WHAT DRIVES RETAIL INVESTORS' INVESTMENT DECISIONS? EVIDENCE FROM NO MOBILE PHONE PHOBIA (NOMOPHOBIA) AND INVESTOR FEAR OF MISSING OUT (I – FOMO)

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ABSTRACT

The main objective of the study is to investigate the impact of No-Mobile-Phobia (Nomophobia) on retail investors' investment decisions. The relationship was further analysed by incorporating the role of Investor related Fear-of-Missing-Out (I-FoMO) which is different from traditional FOMO in Indian Financial Markets. The information asymmtary as generated by absence of mobile phone coupled with fear of missing important information in financial markets used for extensive investment decisions was determined by conducting survey method. A total of 265 retail investors were used for analysing the data and to explore this new phenomenon by Partial Least Square Structural Equational Modelling (PLS – SEM) in SmartPLS version 3.3.2. Further, Importance Performance Map Analysis (IMPA) was applied to investigate the critical factors for determining investor behaviour. The results revealed that there is a tendency to exhibit overtrading by retail investors in the state of fear of no investment information and lack of convenience due to news in smartphones. The similar phenomenon was experienced where Nomophobia lead extensively to I-FoMO which mediates the relationship of No-mobiles and investor behaviour. The study provides a new dimension to the theoretical frameworks in behavioural finance where media studies and information dissemination through smartphones to understand investor behaviour. The study not only validates NMP-Questionnaire in media studies but also investigates new scale of I-FoMOin behavioural finance to understand the aspects of fear and anxiety among human behaviour in Information Systems (IS) Research.

Keywords: Nomophobia, I-FoMo, Fear of Missing Out, SmartPLS, Information Systems, PLS-SEM.

INTRODUCTION

Investment is one of the most important decisions that consumers make in their lives, as it involves risk and can have life-long consequences for their wealth management (Raghubir and Das, 2010; He et al., 2008).The investment decisions attain much more significance with the use of modern technology and the rapidly changing information in the stock markets. The use of mobile phone has brought radical changes in the investment decisions by the Indian population, since the initiation of the liberalization policies in India in the 1990s. With the explosive growth in the availability and affordability of the mobile phones in societies, even in the poor and most remote communities, the investors are using the digital communication revolution in making their investment decisions (Shana et al., 2019). The mobile phone has become the primary access point to the information and for social media interaction, with nearly five billion current active users in the global market, which is many times the number of active internet-connected personal computers (Shana et al., 2019). However, two negative phenomena of no mobile phone phobia

(Nomophobia) and the fear of missing out (FOMO) on social media have emerged with the modern technology (Gezgin et al., 2019), which present a high risk especially for the investors, who are dependent on the technology for making their investment decisions.

The Nomophobia has created a state of panic in the minds of the investors about staying away from their smartphones, and creating a sense of anxiety for being out of the network range or out of battery power (Gezgin et al., 2019). This has resulted in several behavioural pattern among Nomophobic individuals (Durak, 2018). The Nomophobic individuals develop the habit of checking their mobile phones frequently, sleeping with their mobile phone besides their pillow, and always carrying an extra battery power bank with them (Durak, 2018). These individuals spend lots of time on social media to reduce their anxiety in the FOMO on important information (Franchina et al., 2018; Przybylski et al., 2013; VandenAbeeleand and Van Rooij, 2016). Therefore, Nomophobia individuals follow up the messages on social media in the mobile applications frequently and obtain updates about developments in the country and social environment.

The research literature in this area has only focused on the prevalence of Nomophobia and FOMO among the younger generation, and the common disorders due to the excessive use of smartphones and social media (Ak and Yıldırım, 2018; Gezgin and Çakır, 2016; Gezgin et al., 2017; Gezgin, 2017; Gökler et al., 2016). However, there have not been any studies to our knowledge that focus on understanding the behavioural patterns of Nomophobic individuals.

The mobile phones may have increased the access of the investors to the real-time investment information; however, it has vastly impacted their behavioural patterns in making investment decisions (Brown et al., 2015). The investors develop I-FoMO, the fear of missing out on investment information, if they don't remain continuously connected (Saft, 2015; Wadhwa, 2017). The stochastic information on social media, the lucrative looking advertisements, and I-FoMO on investment information interact together to affect the investors' investment decisions. Past quantitative studies found that investors' investment behaviour affects capital markets (Miller and Skinner, 2015), market information (Bushee et al., 2010), trading behavior (Engelberg and Parsons, 2011), cash flow (Drake et al., 2014), and market pricing efficiency (Twedt, 2016). However, there are no combined qualitative and quantitative studies that study the impact of Nomophobia and I-FoMO on investors' investment decisions. In order to investigate whether there is an impact of Nomophobia on retail investors' decisions by incorporating the mediating effects of I-FoMO, the present study offers a novel approach in interdisciplinary studies of behavioural finance, marketing and media studies. The major objectives of the study are: (a) to investigate the impact of Nomophobia on retail investors' decision making in financial market and (b) to analyse the mediating effects of I-FoMO between the relationship of Nomophobia and Investor behaviour in Indian Financial markets.

The rest of the paper is organized as follows. Section two provides theoretical framework and conceptual model under the head of Literature Review. Section three presents research methods and techniques applied to investigate the phenomenon. Section four presents data analysis and results of the study. Section five explains the theoretical and managerial implications followed by limitations of the study and the directions for future research.

LITERATURE REVIEW

Theoretical Framework

In behavioural finance, there are many biases which investors tends to exhibit while incorporating their investment decisions in any financial market. Human beings are generally called as social animals and thus possess an inherent bias commonly followed in financial market is called as Herd Behaviour. In any capital market, investors exhibit behaviour where they follow groups to avoid any predatory activities, which might land them up in financial loss (Baddeley, 2010; Kumar and Goyal, 2015; Spyrou, 2013). In this regard, the most common tool used is a mobile (smart) phone to gather information either through social media pages, brokers, investment advisors' tips, and many other platforms to keep them updated. The continued usage of smartphone for generating

information is useful also, but making investors addictive to compulsory checking habits too (Chiu, 2014; Lee, 2014). Thus, in case the mobile phone is lost or in any working day and investor does not possess this vital organ for taking strong and bold investment decisions, the investors might represent a distressed and depressed behaviour and can lead for higher anxiety levels full of fear and irrational decisions. This phenomenon was addressed in detail by 20-item Nomophobia questionnaire (NMP-Q) by Yildirim and Correia (2015). The present study is adopting this 20-item NMP-Q to investigate the fact that how much it has an impact on investors' decision making and contributing to herd behaviour in financial market. The scenario of Nomophobia corroborates the findings of Compensatory Internet Use Theory (Kardefelt-Winther, 2014), where people go for online transactions to alleviate negative feelings and adverse life situations caused by an addition, that is, no-mobile-phones and investment decisions.

