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#### An Empirical Investigation on Determinants of Retail Investors Investment Behaviour in Initial Public Offers

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### ABSTRACT

Purpose of this paper is to identify constructs involved in Retail Investors Investment Behaviour towards Initial Public Offers and suggest a model to understand the relationship between various construct considered. Data was collected through structured questionnaire from selected sample size and finally 504 responses were used to justify the structure. A feeling that primary market can provide better return that secondary market, Knowledge about the IPO issue, Pricing of the issue are considered to be the dominant items influencing a retail investors investment decision. The study determined four variables Information Asymmetry, Attitude, EIC attributes and Subjective norms can influence any decisions. Attitude is highly influenced by information and hence it is suggested to know more information about the Economy, market, industry and the company which gives an informed guess on the IPO issue. Also, the study contributed in identifying a model that can show a meaningful relationship among the variables identified and Intention of an investor towards IPO investments. Though the four considered had a direct or indirect relationship with Intention, Attitude had a major influence. Information Asymmetry had an indirect relationship with Intention by modifying the perception of investors either through the Attitude or through the EIC attributes.

### Introduction

1. Indian Stock Market, Mechanism of pricing and allocation in India:

Indian stock market is one of the markets among developing countries that attract more investors and has also surprised being resilient to major turmoil's which is evident from the recent situational factors that affected global markets a large, but not the same extent in our exchanges. Participation of domestic institutional investors is increasing with the increase in investor's confidence and awareness in our market. Individual investors are becoming more professional in their investment. There is a drastic increase in the number of investors who have opened Demat accounts post 2013 and counting still.

Economic reforms in Indian capital market started in the earlier part of 1990s which was then controlled by CCI Controller of Capital Issues in India. CCI was abolished in the year 1993 and a new regulator Securities Exchange Board of India took over the control of Indian Stock Market. Fixed pricing mechanism was the one widely used during the period with lack of facilities in almost all sector since IT was much developed in India. With the advent of IT, Indian stock market took a shape with introduction of online terminals by NSE which was youngest stock exchange, this welcomed many investors into the stock market. Stock Exchanges started following Book-building method of Pricing mechanism and companies are given the choice of either following 100% or 75% Book building methods. In 100% book building methods companies are instructed to provide not less than 25% of total number of shares to retail investors.

Initial Public Offers are widely discussed and researched topic by many of the researchers and experts, most of them related to the performance of Initial Public Offers with various factors either to measure long term or short term. When it comes to performance it is related to the secondary data available, which were tested with performance as dependent and other factors as independent variables. It is imperative that investors to behave rational, but decisions are made from the psychological point of view in many situations attributed to awareness level, availability of information etc., Psychological factors have major influence on decision making. Richard H. Thaler (2005) Behavioural finance explains interaction between human and his/her motivation towards investment, either partially or completely influenced by psychological factors. Our proposed research is from behavioural point of view, to know the variables and its strength in deciding the investor's interest.

2. Variables for the study

Literature concentrating on financial behaviour of retail investors

specific to Initial Public Offers is limited in India and using of structural equation modelling is rarest in the case of identifying the determinants in case of Retail Investors Intention based on the various perception parameters about the Initial Public Offers. Since the model will have complex relationship between the variables were identified through Structural Equation Modelling (SEM), instead of Regression analysis or Analysis of Variance. SEM has the ability to select an appropriate model among the competing ones, also with validity and reliability measures to test the variables in study. Five factors were considered based on the emerging literature to identify the pattern of relationship between Information asymmetry, Market and Company Perception, Societal Perception, Representativeness and Familiarity, Intention.

# Literature Review

Park and Gunther (2007) Receiver's perception is affected by information w.r. to given behaviour by attitude change which in turn finally change the behaviour of receiver. Salam Abdullah and Khalil Hilu (2015) them exist a direct relationship between risk attitude and market perception. Lee (2009) Attitude is the more relevant variable to explain intention. Gopi and Ramavah (2007) All investment activities of individual investors are guided by their attitude. Michael (2011) Individual investors are favourable towards investments in which they are highly motivated and less favourable towards the one that are less motivating. Attitude has evaluative effect on individual feelings towards a behaviour. Lo and Repin (2001) has studied the psychological characteristics of professional securities traders while they are engaged in live trading. They reported a significant correlation between market events and physiological characteristics. Lawrence (2013) Higher quality disclosure of financial part influence investors to take more risk by investing more. Investor's access to information can influence their perception towards behaviour. Khoa Cuong Phan and Jian Zhou (2014) Attitude of a person is related to confidence in the issue, familiarity in the issue. Investor Behaviour in any investment decision is seen as a factor of attitude of individual, influence of social norms, information an individual has about the investment and influence of other control variables like market.

