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A Study on Sales Decline of Real Estate Sector in Bangladesh

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Abstract: *The real estate sector in Bangladesh has been experiencing a downturn for last few years. But the reasons behind its change of fortune are varied and disproportionate. In major cities especially Dhaka and Chittagong, the problem of allocation in housing is increasing day by day. Because the change in population in the two cities has been rapid, housing shortage has been severe. The majority of the citizens fall within middle income or low income groups. The contributions of the real estate developer companies in solving this problem have been minimal at best. Initially this sector experienced rapid growth but now for survival it faces different degree of challenges. The membership of the REHAB is 1121 and there are other non member companies operating in this sector. However, most of them are operating at a loss because of decreasing sale in the ready-made apartments. Hence, the purpose of this study is to identify the issues that create the fall in demand in the market for readymade apartments.*

Key words: *REHAB, idiom, loading, parallel test, pattern matrix.*

Introduction

The real estate market had seen a huge setback worldwide as a result of the worldwide financial crisis of 2008. However, the localized effects in Bangladesh were not really pronounced before the Stock Exchange crash in 2011. The real estate bubble that was fueled by the stock market bubble was heavily affected by the downturn in the market.

Given the extent of the investment in the real estate sector, it can be assumed that the sellers in the real estate market are highly motivated to make a deal. However, the reason cited for the downturn in the market is the lack of demand. Consumers are less willing to indulge in long term major investments such as purchase of property given that most of the financial market had taken a nosedive.

Bangladesh real estate market is an interesting study because of the sheer contrast it offers to the US market. In the US, the post dot com recession was countered by generating growth in the real estate market. The entire boom in the financial markets was fueled by an ever increasing property values, leading to the creation of the subprime bubble.

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In the Bangladesh market, however, the boom in real estate was fueled both by urban migration and subsequent increase in housing demands and the financial bubble created by a booming securities market. The private sector real estate investment catered solely to the

demand created by the robust stock market. As such, the properties that were developed mostly by the private real estate developers were aimed at premium pricing markets.

Development of public housing, in contrast, has been painstakingly slow and fraught with the problems that are typical of public sector projects. The value generated in the real estate market usually has come exclusively from the private sector. As such, the commercial banks and other lending institutions are also heavily affected in terms of the downturn.

In Bangladesh, the commercial banks, both public and private, face a rather unique problem of high proportion of non-performing loans. However, the problem in the commercial banking sector is exacerbated by the failure of the real estate sector to deliver. A significant amount of private sector investment has been compromised by the downward trend in the real estate sector, with ripple effects in the other areas which are overseen by the commercial banking system.

The stalling of growth in the real estate market has exposed a particular vulnerability in the Bangladesh economy. No matter how much Bangladesh becomes part of the emerging markets, it continues to receive a disproportionate amount of global investment and very little attention from the global investment trends in real estate. Some parts of the emerging markets such as Malaysia and Thailand are booming because they are recipient of the major investment funding by the global financial systems with particular attention in the real estate sector. However, on the other end of the emerging market spectrum, Bangladesh receives little or no attention in its real estate sector both in terms of investment and development as well as international buyers.

This lack of consumer demand in Bangladesh real estate is true both in terms of local as well as international buyers. The purpose of this paper is to examine the factors that lead to the reduction in consumer demand that is contributing to such a lack of growth in the sector. Historically, for Bangladesh real estate has always been one of the most successful sectors of the economy. It would have grave consequences in the long term development of the economy if this sector continues to experience such recessionary impact.

Literature Review

Since the end of the Cold War and the beginning of the globalization phenomenon, the international market for real estate has become highly diversified and lucrative in terms of return on investment. Rapid development in transfer of financial technology has enabled the international financial system to pour money into the real estate assets of the emerging markets (Murray). It is usual for investors and fund managers assign capital to chosen regions and countries before selecting particular forms of real estate (Baum, 2009). There is a great deal of relevance to the choice of a country because social

interaction, provided by spatial proximity, helps to build trustworthiness and rapport, which are crucial for getting market information (Leyshon and Thrift, 1997, Agnes, 2000). Hence the importance of geography in portfolio choice, savings and investment, affecting the investor's decisions and returns (Stulz, 2005). As a result, allocation of capital among countries is rather uneven, often due to barriers which are perceived as well as actual ones (Murray).

