



# Evaluation of Data Analysis for Decision Making in Financial Market Domain

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### Abstract:

Nowadays stock market in the world plays a vital role in financial management with monotonously increasing order of accessing, particularly in India after the reduced interest rates in banking sector for the fixed deposits. The ability to handle a home economical system using software requires proper functionalities and the analysis consumes more mathematical strategies for effective life style. But handling data in Bourse market of India incorporated with Thick data presents the optimal scenario for maintaining, analyzing, predicting the trend with cautious observations and updating. This paper emphasizes the linking of Thick data essentiality with the financial marketing domain.

**Keywords:** BSE, NSE, Equity, Stock Market, Thick Data

## I. INTRODUCTION

Thick data is qualitative information that provides insights into the everyday emotional lives of consumers [2]. It goes beyond big data to explain why consumers have certain preferences, the reasons they behave the way they do, why certain trends stick and so on.

Companies and bulk traders gather this data by conducting primary and secondary research in the form of surveys, focus groups, interviews, questionnaires, videos and other various methods.

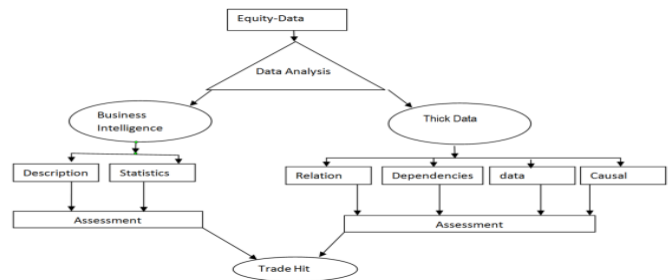
Ultimately, to understand people’s actions and what drives them to your business (or not) and buy the shares or equities, by using thick data,

Companies can develop a positive relationship with their customers and it becomes easier for those companies to maintain their share market in a commercial way [3]. In India the stock markets play its vital role in Indian economy [1].

The Indian stock exchange may refer to these primary types as follows: Bombay Stock Exchange (BSE) - located in Mumbai. National Stock Exchange of India (NSE) - located in Mumbai. Multi Commodity Exchange of India.

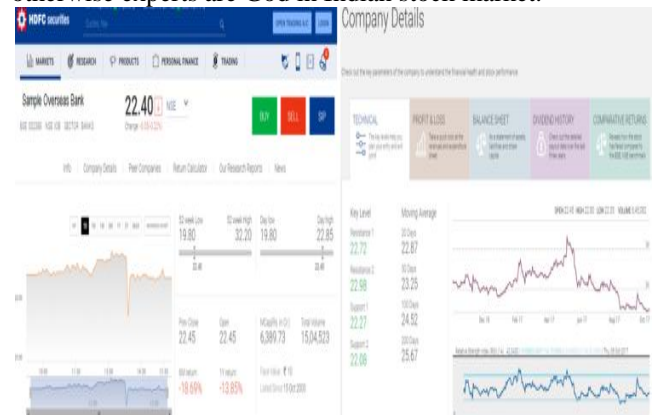
## II. PROPOSED METHODOLOGY

The proposed methodology for our strategy initially focuses on the data analysis in two variations. The first variation entirely incorporates the technical data behind the stock where as the second variation incorporates the relation, data dependencies, data and causal effects for an equity along with the implementation on thick data[4].



**Figure.1. Proposed methodology**

The stage-1 technical data is collected from the company website and other analytical websites for equity marketing which are more helpful in Indian markets such as Hdfcsecurities, Moneycontrol, Moneyworksforme[10], the organization names are used as dummy data in this research for understanding and it never resembles any entity. Moreover Stockmarket equity value is one time high and another time low,so it is time and performance based,not on any individual representations, otherwise experts are God in Indian stock market.



**Figure.2.a and 2.b: Technical data Analysis for SOB-Sample Overseas Bank equity**

Figure 2.a provides the description of equity with the min and max rate for purchase, whereas the figure 2.b provides the statistical values for resistance and support for the SOB equity as 22.87 to 25.67. The final result makes from the assessment provides a HIT symbol for purchasing the SOB-Sample Overseas Bank equity [6]. Now, the stage-2 variation for proposed thick data scheme design is implemented from the optimal resource informations from the company website, Government Policies, News agents, Experts View, Media, Mathematical analysis and other analytical websites for equity marketing[5]. The computation part of our proposed system consists of 5 layers. Each contains the 3-point scale value for assessing the company's (Equity correspondence) current performance and trend with the evaluation factors.

