PRE-MARKET INDIVIDUAL INVESTORS' SENTIMENT AND IPO INITIAL PERFORMANCE OF THE EMERGING MARKET

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Abstract

The volatility of the initial return and trading volume is evident from early observations of the Malaysian initial public offering (IPO) market on the first trading day. Making informed investment decisions is essential for a more accurate assessment of businesses and capital security. Investors should therefore be aware of what influences IPO initial return and trading volume. However, only a few amounts of prior research on the initial return and trading volume on the first trading day of an IPO has focused on the issue of investors' reaction. Specifically, previous studies have not taken into consideration how individual investors feel about IPO companies as the primary influence. In this study, the sentiment of individual investors is measured using the Google Search Volume Score (GSVS), a practical approximation (Da et al., 2011). This is because most people who use Google to look up information, particularly about recently released equities, are individual investors. Between 2004 and 2020, 271 initial public offerings (IPOs) listed on Bursa Malaysia's Main Market and Access, Certainty, Efficiency (ACE) Market made up the study sample. This study demonstrated that pre-market investor sentiment significantly and favourably effects IPO initial return and trading volume on the first trading day based on ordinary least square regression (OLS) models.

Keywords: Google Search Volume Score, Initial Public Offering, IPO Initial Return, IPO Trading Volume, Pre-Market Individual Investors' Sentiment

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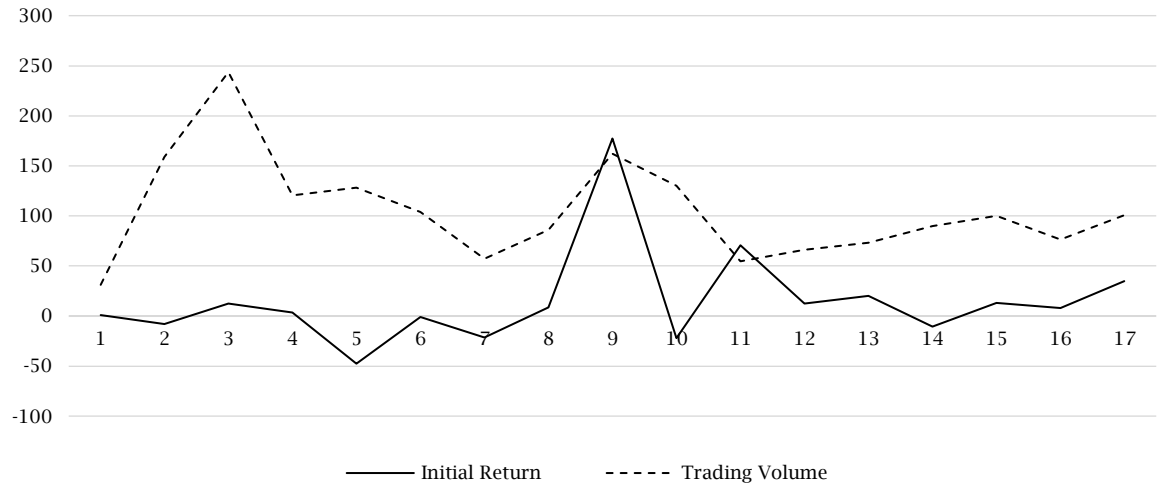
1. INTRODUCTION

An initial public offering (IPO) is a firm's first public offering (Yong & Albada, 2019). Newly listed firms need to have good performance because this implies that they have the potential to survive for a longer period after the IPO. According to Fine et al. (2017), IPO performance refers to how IPO businesses perform over a certain period of time after their listing on the stock market. From the first day of listing to the longest period of many years following the listing, the performance may be seen. The performance of IPOs reveals whether corporations were successful in obtaining cash via IPO offers (Yong, 2019). In contrast, Fischer and Pollock (2004) claimed that because of the different management environments, there is a greater likelihood of a corporation failing after it enters the IPO market. It is difficult to manage the transformational effects resulting from changing the status of private enterprises into public entities (Anwar & Mohd Rashid, 2021). This change must have an impact on the performance of the firms when listed on the stock exchange. Recent studies often look at the performance of IPOs from the point of view of initial returns, though unlikely also to focus on the trading volume of the IPO. The trading volume during the first few days of IPO listing is another aspect of the performance of the IPO, which has recently attracted a great deal of interest in IPO studies (Abdul-Rahim et al., 2013). Thus, studies should focus on both aspects of performance: initial return and trading volume.

