

## Chapter-V

# **Relational Factors and Interaction Effects on Investment Decision**

## **Relational Factors Affecting on Investment in Gold**

Gold investment was influenced by various factors which might be financial, societal, personal, demographic and cultural factors. Studies were illustrating the importance of these factors. There were some fixed factors, i.e., safety, return, liquidity, stability, hedge against inflation and price along with the variable factors that were status symbol, culture, common belief and religious activity. In the literature it was described that how fixed factors and covariates interacted together. Das, S and Jain, R.(2014) stated that the return from the gold as an objective was influenced by education. With different educational qualification, the ability to choose the investment will vary based on the return benefits that different investment avenue provided. As per Das, S. and Jain, R., return was the fixed factor and the qualification was the variable factor. Arulmurugan, P., Balanagaguruthan, K. and Mirudhubashini (2013) stated in their paper on investment behaviour of professor towards gold that gold acted as a natural hedge against two important macro economical factors, i.e., inflation(internal) and other currencies, however for the common man more than these factors the sheer values, the yellow metal was associated with, was mainly responsible. They revealed that hedge against inflation or other currencies was the fixed factor and the sheer value associated with gold was variable. Hundal, B.S., Grover, S. And Bhatia, J.K. (2013),in their study on herd behaviour and gold investment by retail investors observed that investors were of varied personality type and have behavioural biases which impacted the investment decision process. Factors such as income tax, time value of money, future prospects and profitability influenced the retail investor's decision making process & gold was the most sought after asset due to its high liquidity, conventional value and cultural value features. They also stated high liquidity, conventional value and cultural value as the fixed factor in case of gold

investment. Factors such as income tax, time value of money, future prospects and profitability were also important factor while deciding investment in gold. But, Sireesha, B.P. and Laxmi, S.C. (2013) revealed that the study presented the results of empirical testing of impact of demographic factors on investment avenues selected by investors in the twin cities of Hyderabad and Secunderabad, India. It was found that gender, age and friends were mostly influencing the investment decisions of the respondents. It was concluded that the respondents of the study were conservative in nature and showed less concern for money multiplication and liquidity. According to them, money multiplication and liquidity were not the fixed factor rather gender, age and friend were the fixed factor. Money multiplication and liquidity may be treated as the variable factor here. In the same way Singh and Nadda (2013) stated that Investment at any point of time in gold will yield some positive returns, so it was not risky for an investor while it was very tough task for an individual to invest in stocks until and unless he possessed technical knowledge involved with it. In their statement, it was appeared that time and return were the fixed factor and knowledge was the co-variate. Kumar (2012) stated that gold was considered as an investment with high value, making it a reliable form of wealth. The actions of the people and the market trends drive the prices of gold. For the perspective gold buyer, it is important to understand the factors which influence the gold prices. This will help the buyer to analyse and invest in gold to direct towards more profit. Prices of gold are influenced by market trend and the action of the people. Market trend and the action of the people are acting as fixed factor and the price is co-variate. Lutter and Soone (2008) mentioned that one of the issues that could postpone or break the investment process (and also gold purchasing) is sudden price movements. People put investment decisions off when the price is shaking. If the price is increasing suddenly, investors feel as they have missed the right buying time and if it drops suddenly, they wait for the lowest place to buy or lose faith in the investment all together. Overall, sudden price drops are more discouraging than increases for the investors. This is proved by both this research and sales figures. The researcher had remarked that price is the fixed factor and the

decision of the investment is dependent on it. The decision of the investment varies as according to the price varies. Lutter and Soone (2008) showed that gold is already known and valued by the people for its stable nature and long tradition. This is a great advantage during the current uncertain economic times where trust-based investment instruments lose ground. Trust-based investment instruments (like stocks and bonds) are used more for earning profit whereas gold is regarded as long-term stable backbone of the portfolio. All the interview respondents said that they plan to hold gold and buy more if possible. They have stated stability and long tradition as the prime factor for investment in gold.

Baur and McDermott (2010) further examined the role of gold by testing the hypotheses that gold represents a safe haven against equities of developed and major emerging markets. Using data from 1979 to 2009, they showed that gold is both a safe haven and a hedge for major European equity markets and the US but not for Australia, Canada, Japan or major emerging markets such as the BRIC countries (Brazil, Russia, India and China). They also showed that during the peak of the recent financial crisis gold demonstrated safe haven properties in most developed markets, but this is not the case for the Asian crisis. Ciner et. al (2013) examined return relations between five financial asset classes to determine whether these assets could be considered as a hedge or safe haven against each other. Using daily data from the US and the UK for the period of January 1990 and June 2010, they found that gold could be considered as a safe haven against exchange rates in both countries, highlighting its monetary asset role. These scholars had viewed that hedge or safe heaven as the fixed factor upon which return depends.

