

Perception of Market Participants on the Determinants of Stock Prices in India

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Abstract: The stock market is an important segment of the financial system of any country as it transmits savings from the deficit sector to the surplus sector. Stock markets have posed severe challenges to Investors, market participants, policymakers, economists, corporates, and researchers in the past few years. There are market imperfections and other market characteristics in many developing countries, which make the existing models unsuitable for emerging countries like India. The key objective of the research was to explore the impact of the determinants of stock price, i.e., the macroeconomic variables and the micro/firm-specific variable on stock trading. Once this was established, the research would have been incomplete without considering the participants' perceptions who use these parameters (Macro and Micro) in their day-to-day trading and investing for their clients. Therefore, based on the inputs received through interactions with the stock market participants, a questionnaire was devised, pilot tested, and a revised questionnaire was administered to the market participants (Chief Investment Officer, Financial Advisors, Brokers). The factor analysis has been used to deduce the variables into three factors: In-country, Out country, and Microeconomy. These factors were again studied using Partial Least Square - SEM to identify the model.

Keywords: Investor Perception, Price Determinants, Factor Analysis, PLS-SEM, Macroeconomic

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PERCEPTION OF MARKET PARTICIPANTS ON THE DETERMINANTS OF STOCK PRICES IN INDIA

As of December 2022, the government of India has taken substantial initiatives to strengthen its economic position which has resulted in India becoming one of the world's strongest economy. India is often referred to as an initiation hub that concentrates on the creation of new markets and drives innovations, focusing on high growth opportunities such as stock markets, mobility, e-trade, AI, database analysis, etc.

A significant contribution to India's growth story was the recent growth in domestic investment. These investments were contributed made equally by public sector/ governmental units and corporate sectors.

Thampanya et al. (2020), studied the two determinants of stock returns i.e fundamental and behavioral on stock volatility during 1995 to 2018 in ASEAN countries. The study indicated that stock market volatility is determined by behavioral factors in Malaysia, Thailand and Singapore while in case of Indonesia and Philippines. Jagongo & Mutswenje, (2014), studied the factors which influences the individual investors behavior in equity investment decision. The study was done on the stocks listed in the stock exchange of Nairobi. Factor analysis was done to categorize the various factors affecting stock investment decisions using primary data analysis. The study indicated that status and the position of the firm in the respective industry, firm's ROE, stock performance in terms of EPS, investor's perception of the economy were considered as the most important factors which drive retail investors to take up equity investment decisions.

Yates & Firer (1997), urged the need for the investors to have better understanding of the market risk, also felt that a proper information about the company in which they are investing will benefit them better. It also tried to measure the firm-specific determinants like financial leverage, Size of the firm, liquidity, ROCE, Book value and Firm's growth in the stock listed in the Johannesburg Exchange. This

study was supported by Das (2012), by analyzing the equity investment decision making factors of the retail investors in terms of their buying behavior. The study tried to capture the impact of qualitative factors like demographic, social status, and mindset of the equity investors. In retail investors Assam. The factors which the investors considered predominantly were the financial health of the organization, reference from the near one or stock-brokers, while factors such as policies of the regulators, risk parameters and macroeconomic variables were considered primitive factors during stock selection.

Bennet et al. (2011) This study attempts to measure the investor's attitudes and their perception towards investing in equities. The study used sentimental factors and firm-specific factors on the investor's sentiments. The primary data analysis done to measure the impact of psychological factors, stock price performance, P/E ratio, customer familiarity of the firm's products, quality of management etc. The results however did not indicate any impact of the microeconomic factors on the investor's sentiments.

Kavitha (2015), tried to analyze the prevailing lack of awareness in the Indian investors about the risk-return tradeoff for stocks, she tried to identify the reasons for why majority of Indian investors fail to make adequate money in equity markets as they lack proper knowledge about the risk involved. The researcher used both numerical and non-numerical attributes which influence stock prices and has opined on the fact that exchanges and regulatory authorities needs to create more awareness about the pros and cons of the equity investments so that more and more investors in the retail segment can be a part of this market.