Given that if the degree of integration between national markets is high, the potential benefit from international diversification would be minimal (e.g., Taylor and Tonks, 1989;

Bessler and Yang, 2003), it gives us greater insight into the extent to which international investment in the property market is affected by localized factors. Many such factors such as exchange rate risk, information availability, legal and tax differences, foreign ownership restrictions, home bias etc. create the impediments to free flows of capital funds across national borders (Errunza and Losq, 1985).

Other factors that continue to affect the real estate market in the developed world are (1) macroeconomic factors, such as real GDP growth, employment, inflation, monetary policies, and fiscal policies; (2) microeconomic/financial factors, including rental costs as well as real property financing, construction, and transaction costs; and (3) regulatory factors, such as property laws, tax rules, and leasing regulations associated with real estate. (J Yang et al, 2005)

However, it has not been demonstrated whether countries that are not high on the list of international investors would necessarily experience lower social benefits as a result of less entry into their real estate markets. Given that international investment has made it easier to expand the real estate market in a global way, we can perceive that certain uniformities of the real estate market in the developed world would also become part of the global market. In particular, the low barriers to entry in the real estate market results in the same efficiency distributions as they do in the developed country markets such as the US.

Moreover, the similarities indicate that the low barriers to entry would result in creation of inefficiency in the emerging real estate markets. In the US market, low barriers lead to loss of efficiency. (Hsieh and Moretti, 2003)

Furthermore, as we have seen before, the emerging markets do not fare equally and the result of the European markets would be a good indicator of how the former would pan out. The European market for real estate have had a disproportionate impact due to the common currency, with the advanced industrial nations getting a greater share of the pie and lesser industrial countries having little or no impact. (Yang et al 2005).

The other characteristics of the real estate property market are the tendency towards information asymmetry and prices being sticky downwards. In particular, real estate property prices are subject to the psychological point of initial purchasing price (Fabozzi et al, 2011). Given that certain emerging markets experience fluctuation in financial markets more than others, this would clearly mean two things: global investments are disproportionate among the emerging markets and those with less fluctuations and steady economic growth would get greater allocation of the global capital (Baum, 2009).

In the face of dual challenge of global financial crisis of 2008 and climate change issues, the emerging markets as well as OECD countries have developed a trend towards environmentally sustainable real estate development as a selling point. Empirical research has revealed that LEED and ENERGY STAR4 buildings on average have higher value, rent, and occupancy than comparable conventional buildings (Miller, Spivey, and Florance, 2008; Dermisi, 2009; Fuerst and McAllister, 2009; Eichholtz, Kok, and Quigley, 2010; Wiley, Benefield, and Johnson, 2010). Clearly, consumers are more inclined towards real estate properties which are “green” in nature and therefore developers feel compelled towards justifying the extra cost that would be incurred in developing properties that are environmentally sustainable (Galuppo and Tu, 2010). However, the cost of creating energy efficient buildings is not without challenges: the volatility of demand and the fall in the

growth of investment in the post financial crisis of 2008 makes increasingly difficult to allocate resources more efficiently (WBCSD).

Data and Methodology

The data used in this study were collected from 150 employees in 30 companies among 1121 registered member of Real Estate and Housing Association of Bangladesh (REHAB) and 50 customers who were found capable of purchasing apartment. By summing over the market this research find 31 variables or sectors as vital in fall the demand of apartment in Bangladesh. The factors are:

X_1 = Income
X_2 = Cost of Living
X_3 = National Economic growth
X_4 = Fixed Assets investment
X_5 = political stability
X_6 = investment from NRB Clients
X_7 = Rate of Price change of Apartments
X_8 = selling effort
X_9 = bank interest for House Loan
X_{10} = Risk of investment
X_{11} = Frequency of promotional activities
X_{12} = Emigration rate
X_{13} = Quality of Construction Work
X_{14} = saving rate
X_{15} = handover time
X_{16} = Bank Loans Availability
X_{17} = Green Environmental
X_{18} = Location
X_{19} = benefit from renting
X_{20} = Govt. Financial Incentive
X_{21} = Tax Incentive
X_{22} = Foreign Investment
X_{23} = natural disaster
X_{24} = Resources availability to Build High Rise Building
X_{25} = Awareness about better Housing
X_{26} = mortgage availability
X_{27} = Government Regulation
X_{28} = Energy Support
X_{29} = Energy Price
X_{30} = Customized interior design
X_{31} = Entrepreneur experience