The another aspect in the present study is Investor Fear of Missing Out (I-FoMO), where investors are largely effected by the information disseminated by mobile devise applications on non-professional investors' decisions (Clor-Pronell et al., 2019). The I-FoMO scale is different from the traditional FOMO scale that exists in social media setting as proposed by Przybylski et al. (2013). The scale developed in I-FoMO states that mobile phones have a direct relationship with the investment decisions of retail investors and varies under different zones of I-FoMO. The presence of I-FoMO can also trigger overtrading in terms of speculative activities as to satisfy greed or to reduce the future grief of losing vital investment, the investors tends to exhibit the biases of "Hot Hand" fallacy and Gamblers' fallacy succumbing to Wobegon Lake effect in financial market (Maciejewski and Lesznik, 2020). Thus, the theoretical foundations of the present study is based on Nomophobia (Yildirim and Correia, 2015) leading to diverse investors decisions (Livanas, 2011; Maciejewski and Lesznik, 2020; Shiva and Singh, 2019) under the scenario of Investor FoMO (I-FoMO) scale as developed by Clor-Pronell et al., 2019.

The role of Investor FoMO as a mediator is thoroughly investigated in this study to give new insights in the existing literature especially in a developing economy like India comprised of second largest population of the world.

Conceptual Model

The mobile phones have become a part of life for not only the younger generations, but also for people of all age groups, who are now dependent on the mobile phones for their daily needs. There are smartphone applications for almost everything to sustain daily life through communication, recreation, entertainment, education, and social media, and for catching up with the latest developments in today's world (Alfawareh and Jusoh, 2014). With an increased dependence on the mobile phones, many negative impacts have also been noticed due to the excessive use of mobile phones, which include reduced concentration and focus (Alt, 2015), increased loneliness and depression (Casey, 2012; Gezgin et al., 2018), and sleep disorders (Demirci et al., 2015; Gezgin, 2018; Hughes and Burke, 2018; Lemola et al., 2015). This has resulted in two major behavioural issues among the users of mobile phone, Nomophobia and FOMO.

Nomophobia and Investor Behaviour

The Nomophobia is the anxiety syndrome related to the non-availability of the mobile phone (King et al., 2014). People get panic attacks in the fear of staying away from their mobile phones, and in getting out of the network coverage area or out of battery power. These panic attacks can lead to complex behavioural patterns seen in the Nomophobic individuals, including frequently checking their mobile phones, not paying enough attention to the present situation around them, and depression in the long run. Several studies have been conducted in the past to understand these behavioural patterns in the Nomophobic individuals, especially focusing on the younger generations' performance in studies (Burucuoglu, 2017; Durak, 2018; Erdem et al., 2016; Gezgin, 2017; Gezgin and Çakır, 2016; Gezgin et al., 2018; Gezgin et al., 2017; Sırakaya, 2018; Yıldırım et al., 2016). Thus, similar phenomenon can be investigated for Nomophobia on investor behaviour caused by lack of information in financial markets (Saft, 2015; Wadhwa, 2017 especially in the importance of media's role for information dissemination in capital markets causing information asymmetry (Bushee et al.,

2010; Clor-Pronell et al., 2019; Engelberg and Parsons, 2011; Miller and Skinner, 2015). On these premise, we hypothesize that:

H1: Nomophobia influences investment decisions of the retail investors.

I-FoMO and Investor Behaviour

The FOMO syndrome is related to the fear and anxiety of missing out on important information and developments through not being connected to the social media all the time (Przybylski et al., 2013). People with FOMO syndrome also suffer from panic attacks, as they check their mobile phones frequently to continuously update themselves with the latest developments in the social environment (for example, family, friends, and places around them) (Franchina et al., 2018; Przybylski et al., 2013; VandenAbeeleand and Van Rooij, 2016). Therefore, the behavioural patterns of FOMO individuals are very similar to the Nomophobic individuals, and both suffer from mood swings, and lower levels of satisfaction with life (Przybylski et al., 2013). Studies conducted on FOMO individuals also found a strong correlation between excessive use of social media and high levels of stress, and fear of loneliness (Beyens et al., 2016).

The retail investors in India are also making their investment decisions through mobile phone applications. A recent survey of investors indicates that the younger investors are making almost all their investment decisions through mobile phone applications (Shana et al., 2019). This is because of the availability of large number of investment applications on mobile devices and easy access to the real-time market information (Brown et al., 2015). The dependence of retail investors on mobile phones for making their investment decisions has also resulted in more retail investors having Nomophobic and FOMO syndrome (Saft 2015; Wadhwa 2017), and these individuals find it difficult to ignore interruptions in investment information (Basoglu et al., 2009). In the past literature, the FOMO related to the investment information has been given a distinct identity (I-FoMO), to make it different from the traditional FOMO related to the social information (Shana et al., 2019). Past studies have found that I-FoMO is more effective in retail investors decision making if received in smaller pieces with breaks in between (Kupor and Tormala, 2015). The length and delivery mechanism of the investment information (email and text alerts) release also has an impact on I-FoMO retail investors (Blankespoor et al., 2018). On these premises, we posit next two hypotheses:

H2: Nomophobia influences the I-FoMO behaviour of the retail investors, and
H3: I-FoMO influences the investment decisions of retail investors.

Mediating Role of I-FoMO

The literature on the behaviour of Nomophobia and FOMO individuals has been building rapidly (Shana et al., 2019). The majority of the studies are based on the quantitative design models, where the focus is to identify the variables leading to the symptoms of Nomophobia and FOMO among individual investors (Miller and Skinner, 2015). FOMO has been investigated in many studies where mediation effects are documented in many studies (Abel et al., 2016; Alt, 2015; Beyens et al., 2016; Buglass et al., 2017; Oberst et al., 2017; Przylylski et al., 2013).

