FACTOR ANALYSIS

Comprehensive Process of Factor Analysis

In this section, we present the process of factor analysis performed to arrive at the results. Firstly, we found that the KMO test returns the test value of 0.755, which is much higher than the acceptable level of 0.50, and also the Chi-Square value of 1986.843 is highly significant at the 1 percent level of significance. These results provide support to the fact that factor analysis is appropriate for analyzing the correlation matrix of all the items. Accordingly, we proceed by performing principal component analysis. The results of principal component analysis are presented in Tables 1 and 2. It can be inferred from Table 1 that the communalities for each item from 1 to 19 are 1, as units were inserted in the diagonal of the correlation matrix. Further, from Table 2, it can be inferred that the eigenvalues for all factors, as expected, are in the decreasing order of magnitude as we go from factor 1 to factor 19. Only those factors having an eigenvalue greater than 1 were retained, which are 6 in this case. It is to be noted that these 6 factors account for 64.656 percent of the total variance. The factor extraction in this case can also be judged from the screen plot (Fig. 4.1) and is clearly evident from the plot that the number of factors above the eigenvalue (1) is 6.

Table 1: Communalities

	Initial	Extraction
AT1	1.000	.274
AT2	1.000	.675
AT3	1.000	.687
AT4	1.000	.625
SN1	1.000	.682
SN2	1.000	.728
SN3	1.000	.546
PU1	1.000	.896
PU2	1.000	.920
PU3	1.000	.904
O1	1.000	.515
O2	1.000	.448
O3	1.000	.576
C1	1.000	.635
C2	1.000	.605
C3	1.000	.924
BI1	1.000	.558

BI2	1.000	.454
BI3	1.000	.633
Extraction Method: Principal Component Analysis.		

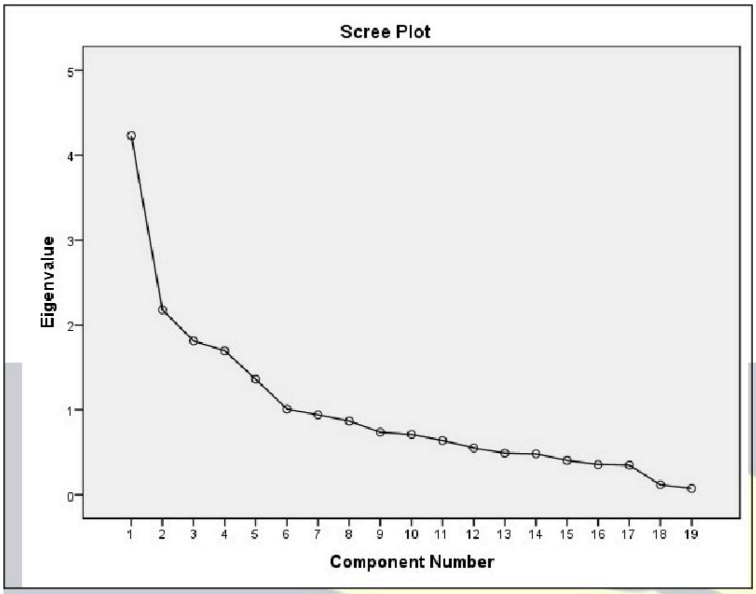
Table 2: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.230	22.263	22.263	4.230	22.263	22.263	3.455
2	2.179	11.468	33.731	2.179	11.468	33.731	2.964
3	1.811	9.533	43.264	1.811	9.533	43.264	2.191
4	1.695	8.920	52.185	1.695	8.920	52.185	2.218
5	1.361	7.163	59.348	1.361	7.163	59.348	1.823
6	1.008	5.308	64.656	1.008	5.308	64.656	1.048
7	.942	4.956	69.612				
8	.869	4.574	74.186				
9	.737	3.880	78.066				
10	.710	3.738	81.803				
11	.637	3.352	85.155				
12	.550	2.897	88.052				
13	.490	2.578	90.630				
14	.481	2.534	93.164				
15	.404	2.124	95.288				
16	.355	1.869	97.157				
17	.348	1.832	98.989				
18	.118	.619	99.609				
19	.074	.391	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Figure 4.1: Screen Plot



