Jurnal Economia, Vol. 20, No.1, February 2024, 161-181 P-ISSN: 1858-2648
Website: https://journal.uny.ac.id/index.php/economia E-ISSN: 2460-1152

Underpricing and Herding Behaviour IPO Stock in the Covid-19 Pandemic at the Indonesian Stock Exchange

Suramaya Suci Kewal[1*], Yohanes Andri Putranto B[2]
[1,2]Universitas Katolik Musi Charitas, Palembang, Indonesia
[1]suramaya@ukmc.ac.id, [2]andri@ukmc.ac.id
*corresponding author

Abstract
This study aims to empirically test whether there is underpricing and herding behavior in companies that have just IPO on the Indonesia Stock Exchange in 2020. The selection in 2020 is because the stock exchange experiences high trading volatility due to the crisis impact of the Covid-19 pandemic. This study uses a market adjusted return approach in calculating underpricing, and uses the Chang, Cheng, and Khorana (CCK) method to indicate the occurrence of herding behavior in IPO shares on the Indonesia Stock Exchange. The significance level used in the study was 5%. The results show that there is an underpricing phenomenon in companies whose IPOs are on the IDX and there is no evidence of herding behavior by investors on IPO shares on the IDX. Investors are advised to invest in IPO shares, especially during the pandemic and make rational considerations in making investment decisions in the capital market.

Keywords: *Underpricing, Herding Behavior, IPO Shares, Pandemic, Capital Market*

Perilaku *Underpricing* dan *Herding* Saham IPO pada Masa Pandemi Covid-19 di Bursa Efek Indonesia

Abstrak
Penelitian ini bertujuan ingin menguji secara empiris apakah terjadi underpricing dan perilaku herding pada perusahaan yang baru IPO di Bursa Efek Indonesia pada tahun 2020. Pemilihan tahun 2020 dikarenakan bursa mengalami volatilitas perdagangan yang tinggi dikarenakan krisis dampak dari pandemi Covid-19. Penelitian ini menggunakan pendekatan market adjusted return dalam menghitung underpricing, dan menggunakan metode Chang, Cheng, and Khorana (CCK) dalam mengindikasikan terjadinya perilaku herding pada saham IPO di Bursa Efek Indonesia. Tingkat signifikansi yang digunakan dalam penelitian sebesar 5%. Hasil penelitian menunjukkan bahwa terjadi fenomena underpricing pada perusahaan yang IPO di BEI dan tidak terbuki adanya perilaku herding yang dilakukan investor pada saham IPO di BEI. Investor disarankan berinvestasi pada saham IPO khususnya ketika pandemi dan membuat pertimbangan secara rasional dalam pengambilan keputusan investasi di pasar modal.

Kata kunci: Underpricing, Perilaku Herding, Saham IPO, Pandemi, Pasar Modal

History: Received: 3 February 2022 Revised: 6 April 2022 Accepted: 26 September 2023
Citation (APA 6th): Kewal, A.A., & B. Putranto, Y.A (2024). Underpricing and herding behaviour IPO stock in the Covid-19 pandemic at the Indonesian Stock Exchange. *Jurnal Economia,* 20 (1), 161-181. https://doi.org/10.21831/economia.v20i1.47493

INTRODUCTION

The Covid-19 pandemic that hit the world has had a huge impact on the world economy. Governments in various countries have imposed restrictions on human activities and even lockdowns in their respective countries. These activity restrictions automatically stop people's economic activities and hamper production and distribution of goods. The implementation of the lockdown also not only impacts domestic economic activities but

also economic activities related to foreign countries, such as exports and imports (Putri, Damayanti, & Sianturi, 2021). The impact of restrictions on economic activities and lockdowns is a decline in economic performance which is indicated by a slowdown in the country's economic growth.

World economic growth is projected by the IMF to contract at 3% in 2020. The IMF categorizes it as quite severe growth over the last 10 years, worse than the global financial crisis in 2009. The IMF also projects that economic growth in developing countries will be in the same period. quite difficult with the economic contraction. However, the economic contraction that occurs in developing countries will not be more severe than in developed countries. Developing countries will experience an economic contraction of 1%. Apart from the impact of the health crisis, the Covid-19 outbreak, which limited economic activity, the decline in economic performance in developing countries was also caused by declining external demand, tight global finances and falling world commodity prices (Indonesian Central Bureau of Statistics, 2020).

