the relative contribution of each factor on the other. It was found that the direct effect of Secured and easy transaction on Perception was relatively higher than the selective purchase or hassle free purchase and the direct effects of other factors. The variable, shopping convenience has low direct effect on perception.

The direct effect of shopping convenience on satisfaction is higher than other purchase behaviour factors. However it could also be seen that perception on branded products on satisfaction is also higher the direct effects of purchase behaviour factors.

Purchase behaviour factors also have indirect effect on satisfaction. The indirect effect of secured and easy transaction contributes more to satisfaction. From the standardized total effects, it can be observed that overall, secured and easy transaction has more effect on perception followed by problem score.

The total effects of purchase behaviour factors on satisfaction show that the total effect of shopping convenience contributes more to satisfaction when compared with other purchase behaviour factors. However, perception is seen to contribute more to satisfaction than the purchase behaviour factors.

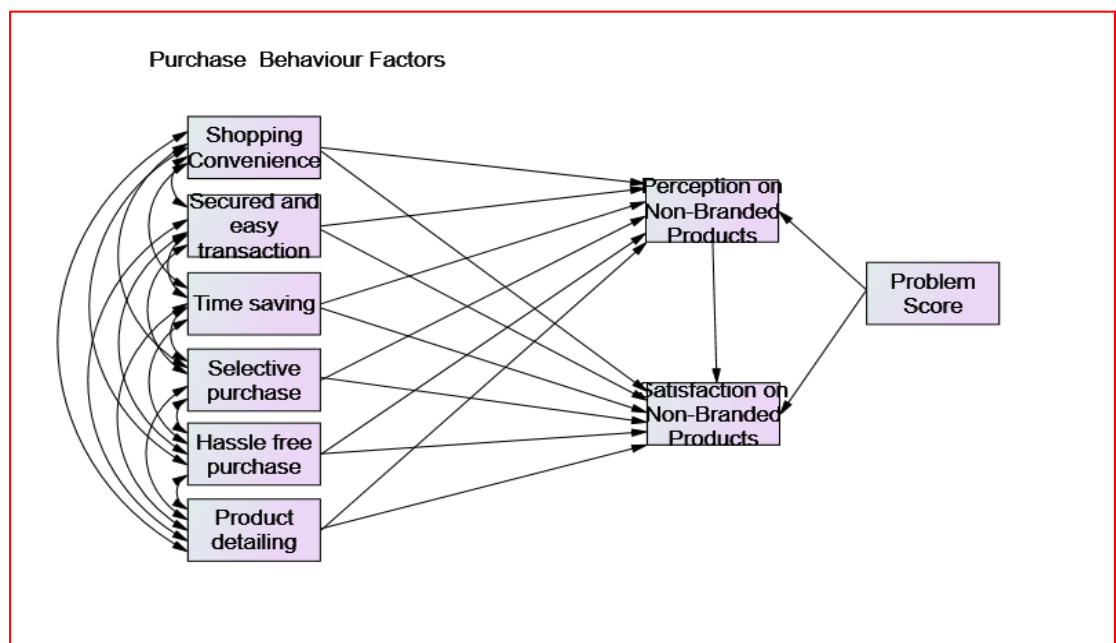
## **6.2 RELATIONSHIP BETWEEN PURCHASE BEHAVIOUR FACTORS, PERCEPTION AND SATISFACTION OF NON - BRANDED PRODUCTS PURCHASED ONLINE.**

Similar to the path model developed for branded products, the study aims to find the relationships between several purchase behaviour factors with respect to non-branded products purchased online, the perception and satisfaction of the respondents who purchased these products. The problems faced by the respondents through online purchase process was also studied as a factor which might affect the perception and satisfaction. The purchase behaviour factors namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product

detailing were assumed to influence the perception and satisfaction of the respondents towards non-branded products purchased online. Also problem score, found out to measure the extent of problems faced by the respondents, is assumed to influence the perception and satisfaction of the respondents.

Purchase behaviour factors, perception and problem scores have been hypothesized to influence the satisfaction scores of the respondents. The influence of perception on satisfaction have been studied with the assumption that purchase behaviour factors have both direct and indirect effect on satisfaction. The hypothesized path analysis model explaining the relationship between these factors are shown below.

