PRINCIPAL COMPONENT ANALYSIS ON FACTORS THAT LEADS TO DIVORCES IN JOS NORTH, PLATEAU STATE, NIGERIA

[1]HAMISU IDI, [2]LUKA JOSHUA,[3]ISAH YAHAYA &[4]DELONG THOMAS GATA
[1] [2]&[4]Department of Mathematics and Statistics, Federal Polytechnic, Bauchi
[3]Department of Basic Studies, Federal Polytechnic, Bauchi

Abstract
This research work "principal component analysis on factors that lead to divorce" is aimed at finding which factor(s) are responsible for divorce in Jos LGA of Plateau State, Nigeria. The primary source of data was employed via questionnaire method of data collection and the factors considered are Income, Love, Intercourse, Compatibility, No-trust, and Infertility. The researcher used principal component analysis through the help of SPSS and all factors eigen values of one and above are consider as factors that contribute mostly to divorce.

Keywords: Factors, Divorce, & Eigenvaues

Introduction

Marriage is the legally or formally recognised union of two people as partners in a personal relationship (historically and in some jurisdiction specifically a union between man and a woman. The marriage of a youth in ancient society was part of the responsibilities of his parents. The young man had no choice of a wife. In some cases a wife was married to him at a time he could not accept to keep a wife, am all maintenance was done by the parents. Such marriages were regarded to be sacred and respected by the spouse. Marriage arranged by parents on the basis of family friendship ties rarely broke up in the past. Marriage is a ubiquitous institution as it encompasses all culture races, ethnic groups or religious groups (Vincent Osaghea 2007)

Divorce is the legal ending of a marriage and was also very rear in the past, because of the penalty associated with proven infidelity and the fear of offending elders of both families in Nigeria. There are clearly defined types of marriages, which are the church or statutory marriage, those performed at mosques and marriages constituted according to native law and custom of any ethnic group.

Divorce is actually a legal dissolution of the marital union which involves the governance of the marriage bond between a husband and his wife. For any marriage

to be successful there is need for mutual understanding between couples. In other words, the husband and wife must have a common goal and each have to contribute positively to the fulfilment of the family, and the key word should be love.

Divorce is a legal termination of valid marriage. If a marriage is not valid when contracted, there cannot be a divorce because there was not really a marriage. M marriage unhappiness is only as a result of the various factors that predispose marital instability. Marital conflict is inevitable in any society as long as the husband and wife are different individuals and their actions are important to each other. With such a view, divorce is a mechanism for dealing with pressure and problem inevitably caused by marriage because without marriage, there will be no divorce.

Statement of the Problem

It is no longer news in our society that marriages fail due to so many reasons best known to couples. Divorce rate poses serious challenge always willing to carry out this humble assignment of husband love your wife, wife submit to your husband, hence , marriage failure is rampart because there is a deviation from love and submission which is the strength and staying power' of marriage. It is for this reason that this researcher wishes to carry out this study.

Research questions

The following are the research questions to be answered:
   a) What factors are responsible for divorce?
   b) What measures should be taking to ensure less reoccurrence of divorce among couples in Jos North Local Government area of Plateau State.

Aims and objectives

The aims and objectives of this research work include:
1. To determine which of the factors among several factors is responsible for the various causes of divorce among couples in Jos North Local Government Area.
2. To reduce data into most prevailing factor.

Significance of the study

This research work will help at identifying the factors that lead to divorce in other to avoid marriage failure in the society.

Research hypothesis

H_0: There is no significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North Local Government Area.

H₁: There is a significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North Local Government Area.

Literature review

Martin et al.(2003) defined divorce as an unplanned event in a family's life. It is something that affects each member of a family at different times and in different ways in the society. About half of all marriages will end in divorce, leaving one million children each year to deal with the process of divorce.

According to Ani (2009), marriage is a sacred institution and the part to the agreement need to handle it carefully since the success or failure of any marriage has consequences. For a marriage to succeed, the man and wife must patiently adhere and cooperate with each other. However, in the modern world, the meaning of marriage and many children are not reared in the traditional family unit (www.onelove.com).

Tikumah (2009) said, marriage may be in crises if one or more of the four purposes of marriage namely child bearing, sexual satisfaction, companionship and economic satisfaction, are not met or achieved. Crisis is a crucial time, the turning point in a marriage that is a decision moment that varies from person to person according to individual experiences and the way people view situation (Westlake, 1969; Ani 2009). The way a particular crisis situation among married couples is handled determines greatly whether marital failure occurs or not. Westlake also added that anything that disturbs the mutual sympathy and love between a husband and wife create serious tension and if happiness is not attained, the marriage is regarded as a failure.

According to Musick and Bumpass (2007), described marriage as a social institution buttressed by law, social support and expectations as well as the potential for spousal support and relationship specific investments and yet, half of all marriages dissolve. Again, despite the potential benefits of marriages are clearly not experienced equally or persistently for many marriages as factors supporting marriages vary across marriage unions and may be absent altogether in some (Musick and Bumpass),2007). The absence of supporting factors in a marriage may however signal divorce (failure). In a purely African setting, the status of a wife in her husband's family remains shaky and unpredictable unit she begets a child she becomes really secure after birth of a male child. At this stage, she is specially welcomed as a responsible house wife in her husband's extended family. The birth of a child gives her the title wife, prior to this time she may simply be referred to as a wife only in anticipation (Obi, 1970). The fate of a sterile woman in eastern Nigeria is a very hard one as she is commonly made the object of conversation and ridicule by some of her female neighbours so if an occasion for a quarrel arises, she gets the most painful telling off such that her women rivals

would call her barren sterile monster who has her maternal organs for more decoration, Obi added.

According to Diehl (2012), marriages fail because the stresses of life on the outside overwhelm the weaknesses on the inside. He added that marriages fail for very predictable reasons; selfishness, brokenness and ignorance in marriage. Each partner, male and female have their own unique and individual spices which are commonly referred to as needs. These needs may be emotional, physical and/or spiritual in nature. Each spouse's need adds flavour to the marriage relationship. Without a variety of individuals and different needs, a marriage relationship would be non stimulating, tedious and thereby lack flavour. A failure to properly identify and meet the needs of a spouse is one of the factors which is contributively to matrimonial failure (http://earnestandroline.com/marriage/lesson/identifying-species.pdf). Furthermore, this outline source has the following to say about the factors influencing divorce.

According to (Obi 1970; Tikumah 2009), childlessness is an issue that influences divorce. This is a critical issue in marriage failure as barren couples may become unhappy with their union and women are often blamed in Nigeria even though medically men may be contributive. Generally in Nigeria, children are accorded a priceless worth since procreation is perceived to be the essence of marriage hence childlessness is viewed as a calamity and a curse (Vincent- Osaghae).

