

# *Chapter VI-A*

## *Challenges faced by the e-wallet users*

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## CHAPTER VI-A

### CHALLENGES FACED BY THE E-WALLET USERS

*"E-wallets offer a glimpse into the future of money management, where transactions are instant, secure, and connected."*

*- Emily Wilson*

Now a days though the future of e-wallets seems to be very bright, there are a lot of challenges faced by the users .Some of them are regulatory compliances, fraud risk, consumer mindset, lack of trust .Most of the challenges are common for all the e-wallet users, irrespective of different service providers. Despite all the negative aspects, service providers have become successful.

In the process of accomplishing the fourth objective of the study which is,

- ❖ To examine the challenges faced by the users of Generation Y and Z while availing e-wallet payment services.

This chapter intends to identify the following objectives:

- Agreeability about the challenges faced by e-wallet users while availing e-wallet payment services
- Problems and rectifications

#### 6.1 CHALLENGES FACED BY E-WALLET USERS

Descriptive statistical tools namely mean and standard deviation have been employed to understand the level of agreeability about the statements on challenges faced by users and the result have been depicted in the following table 6.1

The scale consisted of 13 statements measuring the challenges faced by e-wallet payment service users. A five point rating scale ranging from 1 to 5 where rate 1 for strongly agree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree have been constructed to obtain the opinion of the respondents on their agreeability factors towards the challenges while using e-wallet services. The mean score has been found for each factor separately.

**Table 6.1**

**Challenges faced by the e-wallet users - Generation Y and Z**

Statements	N	Generation Y		Generation Z		Mean		S.D	
		Mini mum	Maxi mum	Mini mum	Maxi mum	Y	Z	Y	Z
There are cyber threats in e- wallet service	400	1.00	5.00	1.00	5.00	3.7900	3.8025	.92088	.99043
Feeling insecure while using in all e- wallet payments	400	1.00	5.00	1.00	5.00	3.4000	3.4116	.94987	.98586
Not having net banking facilities to add money to wallet	400	1.00	5.00	1.00	5.00	3.4475	3.6625	1.05119	.95963
Fearing that process takes more time than expected	400	1.00	5.00	1.00	5.00	3.3375	3.4500	1.06604	1.02720
Worrying about password related issues (Forgetting often, sensitiveness)	400	1.00	5.00	1.00	5.00	3.5250	3.5450	1.06169	1.01269
Having some bad experiences (while sending money / recharging / sent to wrong person etc)	400	1.00	5.00	1.00	5.00	3.4500	3.5100	.99749	1.09448
Poor coverage in my area breaks transactions in the middle	400	1.00	5.00	1.00	5.00	3.6800	3.7500	.98744	1.05370
Transaction alerts not comes in time	400	1.00	5.00	1.00	5.00	3.4787	3.5226	1.02918	1.12370

Statements	N	Generation Y		Generation Z		Mean		S.D	
		Mini mum	Maxi mum	Mini mum	Maxi mum	Y	Z	Y	Z
There are less facilities in e-wallets	400	1.00	5.00	1.00	5.00	3.5113	3.4824	.93198	1.05680
Feeling that mobile wallets don't give attractive cash back and discounts	400	1.00	5.00	1.00	5.00	3.4950	3.4950	.96296	.91102
Confusions regarding transaction failure	400	1.00	5.00	1.00	5.00	3.7075	3.8561	.98202	.96101
Delay in refunds after payment failure	400	1.00	5.00	1.00	5.00	3.6650	3.6859	.93807	1.01592
Procedures followed in bank for refund is time consuming	400	1.00	5.00	1.00	5.00	3.7500	3.8299	.96167	1.00331

(Source: computed)

The respondents of Generation Y have agreed that there have been facing 'Cyber threats' while using e-wallet service, (mean 3.7900) followed by 'Procedures followed in bank for refund is time consuming' (mean 3.7500), 'Confusions regarding transaction failure' (mean 3.7075), 'Poor coverage in my area breaks transactions in the middle' (mean 3.6800).

**Hence, most of the respondents of Generation Y have agreed that cyber threats have been biggest challenge faced by the users.**

The respondents of Generation Z have agreed that there have been 'Confusions regarding transaction failure' (mean 3.8561) followed by 'Procedures followed in bank for refund is time consuming' (mean 3.8299), 'There are cyber threats in e-wallet service' (mean 3.8025), 'Poor coverage in my area breaks transactions in the middle' (mean 3.7500).

Hence, most of the respondents of Generation Z have agreed that confusions regarding transaction failure is the biggest challenge faced by the users.

ANOVA has been used to test whether the agreeability scores of the respondents, classified based on their personal profile on challenges faced by Generation Y and Z users have varied significantly. For this purpose, a null hypothesis has been framed and the analysis is presented in the following table.

**H<sub>0</sub>:** “There has been no significant difference in the agreeability scores of the respondents belonging to Generation Y and Z on the challenges faced by them when classified based on their demographic variables viz., educational qualification, occupational status, number of family members, family monthly income and family monthly expenditure.

**Table 6.2**

**Agreeability scores on challenges faced by the e-wallet users of Vs. Demographic variables- Generation Y and Z**

Demographic variables			Mean	S.D	F value		P Value		Sig	
					Y	Z	Y	Z	Y	Z
Educational qualification	UG	Y	73.35	13.25	0.397	2.020	.672	.134	NS	NS
		Z	73.11	13.53						
	PG	Y	74.32	13.35						
		Z	70.39	12.13						
	Professional	Y	72.37	12.94						
		Z	70.79	11.05						
Occupational status	Employee	Y	70.21	12.51	1.765	3.057	.135	.017	NS	*
		Z	72.85	12.48						
	Professional	Y	72.44	15.72						
		Z	70.11	11.87						
	Business	Y	74.86	9.27						
		Z	81.86	11.04						
	Student	Y	74.06	10.17						
		Z	73.19	13.83						
	Homemaker	Y	71.24	12.46						
		Z	74.49	13.07						

Demographic variables			Mean	S.D	F value		P Value		Sig	
					Y	Z	Y	Z	Y	Z
Number of family members	Two	Y	68.90	12.45	3.084	6.094	0.16	.000	*	**
		Z	62.80	18.45						
	Three	Y	74.75	12.51						
		Z	71.54	13.45						
	Four	Y	71.99	13.36						
		Z	72.77	12.45						
	Five	Y	68.82	10.76						
		Z	77.35	11.35						
Above five	Y	69.73	11.06							
	Z	77.15	13.94							
Number of earning members	One	Y	71.75	14.63	1.308	3.144	.271	.044	NS	*
		Z	74.21	11.59						
	Two	Y	72.19	11.67						
		Z	71.83	14.73						
	Three	Y	69.80	11.47						
		Z	75.92	11.93						
Family monthly income	Up to Rs.30,000	Y	76.12	9.43	5.277	1.536	.000	.191	**	NS
		Z	73.44	12.49						
	Rs.30,001-40,000	Y	77.50	13.49						
		Z	74.70	10.91						
	Rs.40,001-50,000	Y	71.89	11.85						
		Z	75.12	13.50						
	Rs.50,001-60,000	Y	72.48	10.61						
		Z	76.31	13.50						
Above Rs.60,000	Y	69.52	12.56							
	Z	71.87	14.09							
Family monthly expenditure	Up to Rs.20,000	Y	74.50	13.52	5.014	1.425	.001	.225	**	NS
		Z	73.66	12.45						
	Rs.20,001-30,000	Y	72.66	13.10						
		Z	74.70	12.20						
	Rs.30,001-40,000	Y	71.68	12.38						
		Z	73.33	12.59						
	Rs.40,001-50,000	Y	65.38	10.06						
		Z	68.62	13.12						
	Above Rs. 50,000	Y	70.08	9.69						
		Z	71.63	18.69						

(Source: Computed NS-Not Significant \*\*-Significant at 1% level, \*-Significant at 5 % level)

### **Based on the educational qualification**

A high level of agreeability on challenges faced by the respondents belonging to Generation Y while using e-wallets (mean score 74.32) has been expressed by post graduates. Respondents with professional qualification exhibit the lowest level of agreeability (mean 72.37) whereas in Generation Z, e-wallet users with under graduation have the highest level of agreeability with a mean score of 73.11 and respondents with professional qualification shows the lowest level of agreeability with the mean score of 70.39. Thus, it is clear that both Generation Y and Z have no significant difference in the agreeability scores on the challenges faced by them while using the e-wallets based on their educational qualification. Hence, the null hypothesis has been accepted at 5 per cent level of significance.

