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Mr. Rudresh M Shastri
Research Scholar, Shri Maharshi
College of Vedic Astrology,
Udaipur, Rajasthan, India

Prof A Rajagopal
Head of Indian Statistical
Institute, Coimbatore, Tamil
Nadu, India

A study on gender determination through Vedic astrology: Using data mining techniques

Mr. Rudresh M Shastri and Prof A Rajagopal

Abstract
Vedic Astrology covers almost all important phases of our life. If we understand the concepts and combinations of planets, then it can produce extremely accurate results - certainly in Gender prediction. Based on this, the objective was formed: To know the accuracy of predicting the gender of baby through Vedic Horoscopes of parents with the help of 1. Brihat Jatak translated into English by N.Chidambaram Iyer, 1885 June 2, and 2. Fourth Reader- Marriage, Married Life and Children by Krishnamurti Padhathi, 1989. The collected data of 100 children (58 Male and 42 Female babies) already born with parents Vedic horoscopes transformed into numerical format was put for statistical tests under Data Mining techniques. It is the process of discovering patterns in large data sets involving methods at the intersection of machine learning, statistics, and database systems. The analysis methods used in the process shows that, the pattern of prediction was true for 25 male and 15 female babies as per True positive (Male baby predicted as Male) and True negative (Female baby predicted as Female) based on parents Lagna. Further the data was examined based on present absent criteria of planets in respective houses, which resulted in 29 male recorded in True positive and 9 female recorded in True negative. Then the left out data was tested based on proportion of each house filling criteria, which resulted in 14 female babies and recorded in True negative. The undecided data was 4 in male gender under True positive and 3 in female gender under True negative, which resulted in no planets in respective houses. Remaining 1 data was predicted as Male for Female gender which is under False Negative. The overall success ratio was recorded as 92% in which 54% was Male and 38% was Female babies. The results from the proportion tests based on present absent criteria of planet in respective houses showed that, first child from eleventh house (opposite to Fifth House) of father horoscope and second child from seventh house in both father and mother horoscope was significant for gender prediction of baby with P Value= 0.002, 0.003 and 0.003 respectively.

Keywords: Vedic astrology, gender determination in Vedic astrology, medical Vedic astrology, houses for child birth, male child in Vedic astrology, female child in Vedic astrology

1. Introduction
Astrology is the language of symbols and the forethought which symbolizes by the saying, "As Above, So Below" or "That which is Above is the Same as that which is Below". But the astonishing set of experiments, suggests that events in future may demand things happening in the world now. The past, present and future are inseparably entangled.

There are 12 Zodiacal signs and same as 12 Astrological houses. Each house is in analogy with one of the signs and rules a particular area of our life. Based on the houses, the posited planets articulate their dynamism. The basic fact and procedure is of astronomical or chronological interest, and there is some evidence that the main reason for the research and development in astrology in recent years was the wish to be able to know, what the future is?

1.1 Materials used
In this cross checked empirical study, an attempt is made to analyze the text of following books;
1. The book of Brihat Jatak originally written in Sanskrit was translated into English by N.Chidambaram Iyer, B.A, F.T & Founder of "The Tiruvadi Jotistantra Sabha", 1885 June 2, Printed In Madras- Tamil Nadu, Available at Harvard College Library, Digitized by Google.
2. Astrology Book on Marriage, Married Life & Children, 1989–by Krishnamurthi Padhti.The above books say about thegender predictions of baby through Planets andits

Correspondence
Mr. Rudresh M Shastri
Reserch Scholar, Shri Maharshi
College of Vedic Astrology,
Udaipur, Rajasthan, India

positions in Vedic Horoscope. Digital book of Brihat Jatak is one of the oldest Sanskrit literature translated into English is available to us in digital world. Even today it's surprising that how it is possible to make such accurate predictions based on specific houses.

2. Data Mining Methods and Techniques
It is a process of discovering patterns in large data sets, involving methods at the intersection of machine learning, statistics, and database systems. A sample of 20 children's horoscopes with their parents (Father and Mother)

details like date, time and place of birth were collected, which were checked manually in initial stage and then further the data of 80 children with parents born from different states and cities of India and abroad were collected. The total data analyzed is 100 children gender with parents' details.