According to Shukla (2017) and Yong (2014), IPO is an investment with good returns as the shares can offer high initial returns. The strong early returns are often accompanied by a high trading volume in the first few days after listing. When trading activity is substantial, it suggests that the market has enough liquidity since it shows a significant cash flow from shares exchanged in an IPO market. Investors may not want to participate in IPOs despite the high potential returns and market liquidity because of the erratic first profitability and low trading volume of IPO on the first trading day. The mean initial performance of Malaysian IPOs launched between 2004 and 2020 is shown in Figure 1.

Figure 1. Mean performance of Malaysian IPOs on 1st trading day from 2004 to 2020



The figure exhibits that Malaysian IPOs on their first trading day have recorded the average initial return of below 20 percent in 14 out of 17 observation years, while 9 out of 17 observation years showed the average initial return of 0 percent or below 0 percent. This implies that within the 9 observation years, investors of Malaysian IPOs on average produced only a loss when selling their subscribed shares on the first trading day. Indirectly, this observation suggests to prospective investors that their participation in the Malaysian IPO market will not necessarily be pleasing at all times. The possibility of producing a negative initial return may also result in higher price volatility in weeks after the listing of firms due to the lower trading activities, making the generation of profits more difficult for investors (Che-Yahya & Matsuura, 2021; Wang & Wang, 2021). As such, an informed investment decision is necessary to assist investors in selecting IPOs with good return prospects.

Figure 1 displays the active trading activity across the study years. The results show that the mean trading volume for Malaysian IPOs on their first trading day exceeded 100% in 9 of the 17 observation years. It is expected that there would be a high average trading volume of trading activity on the day of the listing because investors with short-term goals often acquire and sell their subscribed IPOs quickly in order to make rapid gains. To guarantee more liquid IPO markets and less price volatility, a higher trading volume is necessary not only on the first trading day but also throughout the medium term and long term. Meanwhile, IPO initial return in the proceeding trading days should not be shown in the continuous unpleasant direction for investors to keep their shares longer (for weeks or more). This is because if the low average initial performance of Malaysian IPO (as shown in Figure 1) persists on to the next trading days, investors must expect a much lower return on their investment in this market. Hence, the such expectation should lead investors to be wiser in evaluating IPO firms for a better assurance of their desired level of returns.

The present study aims to concentrate on a potential factor that has gotten less attention in the literature than well-researched drivers of the success of IPO such as age, IPO size, market situation, and underwriter reputation. This research suggests that the primary driver of IPO initial return and trading volume is the features of investors' intention, namely, individual investors' sentiment towards IPO businesses. Investor attention and behaviour that result from knowledge asymmetry might be broadly characterised as investor sentiment (Chung et al., 2017). Information asymmetry in the context of IPOs refers to the disparities in the degree and quantity of information that the parties engaged in issuing what IPOs and the investors have.

According to Albada et al. (2019), there is more information asymmetry in the Malaysian IPO market, which means that investors' sentiment may be inferred from their attention and conduct. They contend that the intensity of each investor's feelings differs as well. As time goes on, Malaysian investors should have access to more information, which will help them make better decisions. For instance, individual investors may have high expectations for an IPO company in the pre-IPO market (before an IPO company begins trading in the stock market), which motivates them to do extensive research on the company both offline and online. Their actions might raise interest in a specific IPO. As a result, that company's IPO will do better than one that attracts more attention from individual investors.

Individual investors with a high degree of market knowledge will be more inclined to invest, which will increase purchasing interest and sentiment (Moussa et al., 2017). Overall, there will be a strong positive correlation between the emotion of individual investors and the success of initial public offerings due to the abundance of decision-making options. However, there is a knowledge vacuum about how individual investor's sentiment affected the success of the IPO during the pre-trade period, particularly in the context of initial return and trading volume, notably in the Malaysian IPO market. Thus, this study's objectives are to gauge pre-market investor sentiment and its impact on the IPO's first return and trading volume.

This paper consists of five sections structured as follows. Section 2 reviews relevant literature, followed by Section 3 which describes the data and methodology used in this research. Section 4 presents and discusses the empirical results and Section 5 presents conclusions drawn from the findings.

2. LITERATURE REVIEW

Some past studies noted that IPO initial return and trading volume are related, hence they should receive equal attention when examining IPO performance (Lowry & Schwert, 2002; Mohd Rashid et al., 2013; Ritter, 1998).

