




“Unveiling investor behavior: An investigation into India’s pharmaceutical sector during COVID-19”

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UNVEILING INVESTOR BEHAVIOR: AN INVESTIGATION INTO INDIA'S PHARMACEUTICAL SECTOR DURING COVID-19

Abstract

This study examines the factors influencing retail investors' decision to invest into the Indian pharmaceutical sector amidst the COVID-19 global health crisis. Confronting the obstacles introduced by the pandemic has helped create a robust foundation for the Indian pharma sector to grow rapidly in the future. As the industry demonstrated signs of considerable future growth, investors favored pharmaceutical investments during COVID-19. Retail investors were mainly the ones who went on a shopping spree during the pandemic. This backdrop provides a unique context to explore the retail investors' behavior in the Indian pharmaceutical landscape. Leveraging the Theory of Planned Behavior (TPB), this study marks the first attempt to introduce behavior toward market fundamentals as a mediating factor into the TPB framework. To conduct the study, data were collected from 305 retail investors located in Karnataka's South Canara region, who invested into the Indian pharmaceutical industry during the pandemic, using snowball sampling. The e-survey was employed for data collection. The results reveal that attitudes toward pharmaceutical investments, subjective norms, Perceived Behavioral Control (PBC), and behavior toward market fundamentals have significantly influenced investor decisions. Notably, behavior toward market fundamentals has partially mediated the relationship between attitude toward pharma investment and investment decision and PBC and investment decision. However, the mediation effect of behavior toward market fundamentals was not evident between the subject norm and the investment decision. The study holds pivotal implications for policymakers, government bodies, and industry stakeholders to promote pharmaceutical investments.

Keywords

behavioral finance, theory of planned behavior, stock investment, mediating effect, pharmaceuticals, market fundamentals, decision-making, PLS-SEM analysis

JEL Classification

G11, G41

INTRODUCTION

The coronavirus crisis has created instability in industries and financial markets across the world; India is no exception. The Indian stock market experienced one of its worst crashes in history. From January 21, 2020 to March 31, 2020, benchmark indices SENSEX and NIFTY declined by approximately 31%, whereas most Indian equity indices were trading in deep red during the fiscal year 2020-21 (Dhillion & Tyagi, 2021; Bhat & Suresh, 2021). Amid this turmoil, the Indian pharmaceutical sector, despite initial supply shortfalls due to dependency on China for Active Pharmaceutical Ingredients (APIs), showcased resilience and agility (EY India, 2021; Chatterjee, 2020). With strong governmental support, the sector quickly adapted to the situation, focusing on domestic API production and innovative research, leading to swift vaccine development and supply to over 150 countries (EY India, 2021; Sujith Varma, 2021). This response highlighted the sector's untapped potential and positioned India as a significant player in global healthcare.

Investors were drawn to the Indian pharmaceutical sector during the pandemic due to increased demand for healthcare products, new opportunities, government incentives, and potential long-term stock appreciation (Economic Survey 2022-23, 2023; Sharma, 2022). This heightened interest has continued even post-pandemic, with investors viewing the sector as a promising opportunity for investment (Mittal & Sharma, 2021; Keswani & Dhingra, 2023). Retail investors' participation became a major point of discussion during the pandemic in the Indian stock market as they were actively involved in the trading business. However, research focusing on retail investors in the Indian stock market, especially in the Indian pharma landscape, is scarce. Against this backdrop, the current investigation delves into the intricacies of Indian retail traders' decision-making processes regarding investments in the pharmaceutical sector during the pandemic, utilizing the Theory of Planned Behavior (TPB). The present study offers a profound understanding of the psychological and behavioral determinants guiding investment decisions within the pharmaceutical sector.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The pharmaceutical sector has been vital to the Indian economy, contributing significantly to its growth and global influence. As one of the largest producers of generic medicines worldwide, India supplies affordable medications to both domestic and international markets, generating substantial export revenues (Prasad & Panesar, 2024). The growth of India's pharma sector is driven by proactive private companies exploring market opportunities, the export of generic formulated products, and government policies aimed at fostering pharmaceutical clusters (Abbott, 2017). Additionally, the sector's emphasis on research and development has propelled innovation, enhancing India's reputation as a global hub for pharmaceutical manufacturing (Sharma, 2012). The pharmaceutical industry's robust infrastructure and cost-effective production capabilities make it a critical component of the national economy, driving healthcare advancements and economic development (Deloitte, 2020).