### **Based on the occupational status**

The respondents belonging to Generation Y, who are in business have been found with a high mean score of 74.86 whereas the employees have relatively shown a low mean score of 70.21. In Generation Z, the respondents who are in business have been found with high mean score of 81.86 and it is evident that the respondents who are professionals have relatively low agreeability scores (70.11) on the challenges faced by them while using e-wallets. Thus in Generation Y there has been no significant difference in the agreeability scores. So the null hypothesis has been accepted at 5 per cent level of significance and in Generation Z null hypothesis has been rejected at 5 per cent level of significance since there has been a significant difference in the agreeability scores on the challenges faced by the respondents based on occupational status.

### **Based on the number of family members**

The agreeability scores on the challenges faced by Generation Y and Z while using e-wallets are found to be significantly different among the respondents based on the size of their family. In Generation Y, the respondents having 5 members in their family express the lowest score of 68.82 while the highest score of 74.75 has been expressed by the respondents from a family having 3 members. With regard to Generation Z, the respondents having 5 members in their family exhibits the highest mean score of 77.35 while the lowest score of 62.80 has been expressed by the respondents with a family size of 2 members.

Thus in Generation Y, the null hypothesis has been rejected at 5 per cent and in Generation Z the null hypothesis has been rejected at 1 per cent level of significance. **Similar result has shown in the study by Manikandan.M and Chandramohan.S (2016).**

#### **Based on the number of earning members**

In Generation Y, the respondents with 2 earning members in their family have a high agreeability score of 72.19 and a low agreeability score of 69.80 has been found for the respondents with 3 earning members pertaining to their agreeability on challenges faced them while using the e-wallet. In Generation Z, the respondents with 3 earning members in their family have high an agreeability score of 75.92 and the lowest score of 71.83 has been found for the respondents with 2 earning members. Thus in Generation Y, there has been no significant difference in the agreeability scores. So the null hypothesis has been accepted at 5 per cent level of significance but in Generation Z null hypothesis has been rejected at 5 per cent level of significance since there has been a significant difference in the agreeability scores on the challenges faced by the respondents based on the number of earning members.

#### **Based on the family monthly income**

The respondents belonging to Generation Y with a family monthly income between Rs.30, 001 and Rs.40, 000 have an agreeability score of 77.50 and a score of 69.52 has been found for the respondents whose family monthly income is above Rs.60, 000. It is evident that Generation Z , respondents with a family monthly income between Rs.50,001 and Rs.60, 000 has a mean score of 76.31 while the respondents with income above Rs.60,000 has the lowest mean score (71.87). Thus in Generation Y, there has been a significant difference in the agreeability scores on the challenges faced by the respondents based on their family monthly income, so the null hypothesis has been rejected at 1 per cent level of significance. In Generation Z, there has been no significant difference in the agreeability scores on the challenges faced by the respondents based on family monthly income. So the null hypothesis has been accepted at 5 percent level of significance.

#### **Based on family monthly expenditure**

In Generation Y high level of agreeability (mean score 74.50) on challenges faced by e-wallet users have incurred family monthly expenditure up to Rs.20,000 and respondents with family monthly expenditures of Rs.40,001- Rs. 50,000 exhibit the lowest



level of agreeability (mean score 65.38). With regard to Generation Z, respondents with a mean score of 74.70 has a high level of agreeability with the family expenditure of Rs.20,001- Rs.30,000 and Rs.40,001– Rs.50, 000 exhibits a low level of agreeability with a mean score of 68.62. Thus in Generation Y, there has been a significant difference in the agreeability scores so the null hypothesis has been rejected at 1 per cent level of significance but in Generation Z, there has been no significant difference in the agreeability scores in the challenges faced by the respondents based on family monthly expenditure. So the null hypothesis has been accepted at 5 per cent level of significance.

t-Test has been used to find out whether the agreeability scores of the respondents obtained for challenges faced by them have varied significantly when they are classified based on ‘demographic variables’ with the following null hypothesis.

**H<sub>0</sub>:** “There has been no significant difference in the agreeability scores of challenges faced by the respondents of Generation Y and Z while using the e-wallets classified based on their demographic variables viz., namely, as gender, marital status and family type.

**Table 6.3**

**Agreeability scores on challenges faced by the e-wallet users Vs. Demographic variables - Generation Y and Z**

Demographic factors			Mean	S.D	t Value		P Value		Sig	
					Y	Z	Y	Z	Y	Z
<b>Gender</b>	Male	Y	74.12	12.30	0.828	0.667	.408	.505	NS	NS
		Z	71.04	13.14						
	Female	Y	73.02	13.98						
		Z	71.88	11.64						
<b>Marital status</b>	Married	Y	72.29	11.77	1.336	0.854	.182	.339	NS	NS
		Z	73.40	13.37						
	Unmarried	Y	70.62	13.08						
		Z	76.20	9.75						
<b>Family type</b>	Nuclear	Y	71.20	12.66	0.498	3.313	.619	.001	NS	**
		Z	72.53	13.24						
	Joint	Y	71.87	12.14						
		Z	78.26	12.30						

(Source: Computed NS-Not Significant \*\*-Significant at 1% level, \*-Significant at 5 % level)

### **Based on Gender**

The agreeability scores on the challenges faced by the respondents of Generation Y and Z while using e-wallets are classified based on gender have not varied significantly. The Generation Y mean score regarding gender for both male (74.12) and female (73.02) and the Generation Z, mean score for male (71.04) and female (71.88 )are more or less similar. The t-value indicates that there has been no significant difference in the agreeability score of the respondents. Hence, the null hypothesis has been accepted at 5 per cent level of significance. **Similar result has inferred in the study by Gokhan Aydin and Sebnem Burnaz (2016).**

### **Based on marital status**

With regard to the agreeability scores on the challenges faced by the respondents of Generation Y and Z while using e-wallets, the respondents from Generation Y, have a mean score of married (72.29) and unmarried (70.62) and Generation Z, have the mean score of married (73.40)and unmarried (76.20) respectively. The t-value indicates that both Generation Y and Z have no significant difference in the agreeability score of the respondents when grouped based on ‘marital status’. Hence, the null hypothesis has been accepted at 5 per cent level of significance.

### **Based on family type**

The t-Test analysis depicts that the agreeability score on the challenges faced by the respondents of Generation Y while using e-wallets have more or less similar scores among nuclear family (71.20) and joint family (71.87) when grouped under family type. The t-value indicates that there has been no significant difference, so the null hypothesis has been accepted at 5 per cent level of significance whereas in Generation Z, the mean score of the respondents belonging to nuclear family (72.53) and joint family (78.26) exhibits that there has been significant difference in the agreeability score of the respondents based on the family type. Hence, the null hypothesis has been rejected at 1 per cent level of significance.

### **Factor analysis- Challenges faced by the e-wallet users**

Similar to the factor analysis done for perception, the variables relating to challenges faced by users of e-wallets have been analysed. The followings steps discuss the results of factor analysis

The factor analysis technique has been applied to find out the underlying dimensions in the set of statements relating to the challenges faced by the respondents in using the e- wallets.

Factor analysis has been performed in four steps:

1. First, the correlation matrix for all variables is computed. Variables that do not appear to be related to other variables have been identified from the matrix and the correctness of the factor model has also been calculated.
2. Factor extraction has been the second step. Number of factors necessary to represent the data and the method of calculating them has been determined. Also how well the chosen model fits the data has been ascertained.
3. The factors chosen have been transformed to make them more interpretable through a process of rotation
4. Scores for each factor has been computed for all variables and these scores have been used for further analysis.

The set of 13 statements (items) depicted in table 6.4 which measures the underlying factors of e-wallet users of Generation Y’s level of agreeability on challenges faced by them.

**Table 6.4**  
**Challenges faced by the e-wallet users-Generation Y**

S. No.	Statements
1.	Worrying about using e-wallet service because other People can track expenditure.
2.	Feeling insecure while using in all e-wallet payments.
3.	Not having net banking facilities to add money to wallet
4.	Fearing that process takes more time than expected
5.	Worrying about password related issues (Forgetting often, sensitiveness)
6.	Having some bad experiences (while sending money / recharging / sent to wrong person etc)
7.	Poor coverage in my area breaks transactions in the middle

S. No.	Statements
8.	Transaction alerts not comes in time
9.	There are not variety of facilities in e-wallet than other Mode of payment.
10.	Feeling that mobile wallets don't give attractive cash back and discounts
11.	Confusions regarding transaction failure
12.	Delay in refunds after payment failure
13.	Procedures followed in bank for refund is time consuming

(Source: Computed)

To ascertain the challenges faced by the e-wallet users, a factor analysis has been done with a correlation matrix on the identified variables rated by the respondents, in four steps.

### Step 1

Correlation matrix for the variables measuring the challenges faced by the e-wallet users has been analysed to know the possibility of inclusion of the variables in factor analysis, as shown in table 6.5.