The Orthogonal Factor Model

The observable random vector $\mathbf{X}$, with p components, has mean and covariance matrix $\sum$. The factor model postulates that $\mathbf{X}$ is linearly dependent upon a few

unobservable random variablesadditional sources of variation

$F_1, F_2, \square\square, F_m$, called *common factors*, and p $\varepsilon_1, \varepsilon_2, \square\square, \varepsilon_p$, called *error* or sometimes *specific*

factors. In particular, the factor analysis model is

$$X_1 - \mu_1 = l_{11} F_1 + l_{12} F_2 + \square\square + l_{1m} F_m + \varepsilon_1$$

$$X_2 - \mu_2$$

$\vdots$

$= l_{21} F_1 + l_{22} F_2 + \square\square + l_{2m} F_m$

$+ \varepsilon_2$

(1)

$X_p - \mu_p$

$= l_{p1} F_1 + l_{p2} F_2 + \square\square + l_{pm} F_m + \varepsilon_p$

or, in matrix notation,

$$\underset{(p\times 1)}{\mathbf{X} - \boldsymbol{\mu}}$$

$$= + \underset{(p \times m)}{\mathbf{L}}$$

$$\underset{(m \times 1)}{\mathbf{F}} +$$

$$\underset{(p\times 1)}{\boldsymbol{\varepsilon}}$$

(2)

Where,

μ_i = *mean* of variable *i*

ε_i = *i* th *specific factor*

F_j

l_{ij}

= *j* th *common factor*

= *loading* of the *i* th variable on the *j*th factor

We assume that,

$E(\mathbf{F}) =$

$\underset{(m\times 1)}{\mathbf{0}}$,

$Cov(\mathbf{F}) = E(\mathbf{F}\mathbf{F}') =$

$\underset{(m\times m)}{\mathbf{I}}$

$E(\boldsymbol{\varepsilon}) =$

$\underset{(p\times 1)}{\mathbf{0}}$,

$Cov(\boldsymbol{\varepsilon}) = E(\boldsymbol{\varepsilon}\boldsymbol{\varepsilon}') = \boldsymbol{\psi}$

$$\begin{bmatrix} \psi_1 & 0 & \cdots & 0 \\ 0 & \psi_2 & & 0 \\ \vdots & & \ddots & \vdots \\ 0 & 0 & \cdots & \psi_p \end{bmatrix}_{(p\times p)}$$

(3)

$$Cov(\boldsymbol{\varepsilon}, \mathbf{F}) = E(\boldsymbol{\varepsilon}\mathbf{F}) =$$

$$\underset{(p\times m)}{\mathbf{0}}$$

These assumptions and the relation in (2) constitute the *orthogonal factor model.*

Analysis and Discussion

There are 31 variables that act as a barrier to explore the real estate sector, let thevariables are defined as:

X_1 = Income
X_2 = Cost of Living
X_3 = National Economic growth
X_4 = Fixed Assets investment
X_5 = political stability
X_6 = investment from NRB Clients
X_7 = Rate of Price change of Apartments
X_8 = selling effort
X_9 = bank interest for House Loan
X_{10} = Risk of investment
X_{11} = Frequency of promotional activities
X_{12} = Emigration rate
X_{13} = Quality of Construction Work
X_{14} = saving rate
X_{15} = handover time
X_{16} = Bank Loans Availability
X_{17} = Green Environment
X_{18} = Location
X_{19} = benefit from renting
X_{20} = Govt. Financial Incentive
X_{21} = Tax Incentive
X_{22} = Foreign Investment
X_{23} = natural disaster
X_{24} = Resources availability to Build High Rise Building
X_{25} = Awareness about better Housing
X_{26} = mortgage availability
X_{27} = Government Regulation
X_{28} = Energy Support
X_{29} = Energy Price
X_{30} = Customized interior design
X_{31} = Entrepreneur experience

From our data set, the calculated correlation matrix of 31 variables from real estate sales drop is given in appendix Image-1, and Image-2.
The issues of sales drop have been factorized using PCA (principal component analysis) with direct oblimin. In appendix Table-1 represents eigenvalues, percentage of variance, and percentage of cumulative variance. There are thirty one number of issues that included for analysis. Among them twelve factors eigenvalue are more than one and these cumulative variance is 72.41% of the overall variance. The factor eigenvalue is greater than 1; it explains more variance than a single variable. From here, we will consider the twelve factors model.