Mohan, B. R. (2023) in their paper titled "Study on the sentimental influence on Indian stock price" explores the impact of media on equity prices, focusing on the Indian stock market. The study proposes a four-stage model to detect the direction of information flow between news sentiment and stock price. It involves web scraping to extract news datasets, the utilization of the modified VADER algorithm to analyze sentiments, and associational causal analysis to understand the relationship between news sentiment and stock valuation. The research emphasizes the importance of causal analysis in understanding the sentimental effect of broadcasted content on stock valuation. It compares non-parametric Shannon and Renyi's entropy approaches with the parametric Granger test, highlighting the superiority of non-parametric methods in capturing complex dynamics and potential non-linearities. Additionally, the study investigates the impact of news during the COVID-19 pandemic on the pharmaceutical sector, providing insights into the explicit information flow and direction of causality between news sentiment and stock price movement. (Varghese & Mohan, 2023) Overall, the study offers valuable perspectives for both investors and researchers in the Indian stock market, emphasizing the need for nuanced examination and the utilization of advanced causal analysis methods to unveil previously overlooked causal relationships between news sentiment and stock prices.

The research paper titled "A Study on Investors' Perception towards Indian Stock Market" aims to understand the behaviors, attitudes, and desires of investors in different geographical areas towards the Indian stock market. The research questions include the key factors influencing investors' perceptions towards the Indian stock market, the impact of stock market volatility on investors' decision-making processes, and the implications of the study for investors and the stock market industry as a whole. The study collected data through online interviews and distributing questionnaires to respondents to understand their behaviors, attitudes, desires, perspectives, and level of awareness towards the stock market. The results showed that investors' perceptions on buying shares in Asia are represented by several indicators, such as neutral information, accounting information, and social relevance, in which these three indicators generate impressions of the company's activities based on profits and fundamental thinking patterns. Therefore, this will have an influence on investors in making decisions on the shares which will be chosen by them in the future.

Thampanya et al., 2020 in the article provides a comprehensive review of the literature on the determinants of stock return volatility in ASEAN-5 countries. The authors discuss the conventional (neoclassical) finance view that stock market participants are rational investors who seek maximum wealth by considering fundamental factors such as macroeconomic indicators and financial ratios. They also examine the behavioural finance perspective, which suggests that investors may be influenced by psychological biases and emotions, leading to irrational decision-making and increased volatility. The authors review a range of studies that have investigated the impact of fundamental factors such as GDP, money supply, interest rate, inflation rate, exchange rate, and accounting information on stock return volatility. The article also highlights the need for further research to explore the impact of other factors such as financial crises, political and geographical crises, and regulatory regime changes on stock return volatility in ASEAN-5 countries. The authors suggest that future studies could also examine the relationship between fundamental and behavioural factors in more detail, and consider the impact of these factors on different segments of the market.

MATERIALS AND METHODS

The objective of the study is to examine the perception of investment influencers such as investment advisors, stockbrokers, financial analysts, about the determinants and their impact on stock prices in India. A questionnaire and a pilot study were prepared based on secondary data analysis and practitioners of the Indian inventory market; data was collected from Chief Investment Officer, Financial Advisors, Brokers, and analyzed to arrive at the Questionnaire based on the opinion of the various market participants mentioned above. The period of the primary data collection was during July 2019 to April 2022.

Convenience and Snowball sampling was used for collection of data from respondents . The population of the practitioners in the Indian stock market especially on the NSE platform were contemplated and sample size of 364 was required to be collected as per the sample size calculation. In this study 397 responses were received/collected from the participants of the various investment advisory firms, brokerage firms, HNI investors and the category of the participants of the respondents included the Chief investment officers, investment/financial advisors, brokers, financial analysts, and other market participants. The percentage of questionnaire collected was nearly 89.62%. The study employs the Factor Analysis and Partial Least Square Structural Equation Model (PLS-SEM) for data analysis.