When COVID-19 emerged, the Indian pharmaceutical unit faced numerous hurdles, including severe disruptions in supply chains and a surge in demand for essential medications and vaccines (Suraksha et al., 2020; Nair, 2021). These hurdles necessitated rapid adaptation and innovation to meet the escalating healthcare needs globally. Consequently, the sector quickly bounced back through collaborative efforts, accelerated research, and enhanced production capacities, contributing

significantly to pandemic response efforts (Lobo & Bhat, 2023). The resilience demonstrated by the industry during the pandemic had a minimal effect on stock performance. Pushpa et al. (2021) showed that the pandemic affected Indian pharmaceutical companies positively. Additionally, Behera and Rath (2021) reported that the average stock returns of Indian pharmaceutical companies were positive during the COVID-19 phase. These results underscore increased investor confidence and financial inflows into the sector during the pandemic. However, despite the evident surge in investor interest in pharma investments, there is a notable research gap in understanding the underlying psychological and behavioral factors driving these investment decisions during COVID-19. Previous studies have primarily focused on the financial and operational aspects of the pharmaceutical sector (Chaturvedi et al., 2017; Niño-Amézquita et al., 2017; Prabhu & Saravanan, 2018), while limited attention has been directed toward the cognitive processes and behavioral tendencies of investors. Besides, during the pandemic, the increase in equity trading in the Indian stock market was mainly driven by the participation of retail investors (Talwar et al., 2021). This increase was due to the rise of discount brokerages, technological advancements in digital trading, and greater smartphone accessibility, all of which had been accelerated during the pandemic (Patnaik, 2023). However, most of the existing literature on the Indian stock market and pharmaceutical sector has centered around institutional investors (Dhiman, 2012; Syamala et al., 2014; Pinto & Rastogi, 2022), largely ignoring the investment interests of retail investors. Consequently, this study seeks to create a psychological framework to com-

prehend the decision-making processes of retail investors regarding pharmaceutical investments during the COVID-19 pandemic.

1.1. Investment behavior analysis using TPB

TPB has been instrumental in predicting human behavior across diverse domains, including finance. Several studies have harnessed TPB in the financial realm, yielding insightful findings. To outline, Ali et al. (2014) investigated investor behavior in Malaysia's Islamic unit trust industry, while Mahastanti and Hariady (2014) explored factors affecting female investors' stock decisions in Indonesia. Additionally, Paetzold and Busch (2014) used TPB to model sustainable investing decisions, and Norisnita and Indriati (2022) forecasted cryptocurrency investment intentions. Furthermore, Yulandreano and Rita (2023) examined investment intentions in Indonesian crowdfunding platforms. Phan and Zhou (2014) confirmed that TPB components affect investment intentions in Vietnam's stock market. Moreover, TPB has been applied within the context of the COVID-19 era to assess investor behavior. The Government of Malaysia's Sukuk Prihatin (SP), an e-sukuk initiative launched during the COVID-19 crisis, was examined using TPB (Bin-Nashwan et al., 2022). Natsir et al. (2021) explored the ramifications of product acumen and perceived risk on investors' inclinations to invest amidst the COVID-19 pandemic. Besides these studies, Yee et al. (2022), Sivaramakrishnan et al. (2017), Raut (2020), and Gamel et al. (2022) have extensively utilized the TPB framework to prognosticate decision-making conduct across multifarious investment channels and global stock markets. In the Indian context, there have been limited studies employing the Theory of Planned Behavior (TPB). These studies primarily focus on predicting various behavioral intentions, such as environmental behaviors, entrepreneurial intentions, and ethical intentions (Yadav & Pathak, 2016; Paul et al., 2016; Joshi et al., 2020; Marmat, 2021). Specifically, within the realm of the Indian stock market, research utilizing TPB is scarce. Notably, TPB has not been extensively applied within specific sectors of the stock market. Therefore, this investigation endeavors to bridge the existing gap by employing the Theory of Planned Behavior (TPB) to elucidate the factors that influenced retail investors to invest

in the Indian pharmaceutical sector during the COVID-19 pandemic.