	Variables	Author (s)
1.	I am knowledgeable of primary market activities	David Pascual, Barbara and Beatriz (2013), Barbara Wanyana and Dr Issac (2011), Mushtaq Hussain Khan(2014)
2.	IPOs are well managed through regulations by SEBI	Khurshed et al(2008)
3.	I am confident of my own opinion over opinion of friends and colleagues	Renn(1990), Frank(1935) Fischhoff, Slovic and Lichtenstein(1997)
4.	I usually expect my IPO investment to perform better than other IPO choices available	Renn(1990), Choe, Masulis and Nanda(1993)
5.	I feel regret of a drop-in price on listing day of IPO stock I purchased	Barbara Wanyana and Dr Issac (2011), Naveed et al(2011), Weber & Camerer(1998)
6.	Idea of participating in an IPO is appealing	David Pascual,Barbara and Beatriz(2013), Renn(1990)
7.	Data sources available to analyse an IPO is plenty now-a-days	David Pascual,Barbara and Beatriz(2013)
8.	It is very likely that I consider IPO investment though there are other investment options	Developed for the study
9.	When I feel the data available is sufficient, reliable I feel safer	David Pascual,Barbara and Beatriz (2013), Guiso and Japelli (2005)
10.	When IPO is managed by top brokers its safer	Junbo Wang, Sheen Liu and Chunchi Wu
11.	Pricing of an IPO influences my decision on IPO	Grinblatt and Keloharaju (2001)
12.	Institutional and other investors interest on an IPO influences my decision to invest	Jain and Singh(2012), Weldi (1992), Arif(2009), Yash and Anand(2012), Khurshed et al (2008), Lakonishek et al (1992)

#### Table 1: Variables found in the literature

13.	Popularity of company's group influences my participation in that IPO	Shiller and Pound (1988), Robert(1988), Renn (1990), Barber & Odean (2008)
14.	Expectations of my family influences me to take risk on an IPO	David Pascual,Barbara and Beatriz (2013)
15.	I have many positive things to express in my prior IPO investments	Ashbury, Isen and Turkey(1999)
16.	Position of IPO company in corresponding industry influences my idea of participation	Pagamoet et al(1998), Lowery (2002)
17.	Success of IPO's prior to current IPO influence my decision	Lowery & Schwert(2002) Renn (1990), Shefrin(2002) Shiller (2000), De, Gondhi and Pochiraju (2010), Oslen(1997)
18.	My past experiences influence my decision making	Barbara Wanyana and Dr Issac (2011), Naveed et al(2011), Statman(1999), Kaustia & Knupfer(2008), Oslen(1997)
19.	My friends/family confidence on my ability to select winner IPOs influences my participation	Ajzen (2006)
20.	I imitate decision of others when deciding an IPO	David Pascual, Barbara and Beatriz (2013), Barbara Wanyana and Dr Issac (2011), Welch I (2000), Scharfstein D S and Stein J C, Devenow and Welch (1996)
21.	When overall economy is better, I feel IPOs are safer to invest	Gupta (2011), Daniel et al (1998)
22.	I have intention to invest in a good forthcoming IPO	Developed for the study
23.	With a good market condition, I can get better return on IPOs	Lucas and Mcdonald(1990) Ritter and Welch(2002) Neeta and Padmavathi(2012) Aggarwal(1994), Lowery Ritter, Rydquist(1994), Plotnicki and Szyszka(2014)