Since one of the goals of the factor analysis has been to obtain '**factors**' that help explain these correlations, the variables have to be related to each other for the factor model to be appropriate. A closer examination of the correlation matrix has revealed that there have been some variables which do not have any relationship with some variables. Usually a correlation value of 0.3 (absolute value) has been considered sufficient to explain the relation between variables.

It has evident from the correlation matrix that most of the variables have correlated with other variables. Hence, all the variables from 1 to 13 have been retained for further analysis. Further, two tests – KMO and Bartlett's Test (table 6.6) have been applied to the resultant correlation matrix to test whether the relationship among the variables have been significant or not.

**Table 6.5**

**Correlation Matrix- challenges faced by the e-wallet users - Generation Y**

	<b>X1</b>	<b>X2</b>	<b>X3</b>	<b>X4</b>	<b>X5</b>	<b>X6</b>	<b>X7</b>	<b>X8</b>	<b>X9</b>	<b>X10</b>	<b>X11</b>	<b>X12</b>	<b>X13</b>
X1	1.000	0.502	0.206	0.273	0.313	0.384	0.149	0.237	0.179	0.199	0.250	0.249	0.244
X2	0.502	1.000	0.414	0.395	0.459	0.450	0.222	0.327	0.275	0.222	0.188	0.183	0.106
X3	0.206	0.414	1.000	0.717	0.525	0.475	0.408	0.432	0.398	0.258	0.272	0.237	0.119
X4	0.273	0.395	0.717	1.000	0.585	0.513	0.426	0.517	0.418	0.282	0.228	0.276	0.189
X5	0.313	0.459	0.525	0.585	1.000	0.589	0.370	0.391	0.361	0.318	0.208	0.213	0.213
X6	0.384	0.450	0.475	0.513	0.589	1.000	0.410	0.454	0.388	0.335	0.332	0.288	0.281
X7	0.149	0.222	0.408	0.426	0.370	0.410	1.000	0.659	0.288	0.362	0.291	0.350	0.350
X8	0.237	0.327	0.432	0.517	0.391	0.454	0.659	1.000	0.309	0.333	0.375	0.428	0.335
X9	0.179	0.275	0.398	0.418	0.361	0.388	0.288	0.309	1.000	0.500	0.299	0.264	0.256
X10	0.199	0.222	0.258	0.282	0.318	0.335	0.362	0.333	0.500	1.000	0.379	0.342	0.283
X11	0.250	0.188	0.272	0.228	0.208	0.332	0.291	0.375	0.299	0.379	1.000	0.650	0.497
X12	0.249	0.183	0.237	0.276	0.213	0.288	0.350	0.428	0.264	0.342	0.650	1.000	0.589
X13	0.244	0.106	0.119	0.189	0.213	0.281	0.350	0.335	0.256	0.283	0.497	0.589	1.000

<b>X1</b>	Worrying about using e-wallet service because other people can track expenditure
<b>X2</b>	Feeling insecure while using in all e-wallet payments.
<b>X3</b>	Not having net banking facilities to add money to wallet
<b>X4</b>	Fearing that process takes more time than expected
<b>X5</b>	Worrying about password related issues (Forgetting often, sensitiveness)
<b>X6</b>	Having some bad experiences (while sending money / recharging / sent to wrong person etc)
<b>X7</b>	Poor coverage in my area breaks transactions in the middle
<b>X8</b>	Transaction alerts not comes in time
<b>X9</b>	There are not variety of facilities in e-wallet than other mode of payment.
<b>X10</b>	Feeling that mobile wallets don't give attractive cash back and discounts
<b>X11</b>	Confusions regarding transaction failure
<b>X12</b>	Delay in refunds after payment failure
<b>X13</b>	Procedures followed in bank for refund is time consuming

**Table 6.6**

**KMO and Bartlett's Test – Challenges faced by the e-wallet users - Generation Y**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>0.854</b>
<b>Bartlett's Test of Sphericity</b>	Approx. Chi-Square	2180.644
	Df	78
	**Sig.	.000

*(Source: Computed \*\* - Significant at 1% level (P<0.01))*

Kaiser-Meyer-Olkin (KMO) has been used to measure the sampling adequacy, based on the correlations and partial correlations of the variables. If the test value or KMO measure has been closer to 1, then it has been considered appropriate to employ factor analysis where, it has been acknowledged to be inappropriate to use factor analysis for the variables and data if KMO has been closer to 0. It has been noted from the table 6.6 that the value of test statistic that has been 0.854 which means that the factor analysis for the selected variables have been found to be appropriate. Bartlett's test of sphericity depicted in table 6.6 has been used to test whether the correlation matrix has been an identity matrix. i.e., all the diagonal terms in the matrix has been 1 and the off-diagonal terms in the matrix has been 0. In short, it has been used to test whether the correlations between all the variables has been 0. The test value (2180.644) and the significance level (P<.01) given in the table 6.6 has enunciated that the correlation matrix has not been an identity matrix, i.e., there has been correlations between the variables. Hence, the factor analysis has been valid and consistent.

**Step 2**

The next step has been to determine the method of factor extraction, number of initial factors and the estimates of factors. Here Principal Components Analysis (PCA) has been used to extract factors. PCA has been a method used to transform a set of correlated variables into a set of uncorrelated variables (here factors) so that the factors have been unrelated and the variables selected for each factor have been related. Next PCA has been used to extract the number of factors required to represent the data. In order to determine the number of factors to be extracted, there exists less variability. Extraction of factors has been stopped while there has been very little 'random' variability identified.

The results from principal components analysis have been given below.

**Table 6.7**

**Total Variance Explained –Challenges faced by the e-wallet users -Generation Y**

Component	Initial Eigen values			Extraction Sums of Squared Loadings (Roated)		
	Total	Percentage of variance	Cumulative Percentage	Total	Percentage of variance	Cumulative
1	5.217	40.133	40.133	5.217	40.133	40.133
2	1.686	12.973	53.106	1.686	12.973	53.106
3	1.138	8.756	61.862	1.138	8.756	61.862
4	.949	7.301	69.163			
5	.734	5.647	74.809			
6	.608	4.677	79.486			
7	.523	4.023	83.509			
8	.459	3.528	87.037			
9	.449	3.455	90.493			
10	.365	2.808	93.301			
11	.336	2.582	95.883			
12	.304	2.337	98.219			
13	.231	1.781	100.000			

(Source: Computed Extraction Method: Principal Component Analysis)

In the correlation matrix, the analysis has to start from where the variances of all variables have been equal to 1.0. Therefore, the total variance in that matrix has been equal to the number of variables. There have been 13 variables (items) each with a variance of 1, then the total variability that can potentially be extracted has been equal to 13 times 1. The variance accounted for by successive factors have been summarized in table 6.7.

In the column titled ‘Percentage of variance’ under Initial *Eigen values* in table 6.7 the variance on the new factors that have been successively extracted has been shown and these values have been expressed as a percent of the total variance. It has been noticed that factor 1 accounts for about 40 per cent of the total variance, factor 2 about 13 per cent, and so on. As expected, the sum of the Eigen values has been equal to the number of variables.

The third column has the cumulative variance extracted. The variances extracted by the factors have been called the *Eigen Values*.

The factors with Eigen values greater than 1 have been retained for analysis. Unless a factor has extracted at least as much as the equivalent of one original variable, it has been dropped. Three factors (principal components) have been retained for the study. The total variance explained (61.87%) by the three factor model in the original set of variables has been given in the last column of the table 6.7.

The Component Matrix or Factor Matrix where PCA has extracted three factors has been depicted in the table 6.8. These coefficients have been used to express a standardized variable in terms of the factors called factor loadings, since they have indicated the quantum of weight is assigned to each factor. Factors with large coefficients (in absolute value) for a variable have been closely related to that variable. For example, Factor 1 has the factor with largest loading (0.735) for the item, **“Fearing that process takes more time than expected”**. These have been the correlations between the factors and the variables. Hence, the correlation between the first item in the component matrix and Factor 1 has been 0.735. Thus, the factor matrix in table 6.8 has been obtained with the initially obtained estimates of factors.