Shifting the focus to the extension of the TPB framework, while some previously discussed studies have included constructs like risk aversion and socio-economic factors in TPB, they often overlooked behavior toward market fundamentals. Among the prominent studies conducted independent of TPB, Khan et al. (2015) demonstrated the significant influence of market factors on investment decisions, whereas Bennet and Selvam (2013) and Hossain and Nasrin (2012) emphasized the importance of stock-specific influences on investor sentiment. Despite evidence supporting the positive role of market fundamentals in shaping investment behavior, there has been no explicit integration of behavior toward market fundamentals into the TPB model. Thus, addressing this gap, the present study incorporates behavior toward market fundamentals as a mediating construct within the TPB framework. The amalgamation of behavior toward market fundamentals into the TPB framework allows one to examine the extent to which this mediating variable influences the relationship between the core components of the TPB and the ultimate investment decisions made by investors. In undertaking this pursuit, the study endeavors to offer a profound comprehension of the diverse influences on investors' decision-making behavior.

1.2. Application of TPB in the context of the present study

The foundational Theory of Planned Behavior by Ajzen (1991) will serve as the principal theoretical framework guiding the present research. The TPB is a psychological theory that explains the determinants shaping an individual's behavior (Ajzen, 1985; Ajzen & Fishbein, 1980). It has emerged as a valuable framework for predicting investment behaviors, focusing on perspectives, subjective conventions, and PBC (Kapoor & Prosad, 2017). Ajzen (1991) originally proposed the Theory of Planned Behavior (TPB), which emphasizes that behavioral intention is a strong predictor and immediate antecedent of future behavior, a concept supported by empirical studies. The Key constructs in the present study are investors' decision-making behavior, attitude toward pharma investments, subjective norms, PBC, and behavior toward market fundamentals.

Ajzen (1991) aptly defined behavioral intention as a measure of the motivational forces that underpin human conduct, encapsulating the degree of exertion an individual is prepared to commit to enacting a desired comportment. This belief is further fortified by numerous empirical studies, including landmark investigations by Armitage and Conner (1999) and Sutton (1998). Considering its theoretical significance, behavioral intention and decision-making behavior serve as primary dependent variables in experimental research undergirded by the TPB. A surfeit of research has indicated the indubitable influence of intention in directing behavior, with a plethora of studies, covering those performed by Downs and Hausenblas (2005) and Kautonen et al. (2013) unanimously corroborating this notion. In the context of stock market investing, investors' decision-making behavior represents the guiding force that propels the investor to make a particular investment decision. In the current setting, the emphasis lies on analyzing investors' decision-making behavior specifically related to investment in the Indian pharmaceutical industry amidst the challenging circumstances of COVID-19.

Further, attitude a core component of the TPB framework, shapes investment decisions by influencing behavioral intentions (Ajzen & Fishbein, 1969). Attitude reflects individuals' inclinations toward a particular behavior, such as investing in the pharmaceutical sector during COVID-19. Positive attitudes often lead to stronger behavioral inclinations, while negative attitudes can deter individuals from engaging in that behavior (Eagly & Chaiken, 1993; Ajzen, 2001).

Taking a dig at subjective norms, subjective norms denote people's opinions about the social constraints and expectations associated with certain behaviors, shaped by important people in their lives, including friends, family, or coworkers (Ham et al., 2015). These norms encompass both injunctive and descriptive aspects (Rhodes & Courneya, 2003). In the realm of investment, individuals often look to their social circles for guidance and validation, especially when faced with uncertainty or lack of expertise (Van Campenhout, 2015; Kuchler & Stroebel, 2021; Brown et al., 2004). This reliance on social cues can shape investment decisions, as people seek to conform to perceived norms and expectations within their communi-