The Indonesian economy in the first quarter of 2020 was -4.19% and in the second quarter it was -5.32%. In the second quarter of 2020, the realization of APBN spending reached IDR 616.54 trillion or around 22.51% of the ceiling of IDR 2,739.17 trillion. This expenditure increased compared to the second quarter of 2019 which amounted to IDR 582.64 trillion. The increase in spending was due to an increase in central government spending and transfers to regions and village funds (Avisena, 2020). The realization of social assistance spending until November 2020 experienced a high increase, namely 44.4%, spread across several Ministries, namely the Ministry of Social Affairs, the Ministry of Education and Culture, BNPB, and the Ministry of Religion (Prakoso, 2020). The contraction in Indonesia's economic growth in the second quarter (year on year) was quite deep. This is due to the widespread impact of the Covid-19 pandemic hitting almost all sectors of the national economy (Avisena, 2020). In the third quarter of 2020, the Indonesian economy was minus 3.49% (year on year) compared to the same period in 2019, but if compared to the second quarter of 2020, in the third quarter growth experienced growth of 5.05% so that the cumulative economic growth in Indonesia from the first quarter to the previous quarter III 2020 still experienced a contraction of 2.03% (Kusuma, 2020).

The crisis that hit the Indonesian economy also impacted the activities of the Indonesian Stock Exchange. There was a sharp decline in the JCI in March when news emerged of the Corona virus entering Indonesia. JCI previously also showed a downward trend which was influenced by negative sentiment from the Coronavirus which was spreading very quickly in China. As time goes by, the increasing number of COVID-19 sufferers in Indonesia has caused the IHSG to experience a quite severe decline. In trading on March 9 2020, the JCI closed down 6.58% to 5,136.81. In fact, on March 24, 2020 trading, the JCI closed negative again at 3,937.63 (Fernando, 2022). As a result of the sharp decline in the JCI caused by the COVID-19 pandemic, a trading halt policy was made on March 10 2020. Based on this policy, a rule was made that if there was a very sharp decline in the same exchange day, a 30-minute trading halt was implemented if there was 5% weakening, and done again in 30 minutes if there is a 10% decrease. Apart from that, trading

suspension is also implemented if the JCI falls by 15%. In March 2020, there were at least 6 trading halts because the JCI experienced a decline of more than 5%. The Indonesian Stock Exchange and the Financial Services Authority also implemented various policies to curb market panic, including changing the lower limit rule for stock auto rejection from 10% to 7%. Apart from that, there is also a policy of relaxing buybacks or buying back shares by issuers without holding a General Meeting of Shareholders (GMS) (Sugianto, 2020b).

The JCI movement showed quite high volatility in trading after March to December 2020. Even though the JCI continued to rise after March 2020, the index has still been minus 19% since the beginning of the year. Even in December, the JCI had penetrated the 6,000 level and there was a decline to the 5,000 level again. The interesting thing that is happening in the capital market is that in unstable economic conditions and stock exchange conditions, it could even be said to be a bearish condition, IPO companies from the beginning of 2020 to the end of 2020 still reached high numbers. As of December 2020, 50 IPO companies had been recorded. Bloomberg noted that Indonesia was the country with the most initial public offerings (IPOs) during the Covid-19 pandemic in the Southeast Asia - ASEAN region (CNN Indonesia, 2020).