Layer-1- Factor-  $\alpha$  -Focusing on Basic Technical's.  
 Layer-2- Factor-  $\beta$  -Focusing on Demand Criteria's  
 Layer-3- Factor- $\gamma$  -Focusing on Motivation condition.  
 Layer-4- Factor-  $\delta$  -Focusing on Business Market Rate  
 Layer-5- Factor-  $\epsilon$  focusing on triggering condition.  
 The following Tables represent the 3-scale description for the Factor-  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  and  $\epsilon$  as follows,

**Table.1.  $\alpha$ -Computation table**

Factor- $\alpha$	Degradation=-1	Flat=0	Up gradation=+1
Resistance level	< current week high	=current week high	>current week high
Market cap	Low cap	Midcap	Large cap
Support Level	<Current week Low	=current week low	>current week low
EPS	<purchase date/last Q	=purchase date/last Q	>purchase date/last Q
PE Ratio:	>current week/Q	=Current week/Q	<current Q
Inspections /Audit:	Observations/Reject	Approval waiting	Clearance
Debts:	Increasing	Same	Decreasing
QoQ/YoY level	Degradation	Normal	Improvement
Govt Policy:	Declinement	No effect	Supportive
Fundamentals:	Negative market Ratio	Non market relation	Positive Market Ratio

**Table.2.  $\beta$ -Computation table**

Factor- $\beta$	Degradation=-1	Flat=0	Up gradation=+1
Market demand:	Negative req	No relation	Positive Req
Corporate Governance	Weak	Normal	Strong
Global cues:	Decline	Normal	Support
Legal issues:	Negative	Normal	Positive
Block deals	Rare QoQ	Normal	Improving QoQ
Successors/ Giants Investment	Nil	Few	More
Price fit	High	Normal	Optimal
Increasing Demand	Nil	Low	High
Dividend	Rare/Nil	Normal	Attractive/Freq
Bonus	Rare/Nil	10 Yrs	Every 2/3 yrs

**Table.3.  $\gamma$  -Computation table**

Factor- $\gamma$	Degradation=-1	Flat=0	Up gradation=+1
Expert View	Negative	Normal	Positive
Media point	Negative	Normal	Positive
Web Report	Negative	Normal	Positive
Friend/family influence	Negative	Normal	Positive
External influence	Negative	Normal	Positive
Open interest	Negative	Normal	Positive
Low Risk High profit	Negative	Normal	Positive
MF selection	NIL	Rare	Always
Volume traded	Low	Normal	High
Day Low/High value	Misfit	Ok	Optimal

**Table.4.  $\delta$ -Computation table**

Factor- $\delta$	Degradation=-1	Flat=0	Up gradation=+1
Sector impact	Replicated>5	Replicated<=5	New
Nifty	Not in Nifty500	Nifty100	Nifty50
Sensex	> Sensex200	Sensex100	Sensex30
F&O impact	No	Independent	Yes
Book value	>current price	+10% <current price	+70%<current price
Multi bagger	No	May be	Yes
Acquisition	No	Rare	Yes
Merger	No	May be	Yes
Demerger	May be	May not be	No
New Project	No	Non transparent	Yes

**Table.5.  $\epsilon$  -Computation table**

Factor- $\epsilon$	Degradation =-1	Flat=0	Up gradation=+1
Rights issue	No	Rare	Yes
Target profit	No	May be	Yes
Broker Recommendation	No	Ok	Yes
Season/Climate	No	May be	Yes
52 Week Low/High	No	Yet to be	Yes
EQ-Purchase-Round off	No	Yes	More than that
Exponential growth	No	Normal	Yes
Branded company	No	Yes	High demand
Political Support	No	May be	Yes
E-voting	No	Rare	Frequent

Now the Evaluation function which produces the Cartesian coordinate point (X1, Y1) computation is as follows, The Aggregator function Z1 is calculated as follows,  $Z1=\alpha+\beta$   
 The Cumulative function Z2 is calculated is as follows,  $Z2=\gamma+\delta$   
 The demand assessment function Z3 is calculated as follows,  $Z3=1*(\epsilon+\text{dayorder})$  where  
 Day order=2 for Monday/1 for Tuesday/-1 for Wednesday/-2 for Thursday/-3 for Friday.  
 i.e. the day orders are positive on Monday and Tuesday and pessimistic during Wednesday to Friday for most of the trading sessions starts from Feb-2017 to Oct-2017 towards premium equities based on the report from money control and money

works for me analysis[9][8][7]. Moreover l=level of significance for purchase to accept or deny the trade.

**Table.6. Level of significance Table**

l=level of significance for purchase	Value
Right to purchase	1
Fund available	2
Ignorance	3
Anxious/Curious	4
Locality/Nativity	5
Indirect Insider	6
Chart based top equities	7
Past experiences	8
Advertisements	9
Self Trade plan	10

Consider the Cartesian coordinate System containing X-axis, and Y-axis System for the markings (X1,Y1),Therefore fixing the coordinate values in which Z1 and Z2 are the two extreme entities for X and Y axis. The impact of demand assessment towards aggregation Z1 and Accumulation Z2 are associated properly through the summation as follows,  
 $X1=Z1+Z3$   
 $Y1=Z2+Z3$

Now in the final stage, after arriving with (X1,Y1) the proposed methodology focusing on the fixing up the point in the Cartesian coordinate system with its predefined properties of positive and negative quadrants.



**Figure.3. Cartesian Reference for equity analysis**

**III. IMPLEMENTATION**

Now consider the proposal in anxious mode to purchase SOB - Sample Overseas Bank equity on Friday. Which can be validated by our proposed model as follows?