Investor perception on the determinants of stock price

The primary data analysis was done with exploratory factor analysis for dimension reduction and dimension summarization.

Macro-economy Variables

The output of exploratory factor analysis of macro-economy variables are identified two Factors

- Factor 1: In-Country Macro-economy
- Factor 2: Out country Macro-economy

The In-Country Macro-economy factors included Monetary policy of the central bank, fiscal policy, credit rating downgrade information, countries' economic life cycle, outbreak of a pandemic, and Big Bankruptcy.

According to the respondents (StockBrokers, Chief Investment Officers, Financial analysts), Some of the key determinants of the in-country macroeconomy variables considered are the fiscal policy, changes of monetary policy in interest rates, pandemics and crude oil prices outbreak.

The Out-Country Macroeconomy factors included Business Demand in European zones, US Interest rate, US GDP growth, and a neighbouring country's political events are the prominent factors.

According to the respondents (Stockbrokers, Chief Investment Officers, Financial analysts), they consider that US Interest rate, Business Demand in European zones, US GDP growth, political events in the neighbouring country are the key out-country macro-economic factors.

Micro-economy/Firm-Specific Variables

The study indicated only one factor which comprises of growth of market capitalization, reputation of organization, 3 years ROCE, Book value of the firm, companies risk diversification strategy, companies strategies towards new opportunities , companies market dynamism, CEO’s action towards business goals are the factors to be considered from the firm-specific variables affecting the stock price. The greater contribution according to the study was indicating that the growth of market capitalization, growth of the companies in the industry, reputation of organization, Book value of the firm are impacting the determinants of stock price.

RESULTS AND DISCUSSION

Perception of Market Participants

Table 1: Reliability Analysis In-country Economy

SRS*			
	mean	sd	Cronbach's α
scale	3.79	0.7	0.91

*SRS- Scale Reliability Statistics

The above table showed the reliability test result,Cronbach alpha of constructs is more than 0.9, which is good. The mean value is 3.79, and standard deviation is 0.70. The test outcome confirmed the consistency of the instrument, and the data is reliable.

Table 2: Reliability Statistics

Reliability Statistics	
	item-rest correlation
At least 3 quarter of India GDP	0.55
Countries economic life cycle [such as a recession or boom etc.]	0.56
The inflation rate is very much considered	0.59
Role of the money supply	0.58
Change of interest rates	0.71
Political events within the country	0.55
Outbreak of pandemic	0.66
Crude oil prices in the international market	0.66
US interest rate	0.51
The supply side of oil in the international market	0.66
Big bankruptcy such as Lehman Brothers and Bears Sterns etc.	0.6
Credit rating downgrade information	0.6
Monetary policy of the central bank	0.74
Fiscal policy of the central government	0.78

Table 3: Reliability Analysis out-country economy

SRS			
	mean	sd	Cronbach's α
scale	3.37	0.77	0.82

The above table showed the reliability test result. Cronbach's alpha of constructs is more than 0.8, which is good. The mean value is 3.37, and std dev is 0.77. The results of the test ensured consistency and reliability of the data.

Table 4: Reliability Statistics

Item Reliability Statistics	
	item-rest correlation
Political events of the neighboring country	0.49
US GDP growth	0.63
US interest rate (2)	0.7
Business Demand in European zones	0.68
Geopolitical tensions in the middle east and West Asia	0.55

Partial least square SEM analysis

This research aims at finding the constituents of economic factors. The economic factors are reflected through three dimensions viz., In-country economy, Out-country economy, and Micro economy. The hypothesis is proposed in the present study as to whether the above factors reflect or not the economic factors. To test this, Partial least square structural equation modeling (PLS-SEM) was used. Partial least square structural equation modeling (PLS-SEM) is a new generation statistical software that is user-friendly and uses the least square method compared to the covariance-based method of calculating structural equation modeling. The method for estimating was the OLS method. The external model and measuring model, as well as the inner model referred to as the structural models, are two PLS-SEM models. The external model was tested by means of external loads and path coefficients of the measuring elements. The reliability and validity of the buildings have been measured in the study. Cronbach alpha, composite reliability and AVE have been measured to determine the building reliability. The validity of the measurements was assessed by using discriminant validity. Further, the proposed model was tested using R square values. Measurement of the important relationship between the study variables using the Path Coefficients. The following section provides information on the model study:

Figure 1: Construct and dimensions

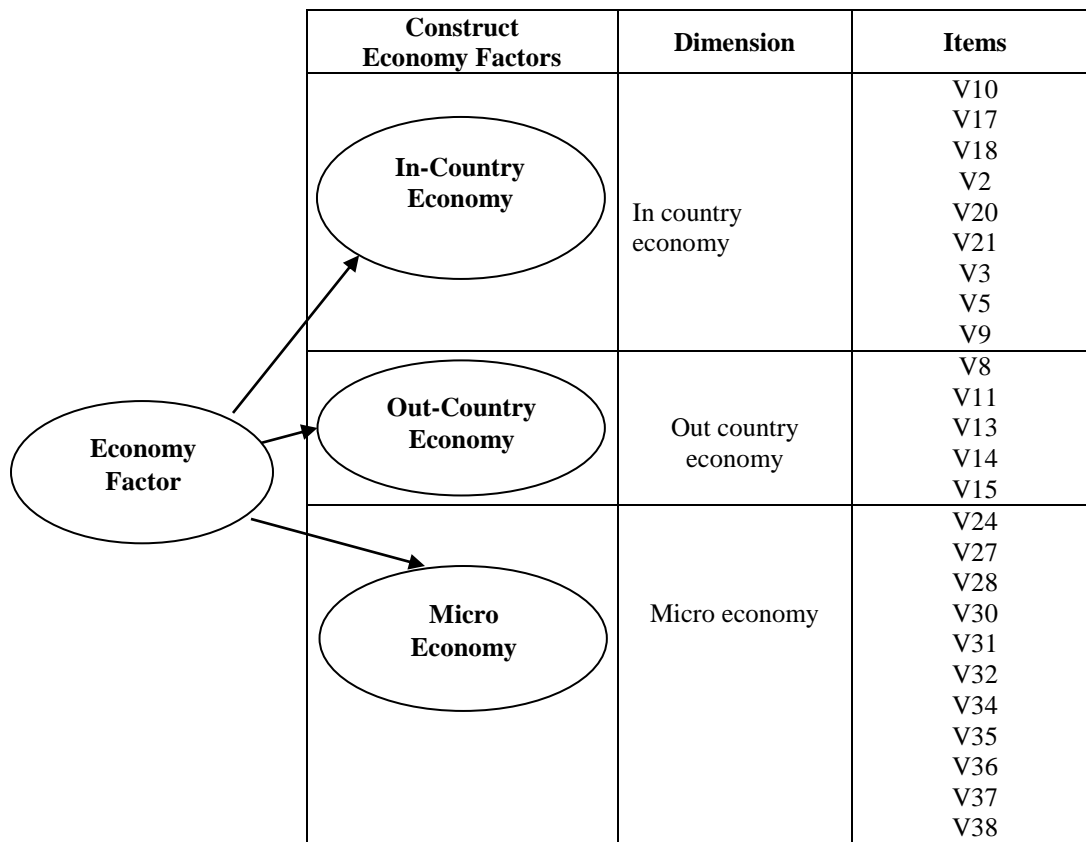


Fig 1: Proposed Model

The above diagram is the representation of the constituents of economic factors. The model is statistically tested, and its detailed explanation is given below.