The issue of sexual dissatisfaction is even a factor influencing divorce as Tikumah (2009) observed that, it is a problem stronger than childlessness because it could lead to sexual dishonesty among spouses which in turn can lead to extra marital affairs, bigamy and polygamy.

Ekiron (2003), when there is a wide educational gab between spouses, their approaches to life will be at variance, a problem may arise as the less educated person may be more superstitious, traditional or conservative and there may be difficulty in reasoning together and when these disparities exist in a wedlock, it is often difficult to maintain peace and stability. So divorce may likely result since the spouses are not at par in intellectual or rational thinking levels.

Brudel et al., (1999), this trial marriage hypothesis regularly fails to find confirmation in empirical studies. Various studies have shown that couples who cohabited before marriage show higher risk of failure and divorce. The widely accepted trial marriage hypothesis maintains the premarital cohabitation reduces the risk of divorce because the partners can test if they are compatible. The mechanism can be described more precisely with the help of arguments from family economics (Beckerl et al., 1977; Becker 1991; Bruderl, et al., 1999).

According to Doverty and Needle (1991), divorce is not an intended event in a family's life. It is something that can affect each individual of the family differently and at different times. Today, a couple's chance of getting a divorce is around fifty percent.

Since this is an event that is not intended to happen, many factors need to be considered when children from divorced families experience difficult adjustments such as social, academic and behavioural compared to children of intact families . Woosley et at., (2009) also concluded that from non-intact families tend to have lower psychological well being as compared to those from intact families.

According to Buchanan et al.,(1991), adolescent can be put in a situation during the divorce of their parents that can cause a triangulation between family members. Of researcher found that when parents from alliance with a child/adolescent against the other parent, the parent to parent and parent to child relationship puts the child into parent negotiations, tension and active conflicts causing an impact on their relationship (Buchana et al., 1991).

According to Bartel(2001), the relationship between a child and parent is one factor that may change or add stress to all involved. The parent child relationships are relationship with representations of how the child views relationship not only with friends but also with a romantic partner. Many changes occur during and after divorce that can impact this relationship. The negative effects that can happen to the parent-child relationship such as less time together and the degree of closeness and warmth can affect the attachment between the two (mahl,2001)

Poor quality relationships with parents after a divorce are related to less satisfaction in romantic relationships more fear and anxiety, less trust and happiness in love (bartel 2014).

Method of data Collection and Analysis

For this research work, data collection is an important and indispensable part. Therefore, the method of data collection for this research work is primary method through the use of questionnaire among residents of Jos North Local Government area of Plateau State.

Questionnaire is a research instrument consisting of series of questions and other prompts for the purpose of gathering information from respondents. The questionnaire for this work will be formulated based on some factors that lead to divorce in Jos North Local Government Area of Plateau State. The selected factors are: income, love, level of sexual intercourse, compatibility, lack of trust, infertility/impotence, addiction, intrusion by third party, sex of a baby, level of civilization, illiteracy, etc.

The factor will be rated 1-5 and each respondent is required to thick the number against the variable in the question as it affects them. That or, how they feel each of these factors is responsible using 1 as agree, 2 disagree, 3 fair (indifferent), 4 agree, 5 strongly agree.

Statistical Technique

Principal component analysis is the statistical tool used for this research work.

A principal component analysis (PCA) is concerned with explaining the variance structure of a set of variable through a few linear combinations of these variables.

An analysis of principal component often reveals relationships that were previously suspected and thereby allow interpretation that will ordinary resolve. Analysis of principal components are more of a means to an end than an end in themselves frequently served as an immediate step in much larger investigation. Algebraically principal components are particularly linear combination of a random variables X_1, $X_2, X_3, ..., X_p$.

Geometrically, this linear combination represents the selection of a new coordinate system obtained by rotating the original system with $X_1, X_2, X_3, ..., X_p$ as the coordinate axis. Principal component depends solely on the covariance matrix or correlation matrix (p) of $X_1, X_2, ..., X_p$. their development does not require a multivariate normal assumption.

Data Presentation

RESP	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
1	5	4	0	4	4	5	4	5	4	5	5	5	4	4	3
2	4	4	0	4	4	0	4	5	4	5	4	4	4	3	4
RESP	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
3	4	3	5	3	4	4	3	4	3	4	3	4	3	3	2
4	4	5	4	5	5	5	4	4	3	3	3	4	3	3	4
5	3	3	0	4	3	4	3	4	0	4	2	4	3	4	4
6	5	5	4	3	5	4	3	5	5	5	2	3	4	3	3
7	4	5	4	3	3	2	2	4	3	3	2	4	0	5	5
8	4	3	4	3	3	5	4	5	4	4	4	4	4	4	4
9	5	4	5	4	4	5	5	5	5	5	5	5	5	5	5
10	4	5	5	4	4	4	3	2	2	1	2	3	2	3	5
11	5	5	4	4	4	5	5	3	5	3	3	4	5	4	4
12	4	5	4	4	4	5	3	5	1	5	1	5	5	3	1
13	3	1	3	5	5	5	4	4	3	2	2	3	4	3	4
14	4	4	4	4	4	5	4	5	3	3	3	3	5	4	3
15	4	5	4	4	4	5	4	5	3	2	3	3	5	3	3
16	3	5	4	4	3	5	4	5	4	4	3	3	5	4	3
17	4	5	3	5	2	5	3	5	5	4	2	4	4	4	4
18	4	5	3	3	5	4	4	3	4	3	3	3	4	3	3