### **Factors Interactions Effects on Gold Buying**

In the above section, the literatures supported in classifying two types of factors, i.e. fixed factors and the variable factors those having their inter-connection with resultant effects on gold buying. As the inter connection of the factors we could presume, obviously, these interaction among the factors anyhow

affected on the decision of gold buying or gold investment by anyone who were consuming or investing in the gold of the world. We also could presume that there may be different degrees of interaction among the various factors. Such interaction might be positive interaction or negative interaction. In the literatures cited above, we have found positive as well as negative interaction. Safety, return, liquidity, stability, hedge against inflation, price were the main factors or fixed factors followed by the additional factors, such as status symbol, culture, common belief, religious activity, traditions and customs as the variables. Combining together both fixed and variable factors we may derive our desired result. Positive interaction among the factors always gives positive result and the negative interaction among factors may not give positive result. This chapter aimed to determine the relative importance of the identified factors influencing gold investment.

### **Examining the Factors' Interaction Effect**

Here, in this section, how the different factors were interacting to create effect on investment decisions as well as gold buying were examined empirically. To examine empirically, first classified the respondents who considered safety, return, liquidity, stability, hedge against inflation and finally price of gold while buying or investing in the gold. The table- 5.1 stated the numbers of respondents who considered those factors in investment of gold.

<b>Factors Considered in Gold Investment</b>	<b>Table- 5.1</b>	
	<b>Response towards Factors</b>	
	<b>N</b>	
	<b>(Yes)</b>	<b>(No)</b>
<b>Safety</b>	146	258
<b>Return</b>	78	326
<b>Liquidity</b>	121	283
<b>Stability</b>	100	304
<b>Hedge against Inflation</b>	40	364
<b>Price</b>	51	353

*Source : Compiled from Questionnaire*

The table- 5.2 was an examination of interaction effect of various factors in selection of various forms of gold.

<b>Table- 5.2</b>							
<b>Relational Factors and Interaction Effects on Investment Decision</b>							
<b>Source</b>	<b>Dependent Variable</b>	<b>Type III Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>	<b>Partial Eta Squared (<math>\epsilon^2</math>)</b>
<b>Model</b>	<b>Physical Gold</b>	823.758	13	63.366	294.106	.000	.907
	<b>Certificate Form of Gold</b>	1484.081	13	114.160	1491.931	.000	.980
	<b>Gold mining share</b>	1584.302	13	121.869	6189.708	.000	.995
	<b>Gold Accounts</b>	1564.864	13	120.374	3878.342	.000	.992
<b>Interaction between factors</b>							
With treating together whole fixed factors (safety+ return+ liquidity+ stability+ hedge against inflation+ price)+ Covariates (status symbol+ culture+ common belief+ religious activity+ traditions + custom) ; Interaction of aggregate factors and the Interaction of individual covariates are treated in this predictive model.							
<b>Error</b>	<b>Physical Gold</b>	84.242	391	0.215			
	<b>Certificate Form of Gold</b>	29.919	391	0.077			
	<b>Gold mining share</b>	7.698	391	0.020			
	<b>Gold Accounts</b>	12.136	391	0.031			
<b>Total</b>	<b>Physical Gold</b>	908.000	404				
	<b>Certificate Form of Gold</b>	1514.000	404				
	<b>Gold mining share</b>	1592.000	404				
	<b>Gold Accounts</b>	1577.000	404				

*Source: Compiled from Questionnaire*

In this analysis (Table-5.2),the interaction effects were statistically significant (level of Sig=0.000).The effects of interactions of independent over the dependent variables were shown in the table-5.2.Column labelled source lists incorporated variables which affected distinctively the outcome in the model. The second column displayed the sum of squares for each effect. The degrees of freedom for each sum of squares was displayed in the column labelled df. The mean square of each effect was calculated by dividing the sum of squares by its degree of freedom. The F distribution & its significance value were displayed in the next column. The F statistics were calculated by dividing the mean square by mean square error which were very negligible by value indicated variability of

interactions of fixed factor along with the covariates directed in interpreting the result.