2.1 Data Mining in Vedic Astrology - Statistical Approach for Analytics
For statistical analysis testing the data was given in numerical format as per authors view;
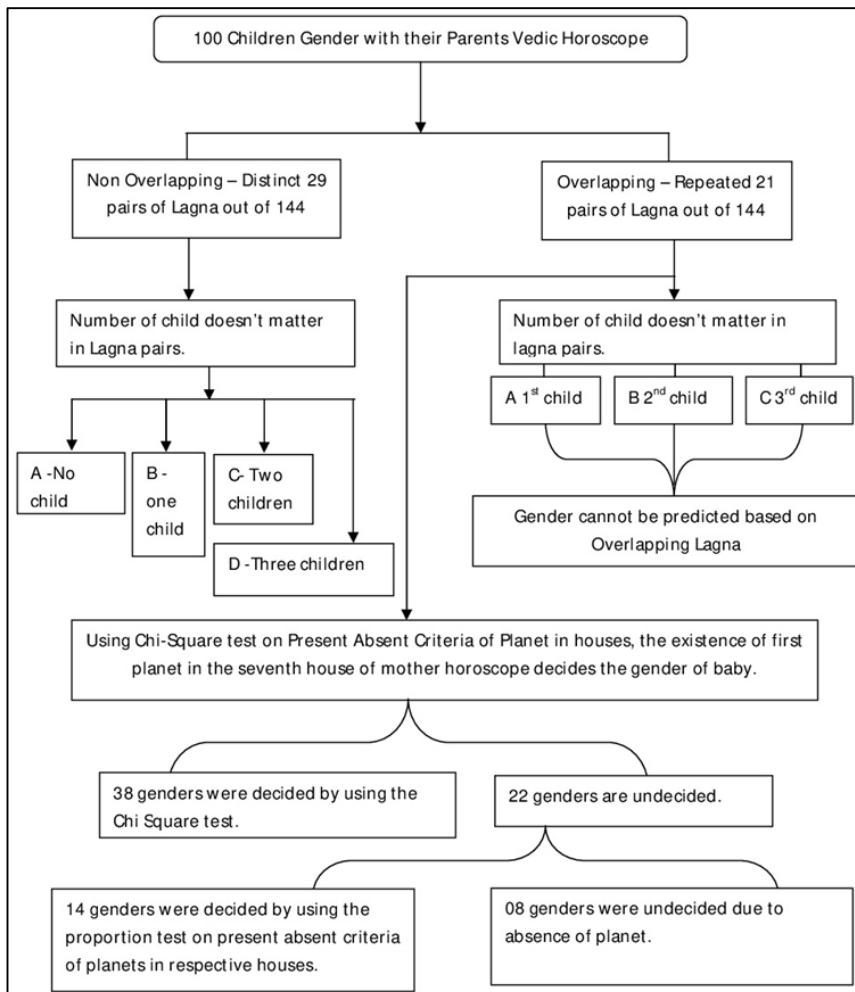
Table 1: Showing the numbers given to planets as per Dasa system and genders of planets.

PLANETS	NUMBERS	GENDER
KETU	1	MALE
VEN	2	FEMALE
SUN	3	MALE
MOON	4	FEMALE
MARS	5	MALE
RAHU	6	MALE
JUPITER	7	MALE
SATURN	8	MALE
MERCURY	9	NEUTRAL

3. Data Mining Concept
Vedic horoscopes were converted into numerical as per the numbers assigned in table 1 and then the data was given for testing under the data mining techniques. The data was converted manually using the Microsoft Excel which

facilitated the Indian statistical Institute for further analysis process. Provided data was examined by the institute and various methods were used for cross checking the pattern of predictions written by authors.

Flow chart 3.1.1: of Data Mining in Vedic Horoscope and its Research Methods:

Table 2: Data Mining in Vedic Horoscope and its Research Methods.