RESP	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
19	1	5	1	4	5	3	5	5	2	1	1	2	5	1	3
20	5	4	5	5	5	5	4	2	1	3	1	4	5	4	5
21	5	5	5	5	5	3	5	5	1	1	1	1	5	1	3
22	1	5	5	5	5	3	5	5	2	1	1	2	5	2	2
23	4	1	4	4	5	5	5	3	1	3	1	4	5	3	4
24	3	3	5	5	5	3	2	5	1	1	1	3	5	1	3
25	5	5	5	5	5	1	3	5	1	1	1	3	5	3	3
26	3	4	0	4	4	2	2	5	1	1	1	2	5	1	2
27	1	4	3	4	5	3	3	5	1	1	1	2	5	2	2
28	3	5	5	4	5	3	4	5	2	1	1	2	4	2	2
29	5	3	5	4	5	3	1	4	2	2	2	2	5	2	5
30	3	2	3	4	4	4	3	4	2	3	3	3	2	2	3
31	2	5	5	3	5	4	4	4	1	2	3	5	5	3	4
32	2	1	5	4	0	5	5	5	4	4	5	5	5	2	2
33	1	2	2	4	5	4	3	5	1	3	4	2	5	3	4
34	2	2	2	1	5	0	4	5	3	1	4	4	0	0	5
35	5	5	5	3	2	3	3	5	3	1	1	3	5	1	5
36	3	2	4	5	0	5	4	4	3	4	2	3	4	2	2
37	4	3	4	4	5	4	5	3	1	1	1	5	4	3	3
38	5	1	5	5	4	1	4	4	2	1	1	4	5	3	2
39	3	4	5	3	4	3	5	4	3	1	1	4	3	2	3
40	3	5	3	5	5	5	4	4	4	4	1	4	5	4	4
41	4	4	3	4	5	3	3	3	3	3	2	4	5	3	3
42	4	5	3	5	5	3	2	4	2	3	1	3	5	1	2
RESP	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
43	3	1	2	5	5	4	3	4	2	4	2	4	5	3	2
44	4	3	5	2	3	3	2	3	3	3	4	4	4	4	4
45	4	3	4	5	5	0	4	4	3	4	4	4	5	4	4
46	3	2	3	2	1	3	3	2	3	3	3	2	1	3	3
47	3	3	5	3	4	5	3	4	3	3	3	2	3	3	4
48	4	3	5	4	4	3	4	4	1	2	2	3	5	2	3
49	3	5	4	5	5	5	5	5	3	3	2	4	4	3	4
50	3	3	4	5	5	5	5	5	3	3	3	3	5	3	3
51	3	4	4	4	3	3	1	2	2	1	1	2	5	2	2
52	4	5	5	3	5	5	4	4	4	3	5	5	5	3	4
53	2	3	5	4	5	4	3	5	2	3	3	4	5	2	3

54	2	1	5	5	1	2	3	5	3	1	3	5	5	3	4
55	3	1	2	4	4	3	3	3	3	4	4	3	4	4	3
56	3	1	3	1	5	4	3	3	1	3	3	1	3	3	1
57	3	1	5	1	5	5	4	5	3	3	3	4	5	4	3
58	4	0	1	0	5	4	1	4	1	4	1	3	4	2	3
59	3	0	5	3	5	5	5	3	3	3	3	3	5	4	5
60	4	5	5	4	5	4	3	4	4	3	3	4	4	3	4

Descriptive statistics

	Mean	Std. Deviation	Analysis N
INCOME = Q1	3.47	1.081	60
LOVE =Q2	3.42	1.576	60
INTERCOURSE =Q3	3.73	1.471	60s
COMPATIBILITY =Q4	3.82	1.142	60
NOTRUST = Q5	4.13	1.268	60
INFERTILITY = Q6	3.70	1.369	60
ADDICTION = Q7	3.55	1.064	60
INTRUSION = Q8	4.17	.924	60
GENDER = Q9	2.58	1.239	60
CIVILIZATION = Q10	2.75	1.284	60
ILLITERACY = Q11	2.42	1.239	60
PARENTING = Q12	3.40	1.028	60
COMMUNICATION = Q13	4.22	1.209	60
EMPLOYMENT = Q14	2.85	1.055	60
EXTRAVAGANT = Q15	3.32	1.033	60

The table shows the means, standard deviations and sample size for each variable. It appears that the average score for all the tests is very similar and all have a similar spread.

Correlation matrix

	Initial	Extraction
Q1	1.000	.711
Q2	1.000	.671
Q3	1.000	.752
Q4	1.000	.581
Q5	1.000	.896
Q6	1.000	.599
Q7	1.000	.688
Q8	1.000	.728
Q9	1.000	.707
Q10	1.000	.880
Q11	1.000	.734
Q12	1.000	.443
Q13	1.000	.661
Q14	1.000	.707
Q15	1.000	.674

Extraction Method: Principal Component Analysis.

The table shows most of the correlations are well above 0.3 - a good indication that we have obtain a result and there appears to be two groups of variables which are Q1 to Q7 in one, and Q8 to Q15 in the other.

Kaiser-Meyer-Olkin And Barlett's Test
The table in (Apendix D) shows, the KMO value (.588) indicates that we have is pretty poor – just above miserable, however Barlett's test of sphericity with an associated p value of <0.001 indicates that we can proceed.

Communalities
The table in (Apendix E) shows, the estimated communalities (i.e. estimates of that part of the variability in each variable that is shared with others, and which is not due to measurement error or latent variable influence on the observed variable). The initial values can be ignored.

APPENDIX F: EIGENVALUES AND SCREE PLOT

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.271	21.804	21.804	3.271	21.804	21.804	3.216	21.441	21.441
2	2.053	13.687	35.491	2.053	13.687	35.491	1.670	11.133	32.574
3	1.571	10.471	45.962	1.571	10.471	45.962	1.515	10.103	42.677
4	1.287	8.583	54.545	1.287	8.583	54.545	1.489	9.928	52.605
5	1.190	7.932	62.477	1.190	7.932	62.477	1.406	9.371	61.976
6	1.061	7.075	69.551	1.061	7.075	69.551	1.136	7.576	69.551
7	.885	5.898	75.449						
8	.788	5.257	80.706						
9	.626	4.172	84.878						
10	.585	3.901	88.779						
11	.482	3.215	91.994						
12	.399	2.660	94.655						
13	.331	2.207	96.861						
14	.287	1.910	98.771						
15	.184	1.229	100.000						

Extraction Method: Principal Component Analysis.

The table showing the importance of each of the fifteen principal components. Only the first six have eigenvalues over 1.00, and together these explain over 70% (69.552%) of the total variability in the data. This leads us to the conclusion that a two factor solution will probably be adequate.

Scree Plot

The graph in (Apendix G) is showing this conclusion is supported by the scree plot (which is actually simply displaying the same data visually).

Unrotated Factor Loadings

The table in (Apendix H) shows the unrotated factor loadings are presented above. These show the expected pattern, with high positive and high negative loadings on the first six.

Reproduced Correlations

The table in (Apendix I) shows the extent to which the original correlation matrix can be reproduced from two factors. The small residuals show that there is very little difference between the reproduced correlations actually observed between the variables. The two factor solution provides a very relationships in the data.

Rotation

The table in (Apendix J) shows the factor loadings that result from Varimax rotation. These six rotated factors are just as good as the initial factors in explaining and reproducing the observed correlation matrix (see Appendix J). In the rotated factors, Q1 to Q5 have high positive loadings on the six factors and low loadings on the others as can be seen on Appendix J e.g. Q1 = + in factor 1 but – in factor 2, + in factor 3, 6, but – in 4, 5.

Total Variance Explained

The table in (Apendix K) shows the effect of rotation is to spread the importance more or less equally between the six rotated factors. In Appendix K the eigenvalues of the rotated factors are 3.216, 1.670, 1.515, 1.489, 1.406 and 1.136, compared to 3.271, 2.053, 1.571, 1.287, 1.190 and 1.061 in the initial solution. This makes it clear how important it is that we extract an appropriate number of fasctors. If we extract more than are needed, then rotation will ensure that the variability explained is more or less evenly distributed between them. If the data are really the product of just six factors, but we extract and rotate fifteen, the resulting solution is not likely to be very informative.