However, there are no qualitative studies to our knowledge, which focus on how the behavioural patterns among Nomophobia and I-FoMO individuals impact the investment decisions of retail investors (Basoglu et al., 2009; Clor-proell et al., 2019; Schuur, 2017). Our study fills that gap using a conceptual model that integrates qualitative and quantitative data. As more and more retail investors fall into this category of Nomophobia and I-FoMO individuals, it is important to understand how their investment information, obtained through the use of mobile phones, impacts their investment decisions. The retail investors' investment behaviour further affects capital markets, market information asymmetry, trading behavior, cash flow, and market pricing efficiency (Shana et al., 2019). The results of our study fill the gap in literature through an understanding of the individual retail investors' behaviour, who have been exposed to these two negative concepts (Nomophobia and FOMO), using an interpretation of the quantitative and qualitative findings. Thus, we focus on seeking an answer to the hypotheseswhether Nomophobia and/or FOMO behaviour positively influences the investment decisions of the retail investors, and if FOMO mediates the relationship

between the Nomophobia and investment decisions by the retail investors. Thus we propose another hypothesis:

H4: I-FoMO mediates the relationship between the Nomophobia and investment decisions by the retail investors.

The study would be incomplete with the control variables and it for this reason, the literature review suggested the under the Investor FoMO environment on investor decisions in a financial market, vital factors like age, gender and education of investors play a pivotal role in both investment decisions and I-FoMO (Alt and Boniel-Nissim, 2018; Przybylski et al., 2013). Thus, by controlling the effects of age, gender and education of retail investors, the impact of Nomophobia and I-FoMO on investors' decisions were investigated and the proposed conceptual model was shown in Figure 1.

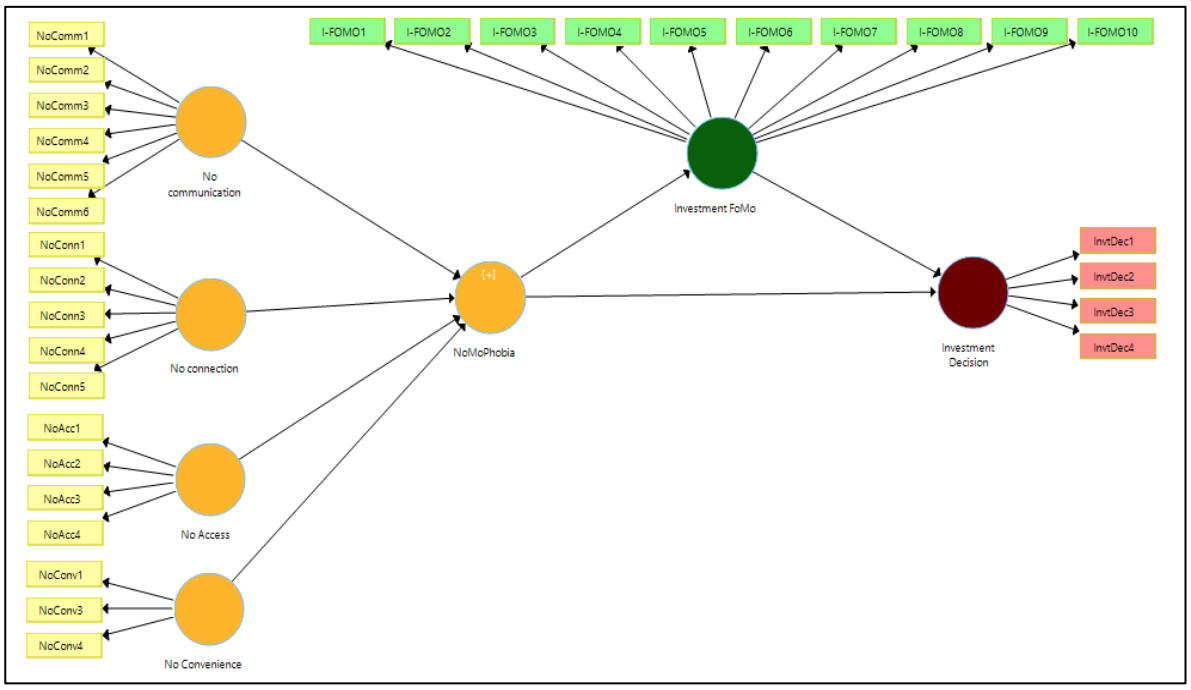

Figure1: Proposed Conceptual Model

RESEARCH METHODOLOGY

The present study was conducted on the major financial markets located in Mumbai and Delhi. Further data was collected from other major cities of India to represent the behaviour of Indian investor by an online questionnaire due to the lockdown imposed during the months of March to May 2020. Online survey was conducted by applying non-probability purposive sampling method to collect data through a questionnaire as mentioned in Appendix – 1. The questionnaire was adapted from the 20 item explored by Yildirim and Correia(2015) in order to validate the constructs of Nomophobia, and from Clor-Proell et al.(2019),Przybylski et al.(2013, p.1841) for Investment related Fear of Missing Out 10 item construct (I-FOMO). Finally, the construct of investment decision was obtained from the studies of Livanas (2011), Shiva and Singh (2019), and Maciejewski and Lesznik (2020). All items were measured on a 7-point scale ranging from 1 – 7, representing strongly disagree to strongly agree.

In total, 265 correct responses were received and used for final analysis by Partial Least Square Structural Equational Modelling (PLS-SEM) in SmartPLS Software 3.3.2 version. PLS – SEM is considered as a preferred method in this analysis since the conceptual model contains the construct of Nomophobia, which is a second order construct to be assessed by formative modelling. Further, where the model consists of reflective and formative modelling, then PLS-SEM in SmartPLS offers higher flexibility in such complex models and thus is widely accepted multivariate analytical method (Hair et al., 2017; Hair et al., 2019; Nitzl et al., 2016; Richter et a., 2016; Rigdon, 2016; Ringle et al., 2014; Ringle et al. 2015; Hair et al., 2020). We have applied the PLS-SEM approach to study the impacts of Nomophobia and I-FoMO on investors' behaviour towards

their investment decisions. The sample size was determined by applying G*Power software 3.1.9.7 version in order to investigate the minimum required sample size (Faul et al., 2007; 2009). The actual power of 0.95 was duly obtained by a minimum sample size of 226 respondents, whereas the study used a sample size of 265 which satisfies the appropriate sample size requirements. The minimum sample size estimations are reported in Figure 2.