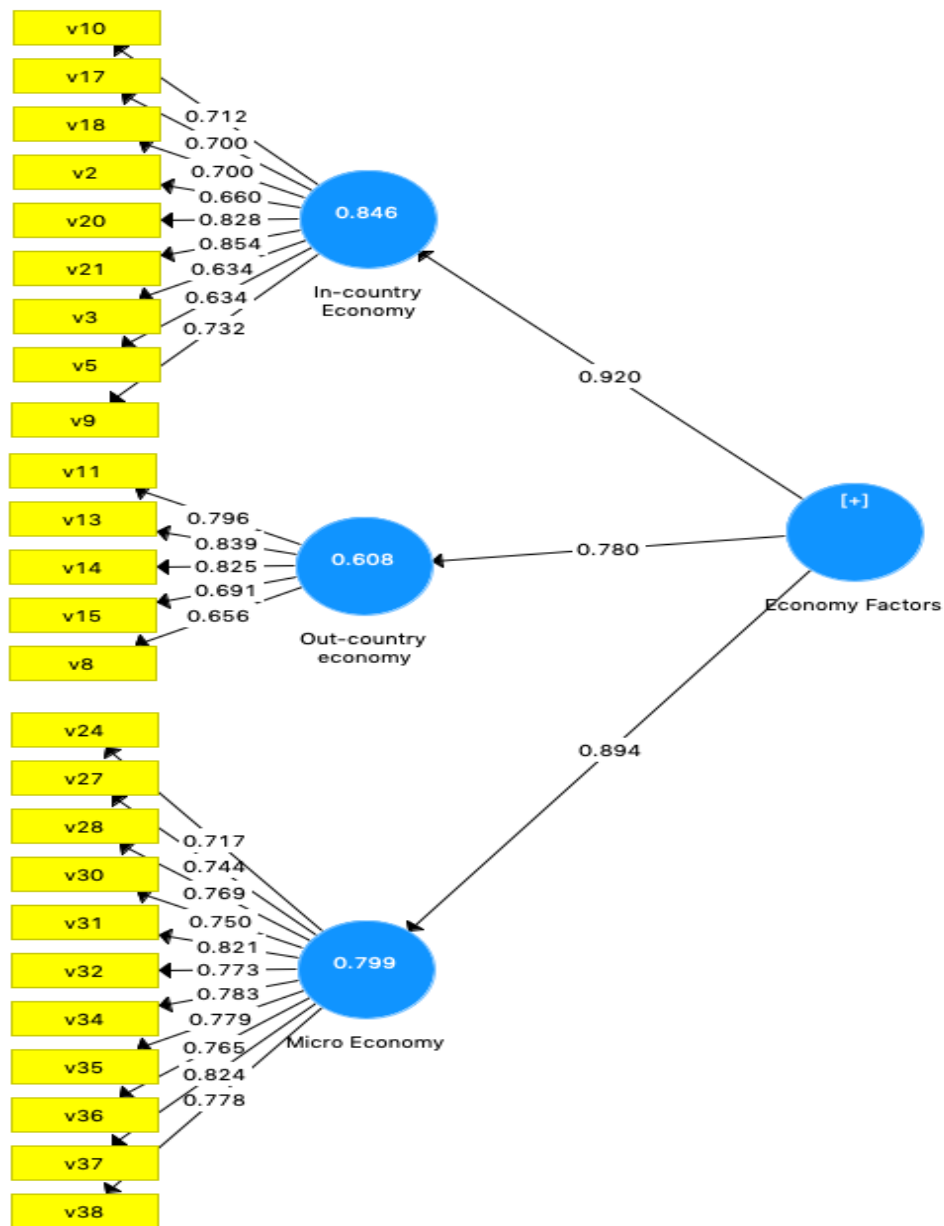
Table 5: Outer Loadings

	In- Country economy	Out-Country Economy	Micro Economy
V2	0.660		
V3	0.634		
V5	0.634		
V9	0.732		
V10	0.712		
V17	0.700		
V18	0.700		
V20	0.828		
V21	0.854		
V8		0.656	
V11		0.796	
V13		0.839	
V14		0.825	
V15		0.691	
V24			0.717
V27			0.744
V28			0.769
V30			0.750
V31			0.821
V32			0.773
V34			0.783
V35			0.779