**Table 6.8**

**Component Matrix-Challenges faced by the e-wallet users - Generation Y**

	Component		
	1	2	3
Fearing that process takes more time than expected	.735	-.363	-.199
Having some bad experiences (while sending money / recharging / sent to wrong person etc.	.734	-.209	.114
Transaction alerts not comes in time	.722	.064	-.263
Worrying about password related issues (Forgetting often, sensitiveness.	.693	-.371	.028
Not having net banking facilities to add money to wallet	.689	-.380	-.217
Poor coverage in my area breaks transactions in the middle	.657	.086	-.402
Delay in refunds after payment failure	.601	.600	.091



	Component		
	1	2	3
There are not variety of facilities in e-wallet than other mode of payment.	.599	-.025	-.153
Confusions regarding transaction failure	.588	.552	.127
Feeling that mobile wallets don't give attractive cash back and discounts	.576	.197	-.115
Feeling insecure while using in all e-wallet payments.	.573	-.375	.470
Procedures followed in bank for refund is time consuming	.519	.604	.113
Worrying about using e-wallet service because other People can track expenditure.	.485	-.094	.716

(Source: Computed Extraction Method: Principal Component Analysis-3 components extracted)

### Step 3

Although the factor matrix (**Component Matrix**) that has been obtained in the extraction phase has indicated the relationship between the factors and the individual variables. It has been usually, difficult to identify meaningful factors based on this matrix. Often variables and factors do not appear to be correlated in any interpretable pattern as most factors have been correlated with many variables. Since the idea of factor analysis has been to identify the factors that meaningfully summarize the sets of closely related variables, the Rotation phase of the factor analysis has been attempted to transfer initial matrix into one that has been easier to interpret. It has been called the rotation of the factor matrix. There have been several methods available for rotation of factor matrix. There have been several methods available for rotating factor matrix. The one used in this analysis has been varimax rotation, the most commonly used method, which has attempted to minimize the number of variables that have high loadings on a factor and has enhanced the interpretability of the factors.

The Rotated Factor Matrix using varimax rotation has been presented in table 6.9 where each factor has identified itself with a few set of variables. The variables which identify with each of the factors were sorted in the decreasing order and are highlighted against each column and row.

**Table 6.9****Rotated Component Matrix-challenges faced by e-wallet users -Generation Y**

	Component		
	1	2	3
Fearing that process takes more time than expected	<b>.805</b>	.054	.246
Not having net banking facilities to add money to wallet	<b>.787</b>	.015	.218
Poor coverage in my area breaks transactions in the middle	<b>.669</b>	.374	-.112
Worrying about password related issues (Forgetting often, sensitiveness	<b>.660</b>	.049	.426
Transaction alerts not comes in time	<b>.656</b>	.404	.040
Having some bad experiences (while sending money / recharging / sent to wrong person etc.	<b>.581</b>	.215	.459
There are less variety of facilities in e-wallet	<b>.542</b>	.276	.116
Delay in refunds after payment failure	.166	<b>.830</b>	.111
Procedures followed in bank for refund is time consuming	.091	<b>.793</b>	.095
Confusions regarding transaction failure	.157	<b>.787</b>	.152
Worrying about using e-wallet service because other people can track expenditure.	.415	.455	<b>.063</b>
Feeling insecure while using in all e-wallet payments	.037	.243	<b>.834</b>
Feeling that mobile wallets don't give attractive cash back and discounts	.344	.027	<b>.756</b>

(Source: Computed Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 13 iterations)

**Step 4**

Normally, from the factor results arrived, factor score coefficients can be calculated for all variables (since each factor is a linear combination of all variables) which have been used to calculate the factor scores for each individual. Since PCA has been used in extraction of initial factors, all methods have resulted in estimating the same factor score co-efficient. However, for the study, original values of the variables have been retained for further analysis.

Table 6.10 has described the factors extracted from the challenges faced by the users on e- wallets. The three factors identified have been named as, '**Operational difficulties and Network coverage**', '**Payment service and Quality**' and '**Security**'.

**Table 6.10**

**Factors identified - statements relating to challenges faced by the users-Generation Y**

Statements	Factors identified
Fearing that process takes more time than expected	<b>Operational difficulties &amp; Network coverage.</b>
Not having net banking facilities to add money to wallet	
Poor coverage in my area breaks transactions in the middle	
Worrying about password related issues (Forgetting often, sensitiveness	
Transaction alerts not comes in time	
Having some bad experiences (while sending money / recharging / sent to wrong person etc.	
There are less variety of facilities in e-wallet	
Delay in refunds after payment failure	<b>Payment service and Quality</b>
Procedures followed in bank for refund is time consuming	
Confusions regarding transaction failure	
Worrying about using e-wallet service because other people can track expenditure.	<b>Security</b>
Feeling insecure while using in all e-wallet payments	
Feeling that mobile wallets don't give attractive cash back and discounts	

The analysis of challenges faced by the e-wallet users has revealed that most of them have faced delay in refunds, confusions regarding transaction failure and also tracking of e-wallet usage service by unknowns.

The set of 13 statements (items), depicted in table 6.11 which measures the underlying factors of e-wallet users of Generation Z level of agreeability on challenges faced.

**Table 6.11**

**Challenges faced by the e-wallet users - Generation Z**

<b>S. No.</b>	<b>Statements</b>
1.	Worrying about using e-wallet service because other people can track expenditure.
2.	Feeling insecure while using in all e-wallet payments.
3.	Not having net banking facilities to add money to wallet
4.	Fearing that process takes more time than expected
5.	Worrying about password related issues (Forgetting often, sensitiveness)
6.	Having some bad experiences (while sending money / recharging / sent to wrong person etc)
7.	Poor coverage in my area breaks transactions in the middle
8.	Transaction alerts not comes in time
9.	There are less variety of facilities in e-wallet
10.	Feeling that mobile wallets don't give attractive cash back and discounts
11.	Confusions regarding transaction failure
12.	Delay in refunds after payment failure
13.	Procedures followed in bank for refund is time consuming

*(Source: Computed)*

To ascertain the challenges faced by the e-wallet users, a factor analysis has been done with a correlation matrix on the identified variables rated by the respondents, in four steps.

**Step 1**

Correlation matrix for the variables measuring the challenges faced by the e-wallet users has been analysed to know the possibility of inclusion of the variables in factor analysis, as shown in table 6.12.

Since one of the goals of the factor analysis has been to obtain '**factors**' that help explain these correlations, the variables have to be related to each other for the factor model to be appropriate. A closer examination of the correlation matrix has revealed that there have been some variables which do not have any relationship with some variables. Usually a correlation value of 0.3 (absolute value) has been considered sufficient to explain the relation between variables.

It has evident from the correlation matrix that most of the variables have correlated with other variables. Hence, all the variables from 1 to 13 have been retained for further analysis. Further, two tests – KMO and Bartlett’s Test (Table 6.13) have been applied to the resultant correlation matrix to test whether the relationship among the variables have been significant or not.

**Table 6.12**

**Correlation Matrix- challenges faced by the e-wallet users - Generation Z**

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
X1	1.000	0.668	0.472	0.438	0.355	0.419	0.354	0.313	0.337	0.249	0.340	0.348	0.196
X2	0.668	1.000	0.418	0.437	0.415	0.461	0.290	0.360	0.314	0.202	0.237	0.309	0.223
X3	0.472	0.418	1.000	0.612	0.444	0.502	0.381	0.282	0.290	0.232	0.283	0.304	0.244
X4	0.438	0.437	0.612	1.000	0.559	0.678	0.352	0.362	0.376	0.392	0.409	0.421	0.340
X5	0.355	0.415	0.444	0.559	1.000	0.611	0.387	0.436	0.323	0.252	0.518	0.437	0.348
X6	0.419	0.461	0.502	0.678	0.611	1.000	0.379	0.367	0.360	0.342	0.427	0.444	0.383
X7	0.354	0.290	0.381	0.352	0.387	0.379	1.000	0.668	0.234	0.222	0.460	0.399	0.272
X8	0.313	0.360	0.282	0.362	0.436	0.367	0.668	1.000	0.455	0.312	0.468	0.491	0.369
X9	0.337	0.314	0.290	0.376	0.323	0.360	0.234	0.455	1.000	0.440	0.423	0.444	0.320
X10	0.249	0.202	0.232	0.392	0.252	0.342	0.222	0.312	0.440	1.000	0.385	0.328	0.330
X11	0.340	0.237	0.283	0.409	0.518	0.427	0.460	0.468	0.423	0.385	1.000	0.588	0.560
X12	0.348	0.309	0.304	0.421	0.437	0.444	0.399	0.491	0.444	0.328	0.588	1.000	0.624
X13	0.196	0.223	0.244	0.340	0.348	0.383	0.272	0.369	0.320	0.330	0.560	0.624	1.000

X1	Worrying about using e-wallet service because other people can track expenditure.
X2	Feeling insecure while using in all e-wallet payments.
X3	Not having net banking facilities to add money to wallet
X4	Fearing that process takes more time than expected
X5	Worrying about password related issues (Forgetting often, sensitiveness.
X6	Having some bad experiences (while sending money / recharging / sent to wrong person etc.)
X7	Poor coverage in my area breaks transactions in the middle
X8	Transaction alerts not comes in time
X9	There are less variety of facilities in e-wallet
X10	Feeling that mobile wallets don’t give attractive cash back and discounts
X11	Confusions regarding transaction failure
X12	Delay in refunds after payment failure
X13	Procedures followed in bank for refund is time consuming