IPO initial return is the profits that investors gained in the early days of the IPO listing. A positive return arises from the market price of an IPO share on the first trading day that is higher than its offer price (Yong & Albada, 2019). Chung et al. (2017) measured the initial return of an IPO using the difference between the first-day opening price and the offer price of the IPO. Abdou and Dicle (2007), Wu (2012), Tsukioka et al. (2018), as well as Wasiuzzaman et al. (2018), estimated the initial return of IPO using the percentage difference between the first-day closing price and the offer price of the share. The first-day return was calculated by Gao et al. (2016), which divides the first-day closing price by the offering price less the market value-weighted return. Numerous research on IPO initial return is available (Abdul-Rahim & Che-Embi, 2013; Abdul-Rahman & Che-Yahya, 2019; Che-Yahya et al., 2017; Yong & Albada, 2019). The empirical data, however, is sparse when compared to other research (Gao et al., 2016; Chung et al., 2017; Tsukioka et al., 2018; Wasiuzzaman et al., 2018), which concentrate on investors' sentiment.

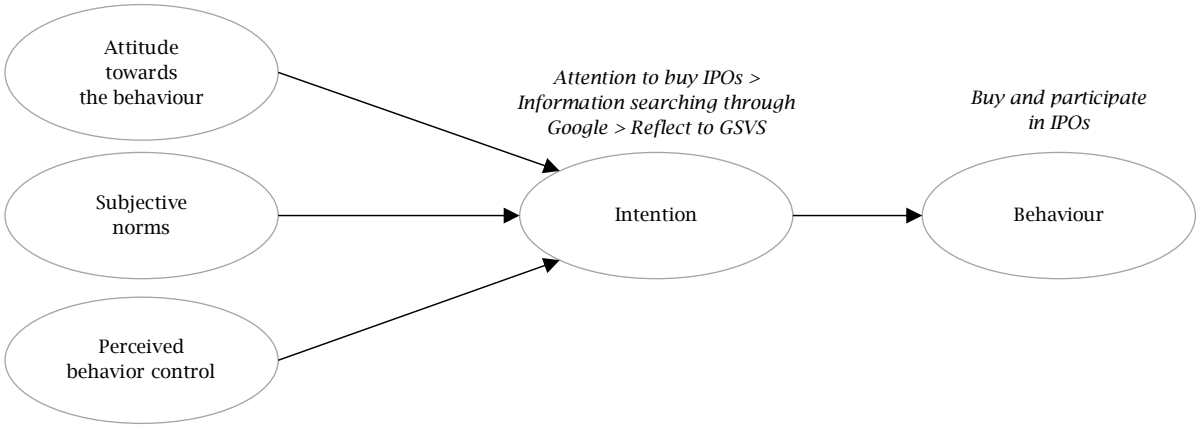
The buying and selling of shares at a certain time is reflected in the stock market's trading volume. In the context of initial public offerings, "trading volume on the first trading day" refers to the proportion of shares traded on a listing day to the overall number of IPO units issued. De Souza et al. (2018) used the total number of IPOs traded each day to estimate trading volume. Meanwhile, Mohamed-Arshad et al. (2016), as well as Zameni and Yong (2016), estimated the market-adjusted volume ratio using the anomalous daily trading volume. Compared with the initial return, studies on trading volume are lower in quantity (Mohamed-Arshad et al., 2016; Zameni & Yong, 2016; De Souza et al., 2018). Meanwhile, studies on investors' sentiment as a determinant of trading volume are also scant (Lowry, 2003; Lee et al., 2002; Moussa et al., 2017; Choi, 2019).

The success of the IPO may be explained by the emotion of individual investors, according to research by Da, Engelberg, and Gao (2011). The signalling hypothesis has the potential to explain how investors' attitude affects IPO initial return and trading volume. Ross (1977) created the signalling theory, that premise is taken from the information asymmetry hypothesis put out by Akerlof (1970). The knowledge gap between management and possibly outside investors is referred to as information asymmetry concerning businesses (internal). According to the study, IPO issuers may provide information about the emotion of certain investors to express the true quality of their company. Theoretically, if individual investors are shown to pay IPOs more attention (greater GSVS), this suggests that IPO businesses often have large early returns and trading volume. According to Da et al. (2011), the incidences arise as a result of the asymmetries in the information that investment players obtained about IPO businesses, which may enhance the pace at which information is assimilated into pricing.

Google searches by individual investors regarding an IPO will continue, and the increasing urgency to acquire causes the IPO to have more demand and higher pricing. These circumstances indicate that information asymmetry may help explain why individual investors pay more attention. Due to those uneducated investors having a strong demand for shares and are willing to pay high prices for them, information uncertainties contribute to the larger purchasing activity. The initial return and trading volume will both rise as a result of more individual investors paying attention to an IPO.