<b>Table- 5.3</b>			
<b>Factors Interaction and Effect Size</b>			
<b>Factors Interaction</b>	<b>Effect Size</b>		<b>Interpretation</b>
	<b>Buying and investing</b>	<b>Partial Eta Square Value</b>	
<b>Fixed factors (Safety+ Return+ Liquidity+ Stability+ Hedge Against Inflation+ Price)</b>  <b>+ (Plus)</b>  <b>Covariates (Status Symbol+ Culture+ Common Belief+ Religious Activity+ Traditions + Custom)</b>	Physical Gold P= 0.000	0.907	Significantly High Interactive effects
	Certificate Form of Gold P=0.000	0.980	Significantly High Interactive effects
	Gold mining share P=0.000	0.995	Significantly High Interactive effects
	Gold Accounts P=0.000	0.992	Significantly High Interactive effects

*Source: Compiled from Questionnaire*

In the table- 5.3, it was appeared that in all the forms of investment in gold, i.e, in physical gold, certificate form of gold, shares of gold mining companies and in gold account, the variability of interactions between the fixed and variable factors were having significantly high impacts. All the factors irrespective of fixed factor along with the covariates played a significant role while investment in gold as initiated by the Marwari businessmen of Guwahati city.

### **Clusters of Factors Influencing on Gold investment**

To churn out the central factors influencing investment in gold by the respondents, cluster analysis for classifying the factors for clubbing the factors was executed. Initially the data collected on the factors were safety, return, liquidity, stability, hedge against inflation, price, status symbol, culture, common belief, religious activities, tradition and custom which were also coded as yes (1) and No (2) inserted in cluster and classification penal. Out of 404 numbers of

sample respondents 299 numbers constituted as yes (1) and 105 numbers (2) constituted the initial 2 numbers of cluster (Table- 5. 4 and 5.5 )

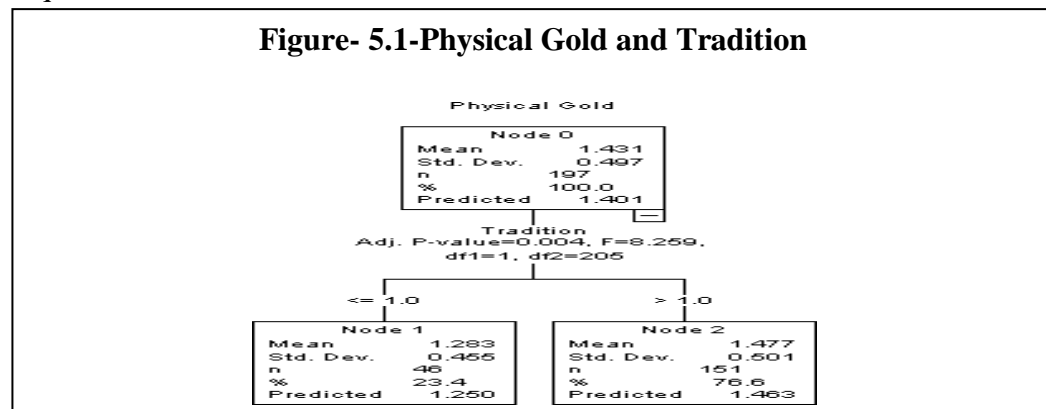
Table- 5.4 Final Cluster Centers		
Factors	Cluster	
	1	2
Safety	Yes (1)	No (2)
Return	Yes(1)	No(2)
Liquidity	Yes (1)	No (2)
Stability	Yes (1)	No (2)
Hedge against Inflation	Yes (1)	No (2)
Price	Yes (1)	No (2)
Status Symbol	Yes (1)	No (2)
Culture	Yes (1)	No (2)
Common belief	Yes (1)	No (2)
Religious Activity	Yes (1)	No (2)
Tradition	Yes (1)	No (1)
Custom	Yes (1)	No (2)

Source: Compiled from Questionnaire

Table-5.5 Number of cases in each Cluster		
Cluster	1	299.000
	2	105.000
Valid		404.000
Missing		.000
Risk of Decision		
Estimate	Std. Error	
.239	.008	
Growing Method : CHAID Dependent Variable: Physical gold Test sample results are displayed.		

Source: Compiled from Questionnaire

After initial cluster on the response of the variables, i.e., status symbol, culture, common belief, religious activity, tradition were instructed to sequentialise as well as to detect the value of influence.



Source: Compiled from Questionnaire

The operation yielded the factor **Tradition** with  $P=0.004 < 95.00$  significance,  $F= 8.259$ , with degree of freedom= 205 indicating as one the major factor out of all operated factors for investment in the gold as dependent value of physical gold purchase shown in the figure-5. 1.