Sl. No	Purpose	Factor	Method for analysis	Result
1	Child gender based on Lagna of Parents	Lagna Deciding Gender of Child	Total Non Overlapping Lagna Pairs is 29	29 out of 50 Non Overlapping Lagna pairs decided gender of 40 children.
2	Child gender based on Lagna of Parents	Lagna Deciding Gender of Child	Total Overlapping Lagna Pairs	21 out of 50 Overlapping Lagna pairs could not predict the gender of 60 child
3	Child gender for overlapping Lagna pairs	Respective Houses for child birth- Present-Absent planet criteria.	Chi-square test for overlapping pairs of Lagna	38 out of 60 children gender were decided by using chi-square test.
4	22 out of 60 child gender for overlapping pairs of Lagna	Respective Houses for child birth- Present-Absent planet criteria.	Proportion test for Present-Absent planets in respective houses	14 out of 22 children gender were decided by Proportion test.
5	08 out 22 child gender for overlapping Lagna	Houses for child birth- Present-Absent planet criteria.	Proportion test not possible.	For 08 out of 22 children the Proportion test is not possible due to absence of planets in respective houses.

3.2 Chi Square Analysis- Non overlapping Lagna in Vedic Horoscope

It is used to decide the relationship and association between horoscope Lagnas and the frequency of occurrence of actual genders. A horoscope will have 12 possible Lagna basically.

So, between the parents, there are 12 x 12 = 144 possible Lagna pairs. Our data samples cover 50 of these pairs. 40 out of 100 children's genders were predicted based on the distinct Lagna in the horoscope of parents.

Table 2: Decides 40 children's gender based on 29 Lagna out of 50 non-overlapping Lagna pairs.

Lagna Group for Male	Male Count(O)	Expected Value(E)	R=O-E	S=R^2	S/E
A no male child	0	6.25	-6.25	39.0625	6.25
B only one male child	16	6.25	9.75	95.0625	15.21
C only two male child	6	6.25	-0.25	0.0625	0.01
D only three child	3	6.25	-3.25	10.5625	1.69
Total Male Children	25				23.16
Lagna Group for Female	Female Count	Expected Value(E)	R=O-E	S=R^2	S/E
A no female child	0	3.75	-3.75	14.0625	3.75
B only one female child	4	3.75	0.25	0.0625	0.016
C only two female child	8	3.75	4.25	18.0625	4.816
D only three female child	3	3.75	-0.75	0.5625	0.15
Total Female Children	15				8.732

3.3 Chi-square analysis- Overlapping Lagna in Vedic Horoscope

We have 60 children left undecided by overlapping Lagna of parents. These children cover the remaining 21 Lagna pairs of parents out 50 total Lagna pairs. Based on the overlapping Lagna pairs the gender of baby cannot be decided because the occurrence of Male and Female gender is observed in repeated Lagnas pairs of parents.
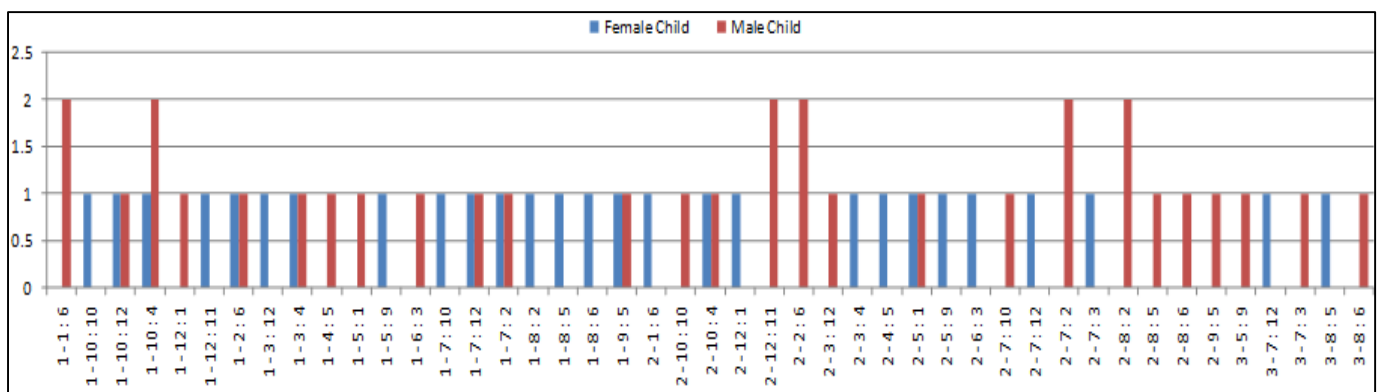