Items falling in the respective Constructs/Factors

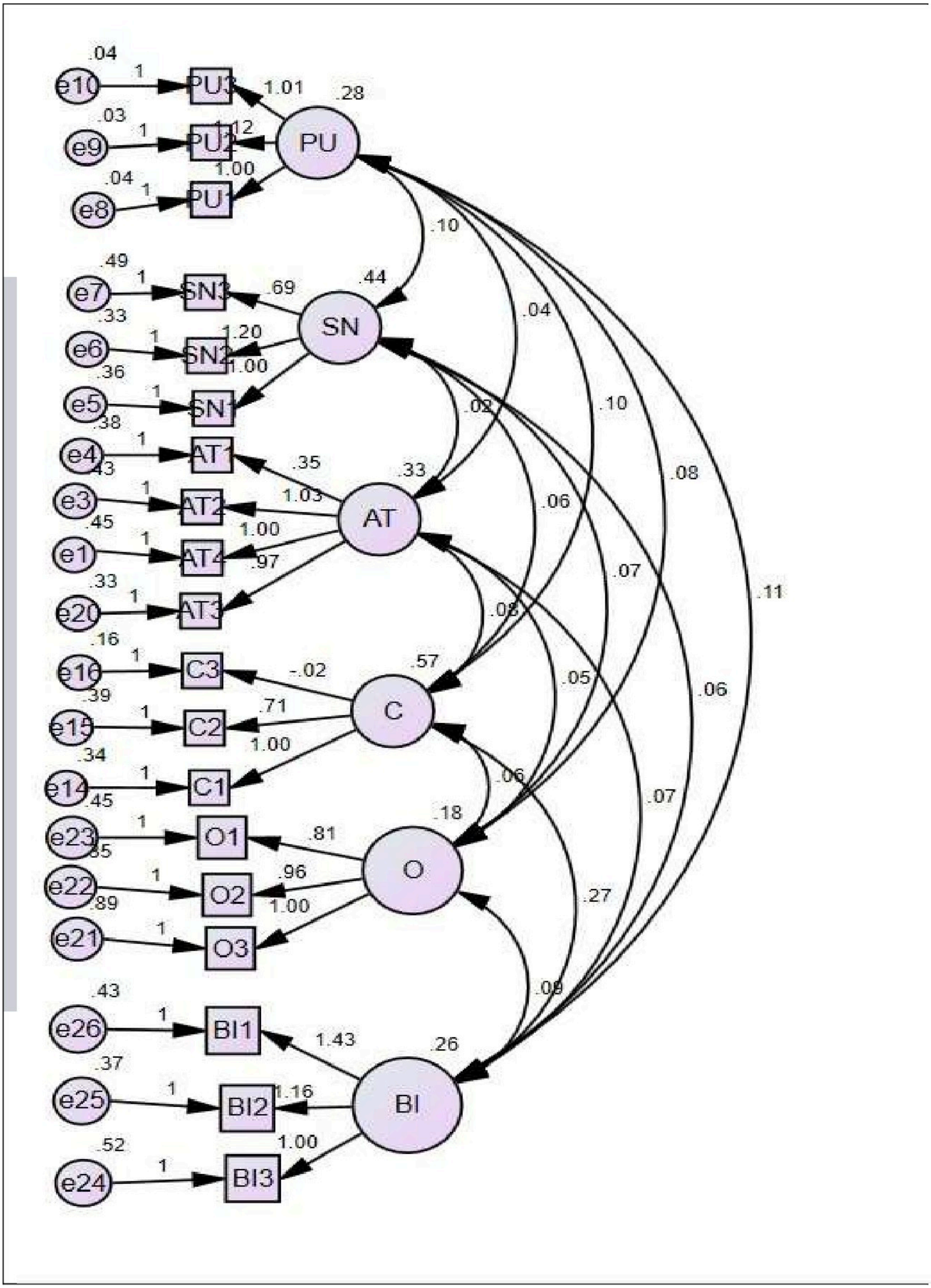
For the purpose of determining the respective observed items in a particular dimension, Rotated Matrix was used and has been illustrated below under headings Rotated Component Matrix. Initially component matrix was used to specify the underlying items in the respective factors but because of irregularity of results, rotated matrix was exploited which clearly identified the underlying observed items in respective constructs. It is evident from the rotated matrix (Table 3) that only 6 factors could be retained. It may be noted that higher loadings of items in the respective factors have been taken for identifying items in the particular factor. It is worth mentioning that items PU1, PU2, and PU3 fall under factor 1 and are classified as perceived use of use. Items C1, C2, and C3 fall under factor 2 and are classified as compatibility factors. Also, items SN1, SN2, and SN3 fall under factor 3 and are classified as subjective norm. Further, items A1, A2, A3, and A4 fall under factor 4 and are classified as attitude factors. Items O1, O2, and O3 fall under factor 5 and are classified as observability factors. Lastly, BI1, BI2, and BI3 fall under factor 6 and are classified as the Behavioral Intention factor.

Table 3: Rotated Component Matrix						
	Component					
	1	2	3	4	5	6
AT1				.735		
AT2				.801		
AT3				.796		
AT4				.763		
SN1			.806			
SN2			.842			
SN3			.730			
PU1	.919					
PU2	.939					
PU3	.931					
O1					.709	
O2					.584	
O3					.744	
C1		.789				
C2		.748				
C3		.952				
BI1						.606
BI2						.547
BI3						.790
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 5 iterations.						