**Table 6.13**

**KMO and Bartlett's Test – Challenges faced by the e-wallet users**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>0.858</b>
<b>Bartlett's Test of Sphericity</b>	Approx. Chi-Square	2422.531
	Df	78
	**Sig.	.000

*(Source: Computed \*\* - Significant at 1% level ( $P < 0.01$ ))*

Kaiser-Meyer-Olkin (KMO) has been used to measure the sampling adequacy, based on the correlations and partial correlations of the variables. If the test value or KMO measure has been closer to 1, then it has been considered appropriate to employ factor analysis where, it has been acknowledged to be inappropriate to use factor analysis for the variables and data if KMO has been closer to 0. It has been noted from the table 6.12 that the value of test statistic that has been 0.858 which means that the factor analysis for the selected variables have been found to be appropriate. Bartlett's test of sphericity depicted in table 6.12 has been used to test whether the correlation matrix has been an identity matrix. i.e., all the diagonal terms in the matrix has been 1 and the off-diagonal terms in the matrix has been 0. In short, it has been used to test whether the correlations between all the variables has been 0. The test value (2422.531) and the significance level ( $P < .01$ ) given in the table 6.13 has enunciated that the correlation matrix has not been an identity matrix, i.e., there has been correlations between the variables. Hence, the factor analysis has been valid and consistent.

**Step 2**

The next step has been to determine the method of factor extraction, number of initial factors and the estimates of factors. Here Principal Components Analysis (PCA) has been used to extract factors. PCA has been a method used to transform a set of correlated variables into a set of uncorrelated variables (here factors) so that the factors have been unrelated and the variables selected for each factor have been related. Next PCA has been used to extract the number of factors required to represent the data. In order to determine the number of factors to be extracted, there exists less variability. Extraction of factors has been stopped while there has been very little 'random' variability identified.

The results from principal components analysis have been given below.

**Table 6.14**

**Total Variance Explained –Challenges faced by the e-wallet users**

Component	Initial Eigen values			Extraction Sums of Squared Loadings (Roated)		
	Total	Percentage of variance	Cumulative percentage	Total	Percentage of Variance	Cumulative percentage
1	5.730	44.073	44.073	5.730	44.073	44.073
2	1.415	10.888	54.961	1.415	10.888	54.961
3	1.004	7.723	62.684	1.004	7.723	62.684
4	.910	6.998	69.682			
5	.793	6.101	75.783			
6	.600	4.618	80.401			
7	.557	4.281	84.682			
8	.489	3.758	88.441			
9	.385	2.959	91.400			
10	.343	2.638	94.037			
11	.302	2.320	96.357			
12	.251	1.931	98.289			
13	.222	1.711	100.000			

(Source: Computed Extraction Method: Principal Component Analysis)

In the correlation matrix, the analysis has to start from where the variances of all variables have been equal to 1.0. Therefore, the total variance in that matrix has been equal to the number of variables. There have been 13 variables (items) each with a variance of 1, then the total variability that can potentially be extracted has been equal to 13 times 1. The variance accounted for by successive factors have been summarized in table 6.14

In the column titled ‘Percentage of variance’ under Initial *Eigen values* in table 6.14 the variance on the new factors that have been successively extracted has been shown and these values have been expressed as a percent of the total variance. It has been noticed that factor 1 accounts for about 44 percent of the total variance, factor 2 about 11 percent, and so on. As expected, the sum of the Eigen values has been equal to the number of variables.

The third column has the cumulative variance extracted. The variances extracted by the factors have been called the *Eigen Values*.

The factors with Eigen values greater than 1 have been retained for analysis. Unless a factor has extracted at least as much as the equivalent of one original variable, it has been dropped.

Three factors (principal components) have been retained for the study. The total variance explained (62.68%) by the three factor model in the original set of variables has been given in the last column of the table 6.14

The Component Matrix or Factor Matrix where PCA has extracted three factors has been depicted in the table 6.15. These coefficients have been used to express a standardized variable in terms of the factors called factor loadings, since they have indicated the quantum of weight is assigned to each factor. Factors with large coefficients (in absolute value) for a variable have been closely related to that variable. For example, Factor 1 has the factor with largest loading (0.753) for the item, “**Having some bad experiences (while sending money/ recharging / sent to wrong person etc)**”. These have been the correlations between the factors and the variables. Hence, the correlation between the first item in the component matrix and Factor 1 has been 0.753. Thus the factor matrix in the table 6.15 has been obtained with the initially obtained estimates of factors.

**Table 6.15**

**Component Matrix- Challenges faced by the e-wallet users of Generation Z**

	Component		
	1	2	3
Having some bad experiences (while sending money / recharging / sent to wrong person etc.	.753	-.212	.183
Fearing that process takes more time than expected	.751	-.271	.246
Worrying about password related issues (Forgetting often, sensitiveness)	.720	-.098	-.006
Delay in refunds after payment failure	.717	.369	.021
Confusions regarding transaction failure	.713	.394	-.013
Transaction alerts not comes in time	.683	.246	-.480



	Component		
	1	2	3
Not having net banking facilities to add money to wallet	.637	-.430	.055
Worrying about using e-wallet service because other people can track expenditure.	.633	-.446	-.086
Feeling insecure while using in all e-wallet payments.	.616	-.486	-.084
There are less variety of facilities in e-wallet	.609	.187	.226
Procedures followed in bank for refund is time consuming	.602	.468	.176
Feeling that mobile wallets don't give attractive cash back and discounts	.527	.229	.430
Poor coverage in my area breaks transactions in the middle	.628	.093	-.628

(Source: Computed Extraction Method: Principal Component Analysis-3 components extracted)

### Step 3

Although the factor matrix (**Component Matrix**) that has been obtained in the extraction phase has indicated the relationship between the factors and the individual variables. It has been usually, difficult to identify meaningful factors based on this matrix. Often variables and factors do not appear to be correlated in any interpretable pattern as most factors have been correlated with many variables. Since the idea of factor analysis has been to identify the factors that meaningfully summarize the sets of closely related variables, the Rotation phase of the factor analysis has been attempted to transfer initial matrix into one that has been easier to interpret. It has been called the rotation of the factor matrix.

There have been several methods available for rotation of factor matrix. There have been several methods available for rotating factor matrix. The one used in this analysis has been varimax rotation, the most commonly used method, which has attempted to minimize the number of variables that have high loadings on a factor and has enhanced the interpretability of the factors.

The Rotated Factor Matrix using varimax rotation has been presented in table 6.16 where each factor has identified itself with a few set of variables. The variables which identify with each of the factors were sorted in the decreasing order and are highlighted against each column and row.

**Table 6.16****Rotated Component Matrix-challenges faced by the e-wallet users - Generation Z**

	Component		
	1	2	3
Feeling insecure while using in all e-wallet payments	<b>.759</b>	.045	.211
Not having net banking facilities to add money to Wallet	<b>.744</b>	.162	.118
Worrying about using e-wallet service because other People can track expenditure.	<b>.740</b>	.078	.231
Fearing that process takes more time than expected	<b>.717</b>	.426	.050
Having some bad experiences (while sending money / recharging / sent to wrong person etc.	<b>.667</b>	.430	.121
Worrying about password related issues (Forgetting often, sensitiveness	<b>.543</b>	.381	.298
Procedures followed in bank for refund is time consuming	.057	<b>.741</b>	.247
Feeling that mobile wallets don't give attractive cash back and discounts	.212	<b>.682</b>	-.069
Delay in refunds after payment failure	.192	<b>.673</b>	.403
Confusions regarding transaction failure	.167	<b>.667</b>	.437
There are less variety of facilities in e-wallet	.278	<b>.602</b>	.130
Poor coverage in my area breaks transactions in the Middle	.279	.118	<b>.840</b>
Transaction alerts not comes in time	.214	.320	<b>.781</b>

(Source: Computed Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 13 iterations)

**Step 4**

Normally, from the factor results arrived, factor score coefficients can be calculated for all variables (since each factor is a linear combination of all variables) which have been used to calculate the factor scores for each individual. Since PCA has been used in extraction of initial factors, all methods have resulted in estimating the same factor score coefficients. However, for the study, original values of the variables have been retained for further analysis. Table 6.17 has described the factors extracted from the variables on challenges faced by the e-wallet users The three factors identified have been named as, '**Security and Operational difficulties**', '**Payment service and Quality**' and '**Network coverage**'.