Chart 3.3.1: Showing Overlapping Lagna pairs of parents which cannot decide the gender of baby.

3.4 Chi-square analysis

All overlapping Lagna is tested using chi-square analysis method based on the number of planets present and absent in respective house. The 60 children were classified into three different groups A, B and C based on the Lagna.

A group contains the Lagna pairs having only one male child and the Lagna pairs having only one female child and the results show that it is not possible to predict the gender of the baby as per Pearson chi-Square test. As the values are 15.4 and 12.6 when divided from 28 children's. B group contains the Lagna pairs having two male children and the Lagna pairs having two female children and the results shows that it is not possible to predict the gender of the baby as per Pearson chi-Square test. As the values are 11 and 9 when divided from 20 children's. C group contains the Lagna pairs having three male children and the Lagna pairs having three female children and the results shows that it is not possible to predict the gender of the baby as per Pearson chi-Square test. As the values are 6.6 and 5.4 when divided from 12 children's.

Table 3: Shows A for One, B for Two and C for Three children based on Lagna pairs.

GROUP	MALE	FEMALE	TOTAL
A	12	16	28
	15.4	12.6	
B	12	8	20
	11	9	
C	9	3	12
	6.6	5.4	60

The proportion of the sample for First child is tested and found to be 0.437 as per fishers test with 95% of difference in value as (-0.383432, 0.120806).

Table 4: Shows the Proportion test for First child.

CHI-SQUARE TEST FOR				
Test and CI for Two Proportions for First child				
Sample	Present	Absent	P Value	Significance
1 Male Child	14	33	0.437	NILL
2 Female Child	15	27		

The proportion of the sample for Second child is tested and found to be 0.438 as per fishers test with 95% of difference in value as (-0.135028, 0.363985).

Table 5: Shows the Proportion test second child.

Test and CI for Two Proportions Second child				
Sample	Present	Absent	P Value	Significance
1 Male Child	16	33	0.438	NILL
2 Female Child	10	27		

The proportion of the sample for Third child is tested and found to be 1.000 as per fishers test with 95% of difference in value as (-0.122373, 0.156043).

Table 6: Shows the Proportion test for third child.

Test and CI for Two Proportions Third child				
Sample	Present	Absent	P Value	Significance
1 Male Child	3	33	1.000	NILL
2 Female Child	2	27		

The values when calculated in Pearson chi-square test and Likelihood Ratio chi-Square test are very near, that is 0.149 and 0.141 respectively.

On applying the Chi-Square method, the genders for 38 out of the remaining 60 children were decided.

3.5 Chi-Square Test Calculations
Chi-Square Test: F5-1-P, F5-1-A

Table 7: Showing Chi-Square test for 5th House based on planets present and absent criteria.

Sl.No	F 5–1–P	F5–1–A	TOTAL
1	26	7	33
	26.95	6.05	
2	23	4	27
	22.05	4.95	
	0.041	0.182	
Total	49	11	60

Chi-Sq = 0.406, DF = 1, P-Value = 0.524, 1 cells with expected counts less than 5.

Table 8: Showing Chi-Square Test all Houses based on present and absent criteria.