This exactly created on the basis of two exhibiting nodes on the extreme of node  $\leq 1.0$  with  $n=46.0$  and  $\geq 1.0$  with  $n= 151$  with a standard error count= $0.008 < 10$  percent shown in table 5.5 . *This verbalized that the tradition as one central factor among the all relevant factors those influence on investing in physical gold by Marwari businessmen.*

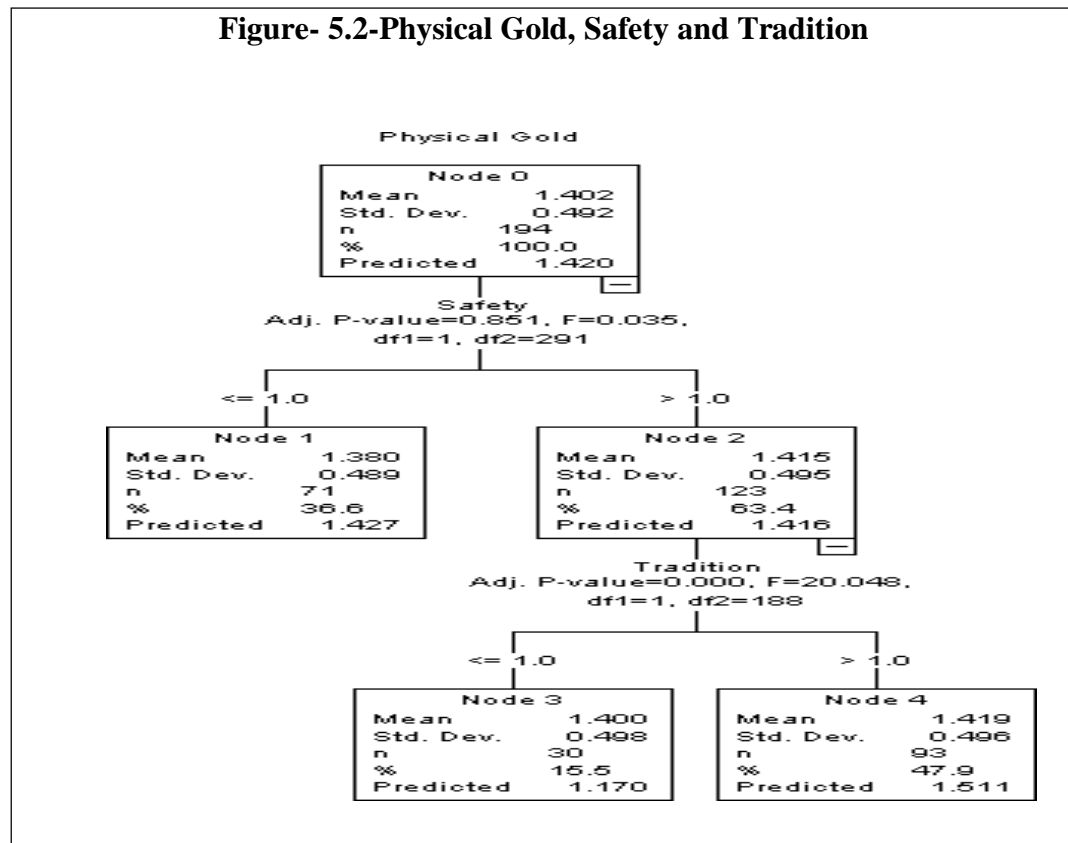
<b>Table-5.6</b>	
<b>Risk of Decision-I</b>	
<b>Estimate</b>	<b>Std. Error</b>
.232	.010
Growing Method : CHAID Dependent Variable: Physical gold Test sample results are displayed.	

*Source: Compiled from Questionnaire*

Combining the factor structure along with tradition and common belief and their influences on the decision of investing in gold induced to operate the analysis for making cluster of the factors. Here, cluster analysis was executed and its operation yields safety and tradition together and both the factors created separate cluster. As a result, the safety emerged as a root factor and tradition as a branch (child) factor. The operation of the both the factors produced the given level of influence while making investment in gold. After the analysis, safety appeared as an insignificant factor in case of investing in physical gold, **with**  $P=0.851 < 95.00$  Significance,  $F= 0.035$ , with degree of freedom= 291(Figure 5.2). This exactly created on the basis of two exhibiting nodes on the extreme node  $\leq 1.0$  with  $n=71.0$  and  $\geq 1.0$  with  $n= 123$  with a standard error count= $0.010 < 10$  percent (Table 5.6) .Moreover, tradition emerged as one of the central factor **with**  $P=0.000 > 95.00$  significance,  $F= 20.048$ , with degree of freedom= 188 indicating as the central factor out of all operated factors for investment in the gold as the dependent value of physical gold purchase shown in the figure-5. 2 .In this analysis safety emerged as insignificant central factor for



investing in physical form of gold but tradition emerged as one of the significant factor among those influence on investing in physical gold by Marwari businessmen. Tradition revealed two extreme of nodes i.e. node  $\leq 1.0$  with  $n=30.0$  and  $\geq 1.0$  with  $n= 93$  with a standard error count= $0.010 < 10$  percent (5.6).