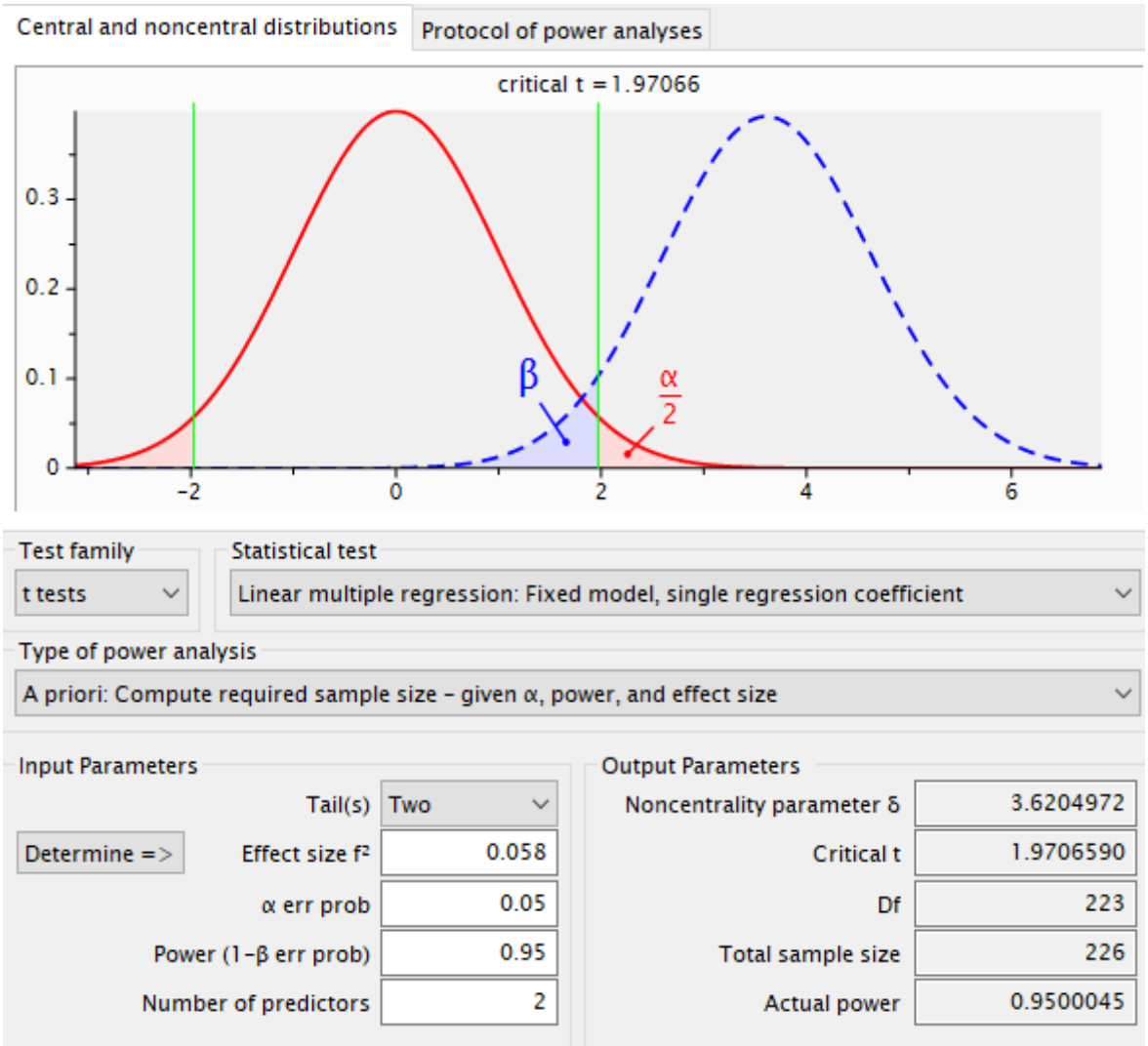

Figure 2: G*Power Analysis (Faul et al. 2007; 2009)
Source: Authors' Calculations

Finally, Harman' single factor analysis was applied to investigate whether any Common Method Bias exist in the study. In this process, all statements were loaded to single factor and the results revealed that there is a total of 34.007percent variance, which is below the threshold maximum limit of 50 percent variance, recommending no common method bias in the study (Babin et al., 2016; Podsakoff et al., 2003).

RESULTS

Descriptive Analysis

The descriptive statistics of the study are well reported in Table 1. All surveyed investors were actively engaged in the investment decisions related to buying and selling of stock. The demographic figures show that majority are males (53.2%), young investors (74.3%), well-educated (52.1%) and experienced (57.9%) for investing money in stock with a good deal of risk appetite (55.1%).

Measurement Model Assessments

The study investigated outer model specifications applying internal reliability and convergent validity checks of the model. In

partial least square structural Equational modelling, the study used Confirmatory Composite Analysis (CCA), whereby Nomophobia was investigated by reflective-formative measurement assessments as proposed by Yildirim and Correia(2015). In the first stage of Two-Stage reflective-formative assessments, first the latent variable scores of all four dimensions of Nomophobia were assessed by applying Mode A. Then the scores of first order constructs were applied to measure the second-order construct in a formative mode in the second stage. Therefore, second-order composite was designed to investigate the impact on I-FOMO and investment decisions of retail investors in the study(Schuberth, Henseler and Dijkstra, 2018; Nitzl et al., 2020).