F5-2-P, F5-2-A, P-Value = 0.156
F5-3-P, F5-3-A, P-Value = 0.261
F7-1-P, F7-1-A, P-Value = 0.297
F7-2-P, F7-2-A, P-Value = 0.430
F7-3-P, F7-3-A, P-Value = 0.903
F9-1-P, F9-1-A, P-Value = 0.113
F9-2-P, F9-2-A, P-Value = 0.437
F9-3-P, F9-3-A, P-Value = Invalid
F11-1-P, F11-1-A, P-Value = 0.628
F11-2-P, F11-2-F, P-Value = 0.903
F11-3-P, F11-3-A, P-Value = 0.677
F11-4-P, F11-4-A, P-Value = Invalid
M5-1-P, M5-1-A, P-Value = 0.807
M5-2-P, M5-2-A, P-Value = 0.011
M5-3-P, M5-3-A, P-Value = 0.814
M5-4-P, M5-4-A, P-Value = Invalid
M7-1-P, M7-1-A, P-Value = 0.013
M7-2-P, M7-2-A, P-Value = 0.119
M7-3-P, M7-3-A, P-Value = 0.141
M9-1-P, M9-1-A, P-Value = 0.549
M9-2-P, M9-2-A, P-Value = 0.971
M9-3-P, M9-3-A, P-Value = 0.100
M11-1-P, M11-1-A, P-Value = 0.194
M11-2-P, M11-2-A, P-Value = 0.925
Warning: 2 cells with expected counts less than 1. Chi-Square approximation probably invalid. 2 cells with expected counts less than 5.

Now, we have 22 children left with undecided genders. The proportion test based on the proportion of male children in the House-Planet Present-Absent criteria was performed on these children. On doing this, the genders of 14 of the children were decided based on the Each House-Filling-criteria.

3.6 Proportion Tests Calculation
Male child ratio proportion is affected by Present- Absent of Planet in its respective house;

Table 9: Showing proportion test for male baby for respective House based on planets present and absent criteria.

PROPORTION OF MALES				
PLANETS IN HOUSES	PRESENT	ABSENT	P VALUE	HYPOTHESIS
House 5–1 Planet	0.2	0	0.953	NIL
5–2	0.166666667	0.187500	0.348	NIL
5–3	0.25	0.166666667	0.557	NIL
5–4	0	0.181818182	0.996	NIL
House 7–1 Planet	0	0.4	0.002	SIGNIFICANT
7–2	0	0.416666667	0.003	SIGNIFICANT
7–3	0	0.19047619	0.003	SIGNIFICANT
House 9–1 Planet	0.250000	0	0.968	NIL
9–2	0.250000	0.142857143	0.625	NIL
11–2	0	0.200000	0.003	SIGNIFICANT
House 5–1 Planet	0.214286	0.125000	0.597	NIL
House 7–1 Planet	0	0.210526	0	SIGNIFICANT
House 9–1 Planet	0.166667	0.20000	0.308	NIL
House 11–1 Planet	0	0	0	
11–2	0.333333	0.125000	0.775	NIL

3.7 Undecided Data
Hence we have no planets in seven data so; the genders of 40+38+14=92 out of 100 were decided. Thus, giving an accuracy of 3% improvement on the 89% of accuracy obtained manually.

4. Objectives
- To know the accuracy ratio of gender prediction in Vedic Astrology.

5. Hypothesis
The collected data of 100 Children's with 58 Male and 42 Female children born with parents details was put for statistical tests. The analysis methods used in the process shows that, the pattern of prediction was true for 25 male and 15 female babies as per True positive (Male baby predicted as Male) and True negative (Female baby predicted as Female) based on parents Lagna. Further the data was analyzed based on present absent criteria on respective houses, which resulted in 29 male as per True positive and 9 female as per True negative. Then the left out data was tested based on each house filling criteria, which resulted in 14 female babies as per true negative. The undecided data was 4 in male gender under True positive and 3 in female gender as per True negative, which resulted in no planets in respective houses. Remaining 1 data was predicted as Male which is under False Negative (Female baby predicted as Male baby).

The overall success ratio was recorded as 92% in which 54% was Male babies and 38% was Female babies. The results from the proportion tests based on present absent criteria of planet in respective houses showed that, first child from eleventh house (Fifth House opposite) of father horoscope and second child from seventh house in both father and mother horoscope was significant for gender prediction of baby with P Value= 0.002, 0.003 and 0.003 respectively.