ties. Moving to the next key element of TPB, which is PBC, as per Ajzen's (1991) TPB model, PBC is a person's evaluation of the degree of comfort or challenge involved in executing an action. It is affected by elements such as knowledge, resources, and obstacles (Terry & O'Leary, 1995). Strong PBC correlates with consistent engagement in behavior, impacting behavioral intentions, especially in financial decision-making (Armitage & Conner, 1999; Fishbein & Ajzen, 1977). In this study, PBC relates to individuals' belief in their capability to engage in pharmaceutical investments amidst COVID-19, encompassing their sense of control and self-efficacy. Transitioning to the novel construct behavior towards market fundamentals, market fundamentals refer to the factors that determine the intrinsic value of an investment, such as a stock or a bond (Teweles & Bradley, 1998). The financial success of the business, market trends, economic situations, and regulatory framework contribute to market fundamentals. Studies by Khan et al. (2015), Patil and Bagodi (2021), and Bashir et al. (2013) highlight the significant influence of market fundamentals on investor behavior, encompassing factors like past performance, financial statements, and economic indicators. In the current scenario, the behavior towards market fundamentals plays a mediating role, elucidating the mechanisms through which psychological and market-related factors interact, and thus providing a holistic perspective. This may turn out to be beneficial in strengthening the accuracy of investment models and increasing the effectiveness of investment strategies.

As the study aims to explore the factors that have driven retail investors to invest into the Indian Pharma sector during COVID-19, particularly applying the extended version of TPB, the following hypotheses are proposed based on the insights gained from the reviewed studies:

- H1: Attitude toward pharma investments positively influences individual investors' behavior in deciding to invest in the pharmaceutical industry during COVID-19.*
- H2: Subjective norms positively impact individual investors' behavior in deciding to invest in the pharmaceutical industry during COVID-19.*

- H3: PBC positively influences investors' decision-making behavior during COVID-19.
- H4: Behavior toward market fundamentals positively impacts individual investors' behavior in deciding to invest in the pharmaceutical industry during COVID-19.
- H5: Attitude toward pharma investments positively impacts behavior toward market fundamentals.
- H6: Subjective norms positively influence behavior toward market fundamentals.
- H7: PBC positively influences behavior toward market fundamentals.
- H8: Attitude toward pharma investments positively influences decision-making behavior, mediated by behavior towards market fundamentals.
- H9: Subjective norms positively influence decision-making behavior, mediated by behavior toward market fundamentals.
- H10: PBC positively influences decision-making behavior, mediated by behavior toward market fundamentals.

2. METHODS

The methodology applied in this study comprises four key components: data collection, measurements, investors' demographic profile, and the method used for data analysis.

2.1. Data collection

This investigation targeted retail investors from the South Canara region of Karnataka, India who invested in Indian Pharmaceutical companies' stocks during the COVID-19 pandemic. The survey was conducted in the month of March-April 2024. The snowball sampling technique was employed, starting with distributing questionnaires to experienced investors in the researchers' social network, who then referred additional participants. An e-survey approach yielded 452 respondents,

with 305 participants (67.47%) having invested in the Indian pharmaceutical companies' stocks during COVID-19.

2.2. Measurements

The study incorporates five underlying variables: attitude towards pharma investments, subjective norm, PBC, behavior towards market fundamentals, and investors' decision-making behavior. The survey questionnaire was meticulously crafted to align with the study's objectives, encompassing inquiries regarding demographic information and the measurement of study variables. The respondents' agreement and disagreement levels were recorded using a Likert scale with a range from 1 to 5, where 1 represented vehement disagreement, and 5 signified robust agreement.

2.3. Investors' demographic profile

Table 1 represents the investors' demographic characteristics. The findings reveal that 51% of the investors were men, while 49% were women. 50% of the respondents were identified in the age band of 20 to 30 years. Additionally, around 61% of the respondents held a bachelor's degree and 48% reported an annual income between rupees 500,000 to 750,000.