Component Transformation Matrix

The table in (Apendix L) shows the information about the extent to which the factors have rotated. The factors have been rotated through 10 degrees (that is cosine of 10 degrees is 0.984808).

Naming the Factors

The graph in (Apendix M) shows the SPSS now produces a decent plot of the fifteen variables on axes representing the six rotated factors.

It seems reasonable to tentatively identify the first rotated factor as "component 1" as Q1 (Income), Q3 (intercourse), Q13 (communication), Q8 (intrusion), Q12 (parenting), Q15 (Extravagant) all have high loadings on it. The second rotated factors as "component 2" as Q2 (Love) Q5 (No trust) Q4 (Compatibility) have high loadings on it. The third rotated factors as "component 3" Q9 (Gender), Q14 (employment), Q6 (Infertility), Q10 (Civilization), Q11 (Illiteracy) and Q7 (Addiction) all have high loading on it.

Saved Factor Scores

The table in (Apendix N) shows the saved Factor scores have been added to the data. These are standardized scores, obtained by applying the rotated factors loadings to the standardized score of each participant on each of the variables (just like making

prediction using a regression equation). Participants (10, 18, 20, 21, 23, 24, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 41, 45, 47, 50, 52, 53, 55 and 57) has a low standardized score on the first rotated factor with negative values and can therefore be said to be low in "component 1" on the other Participants (1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 19, 22, 30, 31, 39, 40, 42, 43, 44, 46, 48, 49, 51, 54, 56, 58, 59, 60) score high standardized score. This can also be seen on the other factors.

Summary of Result showing the Test of Hypothesis using Chi-Square Statistics
The table in (Apendix O) shows the calculated chi-square (X^2) 224.246 is greater than the critical or table value 154.314 at df = 105 and α = 0.001 level of significance. The null hypothesis (H_1) is therefore rejected and it is concluded that there is a significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North Local Government Area. We also see that the following factors **(Income, Love, Intercourse, Compatibility, No-trust,** and **Infertility)** are responsible for divorce among couples in Jos North Local Government Area.

Discussion of Findings
From the outcome of the research and the analysis of the data collected the following research was able to reveal the following.

1. That individuals level of income plays an important role in stability of marriage. When there is sustained lack or improvement in a marriage, either spouse may give up hope since many needs in the home such as unpaid bills, feeding, health and education needs as not met. In some cases a spouse may abscond to an unknown destination because of the abject poverty.

2. Absence of love can lead to divorce, based on the questionnaire respondents affirm that love is an important ingredient in marriage. The sustainability of marriage dependent on love.

3. Level of sexual intercourse among couples can determine stability of marriage to certain level. Sexual dissatisfaction is often a critical issue forwarded in discussing failed marriages because when there is decrease in sexual attraction or desire infidelity can set in.

4. Compatibility as a factor was\also observed as a factor that could lead to divorce. It could be in terms of educational background, religious backgrounds or social statues. When there is a wide range in educational gab between spouses, their approaches to life will be variance.

5. Base on the research lack of trust is a factor that could lead to divorce. When couples loose confidence in each other, marital crises sets difficult to maintain peace and stability in any marriage without trust.

6. The research established infertility as a major factor or a primary contributory factor to divorce. Most especially in African setting where couples enter marriage with the hope of procreation. Once this is not achieved within an expected period, divorce threat's sets in.

7. The component plot in rotated space shows the six components with values as 3.216, 1.515, 1.489, 1.489, 1.406 and 1.1.136.

The information above reveal that the calculated chi-square 224.246 is greater than the critical or table value 154.314 at 0.001 level of significance. The null hypothesis (H1) is therefore rejected and it is calculated that there is a significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North local government area of plateau state.

Summary of Major Findings

The study was conducted to determine which of the factors among several factors is responsible for the various causes of divorce among couples in Jos North Local Government Area of Plateau State and to reduce data into most prevailing factor. The result of the findings revealed that there is significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North Local Government Area. Analysis also shows that data was seriously reduced to about six factors which is the principal component that i.e. the linear combination that shows the prevailing factors that cause divorce among couples.

Conclusion

The findings of the study revealed that there is a significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North Local Government Area. The researcher therefore concluded that there is a significant difference in the factors among several factors responsible for the various causes of divorce among couples in Jos North Local Government Area of Plateau State and by implication the findings will equally go a long way to discourage divorce in Jos North, Plateau State, Nigeria, Africa and the World at large.

Recommendations

Based on the findings of this study and the conclusion drawn, the following measures are recommended as ways to handle divorce:

1. Couples are encouraged to both have stable source of income to avoid divorce.
2. Couples are encouraged to tolerate each other and to act in love at always.
3. Both partners are to agreed on they way they should handle sexual urge.

4. Counselling should be encouraged seriously to handle the issues of compatibility and trust.
5. Medically support should be sort ahead for couples during courtship and after marriage to handle the issue of infertility/impotency.

Suggestions For Further Study

Since research is a continuous process, the researcher therefore suggests that further studies be carried out in the following areas:

1. The Level of spirituality.
2. The character of the person.
3. The values of the person.
4. The level of companionship.
5. The influence of in-laws.

Contribution to Knowledge

It was apparent from the review of related literature that the factors that lead to divorce have been extensively researched upon. In the course of this study however, the researcher was unable to obtain relevant literature on the factors that lead to divorce in the area under study. Consequently, future researchers and stake holders in the field of education (Statistician) will find this piece of work worthwhile when conducting research in related areas.

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APPENDIX A

Dear Respondent,

I Am Delong Thomas Gata, A Student Of PGD Statistics, University of Agriculture Makurdi in Collaboration with Federal Polytechnic Bauchi, Bauchi State. I am currently carrying out a research on factors that lead to divorce. I am soliciting for your help in answering my questions as follows:

Key:

Strongly Agree   5

Agree	*4*
Fair (indifferent)	*3*
Disagree	*2*
Not Agree	*1*

QUESTIONS

1. Level of income is a factor that contributes to divorce. 5 [ ]4[ ] 3[ ] 2[ ] 1[ ]

2. Love is a factor that contributes to divorce? 5[ ] 4[ ] 3[ ] 2[ ]1[ ]

3. Level of sexual intercourse is a factor that contributes to divorce. 5 [ ] 4[ ] 3[ ] 2 [ ] 1 [ ]

4. Compatibility is a factor that contributes to divorce. 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1[ ]

5. Lack of trust is a factor that contributes to divorce. 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1 [ ]

6. Infertility/impotency is a factor that contributes to divorce. 5 [ ] 4[ ] 3[ ] 2[ ] 1[ ]

7. Addiction is a factor that contributes to divorce. 5 [ ] 4 [ ] 3 [ ] 2 [ ] 1 [ ]

8. Intrusion by third party is a factor that contributes to divorce. 5[ ] 4[ ] 3 [ ] 2[ ] 1 [ ]

9. Sex of a baby is a factor that contributes to divorce. 5[ ] 4[ ] 3 [ ] 2[ ] 1 [ ]

10. Level of civilization is a factor that contributes to divorce. 5[ ] 4 [ ] 3[ ] 2[ ] 1[ ]

11. Illiteracy is a factor that contributes to divorce. 5[ ] 4[ ] 3 [ ] 2 [ ] 1 [ ]

12. Poor role of modelling from parents is a factor that contributes to divorce. 5[ ] 4[ ] 3[ ] 2 [ ] 1 [ ]

13. Lack of adequate communication is a factor that contributes to divorce. 5[ ] 4 [ ] 3[ ] 2[ ] 1[ ]

14. Employment status is a factor that contributes to divorce. 5[ ] 4 [ ] 3[ ] 2[ ] 1[ ]

15. Extravagant spending is a factor that contributes to divorce. 5[ ] 4[ ] 3[ ] 2[ ] 1[ ]

APPENDIX A
CORRELATION MATRIX

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15

Correlation		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
	Q1	1.000	.232	.175	.043	.040	.039	-.080	-.198	.236	.244	-.021	.210	.038	.300	.230
	Q2	.232	1.000	.114	.297	.150	.020	.073	.184	.195	-.098	-.195	.000	.067	-.013	.084
	Q3	.175	.114	1.000	.102	-.044	.162	.171	-.079	.087	-.278	-.059	.094	.176	.061	.123
	Q4	.043	.297	.102	1.000	-.006	.018	.224	.158	-.031	-.090	-.244	.063	.422	.019	-.051
	Q5	.040	.150	-.044	-.006	1.000	-.045	.083	.010	-.277	-.146	-.198	-.146	.180	-.073	.045
	Q6	.039	.020	.162	.018	-.045	1.000	.255	-.067	.215	.391	.135	.147	.194	.356	.008
	Q7	-.080	.073	.171	.224	.083	.255	1.000	.164	.254	.016	.183	.245	.156	.150	.086
	Q8	-.198	.184	-.079	.158	.010	-.067	.164	1.000	.121	.036	.086	.054	.240	-.217	-.127
	Q9	.236	.195	.087	-.031	-.277	.215	.254	.121	1.000	.455	.546	.333	-.086	.392	.277
	Q10	.244	-.098	-.278	-.090	-.146	.391	.016	.036	.455	1.000	.503	.385	-.019	.573	.022
	Q11	-.021	-.195	-.059	-.244	-.198	.135	.183	.086	.546	.503	1.000	.359	-.152	.399	.266
	Q12	.210	.000	.094	.063	-.146	.147	.245	.054	.333	.385	.359	1.000	.025	.416	.262
	Q13	.038	.067	.176	.422	.180	.194	.156	.240	-.086	-.019	-.152	.025	1.000	-.014	-.219
	Q14	.300	-.013	.061	.019	-.073	.356	.150	-.217	.392	.573	.399	.416	-.014	1.000	.309
	Q15	.230	.084	.123	-.051	.045	.008	.086	-.127	.277	.022	.266	.262	-.219	.309	1.000

** Correlation is significant at the 0.01 level (2 –tailed)

APPENDIX B

KAISER-MEYER-OLKIN AND BARLETT'S TEST

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.588
Bartlett's Test of Sphericity	Approx. Chi-Square	224.246
	Df	105
	Sig.	.0001

APPENDIX C
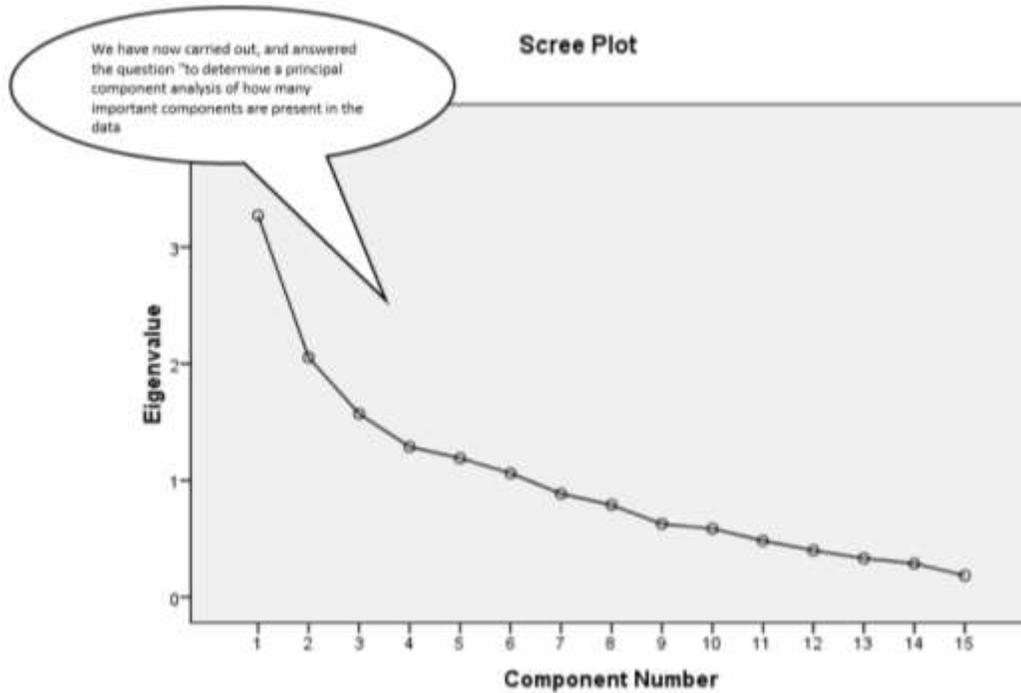
APPENDIX D
UNROTATED FACTOR LOADINGS

Component Matrix[a]

	Component 1	2	3	4	5	6
Q1	.352	.173	.614	-.125	.377	-.145
Q2	.002	.534	.285	.354	.422	-.030
Q3	.067	.420	.389	.038	-.591	-.264
Q4	-.077	.712	-.056	-.006	.141	-.212
Q5	-.257	.235	.193	-.152	.160	.830
Q6	.445	.256	-.138	-.518	-.218	.023
Q7	.297	.479	-.238	.164	-.433	.314
Q8	-.044	.341	-.593	.452	.229	.050
Q9	.744	.077	-.060	.340	.069	-.155
Q10	.740	-.146	-.265	-.310	.381	.005
Q11	.708	-.274	-.285	.217	-.116	.126
Q12	.643	.139	-.012	.093	-.041	-6.500E-5
Q13	-.090	.681	-.249	-.356	.032	-.011
Q14	.764	.026	.168	-.293	.041	.080
Q15	.419	-.046	.497	.377	-.141	.297