6. Results and Discussion

Table 10: Showing results of Data Mining in Vedic Horoscope and its success.

Decision Criteria	Total Decided	Cumulative	True Positive (Male predicted as Male)	True Negative (Female predicted as Female)	False Positive (Male predicted as Female)	False Negative (Female predicted as Male)
Parent's Lagna	40	40	25	15	0	0
House-Planet Present-Absent criteria	38	78	29	9	0	0
Each House Filling criteria	14	92	0	14	0	0
Undecided	8	100	4	3	0	1

- The group data is taken from twenty-one overlapping pairs which cover 50 pairs based on Lagna of parents (12 X 12 = 144 combination in total). And 40 of the children's genders were predicted. Remaining 60 children left undecided by parents Lagna. These children cover the remaining 21 Lagna pairs, which we refer to as overlapping pairs.
- Gender of 38/60 children's were decided using chi-square analysis method on the number of planets present and absent in respective house.
- A Proportion Test reveals the significance of difference in proportion of genders with respect to presence and absence of planets in their respective houses.
- Remaining 22/60 children's left the proportion test based on the proportion of male children in the House-Planet Present-Absent criteria was performed. On doing this, 14/22 children's gender was decided based on the Each House-Filling criteria.
- Left out 7/22 children were not decided because absence of planets in respective houses.
- Remaining 1/8 child was predicted as male for female child based on the predictions given by authors.
- The gender of baby is not possible to predict based on the Lagna alone. We should include other houses like Fifth, Seventh, Ninth and Eleventh house from Lagna for the First, Second, Third and fourth child born from the parent's Vedic horoscope.
- The data has 8% of negative results due to absence of planets in parents' horoscope and may be another reason is possible like; Error in data collection, Wrong information given by the respondent and Error in predicting based on the number of rules framed by the authors in their books.
- The data was collected from different states and cities in India and abroad, as there is a difference in distance with latitude and longitude in birth place of parents.

- The success of prediction is based on combination of two methods of Brihat Jatak and KP System for prediction and calculation.
- This research would be considered for predicting the child birth (irrespective of gender) for those parents, who are hopeful for having at least one child in their family for harmonious life.
- The overall percentage of success ratio in Vedic Astrology prediction is 92% where the objective of the research study is focused.
- There is a possibility to predict the gender of baby based on Vedic Astrology Predictions.
- We cannot predict the gender of twin's baby based on the available data.
- Practical application in INDIA is not possible due to Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994 is an Act of the Parliament of India enacted to stop female foeticides and arrest the declining sex ratio in India. The act banned prenatal sex determination. (Changes in PCPNDT Act may allow astrologer for prediction).

7. Limitation of the Study
- This study is limited for doing research in academics and not for any kind of practical application in India.

8. Acknowledgements

Mr.Rahul Iyer for his endless efforts taken to analyze the data and in writing the interpretation. Mr. S.Gunasekhar, Mr. S.Praksh, Mr. Ajay J Joseph and many more in institute (as Six Sigma Black Belts) needs a mention for being supportive during times of need. I feel obliged to say thank you one more time.

9. References

1. Astrological Series. The Brihat Jataka or Viraha Mihira translated into English by N.Chidambaram Iyer, B.A, F.T & Founder of The Tiruvadi Jotistantra Sabha, June 2, Printed in Madras, available at Harvard College Library, Digitized by Google.1885;IV(3):34-38.
2. Chapter (II, F, M) and stanza 6th says about Female Planets and Female Signs - Chapter (II, P) and stanza 6th, says about Purusha Graha, The Male Planets - Chapter (II,S) and stanza 16th and 17th, says about Sama Graha, The Neutral Planet, 63-16.
3. Sothida Mannan, Jyotish Marthand, Late Shri KrishnamurtiKS. Astrology Book on Marriage, Married Life & Children, Fourth Reader and Fifth Edition - Chapter 59, page number 209 - on Child Birth prediction, 1989.