The theory of planned behaviour (TPB), put out by Ajzen (1991), may also account for how the emotion of individual investors affects the success of IPOs. The theory is founded on the premise that any human conduct is influenced by a person's attitude towards action and consequence. It was originally developed from the theory of reasoned action (TRA) by Fishbein and Ajzen (1975). The application of this theory to this study can be seen in Figure 2, in which in the context of this study, individual investors' sentiment can be reflected in the component of attitude towards the behaviour. The attitude of individual investors towards a stock can be viewed positively if they pay closer attention to the stock. Individual investors will search for information about the stock more frequently, leading to having a higher score of Google Search Volume (GSV) reported in Google Trend. Higher GSVS should indicate the intensity of individual investors' intention or positive sentiment in buying IPOs. Higher demand is expected for IPOs with a higher score of GSV. As a result, a positive relationship can be expected between individual investors' sentiment and IPO initial return and trading volume.

Figure 2. Application of planned behaviour theory



Da et al. (2011) provided empirical data on the impact of pre-market investor sentiment on early returns and discovered a strong positive relationship between sentiment and first trading day IPO return. Three studies, namely by Chung et al. (2017), Gao et al. (2016), and Che-Yahya and Matsuura (2021), have found a strong and favourable relationship between pre-market investor sentiment and early returns. According to Tsukioka et al. (2018), IPOs with strong early returns tend to attract more individual investors or have a positive sentiment. Individual investors' attention is excessive and more bullish toward IPOs than institutional investors' attention in cases of more participation from individual investors in the Japanese IPO market. Thus, the bullish sentiment led the offer price and first-day initial return of IPOs to be at a higher rate. Based on the theories used in this study and the empirical evidence, this study anticipates the following positive correlation between pre-market investor sentiment and IPO first return:

H1: There is a positive relationship between individual investors' sentiment during pre-market and IPO initial return.

Evidence of the impact of pre-market investor's attitude on IPO trading volume is provided by Moussa et al. (2017). They suggested a strong correlation between investors' emotions and proxied public information. Che-Yahya and Matsuura (2021) also supported the same conclusion. Collectively, the studies reached the conclusion that informed investors to be more motivated to invest, to increase their attention to purchase, and to uphold emotion as individuals. Additionally, more options for making decisions resulted in a favourable correlation between trade volume and investor sentiment. The findings are further supported by Lee et al. (2002). Using the same findings of previous research, the theory used in this study is further supported by the same findings. The result is expected to be a positive relationship for individual investors' sentiment during pre-market and IPO trading volume as follows:

H2: There is a positive relationship between individual investors' sentiment during premarket and IPO trading volume.

3. RESEARCH METHODOLOGY

The study's sample period ran from January 2004 to December 2020. It consisted of 430 IPOs listed on Bursa Malaysia's Main Market and ACE market. According to Colaco et al. (2013), the sample period started in January 2004, owing to the frequent occurrence of search phrases in Google Trends, which can only be accessible starting in 2004, to evaluate the attention or sentiment of individual investors. Following the filtering procedure, 159 IPOs were eliminated, leaving the final sample of 271 IPOs from a total of 430 IPOs. All uncommon IPO categories, such as restricted offers for sale, restricted public issues, warrants, tender offers, financial, insurance, and REIT companies; as well as outliers and IPOs with missing value, were excluded. Data for the first trading day's trading volume and the first return on an IPO were taken from the Eikon Thompson Reuters database. The data for individual investors' pre-market sentiment, however, came from Google Trends and were gathered 15 days prior to the listing of an IPO because of the balloting period for IPOs.

3.1. Definition and measures

3.1.1. IPO performance

The dependent variable of this study is the performance of IPOs measured by initial return and trading volume. IPO's initial return on the first trading day ($RTURN_1$) is positive if the market price of the shares on a listing day exceeds its offer price. Bradley et al. (2009), Chung et al. (2017), Jiang and Li (2013), and Mohd Rashid et al. (2014) estimated IPO initial return by the percentage difference between IPO open price on the first trading day and offer price. This study adopted a similar measurement of initial return.

$$RTURN_{1i} = \frac{Popen_{1i} - Poffer_i}{Poffer_i} \times 100 \quad (1)$$

where,
$RTURN_{1i}$ = First trading day initial return of *i* firm;
$Popen_{1i}$ = Open price on first trading day of *i* firm;
$Poffer_i$ = Offer price of *i* firm.

Trading volume on the first trading day (VOL_1) reflects the proportion of shares traded on listing day relative to the total IPO units issued. In previous research, the number of traded shares divided by the total number of shares issued was used to compute the trading volume by Anwar and Mohd Rashid (2021), Chung et al. (2017), Jiang and Li (2013), as well as Yong (2010). The number of IPO units issued to measure trading volume on the first trading day and the total number of shares traded on the first trading day were represented by the VOL_1 in this research.

$$VOL_{1i} = \frac{NOST_{1i}}{NOSI_i} \times 100 \quad (2)$$

where,
VOL_{1i} = First trading day trading volume of *i* firm;
$NOST_{1i}$ = Total number of shares traded on the first trading day of *i* firm;
$NOSI_i$ = Total number of shares issued by *i* firm.