Table 1. Investors' demographic profile

Variables	N	(%)
Gender		
Male	157	51
Female	148	49
Age		
20-30 Years	153	50
31-40 Years	84	28
41-50 Years	37	12
>50 Years	31	10
Marital Status		
Married	161	53
Unmarried	144	47
Education		
Diploma	42	14
Bachelors Degree	186	61
Post Graduate	77	25
Annual Income (In Rupees)		
<250000	29	9
250000-500000	43	14
500000-750000	146	48
>750000	87	29

2.4. Method used for data analysis

For data analysis, the study used SmartPLS version 4 software to compute Partial Least Squares Structural Equation Modelling (PLS-SEM). PLS-SEM is ideal for models with complex relationships among variables, small sample sizes, and non-normally distributed data (Henseler et al., 2015; Hair et al., 2019). It is recognized for its reliability and statistical power (Sarstedt et al., 2020). In line with Hair et al.'s (2017) two-phase procedure, the measurement framework is examined for reliability and validity in the first phase, and the structural framework is evaluated for overall fit to the data and hypotheses significance in the subsequent phase.

3. RESULTS

This segment details the study's primary findings, concentrating on the results of construct and discriminant validity assessments and the outcomes of the hypotheses testing.

3.1. Results of the measurement framework

The measurement framework represents how the indicator variables are linked to the underlying constructs. The evaluation of the measurement

framework entails scrutinizing convergent and discriminant validity. Convergent validity is established by analyzing factor loadings, composite reliability, and Average Variance Extracted (AVE). Table 2 reveals that all factor loadings exceed the minimum limit of 0.70 (Hair et al., 2017). Further, a composite reliability score of at least 0.70 is generally considered desirable (Ringle et al., 2020). Consequently, all the latent constructs possess composite reliability (See Table 2). For the AVE, the cut-off value is 0.50. Referring to the data presented in Table 2, the AVE score comfortably aligns with the specified limit. The overall outcomes indicate that convergent validity is established.

The Heterotrait Monotrait (HTMT) Ratio and Fornell-Larcker procedures are the generally used methods for assessing the discriminant validity of the constructs in a measurement framework. A conservative cutoff value for the HTMT ratio equal to or lower than 0.90 is generally accepted (Henseler et al., 2015). The HTMT scores (see Table 3) are all below the conservative threshold of 0.90, indicating the establishment of discriminant validity. Further, the Fornell and Larcker criterion also evaluates discriminant validity. It entails juxtaposing the square root of the average variance extracted (AVE) for each construct with its correlations vis-a-vis all other constructs. Should the

Table 2. Results of construct validity

Constructs	Items	Loadings	Composite Reliability	AVE
Attitude Toward Pharma Investments (ATD)	ATD1	0.778	0.869	0.649
	ATD2	0.817		
	ATD3	0.804		
	ATD4	0.830		
	ATD5	0.798		
Behavior Toward Market Fundamentals (MF)	MF1	0.775	0.868	0.651
	MF2	0.832		
	MF3	0.843		
	MF4	0.776		
	MF5	0.804		
Subjective Norm (SN)	SN1	0.713	0.776	0.592
	SN2	0.833		
	SN3	0.803		
	SN4	0.721		
Perceived Behavioural Control (PBC)	PBC1	0.849	0.861	0.704
	PBC2	0.868		
	PBC3	0.825		
	PBC4	0.814		
Investment Decision-Making Behaviour (IDMB)	IDMB1	0.779	0.704	0.628
	IDMB2	0.829		
	IDMB3	0.767		

square root of the AVE exceed the correlations of a given construct with others, it signifies the presence of discriminant validity for that construct (Fornell & Larcker, 1981). Table 4 showcases the analysis findings, indicating that all square roots of AVE (highlighted values) surpass the correlation coefficients among the constructs. This result affirms that the measurement framework has achieved discriminant validity according to the Fornell and Larcker criterion.

Table 3. HTMT results

	ATD	IDMB	MF	PBC	SN
ATD					
IDMB	0.652				
MF	0.578	0.625			
PBC	0.532	0.786	0.463		
SN	0.314	0.379	0.266	0.28	

Table 4. Fornell and Larcker results

	ATD	IDMB	MF	PBC	SN
ATD	0.806				
IDMB	0.510	0.792			
MF	0.507	0.490	0.807		
PBC	0.463	0.614	0.403	0.839	
SN	0.256	0.280	0.220	0.228	0.770

3.2. Structural framework results

The structural framework examines the connections between the constructs featured in the study, revealing their interconnectedness and potential influences on each other. It is assessed using t-statistics, and standard beta (β). As shown in Figure 1, the structural framework is implemented to examine the hypotheses developed for the investigation. The statistics of the investigation are displayed in Table 5.