According to CSA Research Institute Analyst, Reza Priyambada, the company needs quite a large amount of additional capital amid crisis conditions to expand and the alternative capital that can be done is an IPO (Fernando, 2022). Apart from that, the business world is forced to maintain its operations so that funding needs continue. Even though the number of IPO companies in 2020 almost reached the number in 2019, the total funds absorbed from IPO activities in 2020 were only half of those in 2019, this shows that companies have not optimally absorbed funds from IPO activities. The large number of companies conducting IPOs is also supported by policies created by the Exchange together with the OJK, making it easier for companies to obtain funding. The policy implemented to stimulate companies that want to go public is in the form of a 50% discount on initial share listing fees (Anggraeni, 2020). Apart from that, PT. BEI launched the Electronic Indonesia Public Offering (e-IPO) System on August 10 2020 where the e-IPO system is not only limited to initial public offerings but also to initial offerings of other instruments in the capital market to increase efficiency, effectiveness and transparency in the public offering (Sugianto, 2020a). The Indonesian Stock Exchange has made a new listing policy, namely allowing companies with small and medium-scale assets to carry out IPOs since July 2019. Companies with small and medium-scale assets are also given convenience, namely: there is a deferment period to fulfill the provisions related to organs and/or governance functions per POJK regulations, use of simpler Accounting Standards for small-scale asset companies, companies are allowed to experience losses until the sixth year after being listed, easier requirements for the company's financial aspects, offering structure to the public and minimum number of shareholders after a public offering fewer costs, cheaper recording costs, relaxation in conveying information disclosure (Nurfitriyani, 2019). Director of Research and Investment at Pilarmas Investindo Sekuritas Maximilianus Nico Demus said that it is not just the quantity of IPOs that must be considered, the quality of IPO companies in terms of fundamentals and growth potential is equally important because the aim is to

have more IPOs on the stock market so that investors can diversify their portfolios (Aldin, 2020).

An initial public offering (IPO) is the most effective funding for a company. By going public, companies gain benefits, including: opening the company's access to long-term funding facilities, increasing company value, improving the company's image, growing company employee loyalty, maintaining business continuity, and providing tax incentives. (Bursa Efek Indonesia, 2016). During the initial offering period, asymmetric information can hinder the company's collection of funds from potential investors. Potential investors obtain limited information from the company conducting the IPO. The limited information obtained by investors causes investors to face a high level of risk due to the uncertainty of the company's financial performance. Therefore, investors will only buy shares that they value low (low price). The underwriter who guarantees the sale of the IPO company's initial shares will determine a selling price that is lower than the intrinsic value of the company's shares in order to maintain the number of potential investors who will make purchases during the IPO. The difference between the intrinsic value and the selling price of shares in the primary market is a risk premium for investors because of the asymmetric information that exists (Li, Liu, Liu, & Tsai, 2018).

Underpricing is a phenomenon that occurs in the primary market where the closing price on the first day of listing on the stock exchange is higher than the initial offering price (Farida, 2018). According to Gumanti and Alkaf (2011), although the company will experience losses when underpricing occurs, namely the higher the indirect costs that the company must bear, the occurrence of underpricing during the initial offering is a signal for the company to demonstrate the quality of the company (convince potential investors regarding the company's true value).

Table 1 shows that of the 51 companies that conducted an Initial Public Offering (IPO) on the Indonesia Stock Exchange, almost all of them produced positive returns after their initial share offering. It can be assumed that almost all companies experienced underpricing, only PT. Solusi Sinergi Digital Tbk (WIFI) is the only company that gave a negative initial return of -2.94%. The highest return, namely 70%, was produced by PT. Esta Multi Usaha Tbk, PT. Era Mandiri Cemerlang Tbk, PT. Agro Yasa Lestari Tbk, PT. Perintis Triniti Properti Tbk, and PT. Royalindo Investa Wijaya Tbk. On average, the initial return generated by IPO companies in 2020 was 37.94%.

Li *et al.* (2018) examined IPO underpricing after the 2018 crisis in the capital market in China by comparing IPO underpricing before and after the 2018 financial crisis. IPOs at a lower rate than large companies after the crisis period. Giannopoulos *et al.*(2018) researched the impact of the 2017 global financial crisis on IPO performance in developing capital markets in Asia Pacific. Research was conducted on capital markets in Thailand, China, South Korea and Malaysia. The results obtained are that short-term performance or IPO underpricing in Thailand increased from 19% to 44% between the pre-crisis and post-crisis periods. In the three other developing capital markets (China, South Korea and Malaysia) there was a decrease in underpricing levels after the crisis period. King and Banderet (2014) examined the performance of IPO shares during the short-term and long-

term financial crisis in the United States capital market. His research found that only a small number of companies experienced underpricing conditions, and the crisis had a strong positive impact on long-term performance. The results obtained were that companies that went public during the normal period showed an average of underperformance of 22%, during crisis conditions they experienced overperformance of 26%. Based on these results, it can be concluded that the market tends to experience overreaction due to investors' optimistic and pessimistic feelings and herding behavior.