3.1.2. Independent variables

The performance of IPOs ($RTURN_1$ and VOL_1) was examined against seven independent variables, namely pre-market individual investors' sentiment (*PREINSENT*), firm age (*AGE*), IPO size (*OFFSIZE*), market condition (*MKTRETURN*), underwriter reputation (*UNDREP*), sector (*SECTOR*) and IPO risk (*RECIPROCAL*). The main independent variable of this study is *PREINSENT*.

The individual investors' sentiment during pre-market (*PREINSENT*) has been estimated using Google Search Volume Score (GSVS). According to Da et al. (2011), Google Trends attracts the attention of individual investors based on the frequency of these people's queries. They forecast that a high Google Trends score would attract more individual investors' interest. The findings showed that GSVS should be regarded positively since it generally attracts investors' attention to an IPO at a certain moment. The three search terms that have the highest average scores for the firm names in this study are a) the name of an initial public offering (IPO) company that has been listed on Bursa Malaysia, b) the name of an IPO company without the word *Berhad* and c) the name of an IPO company that has not yet been listed on Bursa Malaysia. This research has taken the idea from Da et al. (2011), with the sentiment being assessed using a variety of phrases, including the complete name of the company and three search queries. The following metric has been used to calculate the GSVS for the IPO.

$$GSVS = \frac{a_i + b_i + c_i}{i} \quad (3)$$

where,
$GSVS_i$ = Google Search Volume Score of *i* firms;
α_i = Score for the name of an IPO firm as listed in Bursa Malaysia of *i* firm;
b_i = Score for the name of an IPO firm without the word *Berhad* of *i* firm;
c_i = Score for the name of an IPO firm before listing on Bursa Malaysia of *i* firm.

The observations of *PREINSENT* were collected from 15 days before the listing of an IPO due to the balloting period as there existed the sentiment from potential individual investors. The measurement is shown in equation (4).

$$PREINSENT = \frac{GSVS_i \text{ on } 15 \text{ days before listing}}{i} \times 100 \quad (4)$$

where,
$PREINSENT_i$ = Average three search keywords of GSVS for pre-market individual investors' sentiment of *i* firm;
$GSVS_i$ = Google Search Volume Score of *i* firms.

Firm age (*AGE*) is the duration of the incorporation year for IPOs and is calculated using the logarithm of one plus the number of years after incorporation (Wasiuzzaman et al., 2018). Anwar and Mohd Rashid (2021) as well as Kumar and Sahoo (2021) calculated *AGE* as the interval of years between the firm's establishment and first public offering (IPO) dates. IPO size (*OFFSIZE*) is the total unit of IPO shares issued to investors. Following the measurement in Abdul-Rahim and Yong (2010), Kumar and Sahoo (2021), as well as Song et al. (2014), this study measured *OFFSIZE* using the number of shares issued multiplied by the offer price.

Market condition (*MKTRETURN*) can be measured using stock market indices (Abdul-Rahim et al., 2015; Tajuddin et al., 2016). This study used FTSE Bursa Malaysia (FBM) KLCI to calculate the *MKTRETURN* during a particular day, similar to Abdul Rahman and Che-Yahya (2020) as well as Chong and Puan (2009). Underwriter reputation (*UNDREP*) indicates the reliability of investment banks in valuing, selling and promoting IPOs (Che-Yahya et al., 2014). The IPO firms which are engaged with reputable underwriter usually signal that the firms have good quality and are worth

investing in. This study, following Abdul-Rahman and Che-Yahya (2019), Che-Yahya et al. (2018), as well as Sundarasen et al. (2017), calculated *UNDREP* by the percentage of total shares underwritten by an investment bank or underwriter to the total shares underwritten by all underwriters in a listing year.

Bursa Malaysia's sector classification is used to classify IPO firms into a sector that most closely fits their core business. To control the influence of the firm sector (*SECTOR*), this study adopted a dummy value of 1 to assign firms in the technology sector and 0, otherwise. This measurement of *SECTOR* was similar to that used in Ahmad-Zaluki and Badru (2021), Badru and Ahmad-Zaluki (2018), Che-Yahya et al. (2014), as well as Yan et al. (2019). IPO risk (*RECIPROCAL*) indicates the risk at a firm level using information from the IPO offer price. This study, following Abdul-Rahim and Yong (2010), Mohd Rashid and Abdul-Rahim (2012), as well as Khin et al. (2017), measured *RECIPROCAL* using the reciprocal of the offer price.