Table 1: Sample demographics (N=265)

Age	Frequency	Percent	Educational Qualification	Frequency	Percent
Below 30	197	74.3	Graduate	77	29.1
30-39	44	16.5	Post Graduate	138	52.1
Above 40	24	9.1	Professional	50	18.8
	265	100		265	100
Gender			Trading Experience		
Male	141	53.2	Up to 5 year	114	43.1
Female	124	46.8	6 - 10 years	69	26.1
	265	100	Above 10 years	82	31.8
				265	100
Income			Risk Aversion		
Below 30000 p.m.	113	43.80	Risk Averse	119	44.9
30000 – 50000 p.m.	110	42.64	Risk Lover	146	55.1
Above 50000 p.m.	35	13.56		265	100
	258	100			
Marital Status					
Married	178	67.2			
Unmarried	87	32.8			
	265	100			

Source: Author's Calculations

All internal reliability checks were investigated through Cronbach's Alpha, Dijkstra and Henseler'srhoA, Composite Reliability (CR) which were above the threshold limit of 0.70 (Ali et al., 2018; Hair et al., 2017; 2020). The Cronbach's Alpha for No convenience construct was below the value of 0.70; however the value of rho A was sufficiently above the limit of 0.70 to establish the reliability of the constructs. (Hair et al., 2019). The convergent validity was also established with average variance extracted (AVE) score, which were sufficiently above the threshold value of 0.50 and above for all the

major reflective constructs in the model (Fornell and Larcker, 1981;Hair et al., 2019). The findings of internal reliability and convergent validity are explained in Table 2.

The study further investigated discriminant validity with the help of Fornell and Larcker's Criterion (1981) whereby the under root of AVEs of the constructs on the diagonal was higher than their inter-item correlation values. Table 3 explains that each construct had a clear distinction with other and thus the study is fit

Table 2: Quality Criterionfor reflective model assessments and Composite Model

Construct	Items	Type	Loading/ Weights	Cronbach's Alpha	rhoA	CR	AVE
No Communication	NoComm1	Reflective	0.777	0.821	0.832	0.871	0.532
	NoComm2		0.574				
	NoComm3		0.793				
	NoComm4		0.769				
	NoComm5		0.673				
	NoComm6		0.766				
No Connection	NoConn1	Reflective	0.758	0.758	0.772	0.837	0.509
	NoConn2		0.686				
	NoConn3		0.738				
	NoConn4		0.601				
	NoConn5		0.771				
No Convenience	NoConv1	Reflective	0.834	0.690	0.71	0.828	0.617
	NoConv3		0.816				
	NoConv4		0.699				
No Access	NoAcc1	Reflective	0.788	0.737	0.749	0.835	0.559
	NoAcc2		0.648				
	NoAcc3		0.760				
	NoAcc4		0.787				
I-FOMO	I-FOMO1	Reflective	0.643	0.863	0.863	0.893	0.511
	I-FOMO10		0.714				
	I-FOMO4		0.68				
	I-FOMO5		0.733				
	I-FOMO6		0.787				
	I-FOMO7		0.697				
	I-FOMO8		0.747				
	I-FOMO9		0.709				
Investment Decisions	InvtDec1	Reflective	0.805	0.769	0.831	0.854	0.602
	InvtDec2		0.695				
	InvtDec3		0.600				
	InvtDec4		0.958				
Nomophobia		Composite		NA	NA	NA	NA
	No Comm		0.885				
	No Conne		0.785				
	No Conve		0.891				
	No Access		0.784				

***NoConv2; I-FOMO2 and I-FOMO3 were deleted from analysis due to low loading**

Source: Author's Calculations; Note: TF-Trading Frequency

Table 3: Discriminant Validity assessments

Constructs	Investment Decision	Investment FoMO	No Access	No Convenience	No communication	No connection
Investment Decision	**0.776**					
Investment FoMO	0.622	**0.715**				
No Access	0.545	0.575	**0.748**			
No Convenience	0.559	0.706	0.605	**0.785**		
No communication	0.64	0.625	0.539	0.681	**0.73**	
No connection	0.51	0.607	0.698	0.653	0.563	**0.714**

Source: Author's Calculations

for conducting the final analysis.

In addition to the traditional method of investigating discriminant validity of the constructs, a new criterion of Heterotrait-Monotrait ratio of correlations (HTMT) is also used in this study. As per the latest criterion, all HTMT values must be less than 1 as suggested by $HTMT_{inference}$ method, however to be on a stricter note Heterotrait-Monotrait (HTMT) Ratio of correlations with a maximum ratio of 0.85 (Henseler et al., 2015; Voorhees et al., 2016) and 0.9 permissible value (Gold et al., 2001). In this study, the HTMT values were exceeding beyond 0.90 in case of the constructs of No convenience and I-FOMO for which $HTMT_{inference}$ was applied to establish discriminant validity on a liberal side. Similar treatment was provided for the constructs of No connection and No access where the HTMT value was 0.924, however the confidence intervals for $HTMT_{inference}$were well within the limits, thereby establishing the uniqueness of all the constructs as per the empirical standards as represented in Table 4.

Structural Model Assessments

The relationship between the constructs and their predictive relevance were examined in structural model assessments (Hair et al., 2017). The process was conducted with the bootstrapping process with recommended 5000 bootstraps without sign change in order to find out the required p-values for the hypotheses framed in the study (Hair et al., 2020). Firstly, in the structural inner model, each set of he predictor constructs are assessed separately by considering them as a formative measurement models (Cassel et al., 1999). It is for this purpose, tolerance and Variance Inflation Factor (VIF) values were calculated, which were found to be below 3.33 (Diamantopoulos et al., 2008). The inner VIFs were found to be below the threshold limits with Investment FOMO (2.234) and Nomophobia (2.234) on Investment Decisions to report that no collinearity issues were involved in the study (Hair et al., 2017). After investigating for any collinearity issues in the inner model, the next step was to check the significance and relevance of the path coefficients, which could have varied between -1 to +1 by following the bootstrapping process with 5000 subsamples in PLS Algorithm. In the structural model, Nomophobia was assessed as a second-order composite for which latent variable scores of four reflective constructs were considered as a formative assessment. The outer weights of all second – order composite were found to be significant at 1 percent level and different from zero (Van Riel et al., 2017; Henseler, 2017; Muller et al., 2018; Nitzl, 2020). The structural model assessments are represented in Figure 4 as below:

The coefficient of determination (R^2) of the

Table 4: HTMT Ratio of Correlations for Discriminant Validity Assessments

HTMT Criterion	Investment Decision	Investment FoMO	No Access	No Convenience	No Communication
Investment Decision					
Investment FoMO	0.754 CI_{900}[0.630;0.854]				
No Access	0.711 CI_{900}[0.539;0.835]	0.71 CI_{900}[0.566;0.818]			
No Convenience	0.751 CI_{900}[0.611;0.857]	**0.926** CI_{900}[0.843;0.991]	0.819 CI_{900}[0.637;0.959]		
No communication	0.77 CI_{900}[0.643;0.875]	0.743 CI_{900}[0.596;0.850]	0.682 CI_{900}[0.510;0.818]	0.886 CI_{900}[0.764;0.973]	
No connection	0.642 CI_{900}[0.472;0.779]	0.74 CI_{900}[0.604;0.841]	**0.924** CI_{900}[0.798;0.1.08]	0.869 CI_{900}[0.707;0.988]	0.692 CI_{900}[0.529;0.813]

Source: Author's Calculations

endogenous construct investment decision was found be significantly moderate to high at 50.1 percent. In behavioural sciences, any value of $R^2$0.20 and above is considered to be high (Rasoolimanesh et al., 2017), and it this study investment decisions of retail investors are significantly determined by Nomophobia and I-FOMO. Further, the goodness of fit criterion was investigated by the Standardised root mean square residual (SRMR) global fit indices.