24.	When the business of issuer is familiar, IPO can be considered less risky	Baker and Nofsinger (2002) Ricciardi (2004), Huang (2010)
25.	I recommend my friends the IPO which could fetch better return	Developed for the study
26.	When my family approves my risk taking behavior, it increases my confidence	David Pascual, Barbara and Beatriz (2013)
27.	When I feel my IPO investment can provide better return than secondary market, I feel safer	Barbara Wanyana and Dr Issac (2011)
28.	When the company has better management practice, I can take a calculated risk	Robert (1988)
29.	With the age of firm, I can predict credibility of company	Ghosh (2005), Ritter (1991), Neeta&Padmavathi (2012) Loughran and Ritter (2004)
30.	Most people who are important to me think that is should invest in IPO	Icek Ajzen

# Gaps in Literature:

- Most of the studies available are done with the market data available from the technical point of view related to their performance. Performance is assessed either in short or long run based on the return the IPOs provided in the period considered. Our research is aimed at behavioural view not technical.
- From the Behavioural point of view reviews available were huge enough to know about the factors but not the specific items that constitute the factors since most of the reviews were either related to secondary market investment or in the non-financial areas.
- Most of the research were conducted in developed countries which has opened an arena of discussing from Indian perspective since the penetration level of investment in riskier asset class like shares is lower, of which primary market investment has even lower awareness and penetration

# **Objectives of the study:**

- To identify the factors involved in shaping the intentions from behavioural perspective.
- To develop, validate a structural model with the determinants identified.

# Analysis and Interpretations

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Weighted Average
I am knowledgeable of primary market activities	4	3	13	82	151	4.47
IPOs are well managed through regulations by SEBI	15	26	36	101	75	3.77
I am confident of my own opinion over opinion of friends and colleagues	4	8	32	96	113	4.21
I usually expect my IPO investment to perform better than other IPO choices available	13	12	38	89	101	4.00
I feel regret of a drop-in price on listing day of IPO stock I purchased	23	10	33	98	89	3.87
Idea of participating in an IPO is appealing	8	25	65	116	39	3.60
Data sources available to analyse an IPO is plenty now-a-days	2	7	25	128	91	4.18
It is very likely that I consider IPO investment though there are other investment options	1	6	23	118	105	4.26
When I feel the data available is sufficient, reliable I feel safer	3	43	52	82	73	3.71
When IPO is managed by top brokers its safer	11	36	52	102	52	3.58

#### Table 2: Weighted Average Analysis of the Variables in the study

Maximum investors in the study revealed that they are knowledgeable on the activities related to the primary market. When the investors compare their own opinion about an IPO issue on comparison with their peers or colleagues, they feel their opinion is better than their counterparts. As with the justification of data available for the investors to know more about an IPO issue and the company, there were plenty of resources and corresponding data available in the recent days. For investors even though many other investment options are available, considers IPO as a superior option owing to the return it can fetch in a shorter duration. It's a human tendency to believe their investment option to perform better, the belief is justified with the response of their IPO choice over other IPOs available at their time of making investment decisions.

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Weighted Average
Pricing of an IPO influences my decision on IPO	4	3	13	82	151	4.47
Institutional and other investors interest on an IPO influences my decision to invest	15	26	36	101	75	3.77
Popularity of company's group influences my participation in that IPO	4	8	32	96	113	4.21
Expectations of my family influences me to take risk on an IPO	13	12	38	89	101	4.00
I have many positive things to express in my prior IPO investments	23	10	33	98	89	3.87
Position of IPO company in corresponding industry influences my idea of participation	8	25	65	116	39	3.60
Success of IPO's prior to current IPO influence my decision	2	7	25	128	91	4.18
My past experiences influence my decision making	1	6	23	118	105	4.26

Table 3: Response of their IPO choices over other available IPOs

My friends/family confidence on my ability to select winner IPOs influences my participation	3	43	52	82	73	3.71
I imitate decision of others when deciding an IPO	11	36	52	102	52	3.58

When deciding on purchase it is natural to consider the value of money, IPO is no exception proving investors are more concerned on the pricing of the shares in an IPO. Brand of a company plays a major role on forming perception in purchase decisions, in IPO investments also popularity of a company plays a major role in purchase decisions. Success of the IPOs in the recent past has a positive influence in the primary market and hence the sentiment influences participation in the IPOs. Past experiences play again a significant role while an individual considers a stock through an IPO. Expectations of the family and the fulfilments increase the appetite of taking risk among the retail investors.