From the scree plot, this analysis focuses the change of alb, only the components above the break for alb are the components. The below scree plot, there are two components occurred above the break for alb.

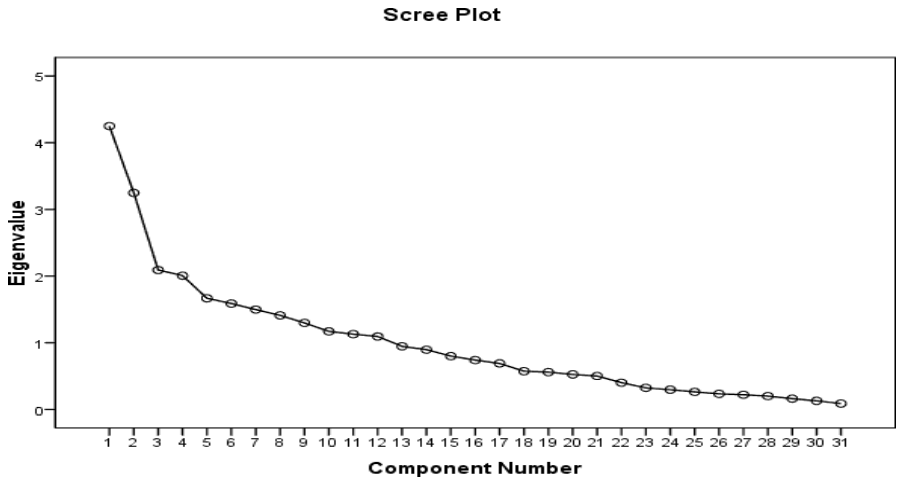

Figure-01: Scree plot

The third way, we can determine our component by parallel analysis. They extract and examine principal component eigenvalues to determine the number of common/principal axis factors!? The Monta Carlo PCA parallel analysis procedure was recommended by Cattell and it is the procedure that he used in his scree tests. It is also the procedure used in the SPSS and SAS factor analysis routines (O'Connor, B. P. 2000). Applying the Monta Carlo PCA parallel analysis test has given the results;

Parallel Analysis:

Principal Components & Random Normal Data GenerationSpecifications

for this Run:

Ncases 72
Nvars 31
Ndatsets 1000
Percent 95

Raw Data Eigenvalues, & Mean & Percentile Random Data Eigenvalues

Root	Raw Data	Means	Prcntyle
1.000000	4.249020	2.492439	2.728884
2.000000	3.247010	2.251962	2.409542
3.000000	2.090617	2.081375	2.216149
4.000000	2.005465	1.931813	2.051987
5.000000	1.666940	1.804380	1.911439
6.000000	1.587943	1.689342	1.787261
7.000000	1.498152	1.581869	1.671544
8.000000	1.409948	1.484090	1.568201
9.000000	1.297724	1.390820	1.471260
10.000000	1.170627	1.302310	1.375464
11.000000	1.129247	1.221162	1.292603
12.000000	1.094522	1.142570	1.217156
13.000000	.946157	1.067582	1.134896
14.000000	.896424	.997066	1.064546
15.000000	.799972	.929354	.991887
16.000000	.740060	.864860	.925551
17.000000	.690495	.802182	.859231
18.000000	.573849	.742795	.799650
19.000000	.559638	.687144	.740243

20.000000	.524784	.632636	.685817
21.000000	.501572	.581363	.631496
22.000000	.401067	.530360	.580422
23.000000	.323370	.481437	.532651
24.000000	.296983	.435838	.485051
25.000000	.263739	.390766	.435284
26.000000	.234203	.347445	.390808
27.000000	.220589	.307776	.349730
28.000000	.200209	.267797	.306928
29.000000	.162197	.227747	.266666
30.000000	.128848	.186998	.224298
31.000000	.088628	.144721	.183288

The above table the first estimated eigenvalue (4.249020) is larger than 95% bench mark criterion eigenvalue from the multi collinear simulation (2.728884). Similarly the second estimated eigenvalue (3.247010) is also larger the bench mark eigenvalue (2.409542). So these two eigenvalues are significant. But rests of all estimated eigenvalues are less than bench mark eigenvalue. From Scree Plot and Monte Carlo PCA parallel analysis indicates most of the loadings are involved in two components.