The results of Table 5 reveal that six out of the seven hypotheses find support in the data. Individual investors' decisions to invest in the pharmaceutical business during COVID-19 are bolstered by their attitudes towards such investments (H1: $\beta = 0.267$, t-value = 5.243). Subjective norm exerts an optimistic stimulus on the investment decisions of individual investors, favoring the pharmaceutical industry during COVID-19 (H2: $\beta = 0.105$, t = 2.327). PBC significantly influences retail investors' decisions in opting to invest in the pharmaceutical industry during COVID-19 (H3: $\beta = 0.467$, t = 10.526). Behavior toward market fundamentals positively impacts investors' decision in selecting

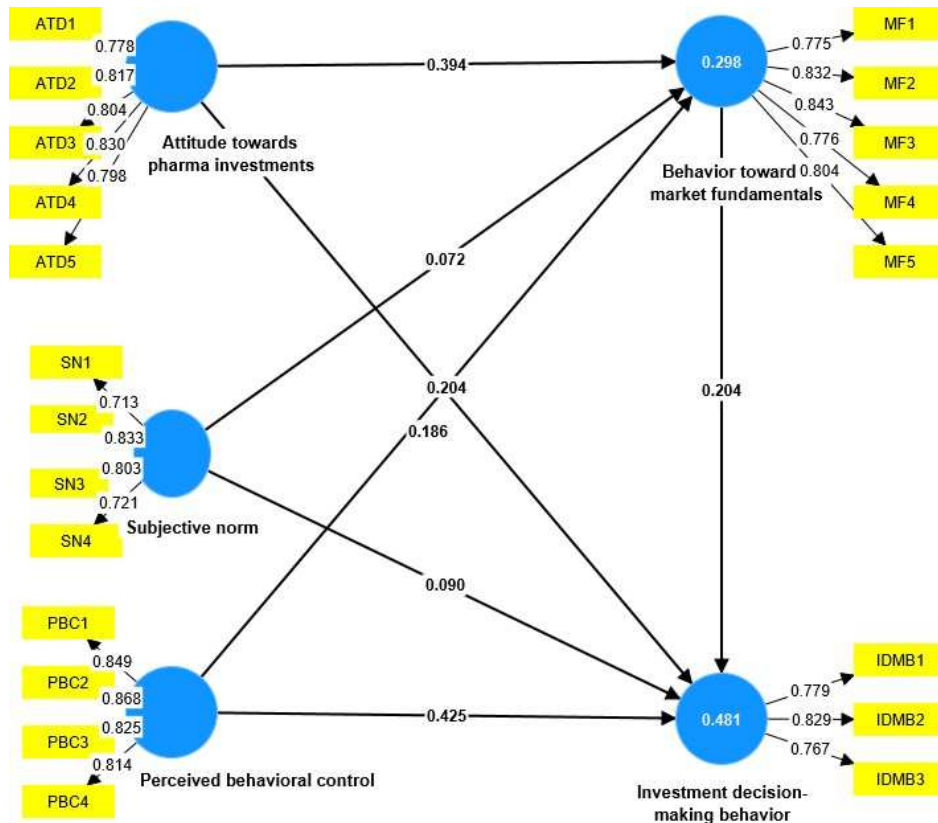


Figure 1. Structural model

Table 5. Hypotheses testing results

Hypotheses	Relationship	Beta (β)	Standard Deviation	t-value	Decision
H1	ATD \rightarrow IDMB	0.267	0.051	5.243**	Supported
H2	SN \rightarrow IDMB	0.105	0.045	2.327**	Supported
H3	PBC \rightarrow IDMB	0.467	0.044	10.526**	Supported
H4	MF \rightarrow IDMB	0.204	0.051	3.998**	Supported
H5	ATD \rightarrow MF	0.394	0.069	5.699**	Supported
H6	SN \rightarrow MF	0.072	0.059	1.232	Rejected
H7	PBC \rightarrow MF	0.204	0.064	3.207**	Supported