In present times of research with PLS –SEM Models, a global model fit index like SRMR is vital to evaluate the goodness of it model (Hair et al., 2020). The study shows SRMR value of 0.067 in the model and is well below the threshold value of 0.08 to indicate that the model under the study had a good explanatory power (Henseler et al., 2016; Hu and Bentler, 1999). The structural model assessment and hypotheses testing is well explained by Table 5.

Table 5 results revealed that Nomophobia is the most prominent feature which positively influence I-FoMO by the investors to make investment decision in stock trading in financial market (β=0.746, p<0.001), thereby supporting H2.

The second most important impact was found

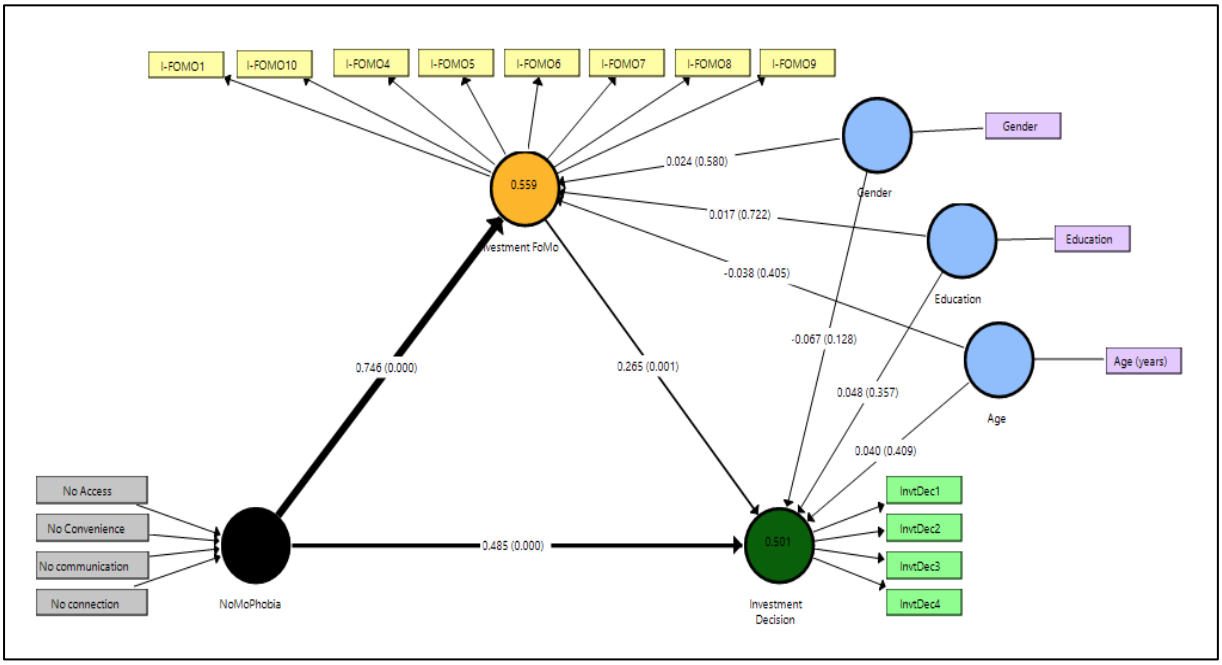

Figure 4: Structural Model Assessments with control variables

Table 5: Structural Model Assessments

Hypothesis	Path Relationships	Std. Beta	Sample Mean (M)	t-values	CI 2.5%	CI 97.5%	Decisions
H1	NoMoPhobia -> Investment Decision	0.485	0.489	6.321***	0.327	0.622	Supported
H2	NoMoPhobia -> Investment FoMO	0.746	0.745	16.698***	0.643	0.817	Supported
H3	Investment FoMO -> Investment Decision	0.265	0.261	3.401***	0.119	0.42	Supported
H4	NoMoPhobia -> Investment FoMO -> Investment Decision	0.198	0.195	3.277***	0.088	0.323	Supported
	Age -> Investment Decision	0.04	0.04	0.81	-0.06	0.133	Not Supported
	Age -> Investment FoMO	-0.038	-0.037	0.837	-0.13	0.05	Not Supported
	Education -> Investment Decision	0.048	0.05	0.928	-0.057	0.143	Not Supported
	Education -> Investment FoMO	0.017	0.015	0.353	-0.074	0.117	Not Supported
	Gender -> Investment Decision	-0.067	-0.067	1.552	-0.152	0.016	Not Supported
	Gender -> Investment FoMO	0.024	0.026	0.545	-0.065	0.11	Not Supported

Source: Authors' Calculations; Path Co-efficient (*p<0.01, **p<0.05, ***p<0.001)

to be from Nomophobia on investment decisions as reported by the investors in trading decision of stock purchases (β=0.485, p<0.001), thus supported H1. Next, investors under study exhibited that one I-FoMO is experienced by them then it leads to immediate investment decisions in financial market (β=0.265, p<0.001) and also supported H3.

Further, all control variables are found to be insignificant in the present study as the results are not supported at 5 percent. However, some inferences can still be drawn where investors above the age of 40 years are engaged in investment decisions whereas younger investors are more prone to I-FoMO. In addition to this, males are more prone to execute the investment decisions in comparison to females, whereas females are more likely to bear the fright of I-FoMO in financial markets. In terms of education, highly educated investor are driving their investment decisions carefully, whereas less educated investors are more likely to exhibit I-FoMO.