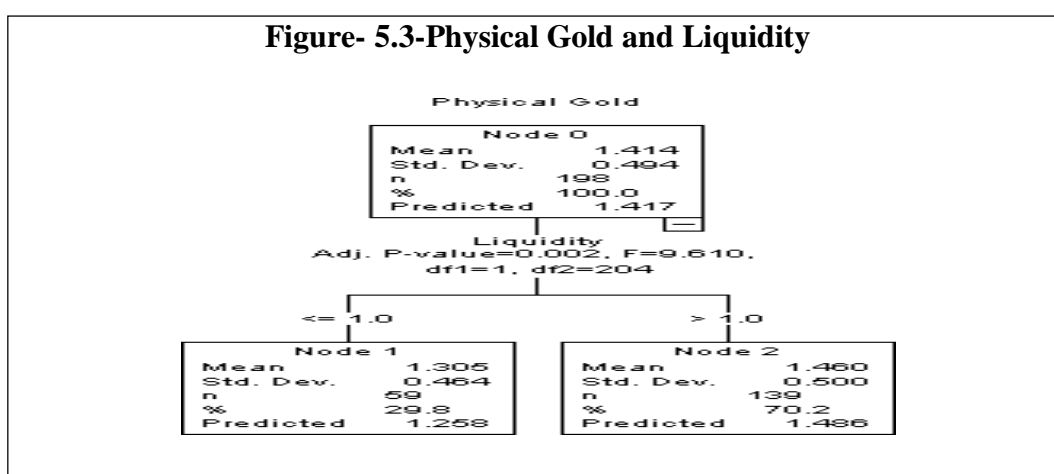
*Source: Compiled from questionnaire*

<b>Table-5.7</b>	
<b>Risk of Decision-II</b>	
<b>Estimate</b>	<b>Std. Error</b>
.239	.009
Growing Method : CHAID Dependent Variable: Physical gold Test sample results are displayed.	

*Source: Compiled from Questionnaire*

Here, considering and executing an operation of the financial factors such as safety, return, liquidity, stability, hedge against inflation, price, the level of influences of the given factors was detected. The operation of these variables

yielded the factor **liquidity** with  $P=0.002 < 95.00$  significance,  $F= 9.610$ , with degree of freedom= 204 indicating as one of the considerable factor out of all operated factors for investment in the gold as dependent value of physical gold purchase shown in the figure-5.3. This exactly created on the basis of two exhibiting nodes on the extreme of node  $\leq 1.0$  with  $n=59.0$  and  $\geq 1.0$  with  $n= 139$  with a standard error count= $0.009 < 10$  percent(table 5.7). *This revealed the liquidity as one of the significant factor among the all relevant factors those influence on investing in physical gold by Marwari businessmen.*