V36			0.765
V37			0.824
V38			0.778

The Outer loadings of the construct and the study's dimensions are as noted in the above table. According to the partial least square structural equation model criteria, only those loadings above 0.5 are to be retained for further analysis. However, in psychometric studies, one can consider the loadings even if it is 0.4 and above. In the present study, the In-country economy is measured with nine items, and all items had loadings above 0.8 and were retained for further analysis. The out-country economy was measured with five items, and all had item loadings above 0.7 and were hence retained. Eleven items measured the micro economy, and the loading are above 0.7.

Fig 2: PLSSEM Diagram



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Table 6: Reliability, Validity and R Square values

	Cronbach Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	R Square
In-country Economy	0.882	0.888	0.906	0.520	0.846
Micro Economy	0.933	0.933	0.942	0.599	0.799
Out-country economy	0.820	0.832	0.875	0.585	0.608

Internal Consistency

Cronbach alpha and composite reliability can be referred to as the internal consistency of the structures. The Cronbach alpha values range from 0.82 to 0.93 for the economic factor dimensions, which are highly covered by thresholds above 0.7 (1978).

Furthermore, by calculating composite reliability the inner consistency of the constructs is also controlled. All dimensions range from 0.87 to 0.94 for the Composite Reliability values which are much higher than the 0.70 cut off value. Therefore, we can conclude that no internal consistency problems exist.

Validity of convergence

By examining the external loading score and the AVE the convergent validity can be evaluated. The AVE value for the dimensions is within 0.5 as Hair et al. suggests (2014). Hence, we can conclude that constructs do not have any convergent validity issues.

The table also highlights the R Square value. R square determines the explanatory power of one variable on the other.

Economy factors are explaining in a country economy to the extent of 84 %. Further economy factors explain micro-economy to 79% and out-country economy to the extent of 60%.

This tells that the economy factors can explain its dimensions to a reasonable extent.

Table 7: Discriminant Validity

	In-country Economy	Micro Economy	Out-country economy
In-country Economy	0.721		
Micro Economy	0.712	0.774	
Out-country economy	0.569	0.508	0.765

The above table indicated about the square root of AVE and shows the correlation among the variables. It is stated that the variable economy factor and In-country economy are highly correlated followed by economy factors and micro economy. Further, Micro economy and out country economy are seen to be least correlated.

The discriminant validity has been checked for two reasons, as suggested by Hair et al. (2014). First of all, with regard to external loading, the items can be noticed by confirming the lack of any discriminating validity issue in their dimensions. The second approach is by comparing the AVE square root with Fronell & Larcker's dimensions (1981). The square root for AVE shown in bold must be greater than the latent variables of the corresponding row and column across the diagonal. The entire AVE square root is greater than the correlation values. In general, we can say that the present study shows a discriminatory validity.

Table 8: Hetrotrait- Monotrait Values

	In-country Economy	Micro Economy	Out-country economy
In-country Economy	-		
Micro Economy	0.873	-	
Out-country economy	0.667	0.573	-

One of the criteria for evaluating the discriminant validity of the structural equation models based on variance is the hetrotrait-monotrait relation (HTMT). The above table shows the HTMT values. The values of HTMT for all the dimensions are lesser than 0.9, thus establishing Discriminant validity.

Testing of hypothesis

The following table represents the statistical analysis of the proposed model. The statistical inference was drawn from the t values and p values and was mentioned as below. The proposed hypothetical relationships between the study variables were analyzed, and interpretations were drawn based on the t and p values. This is discussed as under.