**Path Model showing relationship between Purchase Behaviour, Perception and Satisfaction of Non-Branded Products Purchased online**



**Figure. 6.3**

The arrows leading from the purchase behaviour factors namely shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing measure the direct effects of these factors on perception and satisfaction factors. The direct effects of perception on satisfaction as well as problems on perception and satisfaction are shown by the leading arrows from the perception and the problem score factors to the satisfaction factor. It is also assumed that purchase behaviour factors have indirect effect on satisfaction that is perception factor acts as a mediating variable to measure the indirect effect of purchase behaviour on satisfaction. The factor scores of purchase behaviour and the

scores of perception, satisfaction and problems were used in this model to understand their inter-relationships.

The following are the objectives framed to develop path analysis model for non-branded products purchased online.

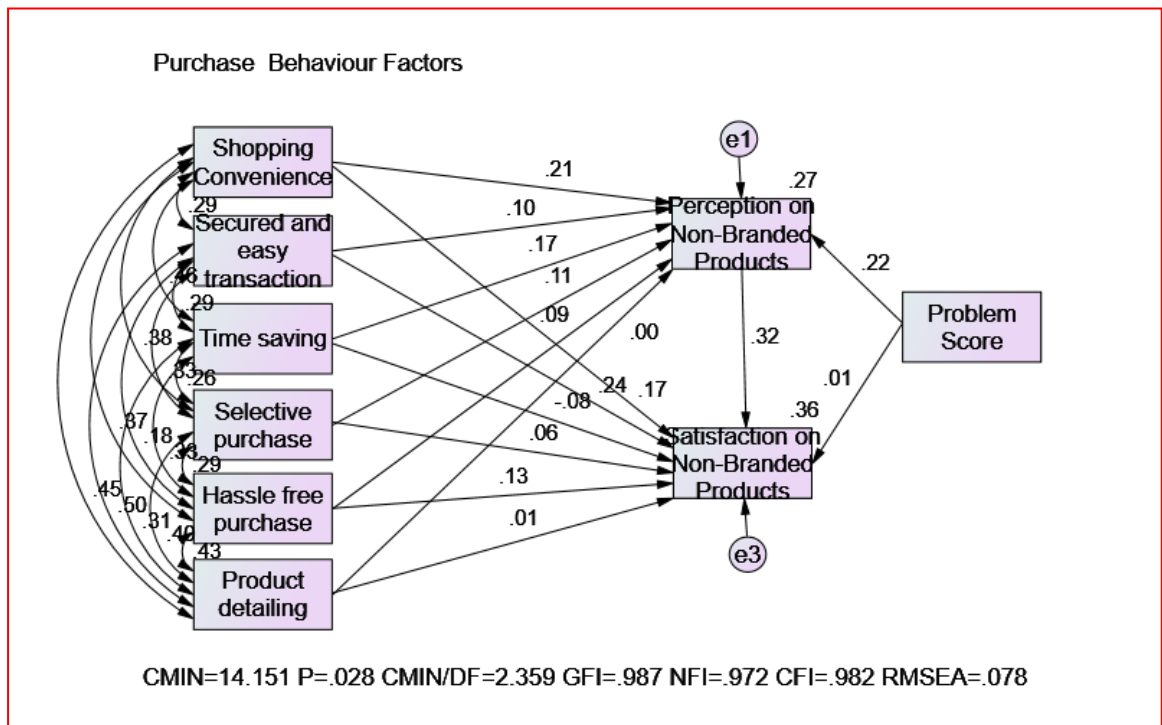
- To examine how the purchase behaviour factors namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing influence the perception and satisfaction of respondents regarding non-branded products purchased online.
- To examine how the perception factor explains the satisfaction factor.
- To examine how the problem factor affects perception and satisfaction factor.
- To establish a causal relationship of purchase behaviour, perception and satisfaction of non-branded products purchased online among the respondents.

Once the overall goodness of fit of the model is established, the following hypotheses will be tested.