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

APPENDIX E

Reproduced Correlations

		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Reproduced Correlation	Q1	.711[a]	.388	.146	.147	.028	.095	-.188	-.298	.244	.254
	Q2	.388	.671[a]	.108	.428	.170	-.178	.054	.268	.179	-.102
	Q3	.146	.108	.752[a]	.245	-.163	.187	.308	-.222	.072	-.353
	Q4	.147	.428	.245	.581[a]	.024	.124	.203	.298	.041	-.092
	Q5	.028	.170	-.163	.024	.896[a]	-.018	.157	-.014	-.354	-.163
	Q6	.095	-.178	.187	.124	-.018	.599[a]	.305	-.133	.164	.406
	Q7	-.188	.054	.308	.203	.157	.305	.688[a]	.281	.250	-.001
	Q8	-.298	.268	-.222	.298	-.014	-.133	.281	.728[a]	.191	.022
	Q9	.244	.179	.072	.041	-.354	.164	.250	.191	.707[a]	.475
	Q10	.254	-.102	-.353	-.092	-.163	.406	-.001	.022	.475	.880[a]
	Q11	-.063	-.202	-.136	-.278	-.249	.200	.272	.123	.569	.529
	Q12	.216	.088	.124	.044	-.156	.284	.293	.059	.518	.414
	Q13	-.008	.180	.154	.514	.186	.347	.283	.229	-.117	.023
	Q14	.418	-.025	.071	-.059	-.041	.468	.159	-.244	.451	.624
	Q15	.302	.183	.222	-.178	.144	-.052	.200	-.176	.350	.016
Residual[b]	Q1		-.156	.029	-.104	.012	-.056	.108	.100	-.008	-.009
	Q2	-.156		.007	-.130	-.020	.197	.019	-.084	.015	.004
	Q3	.029	.007		-.143	.118	-.025	-.137	.143	.015	.075
	Q4	-.104	-.130	-.143		-.031	-.106	.021	-.140	-.072	.002
	Q5	.012	-.020	.118	-.031		-.027	-.074	.023	.077	.018
	Q6	-.056	.197	-.025	-.106	-.027		-.050	.066	.051	-.015
	Q7	.108	.019	-.137	.021	-.074	-.050		-.118	.004	.017
	Q8	.100	-.084	.143	-.140	.023	.066	-.118		-.070	.014
	Q9	-.008	.015	.015	-.072	.077	.051	.004	-.070		-.019
	Q10	-.009	.004	.075	.002	.018	-.015	.017	.014	-.019	
	Q11	.041	.008	.077	.033	.051	-.065	-.089	-.036	-.023	-.025
	Q12	-.006	-.088	-.030	.020	.010	-.137	-.049	-.005	-.186	-.029
	Q13	.046	-.113	.022	-.092	-.006	-.153	-.127	.012	.031	-.042
	Q14	-.117	.013	-.010	.078	-.033	-.112	-.008	.026	-.059	-.051
	Q15	-.072	-.099	-.098	.127	-.099	.060	-.115	.049	-.074	.007

Extraction Method: Principal Component Analysis.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 50 (47.0%) nonredundant residuals with absolute values greater than 0.05.

> We have now carried out, and answered the question "to what extent are the important components able to explain the observed correlations between the variables?"

		Q11	Q12	Q13	Q14	Q15
Reproduced Correlation	Q1	-.063	.216	-.008	.418	.302
	Q2	-.202	.088	.180	-.025	.183
	Q3	-.136	.124	.154	.071	.222
	Q4	-.278	.044	.514	-.059	-.178
	Q5	-.249	-.156	.186	-.041	.144
	Q6	.200	.284	.347	.468	-.052
	Q7	.272	.293	.283	.159	.200
	Q8	.123	.059	.229	-.244	-.176
	Q9	.569	.518	-.117	.451	.350
	Q10	.529	.414	.023	.624	.016
	Q11	.734[a]	.445	-.261	.427	.303
	Q12	.445	.443[a]	.005	.464	.298
	Q13	-.261	.005	.661[a]	.012	-.334
	Q14	.427	.464	.012	.707[a]	.310
	Q15	.303	.298	-.334	.310	.674[a]
Residual[b]	Q1	.041	-.006	.046	-.117	-.072
	Q2	.008	-.088	-.113	.013	-.099
	Q3	.077	-.030	.022	-.010	-.098
	Q4	.033	.020	-.092	.078	.127
	Q5	.051	.010	-.006	-.033	-.099
	Q6	-.065	-.137	-.153	-.112	.060
	Q7	-.089	-.049	-.127	-.008	-.115
	Q8	-.036	-.005	.012	.026	.049
	Q9	-.023	-.186	.031	-.059	-.074
	Q10	-.025	-.029	-.042	-.051	.007
	Q11		-.086	.110	-.029	-.037
	Q12	-.086		.019	-.048	-.036
	Q13	.110	.019		-.026	.116
	Q14	-.029	-.048	-.026		-.001
	Q15	-.037	-.036	.116	-.001	

APPENDIX F

ROTATION

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
Q1	.276	-.005	.595	-.529	-.020	.010
Q2	-.014	.062	.793	.151	.068	.101
Q3	-.019	.136	.111	-.196	.813	-.148
Q4	-.064	.550	.452	.185	.180	-.055
Q5	-.176	.063	.097	-.016	-.064	.921
Q6	.468	.502	-.237	-.211	.151	.068
Q7	.351	.213	-.100	.410	.514	.277
Q8	.045	.164	.189	.802	-.137	-.033
Q9	.722	-.154	.240	.178	.095	-.251
Q10	.778	.159	-.055	-.120	-.477	-.069
Q11	.730	-.288	-.249	.221	-.029	-.082
Q12	.636	-.001	.107	.037	.154	-.047
Q13	-.030	.776	.116	.123	.098	.140
Q14	.748	.081	.031	-.364	.015	.085
Q15	.368	-.525	.236	-.117	.356	.260

We have now carried out, and answered the question "which tests have high loadings on each of the rotated components?"

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 24 iterations.

Total Variance Explained

APPENDIX G

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.271	21.804	21.804	3.271	21.804	21.804	3.216	21.441	21.441
2	2.053	13.687	35.491	2.053	13.687	35.491	1.670	11.133	32.574
3	1.571	10.471	45.962	1.571	10.471	45.962	1.515	10.103	42.677
4	1.287	8.583	54.545	1.287	8.583	54.545	1.489	9.928	52.605
5	1.190	7.932	62.477	1.190	7.932	62.477	1.406	9.371	61.976
6	1.061	7.075	69.551	1.061	7.075	69.551	1.136	7.576	69.551
7	.885	5.898	75.449						
8	.788	5.257		Same overall % but very different division					
9	.626	4.172	84.678						
10	.585	3.901	88.779						
11	.482	3.215	91.994						
12	.399	2.660	94.655						
13	.331	2.207	96.861						
14	.287	1.910	98.771						
15	.184	1.229	100.000						

Extraction Method: Principal Component

Extraction Method: Principal Component Analysis.