The predictive importance and relevance were tested through the effect size (f^2) and (Q^2) of the proposed model. The proposed limits of investigating the change in R^2 due to the impact of exogenous constructs on endogenous constructs are 0.02 (small effects), 0.15 (moderate effects) and 0.35 (large effects) (Cohen, 1988). In this study, I-FoMO (f^2=0.061) discloses weak effect size on Investment Decisions, however Nomophobia (f^2=0.206) is the most important composite which is responsible for explaining the endogenous variable of trading frequency in financial markets by retail investors. Lastly, predictive relevance of the structural model with second-order composite of Nomophobia and I-FOMO and Investment Decisions were investigated by Stone-Geisser's Q^2 as was found to be 0.284 for Investment Decisions representing with a moderate predictive relevance of the model (Geisser, 1975; Stone, 1974).

Any value above 0.02 can be used to generalise the results later on and have sufficient predictive power (Richter et al., 2016). The Stone-Geisser's Q^2 for I-FoMO was also found to be 0.270 which concludes that both independent constructs are important in the conceptual model of the study and the results can be generalised in different contexts ahead in future.

Importance Performance Map Analysis (IMPA)

In order to further strengthen the results of constructs under study, we have applied priority map analysis which is also termed as impact-performance map or importance performance matrix (Ringle and Sarstedt, 2016). The key objective of applying IMPA in this study is to identify which of the Scale, that is, Nomophobia or I-FoMO is important to shape up the performance of target construct of investment decisions (Fornell et al., 1996; Martilla and James, 1977; Ringle and Sarstedt, 2016; Slack, 1994). In this process the strong total effects towards the target construct were identified with a relatively high important construct in the study. IMPA is more suitably applied when there are mediators in the study and especially where there are complex mediation effects (Direct effects + Indirect Effects= Total Effects) with the help of Variance Accounted For (VAF) method.

Table: 6 Importance – Performance Map (Construct wise unstandardized effects)

Constructs	Importance	Performance
Nomophobia	0.262	76.199
Investment FoMO	0.747	79.711
Mean Value	**0.5045**	**77.955**

Source: Authors' Calculations

In Table Number 6, we have investigated Construct Total Effects of Nomophobia and I –FoMOon Investment Decisions for the unstandardized effects to facilitate the ceteris paribus interpretation of predecessor constructs' impact. The unstandardized effects are exactly similar to the unstandardized weights of Ordinary Least Square Regression modelling (Hair et al., 2010). The performance of the construct Investment Decisions is calculated as 77.562. In order to report the IMPA results, the direct effects, indirect effects and the total effects of antecedents on the consequent construct Investment decision is calculate by Variance Accounted For (VAF) by investigating the mediation effects.

The results of IMPA are reported in Table 7 as below:

Table: 7 Direct, Indirect and Total effects

Predecessor Constructs	Direct Effects on Investment Decisions	Indirect Effects on Investment Decisions	Total Effects on Investment Decisions	Significance of Total Effects?
Nomophobia	0.485	0.198	0.683	Yes
Investment FoMO	0.259	------	0.259	Yes

Source: Authors' Calculations

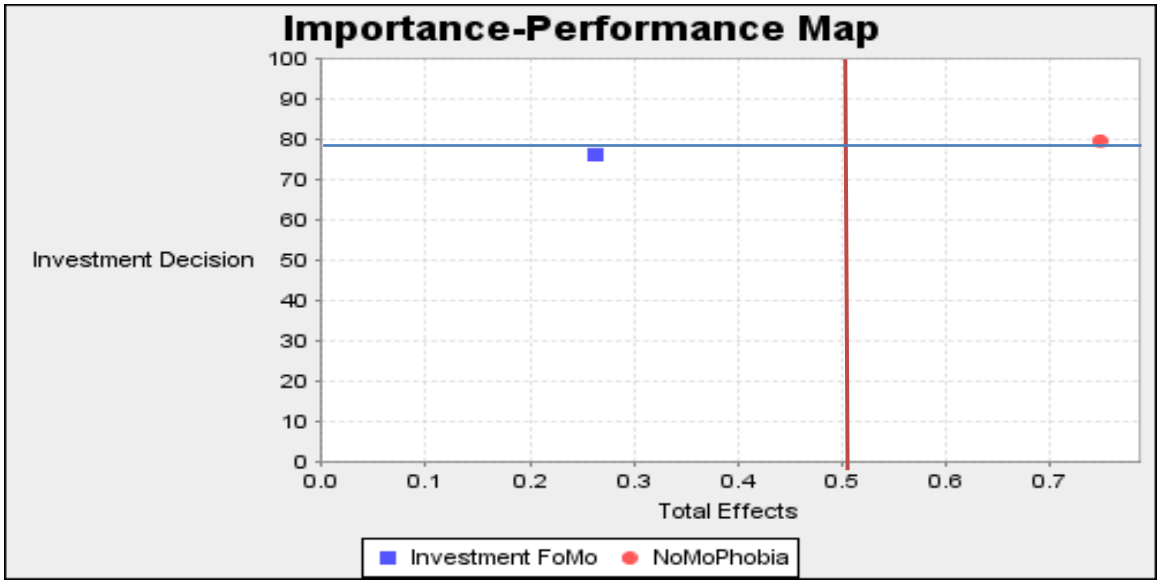

Figure 5: Adjusted Importance Performance Matrix for Investment Decisions.

The basic condition was also met that all indicators were having significant loading and weights and were all positive (Ringle and Sarstedt, 2016) to apply IMPA. The four quadrants were derived successfully based on the mean values of importance and performance values of the constructs.

In figure 5, one unit change in Nomophobia performance from 79.711 to 80.711 would enhance the performance of investment decisions from 77.562 to 78.242 with a total effect of 0.683. Further, for one unit increase from 76.199 to 77.199 in the performance in I-FoMO would raise the performance of Investment Decisions from 77.562 to 77.821. Therefore, out of the two predecessors of the dependent variables towards Investment Decisions, the most striking and important construct is Nomophobia which relatively more important construct in the four quadrants in the figure number 5 and would have more impact on the performance of Investment decisions of retail investors. Therefore, financial advisors, telecommunication industry, opinion makers and especially the media industry should critically look into the aspect of Nomophobia where lack of information in mobile phones would impact the mind of retail investors for erratic investment decision while making the investment decisions (Mirchandani and Gaur, 2019; Malik and Narula, 2019).