Table 9: Path Coefficient Estimates testing of hypothesis

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Economy Factors -> In-country Economy	0.920	0.920	0.008	108.870	0.000
Economy Factors -> Micro Economy	0.894	0.894	0.012	73.015	0.000
Economy Factors -> Out-country economy	0.780	0.780	0.030	25.937	0.000

H1: Economy factor is reflected by In-Country economy

The hypothesis was proposed to understand whether the in-country economy reflects the economy factor or not. To test this hypothesis, the p values and t value statistics were considered. From the above table, we can understand that the t value was found to be 108.8, and the p-value was found to be 0.000. From this, we can understand that the economy factor is reflected by in country's economy. Hence, the alternate hypothesis is accepted.

H2: The out-country economy reflects an economy factors

The hypothesis was proposed to understand whether the out-country economy represents the economy factor or not. To test this hypothesis, the p values and t value statistics were considered.

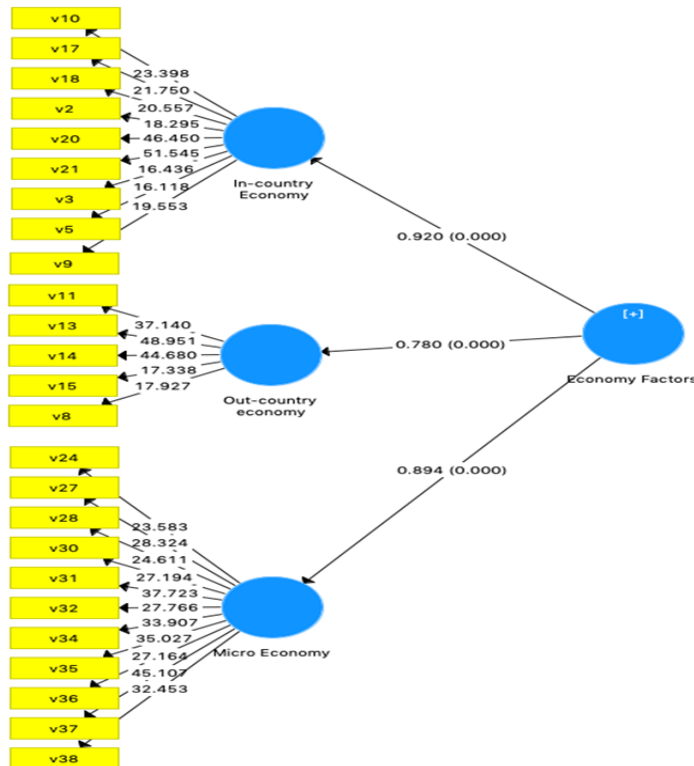
From the above table, we can understand that the t value was found to be 25.93, and the p-value was found to be 0.000. From this, we can understand that the economy factor is reflected by the out-country economy Hence, an alternate hypothesis accepted.

H3: Economy factor is reflected by micro-economy

The hypothesis was proposed to understand whether the micro-economy reflects the economy factor or not, test hypothesis, the p values, and t value statistics were considered.

From the above table, we can understand that the t value was found to be 73.01, and the p-value was found to be 0.000. From this, we can understand that the micro-economy reflects the economy factor. Hence, an alternate hypothesis accepted.

Fig 3: Proposed Model with Loadings



The study aimed to find the constituents of economic factors affecting the determinants of stock price. The economic factors were reflected into three dimensions such as the In-country economy, Out-country economy and Micro-economy.

The study used partial least square SEM method to check whether the economic factors are affected by the above factors-Incountry, Out-country economy and Micro-economy. Based on the factor loadings of more than 0.5- 9 items in the Incountry, 5 items in the outcountry and 11 items had significant impact on the proposed model.

The construct reliability was measured by Cronbach's alpha, composite reliability, and AVE (Average Variance Extracted), while the validity of the model was checked using discriminant validity. According to Dijkstra and Henseler(2015) rho_A is considered as an appropriate measure of construct reliability as it lies between the Cronbach's alpha and the composite reliability. The study indicated rho_A of the In-Country economy, Micro-economy and out-country economy had values between that of the Cronbach's alpha and composite reliability in accordance of the study mentioned earlier. The Cronbach's alpha obtained in the results is well within the threshold limit of 0.7-0.9, as stated by Nunnally(1978), while the composite range is also within the threshold range which helps to conclude that there are no internal issues.