**Step.1. Calculating the value of  $\alpha$  degradation**

Factor- $\alpha$	Degradation=-1
Resistance level	< current week high
Market cap	Low cap
Support Level	<Current week Low
EPS	<purchase date/last Q
PE Ratio:	>current week/Q
Inspections/Audit:	Observations/Reject
Debts:	Increasing
QoQ/YoY level	Degradation
Govt Policy:	Supportive
Fundamentals:	Negative market Ratio
Total	-9

**Step.2. Calculating the value of  $\beta$  degradation**

Factor- $\beta$	Degradation=-1
Market demand:	Negative req
Corporate Governance	Weak
Global cues:	Decline
Legal issues:	Negative
Block deals	Rare QoQ
Successors/Giants Investment	Nil
Price fit	High
Increasing Demand	Nil
Dividend	Rare/Nil
Bonus	Rare/Nil
Total	-10

**Step.3. Calculating the Value of  $\gamma$  degradation**

Factor- $\gamma$	Degradation=-1
Expert View	Negative
Media point	Negative
Web Report	Negative
Friend/family influence	Negative
External influence	Negative
Open interest	Negative
Low Risk High profit	Positive
MF selection	NIL
Volume traded	Low
Day Low/High value	Misfit
Total	-9

**Step.4. Calculating the Value of  $\delta$  degradation**

Factor- $\delta$	Degradation=-1
Sector impact	Replicated>5
Nifty	----
Sensex	-----
F&O impact	No
Book value	>current price
Multi bagger	No
Acquisition	No
Merger	Possible
Demerger	----
New Project	No
Total	-5

**Step.5. Calculating the Value of  $\epsilon$  degradation**

Factor- $\epsilon$	Degradation=-1
Rights issue	No
Target profit	No
Broker Recommendation	No
Season/Climate	No
52 Week Low/High	Yes
EQ-Purchase-Round off	Yes
Exponential growth	No
Branded company	Yes
Political Support	No
E-voting	No
Total	-7

**Step.6. Calculating the Value of I**

I=level of significance for purchase	Value
Anxious/Curious	4

$Z1 = \alpha + \beta$ , Therefore  $Z1 = (-9) + (-10) = -19$ ,  $Z2 = \gamma + \delta$ ,

Therefore  $Z2 = (-9) + (-5) = -14$  and

$Z3 = I * (\epsilon + \text{dayorder})$ , Therefore  $Z3 = 4 * ((-7) + (-3)) = -40$

**IV. RESULTS AND DISCUSSION**

Now Computing X1 and Y1 as follows,

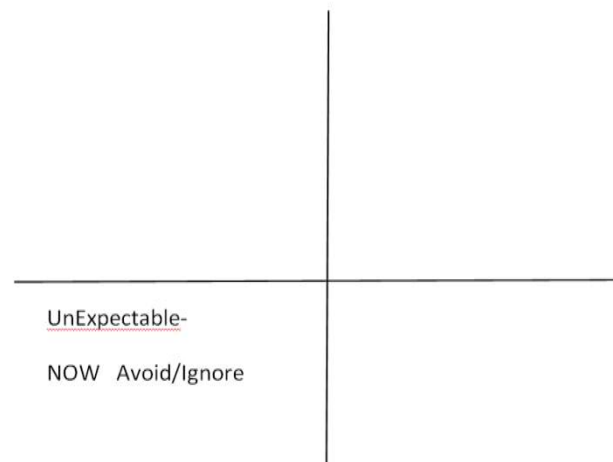
$X1 = Z1 + Z3 = (-19) + (-40) = -59$  and

$Y1 - Z2 + Z3 = (-14) + (-40) = -54$

Therefore (X1, Y1) is (-59, -54).

Now Mark it on the graph and finally comes with a conclusion such that it lies in the fourth quadrant.

Fix the Point



**Figure.4. Decision support from proposed schema analysis**

**V. CONCLUSION**

Indian Stock market fluctuates based on time and technical computations. Our proposed methodology acts as a deciding factor for the current scenario towards the trade in equity. The computations used in our table follows the actual scenario and updated policies implemented in Indian Stock Market 2017-2018 Financial year with valid justifications from the stock market information's available on web resources. The four quadrant

results are speculative focusing on the current trend. In our research we concluded the avoidance of trading the SOB equity which resembles with the prediction and actual result on 22-september-2017. Our proposed methodology yields 80% accuracy for our testing towards 20 equities during the last but one week of January-2018 in NSE Market alone. This paper act as a decision making system for removing the dilemma's for an investor to adopt with the equity purchase or not, and it will be easily extended to simultaneous multiple equity analysis in the similar manner which will be implemented as a software product in our next stage of this research. The four quadrant results are speculative focusing on the current trend. In our research we concluded the avoidance of trading the SOB equity which resembles with the prediction and actual result on 22-september-2017. Our proposed methodology yields 80% accuracy for our testing towards 20 equities during the last but one week of September in NSE Market. We will improve our accuracy level to 100 percent by implementing our proposed methodology with the combined strategy of Fuzzy logic and Neural networks in near future.

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