Table 1. *Initial Return of Companies Going Public in 2020*

No	Stock Code	Initial Return	No	Stock Code	Initial Return	No	Stock Code	Initial Return
1	WIFI	-2.94%	18	TOYS	24.57%	35	CARE	34.95%
2	PMMP	27.81%	19	PPGL	10.00%	36	ESTA	70.00%
3	VICI	35.00%	20	PGUN	34.78%	37	BESS	69.52%
4	ATAP	16.38%	21	SOFA	10.00%	38	ASPI	69.52%
5	PTDU	35.00%	22	UANG	34.40%	39	DADA	69.61%
6	PLAN	9.82%	23	EPAC	34.55%	40	IKAN	70.00%
7	ENZO	34.29%	24	TECH	35.00%	41	AYLS	70.00%
8	HOMI	24.74%	25	CASH	9.71%	42	TAMA	69.14%
9	ROCK	25.00%	26	BBSS	35.00%	43	PURA	69.52%
10	PURI	34.12%	27	BHAT	34.95%	44	DMND	49.73%
11	SOHO	24.73%	28	CBMF	35.00%	45	TRIN	70.00%
12	SCNP	34.55%	29	RONY	35.00%	46	AMOR	50.00%
13	BBSI	25.00%	30	CSMI	0.51%	47	INDO	70.00%
14	KMDS	24.67%	31	SBAT	34.29%	48	AMAR	68.97%
15	PNGO	24.80%	32	KBAG	35.00%	49	CSRA	69.60%
16	TRJA	24.80%	33	SAMF	35.00%	50	PGJO	10.00%
17	SGER	34.26%	34	AMAN	34.55%	51	PTPW	50.00%

Herding behavior is investors' tendency to follow other people's actions (Luong & Ha, 2011). Herding behavior is behavior that connects the psychological aspects of investors with fluctuations that occur in the capital market. A rational investor wants his investment to get a high return with certain risks or vice versa. Rational investors, in making decisions, must base their decisions on an analysis of the company's fundamental conditions. In uncertain situations (high volatility), several objectivity, emotions and psychological factors can influence an investor's investment decisions (Pranyoto, Susanti, & Septiyani, 2020). The influence of several psychological factors can cause investors to become less rational. In the modern financial paradigm, decision-making is based on the complete rationality of investors. Irrational behavior only occurs temporarily from retail investors who trade not based on non-fundamental company information. It is hoped that irrational behavior will disappear from the capital market due to the trading activities of rational institutional investors (Black, 1986; Kyle, 1985; Shleifer & Summers, 1990 dalam Tuyon and Ahmad, 2017). In contrast to the modern financial paradigm, understanding the behavior of "market players" is important in the behavioral financial paradigm because it is believed that the

irrational behavior of "market players" and the interactions between them form dynamic asset prices. (Sanford, 1994; Statman, 2005 dalam Tuyon and Ahmad, 2017).

Capital markets that have a large number of institutional investors allow herding behavior to occur. Institutional investors carry out in-depth evaluations and are very careful in making investment decisions. Institutional investors can also purchase IPO shares in large quantities which can cause share price movements. On the other hand, retail investors will usually follow the recommendations given by institutional investors (Arisanti & Asri, 2018). Throughout 2020 the number of investors on the Indonesian Stock Exchange increased by 28% (the increase occurred among retail investors), this increase has exceeded the target of the Indonesian Stock Exchange, where there was an increase of around 37% compared to 2019. The average daily active retail investor experienced an increase of 184 % as of November 2020 compared to January 2020. The transaction value of retail investors also increased to 44.3% of total transactions from January to October 2020, compared to transactions by local institutional investors at 21.7% and foreign institutional investors at 34.0% (Utami, 2020).