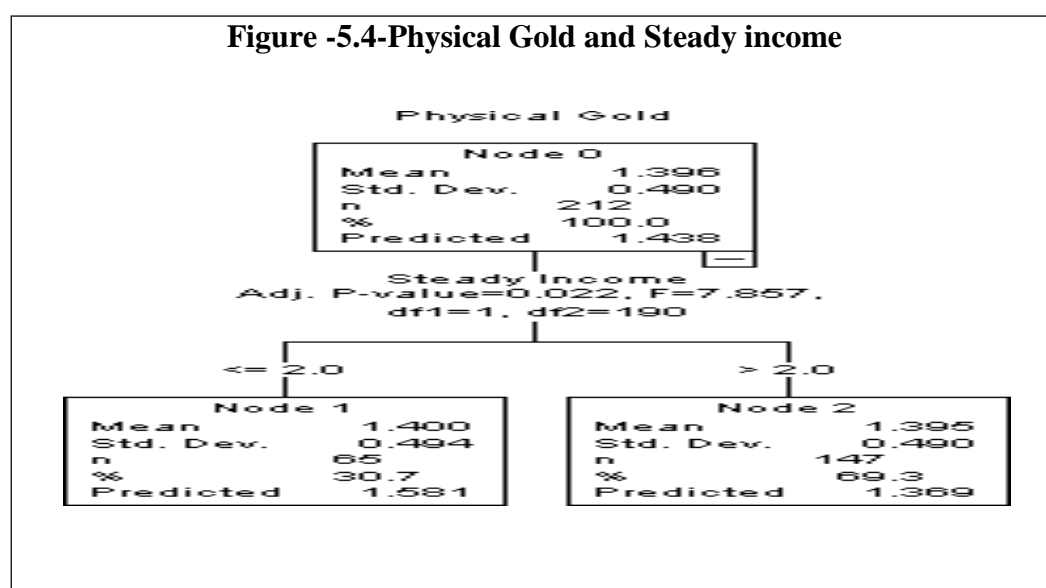
*Source : Compiled from questionnaire*

<b>Table-5.8</b>	
<b>Risk of Decision-III</b>	
<b>Estimate</b>	<b>Std. Error</b>
.250	.008
Growing Method : CHAID	
Dependent Variable: Physical gold	
Test sample results are displayed.	

*Source: Compiled from Questionnaire*

Considering and executing an operation of the factors such as steady income, family culture, status symbol, emotion, custom, traditional values, biasness, short term profit seeking, steady income, long term profit seeking, future security, liquidity and their influences on the decision of investing in gold induced to operate the analysis for making cluster of the factors. The cluster analysis was executed and its operation yielded steady income with  $P=0.022 > 95$  % significance,  $F= 7.857$ , with degree of freedom= 190 indicating a significant

factor out of all operated factors having influence on the investment of gold as dependent value of physical gold shown in figure-5.4. This exactly created on the basis of two exhibiting nodes of which the extreme of node  $\leq 2.0$  with  $n=65.0$  and  $\geq 2.0$  with  $n=147$  with a standard error count  $=0.008 < 10$  percent (table-5.8). This revealed the **steady income** as one of the significant factor among the all relevant factors those influence on investing in physical gold by Marwari businessmen.



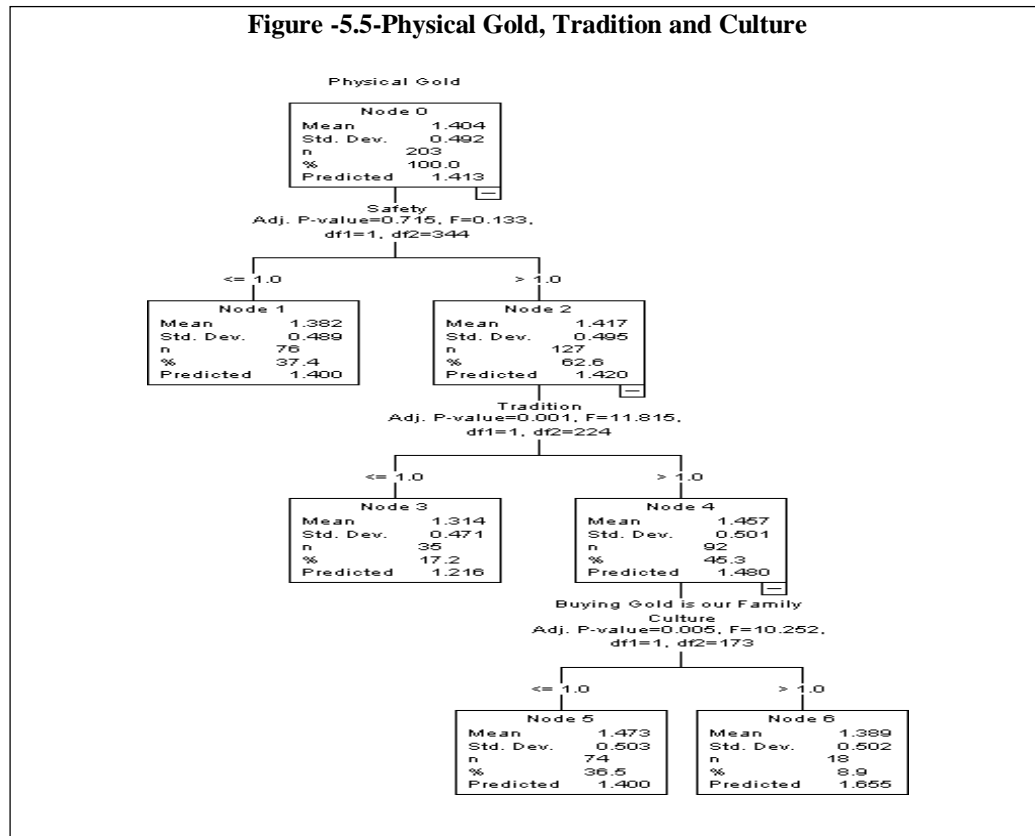
*Source: Compiled from Questionnaire*

<b>Table-5.9</b>	
<b>Risk of Decision-IV</b>	
<b>Estimate</b>	<b>Std. Error</b>
.247	.010
Growing Method : CHAID Dependent Variable: Physical gold Test sample results are displayed.	