In Component Matrix (Appendix, Table-2) most of the idioms load in first two components. Very few idioms load in the rest of the components. From this matrix we can conclude that first two components have best and strongest relationship among the different idioms.

For more confirmation the next steps are to analyze the pattern (Appendix, Table-3). Five idioms load about point three in first component and the six idioms load in second component. But rest of components contain three or less than three idioms. Any components load more than three idioms considering the factor.

From the above discussion we confirm two factors model for our analysis. For that again run the SPSS to fix the number of factor two. Then the pattern matrix (Appendix, Table- 4) presents fourteen idioms including in first component and eleven idiom including in second component and rest of idioms neither in first nor in second component because of their less impact on sales drop of real estate sector (below 0.3).

Factor 1 has been named as 'State activities toward real estate sector and its response'that include the following variables;

- Political stability
- Government Financial Incentive
- Tax Incentive
- Foreign Investment
- Awareness about better Housing
- Mortgage availability
- Licensing Problem
- Handover time
- Saving rate
- Quality of Construction Work
- Location
- Benefit from renting
- Investment by NRB Clients

xiv)Fixed Assets investment

Factor 2 has been named as 'Customer financial strength and organizational operation activities' that include the following variables;

- Income
- Cost of Living
- National Economic growth
- Rate of Price change
- Selling effort
- Frequency of promotional activities
- Resource availability to Build High Rise Building
- Emigration
- Bank Loans Availability
- Risk of Investment
- Bank interest for House Loan

There are six variable namely Environment, natural disaster, Government Regulation, Energy Support, and Energy Price, Customized interior design rather than purchase not including any factor because less correlation coefficient. This indicates these variables have no impact on sales drop in real estate sector.

Conclusion:

The research is an analysis to identify the reasons that are the barrier to explore the real estate sector. From the above discussion we can conclude that there are two major factors that barrier on sales drop in real estate sector. First factor that indicates the state activities towards the real state that are not satisfactory and similarly the organizational responses are not enough towards the state. Second factor namely customer financial strength and organizational operational activities that focus on customer are not financially capable or do not get enough financial support to purchase apartment and similarly organization has lack activity to attack customer to buy their apartment. This research concludes that these two factors are the most challenging to sustain and explore Real Estate sector.

References

- Hotteling, H. (1933). *Analysis of a Complex Statistical Variables into Principal Components*. Journal of Educational Psychology vol 24, pp 48-56.
- O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. Behavior Research Methods, Instrumentation, and Computers, 32, 396-402.
- Stulz, R. (2005). The Limits of Financial Globalization. *Journal of Finance*, 60(4), 1595-1638
- Leyshon , A & Thrift, N. (1997). *Money/Space: Geographies of Monetary Transformation*. (1sted.). London: Routledge.
- Agnes, P. (2000). The "End of Geography" in Financial Services? Local Embeddedness and Territorialization in the Interest Rate Swaps Industry. *Economic Geography*, 76(4), 347-366.
- Taylor, M & Tonks, I. (1989). The Internationalization of Stock Markets and the Abolition of UK Exchange Control. *The Review of Economics and Statistics*, 71(2), 332-336.
- Bessler, D & Yang, J. (2003). The structure of interdependence in international stock markets. *Journalof International Money and Finance*, 22(2), 261-287.
- Errunza, V & Losq, E. (1985). International Asset Pricing under Mild Segmentation: Theory andTest. *The Journal of Finance*, 40(1), 105-124.
- Hsieh, C & Moretti, E. (2003). Can Free Entry Be Inefficient? Fixed Commissions and Social Waste in the Real Estate Industry. *Journal of Political Economy*, 111(5), 1076-1122.