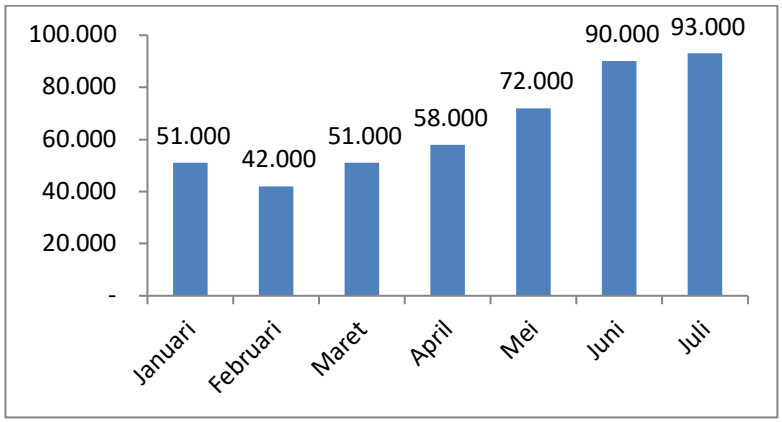

Figure 1. Number of Investors Actively Making Daily Transactions in the Capital Market in 2020 (*Source: PT. BEI in https://katadata.co.id, 2020)*

Figure 1 shows a trend that continues to increase throughout 2020 regarding the number of investors who are active in carrying out daily transactions in the Indonesian capital market in 2020. The increase in the number of active investors is dominated by retail investors who have soared high in the capital market.

Wang, Tang and Chen (2017) researched whether demand for IPO shares influences investors' herding behavior in Taiwan. The results obtained are that investors have a very high interest in demand for IPO shares, herding behavior in the Taiwanese IPO market was found to be consistent with the "winner's curse" theory and investors overreacted to demand for IPO shares in the short term, which resulted in negative returns in the long term. Research by Rahayu *et al.* (2019) regarding herding behavior in the stock market found that herding behavior occurs in almost all stock markets worldwide. Arisanti and Asri (2018) in their research entitled "Herding Behavior of Post Initial Public Offering in Indonesian Stock Exchange" found that there was herding behavior after the IPO on the Indonesian Stock Exchange from 2005 to 2015. Dhall and Singh (2020) conducted research entitled "The

Covid-19 Pandemic and Herding Behavior: Evidence from India's Stock Market" found the results that there was no herding behavior at the industry level before the Covid-19 period, in fact the research results found the occurrence of anti-herding behavior conditions, then after the Covid-19 period in conditions Bullish and Bearish markets occur in herding behavior in the market.

This research aims to prove that underpricing occurred in companies that IPOed during the Covid-19 pandemic. The emergence of the Covid-19 pandemic has also created a condition of panic and worry in the capital market which causes high volatility, high market concentration, reduced returns, and reduced market ability to mobilize new investments, allowing imitation behavior of other investors who have more information than these investors. Therefore, in pandemic conditions and the occurrence of underpricing where the price offered in the primary market is a low price which investors might respond to so that an increase in prices is thought to strengthen the occurrence of herding behavior in IPO companies in the capital market so researchers are interested in continuing to search for evidence of the occurrence of herding behavior in companies that IPOed during the Covid pandemic. This research uses an initial return calculation method which is slightly different from the method usually used by most previous researchers, namely using market-adjusted return because it better reflects price changes than the performance of the stock itself.