Specifying the Measurement Model

If the Measurement Model is not accurate and reliable, the estimations of Structural Relationships are likely to be biased. In this instance, the Measurement Model is set up so that every underlying factor is permitted to correlate with every other factor and that every factor is linked to specific items or observable variables that belong to a given factor or construct. In a single measurement model, the researcher let all six factors that were investigated through the method of exploratory factor analysis to correlate with one another. (Figure 4.2)

Figure 4.2: Measurement Model



.04
e10
1
PU3
1.01
.28
.03
e9
1
PU2
1.12
PU
.04
1.00
e8
1
PU1
.10
.49
e7
1
SN3
.69
.44
.33
SN
.04
e6
1
SN2
1.20
.36
1.00
e5
1
SN1
.02
.10
.38
e4
1
AT1
.35
.43
.33
.08
e3
1
AT2
1.03
AT
.06
.45
1.00
e1
1
AT4
.97
.07
.33
.11
e20
1
AT3
.08
.16
e16
1
C3
-.02
.57
.39
.05
.06
e15
1
C2
.71
C
1.00
.34
e14
1
C1
.06
.07
.45
.18
e23
1
O1
.81
.85
e22
1
O2
.96
O
.89
1.00
.27
e21
1
O3
.09
.43
e26
1
BI1
1.43
.26
.37
e25
1
BI2
1.16
BI
.52
1.00
e24
1
BI3

Assessment of Measurement Model fitness

The Fit of the measurement model was evaluated on the basis of several fit indices including Comparative Fit Indices (CFI), Goodness of Fit indices (GFI), Adjusted Goodness of Fit Indices (AGFI), Normed Fit Index (NFI), Root Mean Square Error Approximation (RMSEA) and Root Mean Square Residual (RMR). The results of the CFA indicated that the Model Fit the data quite well as [Chi-square = 265.375, Probability level = .000. These indices are presented in Table 4. We find that all the goodness of fit indices presented in Table 4 are acceptable and thereby the measurement model is correctly specified.

Table 4: Goodness of Fit Indices for measurement model

Goodness of Fit Criteria	Acceptable Fit	Fit Values Obtained	Fit Situations
Chi Square Test	p-value <0.05	(Chi Square value 265.375; p-value=0.00)	Acceptable
CMIN/DF	value is ≤ 3	1.973	Acceptable
Root Mean Square Error of Approximation	0.05 ≤ RMSEA ≤ 0.10	0.058	Acceptable
Root Mean Square Residual	0.05 ≤ RMR ≤ 0.08	0.04	Acceptable
Normed Fit Index	0.90 ≤ NFI ≤ 0.95	0.92	Acceptable
Comparative Fıt Index	0.95 ≤ CFI ≤ 0.97	0.93	Acceptable
Goodness of Fıt Index	0.90 ≤ GFI ≤ 0.95	0.912	Acceptable
Adjusted Goodness of Fıt Index	0.85 ≤ AGFI ≤ 0.90	0.875	Acceptable

Structural Model

The Structural Model is specified as depicted in figure 4.3. In this model behavioral intention is taken as dependent variable and attitude, perceived use of use, compatibility, subjective norm and observability factors are taken as independent variable. As done with Measurement Model, the proposed Structural Model was found to fit the data quite satisfactorily as the fit values were well within acceptable range (Table 5). The magnitude and significance of the loading estimates as presented in Table 6 clearly indicate that only perceived use of use, observability and compatibility have been found significant in predicting behavioral intention. However, factors compatibility and subjective norm were found non-significant in predicting behavioral intention.

Table 6: Path coefficients

From	To	Estimate	S.E.	C.R.	P	Label
PU	BI	0.266	0.068	3.893	***	
O	BI	0.316	0.113	2.791	***	
SN	BI	0.029	0.059	0.483	0.629	
C	BI	0.754	0.096	7.847	***	
AT	BI	0.091	0.07	1.293	0.196	

Table 5: Goodness of Fit Indices for SEM model

Goodness of Fit Criteria	**Acceptable Fit**	**Fit Values Obtained**	**Fit Situations**
Chi Square Test	p-value <0.05	(Chi Square value 331.473; p-value=0.00)	Acceptable
CMIN/DF	value is ≤ 3	2.24	Acceptable
Root Mean Square Error of Approximation	0.05 ≤ RMSEA ≤ 0.10	0.06	Acceptable
Root Mean Square Residual	0.05 ≤ RMR ≤ 0.08	0.06	Acceptable
Normed Fit Index	0.90 ≤ NFI ≤ 0.95	0.914	Acceptable
Comparative Fıt Index	0.95 ≤ CFI ≤ 0.97	0.96	Acceptable
Goodness of Fıt Index	0.90 ≤ GFI ≤ 0.95	0.911	Acceptable
Adjusted Goodness of Fıt Index	0.85 ≤ AGFI ≤ 0.90	0.867	Acceptable

Figure 4.3: Structural Model