- Antczak, S, Lucua, D & Fabozzi, F. (2011). Leveraged Finance: Concepts, Methods, and Trading of High-Yield Bonds, Loans, and Derivatives. *Financial Analysts Journal*, Vol 67(No 2), 75.

Image-1:

Appendix:

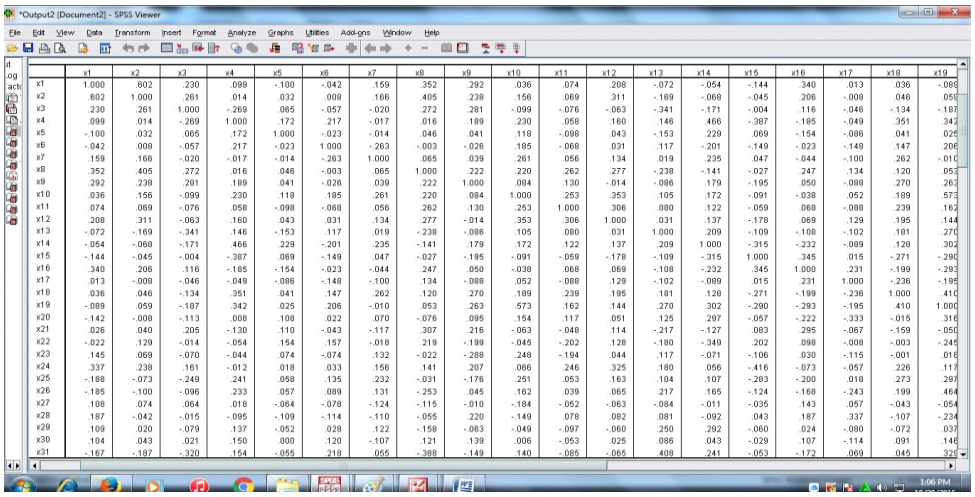

Image-2:

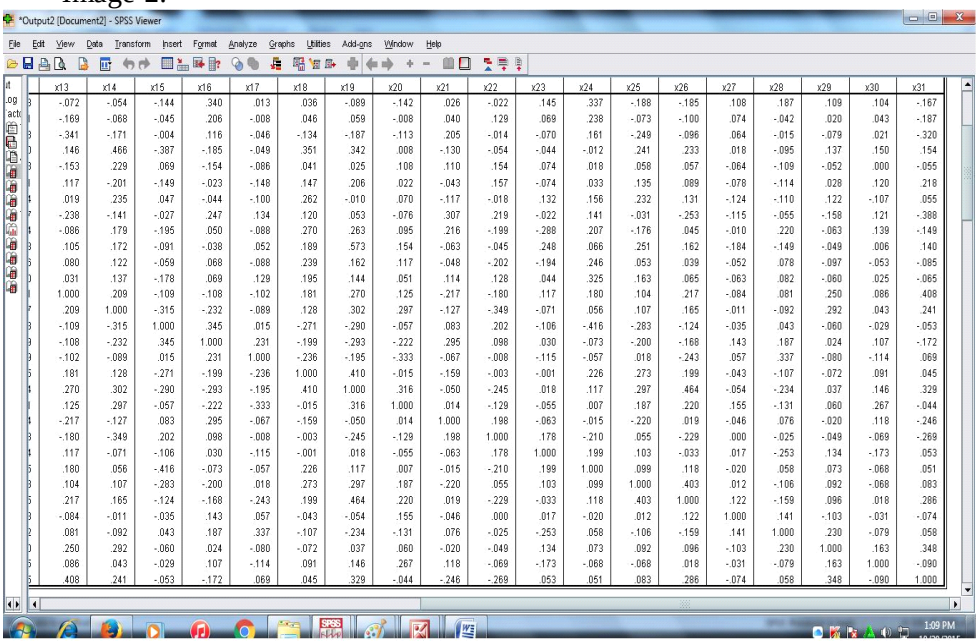

Table-1:

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.249	13.707	13.707	4.249	13.707	13.707	2.911
2	3.247	10.474	24.181	3.247	10.474	24.181	2.869
3	2.091	6.744	30.925	2.091	6.744	30.925	1.987
4	2.005	6.469	37.394	2.005	6.469	37.394	1.974
5	1.667	5.377	42.771	1.667	5.377	42.771	1.659
6	1.588	5.122	47.894	1.588	5.122	47.894	2.056
7	1.498	4.833	52.726	1.498	4.833	52.726	2.346
8	1.410	4.548	57.275	1.410	4.548	57.275	1.662
9	1.298	4.186	61.461	1.298	4.186	61.461	1.380
10	1.171	3.776	65.237	1.171	3.776	65.237	1.951
11	1.129	3.643	68.880	1.129	3.643	68.880	1.942
12	1.095	3.531	72.410	1.095	3.531	72.410	2.078
13	.946	3.052	75.462				
14	.896	2.892	78.354				
15	.800	2.581	80.935				
16	.740	2.387	83.322				
17	.690	2.227	85.549				
18	.574	1.851	87.401				
19	.560	1.805	89.206				
20	.525	1.693	90.899				
21	.502	1.618	92.517				
22	.401	1.294	93.810				
23	.323	1.043	94.854				
24	.297	.958	95.812				
25	.264	.851	96.662				
26	.234	.755	97.418				
27	.221	.712	98.129				
28	.200	.646	98.775				
29	.162	.523	99.298				
30	.129	.416	99.714				
31	.089	.286	100.000				

Table-2:

Component Matrix[a]

	Component											
	1	2	3	4	5	6	7	8	9	10	11	12
x1		.665	.347			.320						
x2		.684										
x3	-.389	.378								.304		
x4	.562							.523				
x5			.374					.524				
x6					.569	.405	-.302					
x7				.312	-.506		.315					.407
x8		.715										
x9		.526		.522								
x10	.468	.340					.303				.317	
x11		.368				.499		.347				
x12		.521		.322								
x13	.485		.315									
x14	.575							.438				
x15	-.481						.535					
x16	-.483						.346					
x17			.313	.344	.343	.339		.335				
x18	.514	.307								.360		.373
x19	.743											
x20	.373			.407			.317		.359			.312
x21	.309			.305						.409	.363	
x22	-.338		-.524									
x23				.570	.355	.363						
x24		.467					-.330				.343	
x25	.514								.384			
x26	.568								.334	.306		.386
x27									.797			
x28			.640									
x29			.404			.525	.323					
x30				-.418		.402						
x31	.475	.394	.336									

Table-3:Table-3:

Pattern Matrix[a]

	Component											
	1	2	3	4	5	6	7	8	9	10	11	12
x1		.870										
x2		.792										
x3		.355								.424		
x4										-.693		
x5								.733				
x6					.795							
x7					-.560							.613
x8		.447									.393	
x9		.319		-.719								
x10	.775											
x11								.329			.620	
x12											.721	
x13						.497		-.377				
x14					.517					.460		
x15							.814					
x16		.467					.488					
x17			.728									-.313
x18												.701
x19	.759											
x20			.718									
x21								.534		.455		
x22	-.408				.366			.363				.308
x23				.788								
x24							-.725			.354		
x25									.327			.498
x26	.487								.396			.355
x27									.867			
x28			.393	-.416		.438						
x29						.839						
x30			.568									
x31	.484					.498						

Pattern Matrix[a]

	Component	
	1	2
Income	.305	.642
LivingCost	-.259	.668
EconomicDownfall	-.465	.326
CustomerInvestment	.516	.224
Politics	.329	
NRBInvestment	.314	
Price	.175	.443
SellingEffort	-.367	.685
HouseLoan		.537
InvestmentInsecure	.382	.399
PromotionalActivity	.125	.394
Emigration		.546
Construction	.523	-.151
Savings	.558	
Handover	.413	.321
LoanAvailability	-.132	.598
StayGreen	.267	
PrimeArea	.434	.373
Benifit	.688	.272
FinancialIncentive	.364	
TaxIncentive	.364	.231
ForeignInvestment	-.345	
EarthQuack		
Resource	.150	.499
Awareness	.510	
LongtermPayment	.578	
GovernmentRegulatory		
EnergySupport	.231	
EnergyPrice	.243	
Selfestablish		.164
License	.554	.331