Li et al. (2018) examined IPO underpricing after the 2018 crisis in the capital market in China by comparing IPO underpricing before and after the 2018 financial crisis. The results obtained were underpricing at a lower level after the crisis period, this is because there is an opinion that states that China has a policy to overcome the 2009 financial crisis so that it can overcome the crisis and its impact is relatively mild. In addition, the results showed that small-sized companies experienced IPOs at a lower rate than large-sized companies after the crisis period. Giannopoulos et al. (2018) conducted research on the impact of the 2017 global financial crisis on IPO performance in developing capital markets in Asia Pacific. Research was conducted on capital markets in Thailand, China, South Korea and Malaysia. The results obtained are that short-term performance or IPO underpricing in Thailand increased from 19% to 44% between the pre-crisis and post-crisis periods. In the three other developing capital markets (China, South Korea and Malaysia), underpricing levels decreased after the crisis period. King and Banderet (2014) examined the performance of IPO shares during the short-term and long-term financial crisis in the United States capital market. His research found that only a small number of companies experienced underpricing conditions, and the crisis had a strong positive impact on long-term performance. The results obtained were that companies that went public during the normal period showed an average of underperformance of 22%, during crisis conditions, they experienced an overperformance of 26%. Based on these results, it can be concluded that the market tends to experience overreaction due to investors' optimistic and pessimistic feelings and herding behavior.

Wang, Tang and Chen (2017) conducted research on whether demand for IPO shares influences investors' herding behavior in Taiwan. The results obtained are that investors

have a very high interest in demand for IPO shares, herding behavior in the Taiwanese IPO market was found to be consistent with the "winner's curse" theory and investors overreacted to demand for IPO shares in the short term, which resulted in negative returns in the long term. Rahayu et al.(2019) research on herding behavior in the stock market found that herding behavior occurs in almost all stock markets worldwide. Arisanti and Asri (2018) in their research entitled "Herding Behavior of Post Initial Public Offering in Indonesian Stock Exchange" found that there was herding behavior after the IPO on the Indonesian Stock Exchange from 2005 to 2015. Dhall and Singh (2020) conducted research entitled "The Covid-19 Pandemic and Herding Behavior: Evidence from India's Stock Market" found the results that there was no herding behavior at the industry level before the Covid-19 period, in fact the research results found the occurrence of anti-herding behavior conditions, then after the Covid-19 period in conditions Bullish and Bearish markets occur in herding behavior in the market.

The winner's curse theory (Rock 1986 dalam Korsten 2018) states that there is information asymmetry among investors. This theory argues that there are two groups of investors in the capital market, namely, investors who receive more information regarding the fair value of shares compared to other groups of investors who do not receive information regarding the fair value of shares. Investors who have more information will only demand shares at prices below the intrinsic value of the shares, while investors who do not have more information will demand shares at prices below and above the intrinsic value of the shares. However, the capital market requires a group of investors who do not have more information to increase profits in the capital market. During the initial offering period, asymmetric information occurs which can hinder the company's collection of funds from potential investors. Potential investors obtain limited information from the company conducting the IPO. The limited information obtained by investors causes investors to face a high level of risk due to the uncertainty of the company's financial performance. Therefore, investors will only buy shares that they value low (low price). The underwriter who guarantees the sale of the IPO company's initial shares will determine a selling price that is lower than the intrinsic value of the company's shares in order to maintain the number of potential investors who will make purchases during the IPO. Apart from that, during a financial crisis that occurs in a country, it is thought to have a greater underpricing impact than IPO shares because, during a crisis, people's income levels are low, so underwriters and issuers have to set low prices so that investors are willing to buy shares. King and Banderet (2014) examined the performance of IPO shares during the short-term and long-term financial crisis in the United States capital market. His research found that only a small number of companies experienced underpricing conditions, and the crisis had a strong positive impact on long-term performance. The results obtained were that companies that went public during the normal period showed an average underperformance of 22%, while those who went public offering during crisis conditions experienced an overperformance of 26%.

H_1 : There was an underpricing phenomenon on the Indonesian Stock Exchange for IPO shares throughout 2020