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Weighted Average
When overall economy is better, I feel IPOs are safer to invest	22	30	40	104	57	3.57
I have intention to invest in a good forthcoming IPO	11	5	34	129	74	3.99
With a good market condition, I can get better return on IPOs	5	15	55	129	49	3.80
When the business of issuer is familiar, IPO can be considered less risky	5	12	35	101	100	4.10
I recommend my friends the IPO which could fetch better return	12	7	34	135	65	3.92
When my family approves my risk-taking behaviour, it increases my confidence		10	45	100	98	4.13

Table 4: Why and when Investors Participate in IPOs?

When I feel my IPO investment can provide better return than secondary market, I feel safer	1	3	19	78	152	4.49
When the company has better management practice, I can take a calculated risk	7	13	63	122	48	3.75
With the age of firm, I can predict credibility of company	6	18	54	121	54	3.79
Most people who are important to me think that I should invest in IPO	2	6	39	89	117	4.24

Investor's internal feeling of a better return than secondary market investment decreases the risk of considering investment in a stock through its IPO. When the people who are most important to an investor thinks he/she has the ability to invest, motivates the investor to invest in an IPO. Also, when the family of an investor approves the risk-taking behaviour of the investor, the feeling rejuvenates the possibility of investment.

The Bartlett's test of sphericity was used to determine the appropriateness of factor analysis by testing the magnitude of the correlations of the entire correlation matrix (Hair et al., 1998). Results from the Bartlett's test indicated significant correlations among measurement variables considered for the study, which are exhibited in table below.

Kaiser-Meyer-	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				
Bartlett's Test	Approx. Chi-Square	6531.317			
of Sphericity	Df	435			
	Sig.	0.000			

Table 5: KMO and Bartlett's Test

#### Source: Primary Data

Kaiser (1974) has recommended KMO value of greater than 0.7 is acceptable and if stated value is between 0.7 and 0.7 is good. Value of

test 0.872 confirmed the adequacy of sample size that is considered for the purpose. Significance value of 0.000 indicates existence of relationship between the variables used in the study. Varimax rotation is used in this study since it has higher generalizability and replicability power on comparison with oblique rotation.

SPSS output indicated 5 factors that explained approximately 68% of the total variance in the data set. These five factors are supported by 21 variables and the remaining 9 were not used of factor loadings less than 0.7 or communality lesser than 0.4. Consequently, they were names as Information Asymmetry, EIC attributes, Subjective Norms and Attitude". Other factor is the dependent variable for the research named as Intention.

# **Confirmatory Analysis:**

Reliability of measurement model:

Reliability is a measure of knowing the extent to which data is error free or without bias, has consistency for measure at any time and across various items. In this research to test the items Squared factor Loadings (SFL) is used. To test reliability of the constructs Cronbach's Alpha is used. Squared Factor Loadings more than 0.5 is considered as acceptable and Cronbach's coefficient alpha of greater than 0.7 is acceptable.

Convergent Validity of Measurement Model:

Convergent validity is used to know how the items correlate with its own construct. Standardised Regression Weights (SRW) and Average Variance Extracted (AVE) is used to measure the same, SRW>0.70 is used as the criteria to measure the convergent validity. In our case all the items have met the criteria. AVE is calculated through the formula, AVE = i/(i+i), i is factor loading and *i* is error variance of measured item. Barclay et al. (1975) suggested that an AVE of 0.5 or more indicates satisfactory convergent validity. AVE of all the five constructs satisfy the requirement.