*Source: Compiled from Questionnaire*

Considering both financial and social factors (return, liquidity, stability, hedge against inflation, price, status symbol, culture, common belief, religious activity, tradition, custom, buying gold is our family culture, gold is a status symbol for me, I buy gold due to my emotion attached to it, buying gold is our

custom, Investment in gold is backed by our traditional values, I have an unknown feeling (biasness) that gold is one of best option to invest in it, short term profit seeking, steady income, long term profit seeking, future security, liquidity, safety) all together twenty four factors and their influences on the decision of investing in gold were executed in the cluster analysis.



*Source: Compiled from Questionnaire*

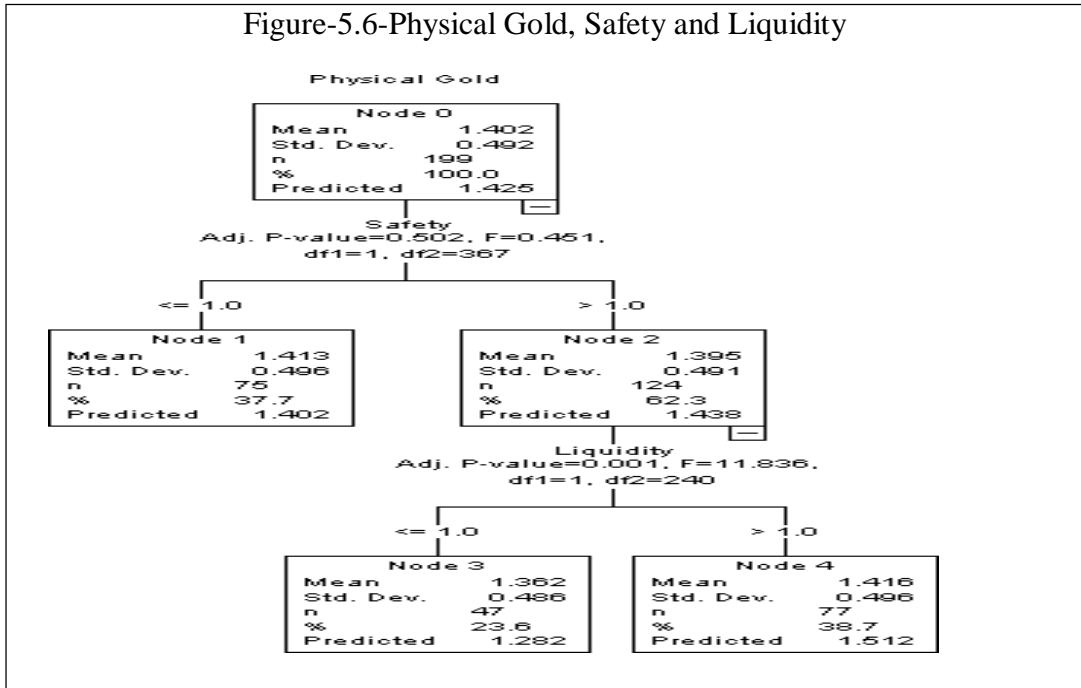
Three factors ,i.e, **safety**, **tradition** , buying gold is our family culture emerged out of which two factors were **safety and tradition** and the new one was **family culture related factor** which was expressed as -buying gold is respondents' family culture. In this node(Figure -5.5,3<sup>rd</sup> layer) family culture related factor appeared as the independent part of the tradition **with P=0.005=95% significance**, F= 10.252, with degree of freedom=173 indicating as the significant factor out of all operated factors for investment in the gold as dependent value of physical gold Purchase shown in the figure-5.5. This exactly created on the basis of two exhibiting nodes on the extreme of node<= 1.0 with n=74.0 and >= 1.0 with n= 18 with a standard error count=0.010 <10 percent (5.9).

Table-5.10 Risk of Decision-V	
Estimate	Std. Error
.245	.008
Growing Method : CHAID Dependent Variable: Physical gold Test sample results are displayed.	