3.2. Cross-sectional regression model

The performance of an IPO is measured by initial return and trading volume and individual investors' sentiment estimated during the first trading day. The regression models of this study were developed into two equations. Both cross-sectional regression Models 1 and 2, equations (5) and (6) also included control variables: firm age, IPO size, market condition, underwriter reputation, firm sector, and IPO risk.

Model 1

$$RTURN_{1i} = \beta_0 + \beta_1 PREINSENT_i + \beta_2 AGE_i + \beta_3 OFFSIZE_i + \beta_4 MKTRETURN_i + \beta_5 UNDREP_i + \beta_6 SECTOR_i + \beta_7 RECIPROCAL_i + \varepsilon_i \quad (5)$$

Model 2

$$VOL_{1i} = \beta_0 + \beta_1 PREINSENT_i + \beta_2 AGE_i + \beta_3 OFFSIZE_i + \beta_4 MKTRETURN_i + \beta_5 UNDREP_i + \beta_6 SECTOR_i + \beta_7 RECIPROCAL_i + \varepsilon_i \quad (6)$$

where, $RTURN_1$ is first-day initial return, VOL_1 is first-day trading volume; β_0 refers to the constant term, while β estimates the coefficient or loading of respective factor; i is the i firm; *PREINSENT* is pre-market individual investors' sentiment; *AGE* is firm age; *OFFSIZE* is IPO offer size; *MKTRETURN* is the market condition; *UNDREP* is underwriter reputation; *SECTOR* is the firm sector; *RECIPROCAL* is IPO risk, and ε is the error term.

4. RESULTS

4.1. Preliminary result and IPO performance

Table 1 shows the descriptive statistics of IPO performance and the independent variables. $RTURN_1$ is the initial return on the first trading day and VOL_1 is the trading volume on the first trading day. $RTURN_1$ shows a mean of -1.50 percent and a median of 2.00 percent, ranging from a minimum of -91.00 percent to a maximum of 156.96 percent. For VOL_1, the mean is 14.24 percent, and the median is 7.58 percent, ranging from a minimum of 0.14 percent to a maximum of 291.63 percent. The huge differences between minimum and maximum for both $RTURN_1$ and VOL_1 indicate the high fluctuation of initial return and trading volume of IPOs during the first trading day.

For *PREINSENT*, the mean is 261.86 percent and the median is 0 percent, ranging from a minimum value of 0 percent to a maximum value of 1824.44 percent. The highest search volume on Google is for Eversafe Rubber Berhad with a score of 1824.44 percent which means individual investors pay high attention to Eversafe Rubber Berhad during the 15 days before listing until it is listed compared to other IPOs. While a value of 0 indicates there are IPOs with no attention at all, hence the proposition of this study, IPOs with high attention from individual investors during pre-market (high pre-market individual investors' sentiment) cause high opening price and demand. Thus, it is high in initial return and trading volume during the first trading day.

The correlation coefficients for all variables for which the findings fell between -0.29 and 0.26 are shown in Table 2. The relationship between *OFFSIZE* and *SECTOR* has the strongest connection. However, as the value does not go over the 0.9 cut-off mark (Asteriou & Hall, 2015), this research did not have a serious multicollinearity problem.

Table 1. Descriptive statistics of sample IPOs (2004–2020)

Variables	*Mean*	*Median*	*Minimum*	*Maximum*	*Std. dev.*	*Jarque–Bera*
$RTURN_1$ (%)	-1.50	2.00	-91.00	156.96	43.48	23.76***
VOL_1 (times)	14.24	7.58	0.14	291.63	26.51	43565.89***
PREINSENT (%)	261.86	0.00	0.00	1824.44	393.66	165.49***
AGE (years)	14.6	12	1	52	11.79	37.08***
OFFSIZE (RM'000)	116,000	30,000	5,143	2,770,000	352,000	15055.64***
MKTRETURN (%)	0.42	0.60	-15.96	9.27	3.09	531.59***
UNDREP (%)	6.62	2.04	0.00	35.83	9.12	174.24***
SECTOR (%)	0.18	0.00	0.00	1	0.39	130.64***
RECIPROCAL (times)	1.93	1.54	0.28	7.69	1.36	128.75***

*Note: *** denotes significant correlations at a 1% level, ** is significant at a 5% level, and * is significant at a 10% level. OFFSIZE is in RM'000, although the log data are used in the regression models.*