Note: ** Significant at p-value < 0.05.

investments in the pharmaceutical industry during COVID-19 (H4: $\beta = 0.204$, $t = 3.998$). Attitude toward pharma investments positively influences behavior toward market fundamentals (H5: $\beta = 0.394$, t-value = 5.699). Moreover, perceived behavior control positively influences behavior toward market fundamentals (H7: $\beta = 0.204$, t-value = 3.207). However, the data did not support H6, which posits that subjective norm positively impacts behavior towards market fundamentals, as the impact was statistically insignificant ($\beta = 0.072$, t-value = 1.232).

3.3. Mediation analysis results

The study also examined the impact of attitude towards pharmaceutical investments, subjective norms, and PBC on decision-making behavior through the intermediary factor of behavior towards market fundamentals. As shown in Table 6, the findings suggest support for two indirect effects. Firstly, attitudes toward pharmaceutical investments positively influence investors' decision-making, partially mediated by behavior toward market fundamentals (H8). Secondly, the perceived behavioral control bears an encouraging stimulus on investors' decisions in selecting investments in the pharmaceutical industry during COVID-19, which is partially channeled through their behavior toward market fundamentals (H10). However, H9, which proposes that subjective norms positively impact investors' decisions

to invest in the pharmaceutical industry during COVID-19, is mediated by the behavior toward market fundamentals and is not supported due to insufficient evidence. Partial mediation is evident in H8 and H10, indicating that while behavior toward market fundamentals explains part of the relationship between the independent variables and the dependent variable, there are also direct effects between attitude, PBC, and investment behavior.

4. DISCUSSION

The research findings have affirmed the relevance and effectiveness of the TPB in comprehending investor choices within the pharmaceutical sector. Attitudes toward pharmaceutical investments, subjective norms, PBC, and behavior toward market fundamentals were identified as significant influencers of investor decisions. Positive attitudes among investors towards pharmaceutical investments were observed to directly and positively affect their decision-making behavior. The finding aligns with the previous research of Ali et al. (2014) and Yulandreano and Rita (2023) who reached a similar conclusion. Additionally, the present study showcased that attitude indirectly influenced decision-making through the partial mediation of behavior toward market fundamentals. This outcome underscores that investors not only held favorable views on pharmaceutical investments during COVID-19 but

Table 6. Results of mediation analysis

Relationship	Total Effects		Direct Effects		Hypotheses	Relationship through Mediator	Indirect Effects		Decision
	Beta	t-value	Beta (β)	t-value			Beta (β)	t-value	
ATD \rightarrow IDMB	0.267	5.243	0.186	3.500	H8	ATD \rightarrow MF \rightarrow IDMB	0.080	3.107**	Supported
SN \rightarrow IDMB	0.105	2.327	0.090	2.013	H9	SN \rightarrow MF \rightarrow IDMB	0.015	1.146	Rejected
PBC \rightarrow IDMB	0.467	10.526	0.425	9.842	H10	PBC \rightarrow MF \rightarrow IDMB	0.042	2.469**	Supported

Note: ** Significant at p-value < 0.05.

also factored in market dynamics when making their decisions. The favorable views during the pandemic are attributed to the essential nature of the pharmaceutical sector, increased demand for healthcare products, innovation and research efforts, government support, and long-term growth potential.

Regarding subjective norms, social influences from sources such as stockbrokers, friends, and family were found to impact investors' decisions in the pharmaceutical sector directly. This outcome aligns with the study by Yee et al. (2022), who identified a positive relationship between subjective norms and investment decisions. The significant influence of subjective norms can be credited to the collectivist nature of Indian society, where individuals often rely on their social networks for guidance and validation. In times of heightened uncertainty, such as during COVID-19, this reliance is likely amplified, with investors turning to trusted social circles for reassurance and advice. However, the indirect path through behavior toward market fundamentals was found to be not significant. This suggests that while social influences are strong enough to shape investment decisions directly, they do not significantly impact the investors' evaluations of market fundamentals. Consequently, community interaction plays a lesser role in shaping how investors assess market fundamentals. This indicates a dichotomy where social validation drives the decision-making process, but market evaluations are independently formed by the investors based on their own analysis and understanding of financial and economic factors. This finding underscores the importance of enhancing financial literacy through educational initiatives and promoting informed decision-making based on market fundamentals rather than solely relying on social influences. This would enable them to navigate the complexities of investment decisions effectively, even in times of uncertainty, such as COVID-19.