- H<sub>0</sub>1. There is a direct positive relationship between purchase behaviour factors and perception of non-branded products purchase online.
- H<sub>0</sub>2. There is a direct positive relationship between purchase behaviour factors and satisfaction of non-branded products purchase online.
- H<sub>0</sub>3. There is a direct negative relationship between perception and problems faced.
- H<sub>0</sub>4: There is a direct negative relationship between satisfaction and problems faced.
- H<sub>0</sub>5: There is a direct positive relationship between perception and satisfaction of non-branded products purchased online.
- H<sub>0</sub>6. There is a mediation effect played by perception between purchase behaviour and satisfaction of the respondents.

The results of path analysis which are shown in the model given below explains the relationship between Purchase Behaviour factors, Knowledge, Perception and Usage factors.

**Path Model showing relationship between Purchase Behaviour, Perception, Satisfaction and Problems Faced-Non-branded**



**Figure 6.4**

The above diagram shows the relationship between purchase behaviour factors, perception, satisfaction and problem factors. The path coefficients are standardized regression coefficients. The curved arrows represent the co-variances between any two independent variables. The model assumes a covariate relationship between the purchase behaviour factors. The regression estimates produced by AMOS for Unstandardized regression are given below. The regression coefficients were estimated by Maximum Likelihood method. AMOS ver.20 was used to estimate the path coefficients.

The following model fit statistics were used to test the goodness of fit of the model.

**CMIN:** CMIN given by AMOS is a chi-square statistic, which compares the tested statistics with the theoretical model. A non-significant chi-square value indicate that the data fits the model well.

**CMIN/DF:** It is a relative chi-square measure, is an index of how much data is fit to the model has been reduced by one or more paths. The index having a value of 3 or below 3 says the data best fits the model, whereas a value between 3 and 5 is good.

GFI: The Goodness of Fit Index, explains the proportion of the variance in the sample variance-covariance is accounted for by the model. This should be above 0.90 and below 1 for a good model fit. A value of 1 is considered as a saturated model.

NFI: Normed Fit Index, is simply the difference between the chi-square values of two models (default and independent) divided by the chi-square value of independent model. The NFI value being above 0.90 is considered to be good fit.

CFI: The Comparative Fit index uses a similar approach and is said to be a good index which can be used for even small sample. The value above 0.90 is considered to be good fit.

RMSEA: The Root Mean Square Error of Approximation, estimates lack of fit compared to the saturated model. RMSEA value of 0.05 or less indicates good fit and value between 0.05 and 0.08 indicates the model fit is adequate.

The model fit statistics estimated by AMOS for the path model developed are given below.

CMIN	= 14.151 (P<0.05)
DF	= 6
CMIN/DF	= 2.359
GFI	= 0.987
NFI	= 0.972
CFI	= 0.982
RMSEA	= 0.078

The results show that all the goodness of fit indices namely, GFI, NFI and CFI satisfy the criterion value of being above 0.90. The Chi-square value is significant (P<0.05) but, CMIN/DF value is within the admissible limit of less than 5. The RMSEA value is 0.078 which is less than 0.08 and can be considered as admissible. Since all the goodness of fit indices are within the recommended limits, it can be inferred that the model is good.

The model shown above gives the standardized regression weights of the respective factors and also squared multiple correlations. The regression weights show that these coefficients are comparable, since, they are independent of units of measurement. Among the purchase behaviour factors, all the six factors have direct positive relationship with the perception factor. However, it was found that shopping convenience, secured and easy transaction, selective purchase, hassle free purchase and product detailing have positive effect on satisfaction, whereas, time saving have



negative effect on satisfaction factor. When the effects of purchase behaviour factors on perception are considered, the contribution of shopping convenience was more on perception factor (0.21), followed by time saving (0.17) and selective purchase (0.11) than other factors. Product detailing (-0.006) are the least contributing factors to perception on non-branded products.

The purchase behaviour factors, namely, shopping convenience, secured and easy transaction, selective purchase, hassle free purchase and product detailing have direct positive effect on satisfaction factor. Secured and easy transaction (0.24) is found to have more effect on satisfaction followed by shopping convenience (0.170) with least contributing factors being product detailing (0.01) and time saving (-0.08).

It is seen from the model that, perception has direct positive effect on satisfaction (0.32). Problem score has direct positive effect on both perception (0.22) and satisfaction (0.01).

The magnitude and the direction of relationship between purchase behaviours, perception, satisfaction and usage are studied in detail with the unstandardized regression weights produced by AMOS which are given below.