APPENDIX H

Component Transformation Matrix

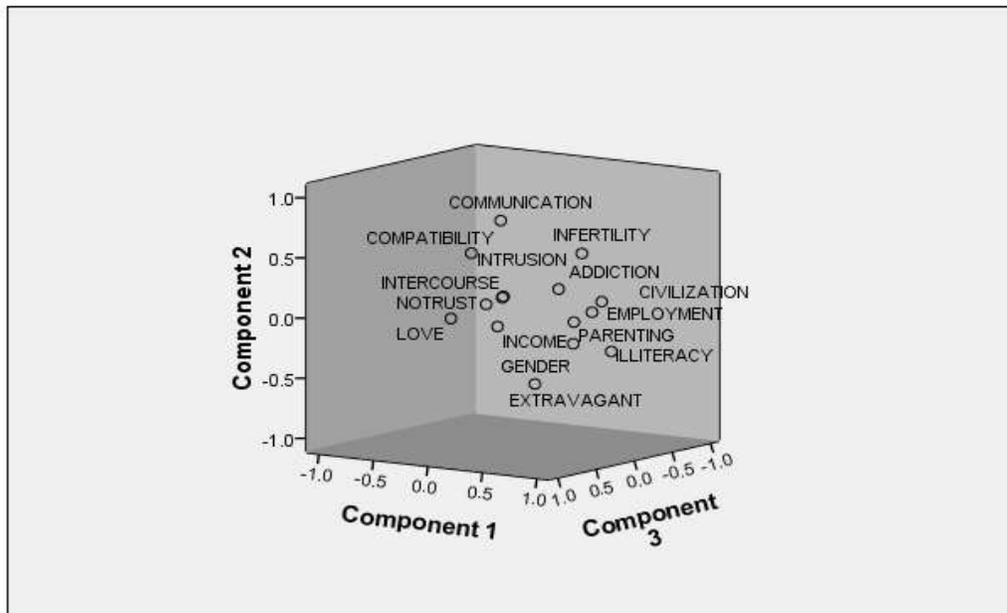| Component	1	2	3	4	5	6
1	.986	-.061	.048	-.101	.068	-.089
2	.029	.673	.513	.246	.430	.196
3	-.125	-.356	.469	-.706	.332	.171
4	-.020	-.621	.371	.637	.228	-.138
5	.035	.044	.590	.000	-.803	.060
6	.103	-.173	-.169	.160	-.059	.950

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

APPENDIX I
NAMING THE FACTORS

Component Plot in Rotated Space

APPENDIX N: SAVED FACTOR SCORES

PARTICIPANT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	FAC1_1	FAC2_1	FAC3_1	FAC4_1	FAC5_1	FAC6_1
1	5	4	0	4	4	5	4	5	4	5	5	5	4	4	3	2.E+000	0.20998	0.57366	0.66653	-2.10544	0.28496
2	4	4	0	4	4	0	4	5	4	5	4	4	4	3	4	1.E+000	-1.35221	1.26401	1.62334	-2.15858	0.23604
3	4	3	5	3	4	4	3	4	3	4	3	4	3	3	2	4.E-001	-0.04647	-0.31431	-0.59898	-0.32832	-0.75839
4	4	5	4	5	5	5	4	4	3	3	3	4	3	3	4	6.E-001	-0.17424	0.78806	-0.05143	0.40775	0.64181
5	3	3	0	4	3	4	3	4	0	4	2	4	3	4	4	2.E-001	-0.19117	-0.44290	-0.48701	-1.77736	0.21065
6	5	5	4	3	5	4	3	5	5	5	2	3	4	3	3	8.E-001	0.00275	1.40741	-0.10815	-1.17190	0.02134
7	4	5	4	3	3	2	2	4	3	2	4	0	5	5	5	4.E-001	-2.71202	1.33951	-0.98929	-0.22563	-0.78844
8	4	4	3	3	5	4	5	4	4	4	4	4	4	4	4	2.E+000	-0.21242	-0.21617	0.29166	0.10552	-0.50932
9	5	4	5	4	5	5	5	5	5	5	5	5	5	5	5	3.E+000	0.08963	0.75315	0.33493	0.73810	0.38126
10	4	5	5	4	4	4	3	2	2	1	2	3	2	3	5	-6.E-001	-1.50159	0.62440	-1.77364	1.43948	0.10284
11	5	5	4	4	4	5	5	3	5	3	3	4	5	4	4	1.E+000	0.27378	0.89125	-0.69254	0.88056	0.25119
12	4	5	4	4	4	5	3	5	1	5	1	5	5	3	1	1.E-001	2.08486	0.50073	-0.38644	-1.35513	-0.51991
13	4	4	4	4	4	5	4	5	3	3	3	3	5	4	3	6.E-001	0.84743	0.19319	0.17385	-0.01622	0.03632
14	4	5	4	4	5	4	5	3	2	3	3	5	3	3	3	2.E-001	0.61532	0.54555	0.51616	0.27755	-0.03466
15	3	5	4	4	3	5	4	5	4	4	3	3	5	4	3	9.E-001	0.86446	0.27900	0.63564	-0.14806	-0.72082
16	4	5	3	5	2	5	3	5	5	4	2	4	4	4	4	1.E+000	0.35070	1.46603	0.20323	-0.50787	-1.58713
17	4	5	3	3	5	4	4	3	4	3	3	4	3	3	3	4.E-001	-0.34453	0.32414	-0.43836	-0.29182	0.62937
18	1	5	1	4	5	3	5	5	2	1	1	2	5	1	3	-1.E+..	0.10704	-0.25436	2.30197	-0.30650	1.17000
19	5	4	5	5	5	5	4	2	1	3	1	4	5	4	5	2.E-001	0.75731	0.62122	-2.48745	1.18420	1.27999
20	5	5	5	5	5	3	5	5	1	1	1	1	5	1	3	-2.E+..	0.63145	1.24698	0.50015	0.87963	0.63843
21	1	5	5	5	5	3	5	5	2	1	1	2	5	2	2	-1.E+..	0.94015	-0.21213	1.76123	1.07887	0.40463
22	4	1	4	4	5	5	5	3	1	3	1	4	5	3	4	3.E-002	0.90129	-1.11045	-1.25659	0.89607	1.32462
23	3	3	5	5	5	3	2	5	1	1	1	3	5	1	3	-2.E+..	0.48006	0.37324	0.30695	0.26440	-0.11634
24	5	5	5	5	5	1	3	5	1	1	1	3	5	3	3	-1.E+..	0.15944	1.97089	-0.11922	0.18590	0.23648