Further, PBC was observed to have a direct and favorable effect on investment decisions. This key finding aligns with the research findings of (Phan & Zhou, 2014). Moreover, the market fundamentals partially mediated the influence of PBC on investment decisions. This discovery highlights

the integrated nature of decision-making processes. Investors have exhibited confidence and asserted control over their pharmaceutical investments. Furthermore, those confident in their abilities viewed market fundamentals as instrumental in their investment approach.

Policymakers, governmental bodies, and industry stakeholders can leverage these insights to craft targeted interventions. Initiatives should focus on introducing policies and schemes that support individual investors, such as tax relief and financing opportunities, thereby fostering a conducive environment for pharmaceutical investments. Implementing policy reforms to streamline regulations and reduce bureaucratic hurdles can attract more investment. This includes simplifying approval processes for setting up manufacturing units, clinical trials, and drug registrations. Investing in infrastructure such as research and development facilities, testing laboratories, and manufacturing plants can enhance the capabilities of the pharmaceutical sector and make it more attractive to investors. Additionally, raising awareness about investment opportunities in the pharmaceutical sector and ensuring the dissemination of trustworthy information can enhance investor confidence and trust. Tailoring interventions to align with the collectivistic nature of many developing countries, such as setting collective goals for pharmaceutical investments, can further bolster investor willingness to engage in such ventures. Efforts to enhance investors' perceived control over their decisions through tools, resources, and support networks are also recommended. By addressing these implications, sustainable growth and development within the pharmaceutical sector could be stimulated while meeting societal needs and priorities.

Further research opportunities exist to enhance the understanding of investment decision-making. Expanding the study's scope to multiple countries would enable comparative analysis, while qualitative methods like interviews could reveal additional insights. Exploring alternative mediators such as risk perception or trust warrants investigation for new perspectives. Additionally, broadening research beyond the pharmaceutical sector allows for sectoral comparisons.

CONCLUSION

This study aimed to examine key factors affecting retail investors' decision-making during COVID-19 in the Indian pharmaceutical sector. During the COVID-19 pandemic, the Indian pharmaceutical industry captured significant investor interest, drawing substantial investment. It was the retail investors who actively participated in the trading activities during the pandemic in the Indian stock market. This study intended to explore the factors that have impacted retail investors' decision-making behavior to invest in the Indian pharmaceutical sector during COVID-19 using an extended version of TPB. Along with the TPB's core elements, behavior toward market fundamentals was introduced as a mediating variable in this analysis. The outcome of this study demonstrated that TPB's primary elements, along with the novel construct, the behavior toward market fundamentals, directly influenced investor decisions. The behavior towards market fundamentals demonstrated partial mediation between attitude and investment decision and perceived behavioral control and investment decision. However, there was no mediation effect of market fundamentals was found between subjective norms and the decision-making approach. This highlights the nuanced nature of investor decision-making, where social influences may not necessarily align with evaluations of market fundamentals. The research discoveries hold significant implications and insights for policymakers, government bodies, and industry stakeholders. Targeted educational initiatives to enhance financial literacy are vital in enabling investors to make informed decisions based on market fundamentals. Furthermore, policy recommendations should focus on supporting industry development, raising awareness about investment opportunities, and ensuring the dissemination of trustworthy information. In summary, by recognizing the relationship between TPB's primary elements and behavior toward market fundamentals, policymakers and industry stakeholders can devise effective strategies to engage with investors and foster a conducive environment for investment in the Indian pharmaceutical sector.

AUTHOR CONTRIBUTIONS

Conceptualization: Sonia Lobo.
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Formal analysis: Sonia Lobo.
Investigation: Sonia Lobo.
Methodology: Sonia Lobo.
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