Table 2. Correlation matrix among variables

Variables	*$RTURN_1$*	*VOL_1*	*PREINSENT*	*AGE*	*OFFSIZE*	*MKTRETURN*	*UNDREP*	*SECTOR*	*RECIPROCAL*
$RTURN_1$	1								
VOL_1	-0.18	1							
PREINSENT	0.26	0.02	1						
AGE	-0.02	0.06	0.09	1					
OFFSIZE	0.03	-0.21	0.19	0.11	1				
MKTRETURN	0.16	0.08	-0.04	0.02	-0.02	1			
UNDREP	-0.07	0.09	-0.14	-0.03	0.40	-0.03	1		
SECTOR	0.05	0.01	-0.10	-0.27	-0.29	-0.05	-0.06	1	
RECIPROCAL	0.36	0.00	0.20	-0.06	-0.43	0.04	-0.31	0.18	1

Note: $RTURN_1$ is the first trading day initial return; VOL_1 is the first trading day trading volume; PREINSENT is the individual investors' sentiment during pre-market (IPO first trading day); AGE is the firms' incorporation years; OFFSIZE indicates the size of the firms using the information of total assets; MKTRETURN measure is based on the FTSE Bursa Malaysia KLCI (FBM KLCI) during 15th day before IPO trading to first trading day; UNDREP is the market shares underwritten by an investment bank in a particular listing year; SECTOR is dummy variable which 1 denotes firms in the technology sector and 0, for the rest; RECIPROCAL is the reciprocal of the offer price.

4.2. Main empirical results

This study investigates the impact of the individual investors' sentiment of early-market, namely $RTURN_1$ and VOL_1. The regression results of Models 1 and 2 are presented in Table 3. This study conducts several diagnostic tests before proceeding to the main findings. The tests are crucial to be carried out in order to ensure the data are clean and regression results produced will be reliable. The tests include the normality test, the Jarque-Bera test, the multicollinearity test, the Pearson correlation matrix, the heteroscedasticity test, the White test, the autocorrelation test, Durbin–Watson statistic, and the model specification test as well as Ramsey regression equation specification error (RESET) test.

Table 3. OLS regression results

Variables	*Exp. sign*	*Model 1 ($RTURN_1$)*		*Model 2 (VOL_1)*	
		Coefficient	*T-stats*	*Coefficient*	*T-stats*
PREINSENT	+ve	0.0184	2.4781***	0.0003	3.9223***
AGE	-ve	-0.0808	-0.4448	0.0021	0.8219
OFFSIZE	-ve	14.9176	2.9644***	-0.4026	-5.7251***
MKTRETURN	+ve	2.1877	3.2435***	0.0162	1.7191*
UNDREP	+ve	0.0513	0.1755	-0.0008	-0.2204
SECTOR	-ve	5.6984	0.7706	0.0444	0.5473
RECIPROCAL	+ve	12.4605	4.9144***	-0.0257	-1.0256
R^2		0.2154		0.1806	
Adjusted R^2		0.1945		0.1588	
F-statistic		10.3160		8.2801	
P-value (F-stats)		0.0000		0.0000	
Durbin–Watson		1.7829		1.7051	

*Note: Sample size = 271. ***, **, and * indicate significant at 1%, 5%, and 10% levels, respectively*

Only 19.45 percent and 15.88 percent, respectively, of the variance in $RTURN_1$ and VOL_1 is explained by factors utilised in this investigation, according to the modified R^2 values for $RTURN_1$ and VOL_1 in Table 3. Models 1 and 2 have substantial F-statistic values of 10.32 and 8, respectively. These values indicate that the models fit, while findings of 1.78 and 1.71 (Durbin-Watson) demonstrate that neither model has serious autocorrelation problems.

Referring to Table 3, Model 1 ($RTURN_1$) reports a significant positive influence of individual investors' sentiment in pre-market (*PREINSENT*) on initial return. Model 1 reports the t-statistics value of 2.4781 (p-value of 0.0138). As such, Model 1 is significant at a 1 percent level. The coefficient shows a positive value of 0.0184 demonstrating that a 1 percent increase in *PREINSENT* will increase $RTURN_1$ by 0.0184 percent. The finding presents the positive influence of *PREINSENT* on $RTURN_1$, which is consistent with *H1* which anticipates the positive influence of *PREINSENT* on $RTURN_1$. The finding on the significant effect of *PREINSENT* is also consistent with Che-Yahya and Matsuura (2021), Da et al. (2011), Chung et al. (2017), Gao et al. (2016), and Tsukioka et al. (2018).