PARTICIPANT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	FAC1_1	FAC2_1	FAC3_1	FAC4_1	FAC5_1	FAC6_1
25	3	4	0	4	4	2	2	5	1	1	1	2	5	1	2	-2.E+..	0.15863	0.52491	0.89986	-2.13314	-0.26787
26	1	4	3	4	5	3	3	5	1	1	1	2	5	2	2	-2.E+..	0.62087	-0.58273	1.16653	-0.44993	0.41803
27	3	5	5	4	5	3	4	5	2	1	1	2	4	2	2	-1.E+..	0.28945	0.45766	0.76526	0.51614	0.16819
28	5	3	5	4	5	3	1	4	2	2	2	2	5	2	5	-1.E+..	-0.57157	1.10459	-1.31131	-0.03506	0.19178
29	3	2	3	4	4	4	3	4	2	3	3	3	2	2	3	-3.E-001	-0.68746	-0.82296	0.00092	-0.52124	-0.34208
30	2	5	5	3	5	4	4	4	1	2	3	5	5	3	4	7.E-002	-0.11737	-0.47116	0.36389	1.15182	1.12940
31	2	1	5	4	0	5	6	5	4	4	6	5	5	2	2	1.E+000	0.99723	-1.94066	1.71660	1.01352	-3.09058
32	1	2	2	4	5	4	3	5	1	3	4	2	5	3	4	-1.E-001	0.09679	-1.55945	1.13617	-0.84951	1.14872
33	2	2	2	1	5	0	4	5	3	1	4	4	0	0	5	-6.E-001	-4.54815	-0.85778	2.41249	0.13821	0.81398
34	5	5	5	3	2	3	3	5	3	1	1	3	5	1	5	-9.E-001	-0.86122	1.68358	0.16143	1.05420	-1.41097
35	3	2	4	5	0	5	4	4	3	4	2	3	4	2	2	-6.E-003	1.25113	-0.83794	0.05891	0.12620	-3.16294
36	4	3	4	4	5	4	5	3	1	1	1	5	4	3	3	-4.E-001	0.31962	-0.34427	-0.83750	1.20422	1.01257
37	5	1	5	5	4	1	4	4	2	1	1	4	5	3	2	-9.E-001	0.55832	0.34308	-0.52256	0.73892	-0.66236
38	3	4	5	3	4	3	5	4	3	1	1	4	3	2	3	-6.E-001	-0.76663	-0.08339	0.50764	1.49448	-0.13231
39	3	5	3	5	5	5	4	4	4	4	1	4	5	4	4	8.E-001	0.92515	0.81807	-0.06725	-0.20111	0.83800
40	4	4	3	4	5	3	3	3	3	3	2	4	5	3	3	4.E-003	0.21992	0.58305	-0.80437	-0.57291	0.40722
41	4	5	3	5	5	3	2	4	2	3	1	3	5	1	2	-1.E+..	0.85650	1.29344	-0.24135	-1.35129	-0.21770
42	3	1	2	5	5	4	3	4	2	4	2	4	5	3	2	7.E-002	1.36512	-0.85429	-0.23260	-1.40321	0.30276
43	4	3	5	2	3	3	2	3	3	3	4	4	4	4	4	6.E-001	-1.14552	-0.25128	-1.39429	0.20856	-0.89337
44	4	3	4	5	5	0	4	4	3	4	4	4	5	4	4	7.E-001	-0.55760	0.63071	0.36452	-0.16471	0.58129
45	3	2	3	2	1	3	3	2	3	3	3	2	1	3	3	-2.E-001	-1.84284	-1.38719	-1.32688	-0.23887	-2.15963
46	3	3	5	3	4	5	3	4	3	3	3	2	3	3	4	9.E-002	-0.62602	-0.68699	-0.45914	0.44307	-0.15610
47	4	3	5	4	4	3	4	4	1	2	2	3	5	2	3	-8.E-001	0.39897	-0.09870	-0.24968	0.70864	-0.07569
48	3	5	4	5	5	5	5	5	3	3	2	4	4	3	4	5.E-001	0.41740	0.54794	0.97594	0.68906	0.92854

	PARTI CIPANT	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	FAC1_1	FAC2_1	FAC3_1	FAC4_1	FAC5_1	FAC6_1
49	49	3	3	4	5	5	5	5	5	3	3	3	3	5	3	3	5.E-001	1.07854	-0.42641	0.98067	0.43556	0.71294
50	50	3	4	4	4	3	3	1	2	2	1	1	2	5	2	2	-2.E+	0.40501	0.11061	-1.73706	-0.28616	-1.59632
51	51	4	5	5	3	5	5	4	4	4	3	5	5	5	3	4	1.E+000	-0.26424	0.26005	0.23880	0.85275	0.67725
52	52	2	3	5	4	5	4	3	5	2	3	3	4	5	2	3	-2.E-001	0.46701	-0.64666	0.86633	0.21313	0.22408
53	53	2	1	5	5	1	2	3	5	3	1	3	5	5	3	4	-1.E-001	-0.26223	-0.49596	1.11691	1.42246	-2.41208
54	54	3	1	2	4	4	3	3	3	3	4	4	3	4	4	3	6.E-001	-0.16344	-1.13335	-0.59648	-1.11807	-0.09473
55	55	3	1	3	1	5	4	3	3	1	3	3	1	3	3	1	-8.E-001	-0.18483	-2.48037	-1.25890	-1.26073	0.46332
56	56	3	1	5	1	5	5	4	5	3	3	3	4	5	4	3	8.E-001	0.16337	-1.84092	0.03561	0.43655	0.79305
57	57	4	0	1	0	5	4	1	4	1	4	1	3	4	2	3	-7.E-001	-0.59977	-1.56566	-1.54003	-2.62049	0.68036
58	58	3	0	5	3	5	5	5	3	3	3	3	3	5	4	5	8.E-001	-0.01888	-1.97386	-0.86553	1.58394	1.36481
59	59	4	5	5	4	5	4	3	4	4	3	3	4	4	3	4	5.E-001	-0.41366	1.01482	-0.21653	0.39893	0.23661
60	60	3	1	3	5	5	5	4	4	3	2	2	3	4	3	4	5.E-002	0.28137	-0.83860	-0.03358	0.43107	0.76803
61																						

We have now carried out, and answered to the question "to identify and name the rotated components"

APPENDIX J

Summary of Results Showing the Test of Hypothesis Using Chi-Square Statistics.

df	X^2 calculated	X^2 critical	$(\alpha = 0.001)$
105	224.246	154.314	0.001