**Table 6.5**  
**Perception and Satisfaction on Non – Branded Products**  
**Regression Weights for the path model-Non-branded**

Variable To	Path	Variable From	Estimate	S.E.	C.R.	P	Sig
Perception on Non-Branded Products	<---	Secured and easy transaction	.131	.090	1.466	.143	Ns
Perception on Non-Branded Products	<---	Hassle free purchase	.185	.130	1.421	.155	Ns
Perception on Non-Branded Products	<---	Time saving	.235	.091	2.584	.010	**
Perception on Non-Branded Products	<---	Selective purchase	.219	.132	1.665	.096	Ns
Perception on Non-Branded Products	<---	Shopping Convenience	.231	.078	2.961	.003	**
Perception on Non-Branded Products	<---	Product detailing	-.006	.137	-.047	.963	Ns

Perception on Non-Branded Products	<---	Problem Score	.082	.021	3.870	.000	**
Satisfaction on Non-Branded Products	<---	Selective purchase	.240	.247	.973	.330	Ns
Satisfaction on Non-Branded Products	<---	Secured and easy transaction	.623	.168	3.710	.000	**
Satisfaction on Non-Branded Products	<---	Shopping Convenience	.378	.148	2.556	.011	*
Satisfaction on Non-Branded Products	<---	Time saving	-.222	.172	-1.290	.197	Ns
Satisfaction on Non-Branded Products	<---	Hassle free purchase	.517	.243	2.127	.033	*
Satisfaction on Non-Branded Products	<---	Product detailing	.026	.255	.101	.920	Ns
Satisfaction on Non-Branded Products	<---	Perception on Non-Branded Products	.635	.124	5.110	.000	**
Satisfaction on Non-Branded Products	<---	Problem Score	.009	.041	.222	.824	Ns

Source: Computed

The above estimates are unstandardized regression estimates. The values given above are the regression estimates of the respective independent variables. Standard errors of respective regression coefficients are given as S.E. Critical ratio is given as C.R, which is the ratio of regression estimate values to S.E. Probability (P) shows regression coefficients significantly contribute to the dependent variables. The ‘Sig.’ under \*\*/\* indicates the respective regression weights are significant at less than 1% or 5% respectively. Ns indicates the regression weights are not significant.

The table shows that, purchase behaviour factors, among the six factors, time saving and shopping convenience have significant effect on perception on non-branded products purchased online. Hence, the hypothesis H<sub>01</sub> that ‘**There is a direct positive relationship between purchase behaviour factors and perception on non-branded products purchased online**’ was accepted with respect to these three factors only.

Secured and easy transaction, shopping convenience and hassle free purchase are found to have significant effect on satisfaction on non-branded products at either 1% or 5% level. Hence, the hypothesis **H<sub>02</sub> that ‘There is a direct positive relationship between purchase behaviour factors and satisfaction of non-branded products purchased online’** is accepted for these three factors.

The regression coefficient of problem score regressed on perception shows that the regression weight which is positive, shows that problem score is found to have significant but positive effect on perception of non-branded products purchased online. Hence, the hypothesis **H<sub>03</sub> that ‘There is a direct negative relationship between purchase behaviour factors and problem score’** is not accepted.

The regression coefficient of problem score on satisfaction is 0.009 which shows a direct positive relationship between these two and the probability level shows that the regression coefficient is not significant and hence the hypothesis **H<sub>04</sub> that is ‘There is a direct negative relationship between problems faced’** is not accepted.

The regression coefficient of perception on non-branded products on satisfaction is 0.635 which shows that there exists a direct positive relationship between these two factors and the probability level shows that the regression coefficient is significant at 1% level and hence, the hypothesis **H<sub>05</sub> that ‘There is a direct positive relationship between perception and satisfaction of non-branded products purchased online’** is accepted.