Moreover, the results presented in Table 3 support the theories applied in this study: signalling theory, information asymmetry theory, and planned behaviour theory. The significance and positive relationship between pre-market individual investors' sentiment (*PREINSENT*) and first-day IPO initial return ($RTURN_1$) are in line with the three theories, proving that if IPO has high attention from individual investors (from a high score of GSVS), caused by information asymmetry issues (when there is low information available to investors), investors will search for more information (in this context, will Google for more information about the IPO). Therefore, with the potential assistance of demand, higher GSVS causes IPO market prices to rise. Indirectly, GSVS signals that high attention and participation from individual investors will lead to a high initial return. The finding of this study also supports the planned behaviour theory. In specific, higher *PREINSENT* implies that when individual investors search for more information on the newly issued IPOs from Google, it reflects the intensity of their intention or positive sentiment in buying the IPOs. Therefore, the intensity escalates demand and better IPO initial return.

Meanwhile, the results presented in Table 3 show Model 2 (VOL_1) that reports a significant and positive influence of individual investors' sentiment in pre-market (*PREINSENT*) and on trading volume. The t-statistics of 3.9223 (p-value of 0.0001) in Model 2 signifies Model 2 to significance at a 1 percent level. The coefficient shows a positive value of 0.0003 which implies a positive relationship between *PREINSENT* and demonstrating that a 1 percent increase in *PREINSENT* will increase VOL_1 by 0.0003 percent. This finding presents a positive influence of *PREINSENT* on VOL_1 that supports *H2* of this study. The finding of this study is consistent with that reported by De Souza et al. (2018), which indirectly suggested that pessimism in investors' sentiment should lead to lower trading volume due to the lower demand for shares while having optimism sentiment (positive sentiment) that leads to a higher trading volume.

The signalling theory and the planned behaviour theory applied in this study support the result for VOL_1. The correlation between *PREINSENT* and VOL_1 is significantly positive. The result supports the idea, which contends that when the IPO is more likely to be purchased by individual investors, investors are more likely to look for further information (in this context, will search, through Google for more information about the IPO). According to Zhu and Niu (2016), new shares with higher levels of informational uncertainty cause individual investors to pay closer attention to them, which increases buying activity because there is a high demand for those shares from uninformed investors. This claim is consistent with their findings. The condition signals that high attention from individual investors may cause high trading volume. On the side of planned behaviour theory, the higher frequency of searches reflects investors' power in buying IPOs which causes higher demand and higher trading activity of an IPO.

For control variables, *OFFSIZE, MKTRETURN,* and *RECIPROCAL* are positive and highly significant in influencing $RTURN_1$. *OFFSIZE* is negative and highly significant, while *MKTRETURN* shows a positive and significant influence on VOL_1. The other variables have shown insignificant influence on IPO initial return and trading volume. Therefore, investors need to have a better judgment on the shares they intend to keep. Thus, the objective of the shareholders to maximize wealth over the long term can be achieved. Next, it is recommended for future studies track their unique market regulation depending on the area of observation of the studies to ensure efficiency and effectiveness in capturing sentiment from individual investors.

Every stock market has its own uniqueness in the regulation setting, making certain research designs unsuitable to be adopted in different studies. At the same time, this research recommends future studies employ the type of online news covered by the mass media as moderating variable to capture the possibility of negative sentiment from individual investors. Wu and Lin (2017) stated that investors have different responses to the tone of media coverage. Sometimes, investors will search for a firm through an online platform only to verify the news that they read. Thus, it does not necessarily mean higher positive sentiment among investors when GSVS is higher. Hence, the examination of a moderating variable may provide the body of knowledge with a better understanding of the role of GSVS, hence further justification behind the significant relationship between individual investors' sentiment and IPO performance.

5. CONCLUSION

This study has scritunised the impact of pre-market investor sentiment on the first trading day's trading volume and the first return on an IPO. The results of this study show a positive and significant relationship between pre-market investor's attitudes and the first return and trading volume of initial public offerings. A few additional independent factors were also shown to have a big impact on trade volume.

To sum up, the major results of this research have shown that pre-market investor sentiment is one of the important factors affecting the initial return and trading volume of initial public offerings (IPOs). The research's implication is that investors should start taking the GSVS data in order to gauge the individual investors' sentiment before the market opens into account. Prior to the IPO, it was anticipated that as Google searches for a company increased, so did investor interest, which increased investor interest in the IPO. These circumstances will lead to larger early returns and IPO trading volume.

Several recommendations for future studies are mainly from the limitations of this study. First of all, it is recommended for future studies to extend the estimation period of IPO performance as this study only focuses on short-term IPO performance to medium and long terms to continually understand the influence of individual investors' sentiment. Da et al. (2011) proposed that an increment in investors' attention usually leads to higher initial performance but lower long-run performance of IPOs. Therefore, the extension of the estimation period of IPO performance helps investors, especially in long-term performance.

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