DISCUSSION AND THEORETICAL IMPLICATIONS

The major aim of the study was to investigate the impact of Nomophobia on the retail investor decision making in the financial market. The study confirms the belief that without mobile the fear of missing a vital information from the stock market would be very high. The relationship of Nomophobia on I-FoMO is extremely high in the Indian financial markets and the results are in line with the scale validation conducted by Clor-Proell et al., 2019. In media studies, technology and media do have considerable impact on investors' reactions and the behaviour is different for the normal decisions primarily accounting for speculative decisions (Cade, 2018; Guggenmos and Bennett, 2018; Brown et al., 2019). The study is in line with the theory of compensatory internet use theory to exhibit the aspect of gamblers' fallacy by doing overtrading in the absence of information asymmetry caused by Nomophobia. Thus, this line of argument is providing value to the

existing literature where Nomophobia is accounting for the behavioural biases like herd behaviour and gambler's fallacy to account for excessive trade. Secondly, the scale developed by Clor-Proell et al. (2019) for I-FoMO is duly established and validated in this study to justify its impact on investment decisions in financial market (Basoglu et al., 2009; Schuur, 2017) and the phenomenon is altogether different from the traditional FOMO (Przybylski et al., 2013). Lastly, the aspect of investors' decision making options are duly validated in the present study (Maciejewski and Lesznik, 2020; Shiva and Singh, 2019). The proposed conceptual model can add value to the domain of behavioural finance where Nomophobia is considered to be an important construct coupled with I-FoMO yielding for investor biases.

Managerial Implications

The predictive relevance of I-FoMO was found to be moderate in this study thereby indicating that in diverse context and in difference financial markets, similar results might occur to represent the investor behaviour. The IMPA has further added a very importance dimension for the investment advisors, brokers, telecommunication companies and corporates to see that smartphones are the key ingredients and considered to be an inseparable part of human lives these days where lot of information can be fuelled to keep the investors engaged in the quality decisions. Further, in case investors face issues like fear, anxiety or exhibit irrational decisions, the same can be corrected by information symmetries by smartphones in financial markets. The aspect of I-FoMO is completely different from traditional FOMO and thus is more related to monetary gains to the investor by regulating the information and news provided by media agencies to their respective clients. The present study also caters to the psychologists to identify the additive behaviour of investors to their smartphones and can suggest way and means to rectify this erratic behaviour, but the cost of monetary gains.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The present study does possess certain limitations in the study, which accounts for other aspects of investor behaviour especially in the domain of behavioural finance. More constructs can be added to the existing model since the proposed model is a modest attempt to link the aspect of Nomophobia to investor behaviour. Further, the study can be conducted in South East Asian markets to investigate whether similar results are obtained by the investors, although the predictive relevance of the present model is good. The role of personality can be investigated ahead in this model where the moderation effects can provide diverse results for extrovert and introvert investors as has been tested for the traditional FOMO.

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Appendix A. Measurement Scales Used

Constructs	Type of Scale	Source
20 Item Nomophobia Questionnaire		
Construct – 1: Not being able to Communicate		
I would be worried because my family and/or friends could not reach me.	**7 point Likert** 1=Totally Disagree 7= Totally Agree	**Yildirim and Correia, 2015**
I would be anxious because I could not keep in touch with my family and/or friends.		
I would feel nervous because I would not be able to receive text messages and calls.		
I would be nervous because I could not know if someone had tried to get a hold of me.		
I would feel anxious because I could not instantly communicate with my family and/or friends		
I would feel anxious because my constant connection to my family and friends would be broken		
Construct – 2: Losing Connectedness		
I would be nervous because I would be disconnected from my online identity	**7 point Likert** 1=Totally Disagree 7= Totally Agree	**Yildirim and Correia, 2015**
I would be uncomfortable because I could not stay up-to-date with social media and online networks		
I would feel awkward because I could not check my notifications for updates from my connections and online networks		
I would feel anxious because I could not check my email messages		
I would feel weird because I would not know what to do		
Construct – 3: Not being able to access Information		
I would be annoyed if I could not look information up on my smartphone when I wanted to do so	**7 point Likert** 1=Totally Disagree 7= Totally Agree	**Yildirim and Correia, 2015**
I would be annoyed if I could not use my smartphone and/or its capabilities when I wanted to do so		
I would feel uncomfortable without constant access to information through my smartphone		
Being unable to get the news (e.g., happenings, weather, etc.) on my smartphone would make me nervous		
Construct – 4: Giving up Convenience		
Running out of battery in my smartphone would scare me	**7 point Likert** 1=Totally Disagree 7= Totally Agree	**Yildirim and Correia, 2015**
If I could not use my smartphone, I would be afraid of getting stranded somewhere		
If I did not have a data signal or could not connect to Wi-Fi, then I would constantly check to see if I had a signal or could find a Wi-Fi network		
If I were to run out of credits or hit my monthly data limit, I would panic		
If I could not check my smartphone for a while, I would feel a desire to check it		

Investment Related Fear of Missing Out (I - FOMO)
(Adapted from Clor-Proell et al., 2019; Przybylski et al., 2013, p.1841)
(7 point Likert Scale: 1= Totally Disagree, 7=Totally Agree)

It bothers me when I don't hear news about my investments until the next day.
I get anxious when I don't know what the companies I'm investing in are planning.
It is important to me that I am "on top" of the latest news for the companies I'm interested in investing in.
When I go on vacation, I continue to keep tabs on my investments
I feel anxious if I'm "unplugged" from news about my investments.
I would prefer to be interrupted by breaking news about my investments rather than to receive the information later at a more convenient time.
I get worried when I am not able to check in on my portfolio.
I would get anxious if my phone battery ran out when I was expecting news about one of my stocks.
When I miss out on industry news it bothers me.
I fear being the last to know about news that is relevant to my portfolio.

Construct – 6: Investment Decisions(Adapted from Livanas, 2011; Shiva and Singh, 2019; Maciejewski and Lesznik, 2020)(7 point Likert Scale: 1= Totally Disagree, 7=Totally Agree)

Retail Investors invest in Balanced and Capital Guarded stocks for over a month.
Retail Investors invest in Diversified stocks for within a month.
Retail Investors invest in High Growth stocks within a week.
Retail Investors invest in Cash Portfolios and conduct Intra Day trading.

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