**Table 6.17**

**Factors identified - Statements relating to challenges faced by the e-wallet users-  
Generation Z**

<b>Statements</b>	<b>Factors identified</b>
Feeling insecure while using in all e-wallet payments	<b>Security and Operational difficulties</b>
Not having net banking facilities to add money to wallet	
Worrying about using e-wallet service because other people can track expenditure.	
Fearing that process takes more time than expected	
Having some bad experiences (while sending money / recharging / sent to wrong person etc.	
Worrying about password related issues (Forgetting often, sensitiveness)	
Procedures followed in bank for refund is time consuming	<b>Payment service and Quality</b>
Feeling that mobile wallets don't give attractive cash back and discounts	
Delay in refunds after payment failure	
Confusions regarding transaction failure	
There are less variety of facilities in e-wallet	
Poor coverage in my area breaks transactions in the middle	<b>Network coverage</b>
Transaction alerts not comes in time	

The analysis of challenges faced by the e-wallet users has revealed that most of the respondents have faced security and operational difficulties which includes password related issues, process taking more time, feeling insecure about e-wallet usage. They have also been worrying about delay in refunds, confusions regarding transaction failure and the alerts which does not comes in time.

## **6.2 PROBLEMS AND RECTIFICATIONS**

Percentage analysis has been applied to know the number of e-wallet users who made complaint and through the source which they have been rectified.

**Table 6.18****Number of users who made complaint-Generation Y and Z**

Yes/No	Generation Y		Generation Z	
	Number	Percentage (%)	Number	Percentage (%)
Yes	273	68.25	246	61.5
No	127	31.75	155	38.75
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>400</b>	<b>100.0</b>

(Source: Computed)

In Generation Y, out of 400 respondents, 68.25 per cent of the respondents have made complaint and 31.75 per cent of the respondents have not made any complaints whereas in Generation Z, out of 400 respondents, 61.5 per cent of the respondents have made complaint and 38.75 per cent of the respondents have not made any complaints.

The respondents have been asked for the source through which they made complaints to rectify the errors.

**Table 6.19****Source of rectification-Generation Y and Z**

Source	Generation Y		Generation Z	
	Number	Percentage (%)	Number	Percentage (%)
E-mail support	64	23.45	45	18.29
Phone helpline	68	24.90	63	25.61
Online support portals (complaint forms or submitting tickets)	141	51.65	138	56.10
<b>Total</b>	<b>273</b>	<b>100.0</b>	<b>246</b>	<b>100.0</b>

(Source: Computed)

In Generation Y, out of the 273 respondents who have made complaints, it has been found that 51.65 per cent of the respondents have been rectified by online support portals, 24.90 per cent of the respondents through phone helpline and 23.45 per cent of them through e-mail support whereas in Generation Z, out of the 246 respondents who have made complaints, it has been found that 56.10 per cent of the respondents have been rectified by online support portals, 25.61 per cent of the respondents through phone helpline and 18.29 per cent of them through e-mail support.

# *Chapter VI-B*

*Path analysis between  
perception, awareness and  
satisfaction towards e-wallets  
with parallel mediator of  
challenges*

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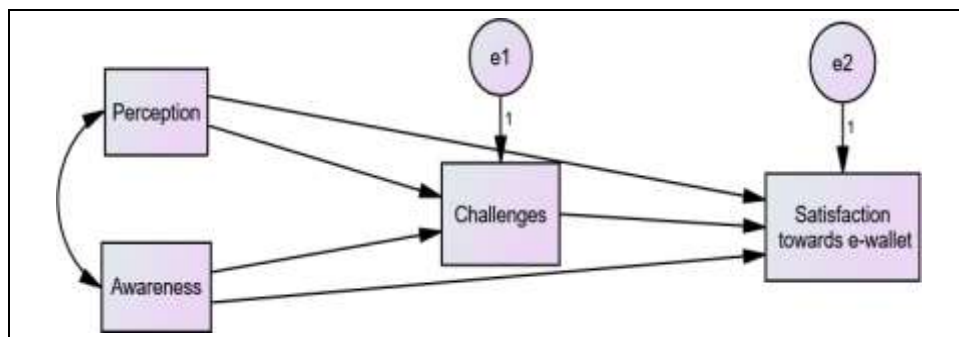
## CHAPTER VI-B

### PATH ANALYSIS AMONG PERCEPTION, AWARENESS AND SATISFACTION TOWARDS E-WALLETS WITH PARALLEL MEDIATOR OF CHALLENGES-GENERATION Y

The objective of the study is to understand the underlying relationship between various factors involved in the e-wallet users of Generation Y in Coimbatore city, Tamil Nadu. It is assumed that the satisfaction towards e-wallets of the respondents largely depends on the perception and awareness towards e-wallet. The direct and indirect effects of perception, awareness, challenges and satisfaction towards e-wallets are also attempted using Path Analysis. The theoretical path analysis model explaining the relationships between these factors has been given below.

#### Exhibit 6.1

#### Theoretical path model explaining the relationship between factors relating to satisfaction towards e-wallets –Generation Y



The factor scores of perception, awareness, challenges and satisfaction towards e-wallets has been used in the model.

The path analysis is developed using the objectives given below.

- To examine how perception and awareness affect the satisfaction towards e-wallets.
- To know about how challenges as mediating factor affects awareness and satisfaction and also perception and satisfaction.

The goodness of the fit of the model is verified by using selected fit statistics. Once it satisfies the goodness of fit of the model, the following hypotheses based on the model objectives will be tested which are given below.

H<sub>0</sub>: Perception has significant direct effect on satisfaction towards e-wallet.

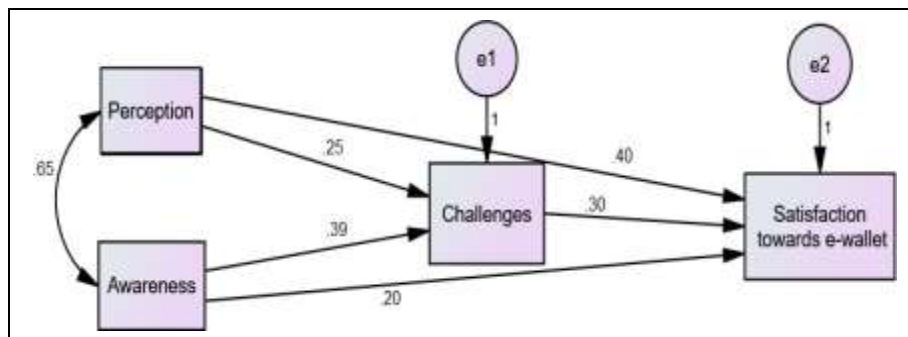
H<sub>1</sub>: Awareness has significant direct effect on satisfaction towards e-wallet.

H<sub>2</sub>: Challenges have significant mediation effect between perception and satisfaction towards e-wallet.

H<sub>3</sub>: Challenges have significant mediation effect between awareness and satisfaction towards e-wallet.

### Exhibit 6.2

**Path model showing the relationship between factors relating to satisfaction towards e- wallets–Generation Y**



The above diagram shows the relationship between the independent variables namely perception, awareness and dependent variables namely, challenges and satisfaction towards e-wallet. The path coefficients are standardized regression coefficients. The regression estimates produced by AMOS for unstandardized regression are given in table 6.20. The regression coefficients were estimated by Maximum likelihood method. AMOS ver. 23 was used to estimate the path coefficients.

The following model fit statistics has been 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. That is the non-significant chi-square value indicates the data fits the model well.

CMIN/DF: It is a relative chi-square measure, is an index of how much the fit of data to 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, where as a value between 3 and 5 is good.

GFI: The Goodness of Fit Index, tells you what 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 saturated model.

NFI: Normed Fit Index, is simply the difference between the two models' (default and independence) chi-square values divided by the chi-square value of independent model. The NFI value 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 between 0.05 and 0.08 is adequate fit.

The model fit statistics estimated by AMOS are given below.

CMIN/DF	5.324
GFI	0.953
NFI	0.921
CFI	0.987
RMSEA	0.053

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 not significant ( $P > 0.05$ ) and also CMIN/DF value is within the admissible limit of 5. The RMSEA value falls above 0.05 but below the maximum value of 0.08. Since all the goodness of fit indices are within the admissible limits it is inferred that the model fit is good.



**Table 6.20**

**Regression estimates of path coefficients–Generation Y**

**Regression weights**

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>
Challenges	<---	Perception	0.291	0.144	3.018	*
Challenges	<---	Awareness	0.519	0.156	5.016	**
Satisfaction towards e-wallet	<---	Perception	0.621	0.144	6.4395	**
Satisfaction towards e-wallet	<---	Awareness	0.211	0.159	1.9935	NS
Satisfaction towards e-wallet	<---	Challenges	0.385	0.126	4.605	*

*NS-Not significant\*\* - Significant at 1% level. \* - Significant at 5% level. (Significance were noted at 5% and 1% level)*

The above estimates are unstandardized regression estimates. The values given above are the regression estimates of the corresponding independent variables. S.Es are the standard errors of respective regression weights. Critical ratio(CR) is the ratio of regression estimate values to S.E. Probability (P) shows which regression coefficients significantly contribute to the dependent variables (\*\* or \* indicates the respective regression weights are significant at less than 1% or 5% respectively. Ns, if any indicates the regression weights are not significant).