Var No	Constructs	Cronbach's Alpha	SFL>0.5	SWL>0.7	AVE>0.5
B1			0.646	0.709	
B7	EIC Attributes	0.929	0.643	0.765	0.692
C3	EIC Auribules	0.929	0.645	0.967	0.692
C8			0.635	0.949	
C9			0.614	0.733	
A1			0.496	0.700	
A3			0.594	0.919	
B2	Attitude	0.913	0.51	0.873	0.615
B3	Attitude	0.915	0.603	0.772	0.010
B10			0.605	0.693	
C4			0.564	0.717	
A7	Information		0.529	0.692	
A9	Asymmetry (IA)	0.795	0.721	0.828	0.603
A10	• • • •		0.628	0.803	
B9	Subjective		0.746	0.695	
C6	Subjective Norms	0.83	0.712	0.898	0.643
C10			0.616	0.800	

#### Table 6: Reliability and Convergent Validity

### Source: Primary Data

Discriminant Validity of Measurement Model:

To measure how the construct is different from other construct to know its unique contribution discriminant validity is done. Correlation between the item is generally used to test this but of overlapping constructs. Fornell and Larcker (1981) suggested that the squared correlations between the constructs should be less than the variance explained by each construct. Table 4 In our case all the items have loaded strongly on its own construct and relatively weak on other constructs and hence the discriminant validity is established.

	EIC	ATT	BI	IA	SN
EIC	0.832	0.635	0.441	0.254	0.153
ATT	0.635	0.784	0.523	0.322	0.123
BI	0.441	0.523	0.793	0.363	0.308
IA	0.254	0.322	0.363	0.777	0.184
SN	0.153	0.123	0.308	0.184	0.802

Table 7: Discriminant Validity

Measurement Model:

To measure the goodness of fit GFI and AGFI are used. A minimum value of 0.90 for GFI and 0.80 for AGFI is expected by Hu and Bentle (1995). Data for our observations are 0.908 and 0.824 respectively for GFI and AGFI and hence both are acceptable. To measure how bad the model is Chi-Square, RME and RMSEA were used. Segars and Grover (1993) has recommended Chi-square value of <= .05, CMIN/DF value of <= 3, RMR value of <= .09 and RMSEA value of <= .08 as acceptable. In this model the above parameters were read 0.000,2.505, 0.056 and 0.076 respectively which satisfies the above criteria that the mode is not bad to be rejected.

To measure the goodness of fit on incremental fit indices, Norm Fit Index (NFI) and Comparative Fit Indices (CFI) were used. A Minimum value of >.9 for both the indices, NFI and CFI have been stated to be acceptable by (Malhotra and Dash. 2011).0.903 and 0.904 were the measurement in this research which as more that the value required to accept the incremental fit.

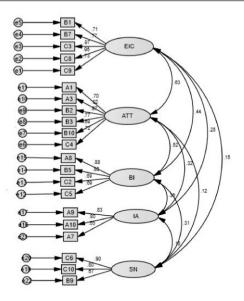


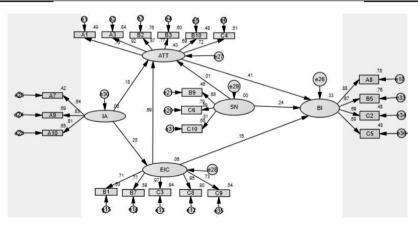
Figure 1: Measurement Model

### Structural Equation Model:

Assessment of fitness of structural model:

Of the several combinations identifies the Model attached below is considered the best, based on the guidelines. Data for our observations are 0.894(Approx 0.90) and 0.822 respectively for GFI and AGFI and hence both are acceptable. To measure how bad the model is Chi-Square, RMR and RMSEA were used. Chi Square 0.000<.05, CMIN/DF 2.503<3, RMR 0.063<.09 and RMSEA 0.077<.08 satisfies the criteria which implies model is acceptable.

To measure the goodness of fit on incremental fit indices, Norm Fit Index (NFI) and Comparative Fit Indices (CFI) were used. NFI 0.900>0.90 and CFI 0.937>0.90 were the measurement in this research which as more that the value required to accept the incremental fit.



**Figure 2: Structural Model** 

# Discussions

H1a: The first null hypothesis of the study "Information Asymmetry will directly and significantly affect Investor Attitude" was supported by the analysis and hence not rejected. R square indicates a positive influence of Information asymmetry on the Investor Attitude. Lawrence (2013) Higher quality disclosure of financial part influence investors to take more risk by investing more. Health and Tversky (1991) argues that ambiguity aversion signifies the confidence individuals have about accessing given information. So, an investor's access to information may also affect their perception towards behaviour.