**Table 6.6**  
**Perception and Satisfaction on Non-Branded Products - Direct, Indirect and Total Effects (Unstandardized)**

	Problem Score	Product detailing	Shopping Convenience	Selective purchases	Time saving	Hassle free purchase	Secured and easy transaction	Perception on Non-Branded Products
<b>Direct Effects</b>								
Perception on Non-Branded Products	.082	-.006	.231	.219	.235	.185	.131	---
Satisfaction on Non-Branded Products	.009	.026	.378	.240	.222	.517	.623	.635
<b>Indirect Effects</b>								
Perception on Non-Branded Products	---	---	---	---	---	---	---	---
Satisfaction on Non-Branded Products	.052	-.004	.146	.139	.149	.117	.083	---

Total Effects								
Perception on Non-Branded Products	.082	-.006	.231	.219	.235	.185	.131	---
Satisfaction on Non-Branded Products	.061	.022	.525	.379	-.073	.634	.706	.635

Source : Computed value

### Estimates of Direct Effects

The direct effects are the coefficients associated with the single-headed arrows in a path diagram. In unstandardized model, the purchase behaviour factors namely hassle free purchase (0.185), shopping convenience (0.231), selective purchase (0.219), time saving (0.235) and secured and easy transaction (0.131) have direct positive effects on perception on non-branded products. That is, due to the direct effects of purchase behaviour factors, when these scores go up by 1, perception score increases by the respective values of the coefficients of purchase behaviour factors. Similarly, the direct effects of purchase behaviour factors namely, product detailing, hassle free purchase, shopping convenience, selective purchase and secured and easy transaction have direct positive effects on satisfaction on non-branded products. That is, increase in score of these purchase behaviour factors will proportionately increase the satisfaction of the respondents. In case of problem score, both perception and satisfaction have been positively influenced by problem score, since the regression coefficients of problem score for these two factors are positive. Perception on non-branded products purchased online has direct positive effect (0.635) on satisfaction of non-branded products purchased online.

### Estimates of Indirect Effects

The above table also explains the indirect effect of each of the column factor of purchase behaviour on each row factors. The table shows that the indirect effects of five of the six factors of purchase behaviour have positive effect on satisfaction. Product detailing factor have negative effect on satisfaction factor.

**Table 6.7****Satisfaction on Non-Branded Products - Estimates of Indirect Effects**

Dependent Variable	Path	Purchase Behaviour Factors (Independent)	Before Mediation		After Mediation	
			Estimate	P	Estimate	P
Satisfaction on Non-Branded Products	<---	Selective purchase	.385	.139	.240	.330
Satisfaction on Non-Branded Products	<---	Secured and easy transaction	.749	.000	.623	.000
Satisfaction on Non-Branded Products	<---	Shopping Convenience	.508	.000	.378	.011
Satisfaction on Non-Branded Products	<---	Time saving	-.066	.712	-.222	.197
Satisfaction on Non-Branded Products	<---	Hassle free purchase	.682	.008	.517	.033
Satisfaction on Non-Branded Products	<---	Product detailing	.016	.951	.026	.920

*Source: Computed*

The results show that when the direct effects of the purchase behaviour factors before mediation were considered, it is seen that the effects of all the purchase behaviour factors have same sign and the regression coefficients before and after mediation have little difference. However, there were no changes in the significance of these variables. That is secured and easy transaction, shopping convenience and hassle free purchase remained significant before and after mediation. Similarly selective purchase, time saving and product detailing remained not significant before and after mediation. This shows that, introduction of perception has no particular impact on satisfaction of non-branded products purchased online as mediating variable. Hence, the hypothesis **H<sub>06</sub>** that ‘**There is a mediation effect played by perception between purchase behaviour and satisfaction of the respondents’ is not accepted.**

**Total Effects – Estimates**

The combined direct and indirect effect of each column variable on each row variable is called total effect. For example, total effect of shopping convenience on satisfaction is 0.525. This is the sum of the direct effect and indirect effect (0.378+0.146=0.525) it had on satisfaction score. The results show that the total effects of five of the six purchase behaviour factors on satisfaction of non-branded products is positive. The total effect of time saving factor on satisfaction is negative.

That is increase in the purchase behaviour combined with perception will improve the satisfaction of non-branded products purchased online by the respondents.