The table shows that, perception (0.621) have significant positive direct effect on satisfaction towards e-wallet at 1 per cent level of significance and hence the hypothesis ‘H<sub>0</sub>: Perception has significant direct effect on satisfaction towards e-wallet.’ is accepted.

Awareness (0.211) have no significant positive direct effect on satisfaction towards e- wallet and hence the hypothesis ‘H<sub>1</sub>: Awareness has significant direct effect on satisfaction towards e- wallet.’ is rejected.

**Table 6.21**

**Direct, Indirect and total effects – Unstandardized–Generation Y**

<b>Relationship</b>	<b>Direct effect without mediation</b>	<b>Effect with mediation (Challenges)</b>	<b>Total effect</b>	<b>Observation</b>
Perception to Satisfaction towards e-wallet	0.46 (*)	0.489(**)	0.949	<b>Partial mediation</b>
Awareness to Satisfaction towards e-wallet	0.15(0.52)	0.534(*)	0.684	<b>Full mediation</b>

*\*\* - Significant at 1% level. \* - Significant at 5% level. (Significance were noted at 5% and 1% level)*

**Direct effects - Estimates**

The coefficients associated with the single-headed arrows in a path diagram are sometimes called direct effects. In unstandardized model, perception has a direct positive effect on satisfaction towards e-wallet with a regression weight of 0.46. That is, due to the direct effect of perception, when the satisfaction towards e-wallet score increases by 1, satisfaction towards e-wallet score increases by 0.46.

Similarly, awareness has a direct positive effect on satisfaction towards e-wallet with a regression weight of 0.15. That is, due to the direct effect of awareness, when the satisfaction towards e-wallet score increases by 1, satisfaction towards e-wallet score increases by 0.15.

**Indirect effects - Estimates**

The path coefficients given in the table also describes the indirect effect of each column variable on each row variable. The table shows that the indirect effect of perception has positive effect (0.489) on satisfaction towards e-wallet of respondents. However, the direct effect of perception on satisfaction towards e-wallets is lesser when compared with the indirect effect and significant at 1 per cent level. Hence hypothesis 'H<sub>2</sub>: Challenges have significant mediation effect between perception and satisfaction towards e-wallets' is rejected. And also, it is a partial mediation.

The indirect effect of awareness has positive effect (0.534) on satisfaction towards e- wallet of respondents. However, the direct effect of awareness on satisfaction towards e- wallet is lesser when compared with the indirect effect and significant at 5 per cent. Hence hypothesis ‘H<sub>3</sub>: Challenges have significant mediation effect between awareness and satisfaction towards e- wallet.’ is accepted. And also, it is a full mediation.

**Total Effects - Estimates**

The total effect is the combined direct and indirect effects of each column variable on each row variable. For example, total effect of perception on satisfaction towards e-wallet 0.949, which is the sum of the direct effect (0.46) and indirect effect (0.489). That is, due to both direct and indirect effects of perception, when the total effect goes up by 1 unit, satisfaction towards e-wallet score increases by 0.949. Similarly when the total effect of satisfaction towards e-wallet score goes up by 1 unit the awareness score of the respondents increases by 0.684, which is again the sum of direct effect (0.15) and indirect effect (0.534) of satisfaction towards e-wallet.

**Table 6.22**

**Direct, Indirect and Total Effects – Standardized–Generation Y**

<b>Relationship</b>	<b>Direct effect without mediation</b>	<b>Effect with mediation (Challenges)</b>	<b>Total effect</b>	<b>Observation</b>
Perception to satisfaction towards e-wallet	0.414 (*)	0.440(**)	0.854	<b>Partial mediation</b>
Awareness to satisfaction towards e-wallet	0.135(.52)	0.480(*)	0.615	<b>Full mediation</b>
<i>** - Significant at 1% level. * - Significant at 5% level. (Significance were noted at 5% and 1% level)</i>				

Similar to unstandardized regression weights, relative contribution of the standardized direct, indirect and total effects of each of column variable on the row variable are given above in the table 6.22. Since the standardized regression weights are free from units of measurements they are comparable. For example, the indirect effect of perception (0.44) on satisfaction towards e-wallet is higher than the direct effect (0.414). The indirect

effect of awareness (0.48) on satisfaction towards e-wallet is higher than direct effect(0.135).The standardized total effect of perception on satisfaction towards e-wallet (0.854) is higher than the total effects of awareness on satisfaction towards e-wallet (0.615).

### **Summary**

Path Analysis has been applied to find the relationship between the factors namely, perception, awareness, challenges and satisfaction towards e-wallet. The mediation effects of perception, awareness and challenges on satisfaction towards e-wallet has been also studied. The path model was developed and the goodness of fit statistics has been employed for the validity of the model. The goodness of fit statistics has been within the admissible limits and it has been inferred that the model fit is good.

Finally, the path coefficients have estimated for direct, indirect and total effects of exogenous and endogenous variables has been found. The standardized regression and unstandardized regression weights have been calculated. The results showed that the variable perception has significant direct effects on satisfaction towards e-wallet.

Standardized regression has been found to compare the relative contribution of direct and indirect of each independent variable on the dependent variable. The results showed that the direct effect of awareness on satisfaction towards e-wallet has been relatively lesser than the indirect effect. The variable, awareness has more indirect effect compared to direct effect.

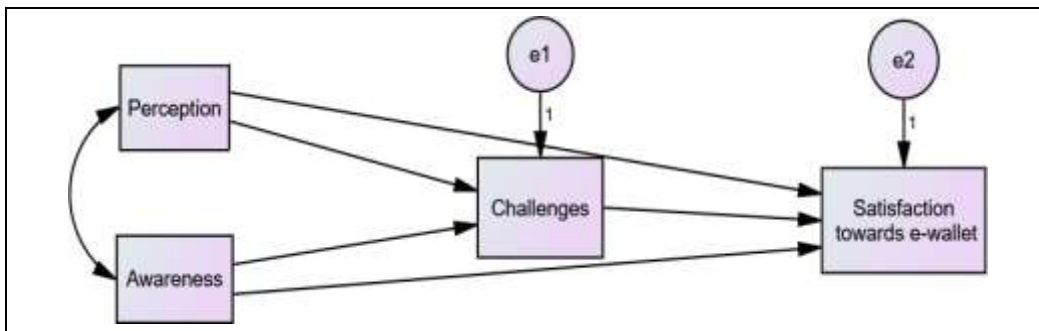
The unstandardized total effect of perception on satisfaction towards e-wallet is higher than the total effects of awareness on satisfaction towards e-wallet. Similarly, the standardized total effect of perception on satisfaction towards e-wallet is higher than the total effects of awareness on satisfaction towards e-wallet.

**PATH ANALYSIS BETWEEN PERCEPTION, AWARENESS AND  
SATISFACTION TOWARDS E-WALLETS WITH PARALLEL MEDIATOR  
OF CHALLENGES – GENERATION Z**

The objective of the study is to understand the underlying relationship between various factors involved in the e-wallet users of Generation Z in Coimbatore city, Tamil Nadu. It is assumed that the satisfaction towards e-wallets of the respondents with largely depends on the perception and awareness of e-wallet. The direct and indirect effects of perception, awareness, challenges and satisfaction towards e-wallet are also attempted using path analysis. The theoretical path analysis model explaining the relationships between these factors are given below.

**Exhibit 6.3**

**Theoretical path model explaining the relationship between factors relating to  
satisfaction towards e-wallets -Generation Z**



The factor scores of perception, awareness, challenges and satisfaction towards e-wallets has been used in the model.

The path analysis is developed using the objectives given below.

- To examine how perception and awareness affect the satisfaction towards e-wallets.
- To know about how challenges as mediating factor affects awareness and satisfaction and also perception and satisfaction.

The goodness of the fit of the model has been verified by using selected fit statistics. Once the fit statistics satisfy the goodness of fit of the model, the following hypothesis based on the model objectives will be tested which has been given below.