The reflective measurement model used in the study aimed at measuring the convergent validity. The convergent validity is measured by a metric called the Average Variance Extracted (AVE). According to Hair.et.al.(2014) an acceptable AVE should be 0.5 or higher. The study indicates the values obtained were within the threshold and hence no issues of convergent validity was detected. According to the study, the economy factor are explaining in the country's economy to the extent of 84%. Further the economic factors are explaining the micro-economy to the extent of 79% and the out-country economy to the extent of 60%, justifying that the economy factors are able to explain its dimensions to a reasonable extent.

According to Henseler et.al (2015) if the heterotrait-monotrait (HTMT) ratio is higher than 0.95, it suggests that there are problems of Discriminant problems, Because the values of HTMT in the study are below 0.9, discriminating validity is thus established.

The study indicates that the economy factors is reflected by in country economy which includes Monetary policy of the central bank, interest rate, credit rating downgrade information, Outbreak of pandemic, role of Money supply, political events within the country, international crude oil prices, inflation rates, GDP.

The study results show that the economy factors is reflected by out-country economy are Business demand in European zones, US interest rate, US GDP growth, Geopolitical tension in the Middle East and West Asia, Political events of a neighbouring countries

The study results show that the economy factors is reflected by micro economy, which includes Growth of Market capitalization, the growth of companies in the Industry Reputation of the organization, following the last 3 years ROCE, Companies' risk diversification strategy, Consistent Book value of the firm, giving importance to company's event on market sentiments, companies strategies towards new opportunities, Following SEBI guidelines in stock market opportunities, companies market dynamism, CEO action towards business goals. The results obtained were in accordance Abdelkarim etal (2009) whose study on the stocks listed in Palestine stock exchange indicated that availability, adequacy and usefulness of information disclosed in the financial reports of the companies are very important and also indicated that timeliness of relevant information is very important about the pricing of the equity stocks. Bennet and Salvam (2010) analyzed the investor's perception towards the Social, Political, Regulatory, Technological, Environmental and Legal (SPERTEL) risks on the stock price and observed that the social, political, regulatory and legal factors had a significant influence on the stock price. Das (2012) studied the investor perception on stock investment in terms of Financial statements of companies, financial ratios, Rumors in the market, media and newspapers, reputation of the company, corporate earnings, Role of referrals and brokers, Auditor's report, Past trading volume of the stocks, governmental policies and found that financial statements, public information about company, reputation of the company were considered as the dominant factors. Schabek (2013) studied Brazilian and the stock prices and determined that the Market capitalization, book value and momentum are the important factors affecting stock prices. Merikas (2016) studied the investor perceptions on the stock prices listed on the Athens stock prices and found that financial statements, expected corporate earnings, Firm status, reputation of the firm, recent price movements were considered to be significant factors for stock price.

CONCLUSIONS

The research study wanted to understand the viewpoints of the Investors, the brokers, investment advisors, Chief Investment Officer, financial analysts and other participants of the stock market.

Following a pilot study, the questionnaire was prepared based on their inputs. Three factors were identified in the analysis of the primary data Macroeconomics in country, macroeconomy in foreign countries, microeconomics based on loading factor. The Partial least square SEM analysis was employed at finding the constituents of the economic factors. The hypothesis was set to test the whether the economic factors are selected by the above three factors mentioned above. The results of the PLSEM identified that the In-country economy, Out-country and Microeconomy reflects the economy factors. The In-country economy components includes monetary policy, interest rate changes, credit rating, outbreak of pandemic, money supply in an economy, International crude oil price, Inflation rate and GDP. The out-country factors included Business demand in European zones, US interest and GDP rates, Political events in the neighboring countries. The microeconomic components included growth of market capitalization, ROCE, company's risk diversification strategy, consistent book value of the firm, company's events on market sentiments, CEO action towards attaining business goals.

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