**Table 6.8**  
**Perception and Satisfaction on Non-Branded Products - Direct, Indirect and Total Effects (Standardised)**

	Problem Score	Product detailing	Shopping Convenience	Selective purchase	Time saving	Hassle free purchase	Secured and easy transaction	Perception on Non-Branded Products
<b>Direct Effects</b>								
Perception on Non-Branded Products	.220	-.003	.209	.108	.171	.094	.099	---
Satisfaction on Non-Branded Products	.012	.007	.173	.060	-.081	.132	.236	.320
<b>Indirect Effects</b>								
Perception on Non-Branded Products	---	---	---	---	---	---	---	---
Satisfaction on Non-Branded Products	.070	-.001	.067	.035	.055	.030	.032	---
<b>Total Effects</b>								
Perception on Non-Branded Products	.220	-.003	.209	.108	.171	.094	.099	---
Satisfaction on Non-Branded Products	.083	.006	.239	.094	-.027	.162	.267	.320

*Source: Computed*

Similar to unstandardized regression weights, the relative contribution of standardized direct, indirect and total effects of each of column variable on the row variables are shown above. The standardized regression weights are free from units of measurements and hence, they are comparable. For example, it can be said that the direct effect of shopping convenience (0.209) on perception is relatively higher than time saving (0.171) or selective purchase (0.108) and the direct effects of other factors. The variable, product detailing has low direct effect (-0.003) on perception.

The direct effect of secured and easy transaction (0.236) on satisfaction is higher than other purchase behaviour factors. However, it could also be seen that perception on non-branded products on satisfaction is also higher (0.320) than the direct effects of purchase behaviour factors.

Purchase behaviour factors also have indirect effect on satisfaction. The indirect effect of shopping convenience (0.067) contributes more to satisfaction than

other purchase behavior factors. The indirect effect of product detailing is least (-0.001) compared to other factors.

From the standardized total effects, it can be observed that overall, problem score (0.220) has more effect on perception followed by shopping convenience (0.209). Perception on non-branded products effect on satisfaction is higher (0.320) when compared to other purchase behaviour factors.

The total effects of purchase behaviour factors on satisfaction are also given above. It is seen that the total effect of shopping convenience (0.209) contributes more to satisfaction when compared with other purchase behaviour factors. However, perception is seen to contribute more (0.320) to satisfaction than the purchase behaviour factors.

### **Summary**

Path analysis was attempted to find the influence of purchase behaviour factors namely, shopping convenience, secured and easy transaction, time saving, selective purchase, hassle free purchase and product detailing on perception and satisfaction factors of non-branded products purchased online. Further, the effects of perception on satisfaction and the effects of problems faced on perception and satisfaction have also been studied. The mediation effects of perception factors between purchase behaviour and satisfaction score were also studied. The path model developed with these factors were tested for goodness of fit. The fit statistics namely CMIN, GFI, NFI, CFI and RMSEA were employed for the validity of the model. The goodness of fit statistics were within the admissible limits and it was inferred that the model was good.

Finally, the path coefficients were estimated and both direct, indirect and total effects of exogenous and endogenous variables were found out. The unstandardized and standardized regression weights were calculated. The results showed that the purchase behaviour factors. Time saving and shopping convenience had significant effect on perception on non-branded products. Secured and easy transaction, shopping convenience and hassle free purchase were found to have significant effect on satisfaction on non-branded products. Perception on non-branded products on satisfaction was significant. While problems faced (Problem Score) had significant positive effect on perception, it did not have any significant effect on satisfaction.

The introduction of the mediating variable, perception had little effect on satisfaction. The effects of purchase behaviour factors more or less remained same even after introduction of mediating variable (Perception).

The standardized regression coefficients were found out to examine the relative contribution of each factor on the other. It was found that the direct effect of shopping convenience on perception was relatively higher than direct effects of other factors. The variable, product detailing has low direct effect on perception.

The direct effect of secured and easy transaction on satisfaction is higher than other purchase behaviour factors. However, it could also be seen that perception on non-branded products on satisfaction is also higher than the direct effects of purchase behaviour factors.

Purchase behaviour factors also have indirect effect on satisfaction. The indirect effect of shopping convenience contributes more to satisfaction. From the standardized total effects, it can be observed that overall, problem score has more effect on perception followed by shopping convenience.

The total effects of purchase behaviour factors on satisfaction show that the total effect of secured and easy transaction contributes more to satisfaction when compared with other purchase behaviour factors. However, perception is seen to contribute more to satisfaction than the purchase behaviour factors.