H1b: The next hypothesis of the study "Information Asymmetry (IA) will directly and significantly affect Economy, Industry and Company Attributes (EIC)" was supported by the analysis and hence not rejected. Relationship was healthy that indicates a strong positive influence of Information Asymmetry on attributes related to economy, industry and company. It is a general belief about the data we have in hand, may be related to access, sufficiency or consulting of data with others.

H2a: The next hypothesis of the study "Economy, Industry and Company (EIC) attributes will directly and significantly affect Investor Attitude (ATT)" was supported by the analysis and hence not rejected. R square was too strong the evidence that Attitude is highly influenced by the market and the related factors. Salam Abdullah and Khalil Hilu (2015) them exist a direct relationship between risk attitude and market perception.

H2b: The next hypothesis of the study "Economy, Industry and Company (EIC) attributes will directly and significantly affect Behavioral Intention (BI)" was supported by the analysis and hence not rejected. Direct relationship between these constructs is not too strong but positive enough to indicate market attributed to influence the behavioural intention. Lo and Repin (2001) reported a significant correlation between market events and physiological characteristics. Here we have considered EIC instead of PBC to know how the situational factors like EIC can be a proxy to PBC and how we can take control of our investment through the market factors (Economy, Industry and Company)

H3: The next hypothesis of the study "Investor Attitude (ATT) will directly and significantly affect Behavioral Intention (BI)" was supported by the analysis and hence not rejected. Influence of Investor attitude on Behavioral Intention was strong and positive to clearly support the hypothesis. Lee (2009) Attitude is the more relevant variable to explain intention. East (1993), Gopi and Ramayah (2007) All investment activities of individual investors are guided by their attitude.

H4a: The next hypothesis of the study "Subjective Norms (SN) will directly and significantly affect Behavioral Intention (BI)" was supported by the analysis and hence not rejected. A positive R square indicates a good relationship between both the constructs indicating no scope for any ambiguity. Venkatesh and Davis (2000), Fu,Farn et al (2006) proved significant relationship between subjective norms and intention.

H4b: The last hypothesis of the study "Subjective Norms (SN) will directly and significantly affect Investor Attitude (ATT)" was not supported by the analysis and hence rejected. Relationship between both the construct were too low to support the rejection.

# Conclusion

In the model developed Intention is predominantly influenced by attitude of an investor when compared to rest all variables. EIC attributes was the

most influencing factor upon Attitude. Also, Information Asymmetry plays a major role in influencing EIC attributes and Attitude considered. Information Asymmetry indirectly affects the intention to invest through Initial public offers. Other constructs like Attitude, EIC Attributes, Subjective Norms directly influences in shaping the intention of an investor. Attitude play a significant role in intention to purchase.

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# APPENDIX

## Questionnaire Items

Questions with Likert's Scale
I am knowledgeable of primary market activities
IPOs are well managed through regulations by SEBI
I am confident of my own opinion over opinion of friends and colleagues
I usually expect my IPO investment to perform better than other IPO choices available
I feel regret of a drop in price on listing day of IPO stock I purchased
Idea of participating in an IPO is appealing
Data sources available to analyse an IPO is plenty now-a-days
It is very likely that I consider IPO investment though there are other investment options
When I feel the data available is sufficient, reliable I feel safer
When IPO is managed by top brokers its safer
Pricing of an IPO influences my decision on IPO
Institutional and other investors interest on an IPO influences my decision to invest
Popularity of company's group influences my participation in that IPO
Expectations of my family influences me to take risk on an IPO
I have many positive things to express in my prior IPO investments
Position of IPO company in corresponding industry influences my idea of participation
Success of IPO's prior to current IPO influence my decision
My past experiences influence my decision making
My friends/family confidence on my ability to select winner IPOs influences my participation
I imitate decision of others when deciding an IPO
When overall economy is better, I feel IPOs are safer to invest

I have intention to invest in a good forthcoming IPO
With a good market condition, I can get better return on IPOs
When the business of issuer is familiar, IPO can be considered less risky
I recommend my friends the IPO which could fetch better return
When my family approves my risk taking behavior, it increases my confidence
When I feel my IPO investment can provide better return than secondary market, I feel safer
When the company has better management practice, I can take a calculated risk
With the age of firm, I can predict credibility of company
Most people who are important to me think that is should invest in IPO