*Source: Compiled from Questionnaire*

Considering both financial and social factors (return, liquidity, stability, hedge against inflation, price, status Symbol, culture, common belief, religious activity, tradition , custom, buying gold is our family culture, gold is a status symbol for me, I buy gold due to my emotion attached to it, buying gold is our custom, investment in gold is backed by our traditional values, I have an unknown feeling (biasness) that gold is one of best option to invest in it, short term profit seeking, steady income, long term profit seeking, future security, liquidity, safety) all together twenty three factors and their influences on the decision of investing in gold were executed in the cluster analysis. Two factors, i.e., **safety and liquidity were the significant factors**. The operation of the both the factors produced the level of influence while making investment in gold. After the analysis safety appeared as a insignificant factor **with**  $P=0.502 > 95\%$  significance,  $F= 0.451$ , with degree of freedom= 367 indicating as the insignificant factor out of all operated factors for investment in the gold as dependent value of Physical Gold Purchase shown in the figure- 5.6. This exactly created on the basis of two exhibiting nodes on the extreme of node  $\leq 1.0$  with  $n=75.0$  and  $\geq 1.0$  with  $n= 124$  with a standard error count= $0.008 < 10$  percent. Moreover, liquidity emerged as one of the significant factor **with**  $P=0.001 < 95\%$  Significance,  $F= 11.836$ , with Degree of freedom= 240 indicating as the significant factor out of all operated factors for investment in the gold as dependent value of physical gold Purchase shown in the figure -5.6. In this analysis **liquidity emerged** as one of the significant factor those influence on investing in physical gold by Marwari businessmen .Liquidity also has got two extreme of node  $\leq 1.0$  with  $n=47.0$  and  $\geq 1.0$  with  $n= 77$  with a standard error count= $0.008 < 10$  percent (table -5.10).

Figure-5.6-Physical Gold, Safety and Liquidity



Source: Compiled from Questionnaire

**Table-5.11**  
 Comparison of effect of factor Interaction and their relative importance

Factors	In Figure	(+) Mean	(-) Mean	P Value (5% level of Significance)	Remarks	Interpretation
Tradition	5.1	1.477	1.283	0.004	Significant Factor	For all cases Tradition is one Prime Determinant
Tradition	5.2	1.419	1.400	0.000	Significant Factor	
Tradition	5.5	1.457	1.314	0.001	Significant Factor	
Safety	5.2	1.415	1.380	0.851	Insignificant Factor	Safety cannot be considered as the factor /determinants in investment in Physical Form of Gold
Safety	5.5	1.417	1.382	0.715	Insignificant Factor	
Safety	5.6	1.395	1.413	0.502	Insignificant Factor	
Liquidity	5.3	1.400	1.305	0.002	Significant Factor	For all cases Liquidity is one Prime Determinant
Liquidity	5.6	1.416	1.382	0.001	Significant Factor	
Steady Income	5.4	1.395	1.400	0.022	Significant Factor	For all cases Steady Income is a Prime Determinant
Buying Gold is our family culture	5.5	1.389	1.473	0.005	Significant Factor	For all cases Buying Gold as a family culture is a Prime Determinant

Source: Compiled from Questionnaire

It was evident from the table 5.11 that Marwari businessmen of Guwahati City relatively considered tradition, liquidity, steady income and culture as the prime determinant for investing in gold .They did not consider safety as significant factor for taking the decision.

### **Chapter Summary**

It was evident from the study that there were always two types of factors which impacted on the investment decision of Marwari businessmen. They were categorised as fixed factor and variable factor. Interaction of both the factors affected the decision of investing in gold. There were some fixed factors, i.e., safety, return, liquidity, stability, hedge against inflation and price along with the variable factors those were status symbol, culture, common belief and religious activity. As it was exposed that the fixed factors were having insignificant impacts but interacting with covariates significantly affected on gold investment decision . In the literature it was described that how fixed factors and covariates interacted together, re established the fact by the study made by Das, S and Jain, R.(2014) that the return from the gold as an objective was influenced by education. With different educational qualification, the ability to choose the investment will vary based on the return benefits that different investment avenue provided. They had established that the interaction between two factors, i.e., fixed and variable factors was required to take investment decision, no individual factor or the set of factors could absolutely influences investment decision in gold. Here, this part of the study enabled to hypothesise that financial factor, financial ability of consumers were not the absolute determinants but the cultural and social , psychological factors along with interaction with financial factors and abilities mostly determined the decision to invest in gold in reference to Marwari Businessman and the Marwari community in Assam.

The study also evidenced that the Marwari businessmen of Guwahati City relatively considered tradition, liquidity, steady income and culture as the prime determinant for investing in gold .They did not consider safety as significant factor for taking the decision.