H<sub>0</sub>: Perception has significant direct effect on satisfaction towards e-wallet

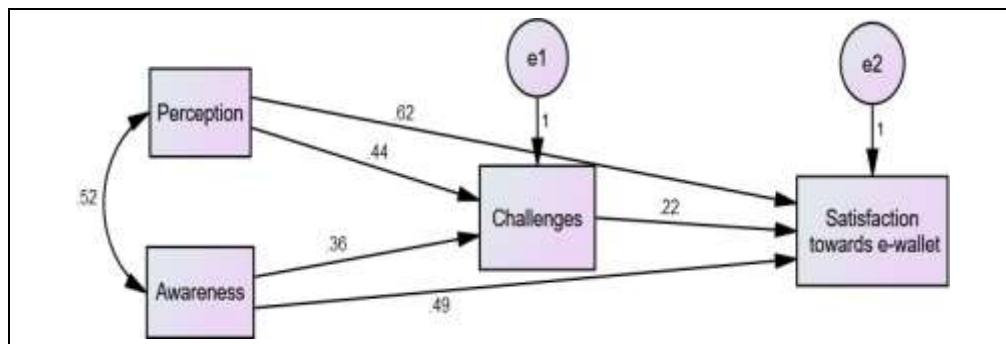
H<sub>1</sub>: Awareness has significant direct effect on satisfaction towards e-wallet

H<sub>2</sub>: Challenges have significant mediation effect between perception and satisfaction towards e-wallet.

H<sub>3</sub>: Challenges have significant mediation effect between awareness and satisfaction towards e-wallet.

### Exhibit 6.4

**Path model showing the relationship between factors relating to satisfaction towards e-wallets-Generation Z**



The above diagram shows the relationship between the independent variables namely perception, awareness and dependent variables namely, challenges and satisfaction towards e-wallet. The path coefficients are standardized regression coefficients. The regression estimates produced by AMOS for unstandardized regression are given. The regression coefficients were estimated by Maximum Likelihood method. AMOS ver. 23 was used to estimate the path coefficients.

The following model fit statistics has been 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. That is the non-significant chi-square value indicates the data fits the model well.

CMIN/DF: It is a relative chi-square measure, is an index of how much the fit of data to 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, where as a value between 3 and 5 is good.

GFI: The Goodness of Fit Index, tells you what 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 saturated model.

NFI: Normed Fit Index, is simply the difference between the two models' (default and independence) chi-square values divided by the chi-square value of independent model. The NFI value 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 between 0.05 and 0.08 is adequate fit.

The model fit statistics estimated by AMOS are given below.

CMIN/DF	2.543
GFI	0.924
NFI	0.973
CFI	0.987
RMSEA	0.069

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 not significant ( $P > 0.05$ ) and also CMIN/DF value is within the admissible limit of 5. The RMSEA value falls above 0.05 but below the maximum value of 0.08. Since all the goodness of fit indices are within the admissible limits it is inferred that the model fit is good.

**Table 6.23****Regression estimates of path coefficients-Generation Z****Regression Weights**

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>
Challenges	<---	Perception	0.32	0.163	3.420	*
Challenges	<---	Awareness	0.58	0.176	5.684	**
Satisfaction towards e-wallet	<---	Perception	0.70	0.163	7.298	**
Satisfaction towards e-wallet	<---	Awareness	0.23	0.180	2.259	NS
Satisfaction towards e-wallet	<---	Challenges	0.43	0.142	5.219	*
<i>** - Significant at 1% level. * - Significant at 5% level. (Significance were noted at 5% and 1% level, NS-Not Significant)</i>						

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

The table shows that, perception (0.70) have significant positive direct effect on satisfaction towards e-wallet which are significant at 1 per cent level and hence the hypothesis 'H<sub>0</sub>: Perception has significant direct effect on satisfaction towards e-wallet.' is accepted.

Awareness (0.23) have no significant positive direct effect on satisfaction towards e- wallet which is not significant at 5 per cent level and hence the hypothesis 'H<sub>1</sub>: Awareness has significant direct effect on satisfaction towards e-wallet.' is rejected.



**Table 6.24**

**Direct, Indirect and Total Effects – Unstandardized-Generation Z**

<b>Relationship</b>	<b>Direct effect without mediation</b>	<b>Effect with mediation (Challenges)</b>	<b>Total effect</b>	<b>Observation</b>
Perception to satisfaction towards e-wallet	0.414 (*)	0.444(**)	0.858	<b>Partial mediation</b>
Awareness to satisfaction towards e-wallet	0.10(.52)	0.325(*)	0.425	<b>Full mediation</b>
<i>** - Significant at 1% level. * - Significant at 5% level. (Significance were noted at 5% and 1% level)</i>				

**Direct effects - Estimates**

The coefficients associated with the single-headed arrows in a path diagram are sometimes known as direct effects. In standardized model, perception has a direct positive effect on satisfaction towards e-wallet with a regression weight of 0.414. That is, due to the direct effect of perception, when the satisfaction towards e-wallet score increases by 1, satisfaction towards e-wallet score increases by 0.414.

Similarly, awareness has a direct positive effect on satisfaction towards e-wallet with a regression weight of 0.10. That is, due to the direct effect of awareness, when the satisfaction towards e-wallet score increases by 1, satisfaction towards e-wallet score increases by 0.10.

**Indirect effects - Estimates**

The path coefficients given in the table also describes the indirect effect of each of the column variable on each row variable. The table shows that the indirect effect of perception has positive effect (0.444) on satisfaction towards e-wallet of respondents. However, the direct effect of perception on satisfaction towards e-wallet is lesser when compared with the indirect effect and significant at 1 per cent. Hence hypothesis 'H<sub>2</sub>: Challenges have significant mediation effect between perception and satisfaction towards e-wallet' rejected. And also, it is a partial mediation.

The indirect effect of awareness has positive effect (0.325) on satisfaction towards e- wallet of respondents. However, the direct effect of awareness on satisfaction towards e- wallet is lesser when compared with the indirect effect and significant at 5 per cent. Hence hypothesis ‘H<sub>3</sub>: Challenges have significant mediation effect between awareness and satisfaction towards e-wallet’ is accepted. And also, it is a full mediation.

### Total Effects - Estimates

The total effect is the combined direct and indirect effects of each column variable on each row variable. For example, total effect of perception on satisfaction towards e-wallet 0.858, which is the sum of the direct effect (0.414) and indirect effect (0.444) it had on satisfaction towards e- wallet. That is, due to both direct and indirect effects of perception, when the total effect goes up by 1 unit, satisfaction towards e-wallet score increases by 0.858. Similarly when the total effect awareness towards e-wallet score goes up by 1 unit the satisfaction score of the respondents increases by 0.425, which is again the sum of direct effect (0.10) and indirect effect (0.325) of satisfaction towards e-wallet.

**Table 6.25**

### Direct, Indirect and Total Effects – Standardized-Generation Z

Relationship	Direct effect without mediation	Effect with mediation (Challenges)	Total effect	Observation
Perception to satisfaction towards e-wallet	0.248 (*)	0.264(**)	0.412	<b>Partial mediation</b>
Awareness to satisfaction towards e-wallet	0.108(.52)	0.38(*)	0.488	<b>Full mediation</b>
** - Significant at 1% level. * - Significant at 5% level. (Significance were noted at 5% and 1% level)				

Similar to unstandardized regression weights, relative contribution of the standardized direct, indirect and total effects of each of column variable on the row variable are given above. Since the standardized regression weights are free from units of measurements they are comparable. For example, the indirect effect of perception (0.264) on satisfaction towards e- wallet is higher than the direct effect (0.248).The indirect effect of awareness (0.38) on satisfaction towards e-wallet is higher than direct effect (0.108).

The standardized total effect of perception on satisfaction towards e-wallet (0.412) is lesser than the total effects of awareness on satisfaction towards e-wallet (0.488).

### **Summary**

Path Analysis has been applied to find the relationship between the factors namely, perception, awareness, challenges and satisfaction towards e-wallet. The mediation effects of perception, awareness and challenges on satisfaction towards e-wallet has also been studied. The path model has been developed and the goodness of fit statistics has been employed for the validity of the model. The goodness of fit statistics has been within the admissible limits and it was inferred that the model fit is good.

Finally, the path coefficients have been estimated for direct, indirect and total effects of exogenous and endogenous variables has been found. The standardized regression and unstandardized regression weights have been calculated. The results showed that the variable perception has significant direct effects on satisfaction towards e-wallet.

Standardized regression weights has been found to compare the relative contribution of direct and indirect of each independent variable on the dependent variable. The results showed that the direct effect of awareness on satisfaction towards e-wallet is relatively lesser than the indirect effect. The variable, awareness has more indirect effect compared to direct effect.

The unstandardized total effect of perception on satisfaction towards e-wallet is higher than the total effects of awareness on satisfaction towards e-wallet. Similarly, the standardized total effect of perception on satisfaction towards e-wallet is lesser than the total effects of awareness on satisfaction towards e-wallet.