Investor behavior in the capital market is very diverse, this can be explained using behavioral finance theory. Behavioral finance theory combines behavior with capital market phenomena and uses knowledge from psychology and financial theory (Fromlet, 2001). In uncertain situations (high volatility), several objectivity, emotions and psychological factors can influence an investor's investment decisions (Pranyoto et al., 2020). Behavioral financial theory can be linked to asymmetric information theory in capital markets. In order to gain profits from investments, investors who have limited information will imitate the actions of other investors who are considered to have better information. Based on the theory of asymmetric information, investors with limited information will follow the decisions of investors with better information to choose underpriced shares to gain profits. The COVID-19 pandemic has created conditions of panic and worry in the capital market, resulting in high volatility, high market concentration, reduced returns and reduced market ability to mobilize new investment. Therefore, it is suspected that the occurrence of herding behavior in pandemic conditions is higher than in normal conditions. Arisanti and Asri (2018) in their research entitled "Herding Behavior of Post Initial Public Offering in the Indonesian Stock Exchange" found that there was herding behavior after the IPO on the Indonesian Stock Exchange from 2005 to 2015.

H_2 : There were indications of herding behavior in IPO shares throughout 2020

METHOD

This type of research is quantitative research. The research aims to prove the occurrence of underpricing conditions and herding behavior in IPO shares throughout 2020 (during the Covid-19 pandemic crisis). The population in this research is IPO companies in 2020. The consideration for the observation period taken in 2020 is the emergence of the first Covid-19 virus in the city of Wuhan, China at the end of 2019. Even though the virus has not been detected in Indonesia, the pandemic issue is developing rapidly, especially since almost half of the total investors on the Indonesian Stock Exchange, namely 43.13% at the end of 2020, were foreign investors (Ramadhani, 2021) which of course has a higher risk because they invest in other countries. The Covid-19 pandemic has also put pressure on economic and social conditions in Indonesia since the end of 2019 (Kurniasih, 2020). The JCI data also shows a downward trend starting in early 2020, as seen in Figure 2.

The official announcement from WHO regarding the Covid-19 pandemic did occur in March 2020, but the circulating rumors started at the end of 2019. In Figure 2 it can be seen that at the beginning of 2020, the IHSG movement had experienced a decline until in March 2020, there was a significant decline in the IHSG.

The sampling technique used was purposive sampling with the following criteria:

1. Companies that IPO in 2020 are not relisting companies.
2. The company must have complete daily closing price data during the IPO period and the 30-day observation period for measuring herding behavior. If investors hold IPO company shares from the start of listing, the rate of return will increase to 15 times the initial investment value (Wibowo, 2021). This behavior shows that price fluctuations are obvious during the 30 days since the company's IPO, and

this is an appropriate period to measure herding behavior. Previous research also used a 30 day observation period for herding behavior (Arisanti & Asri, 2018 ; Wibowo, 2021 ; Akriana & Hasanah, 2022).

3. The company did not carry out a stocksplit during the observation period.

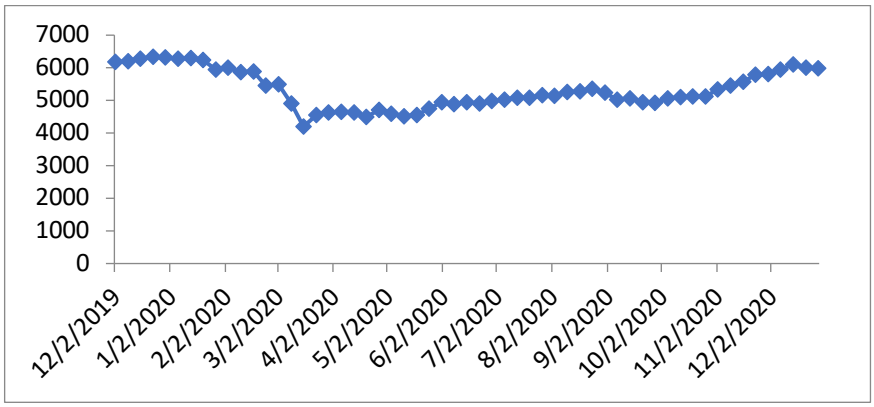

Figure 2. JCI movement December 2019 – December 2020
(Source: yahoofinance.com, 2022)

This type of research data is included in secondary data. The data used in this research is daily company share price data and IHSG data. The data collection method uses documentation techniques. This source can be information or reports from the Indonesian Stock Exchange or from the websites www.idx.co.id, www.yahoofinance.com, and www.ksei.co.id.

The variables used in this research are initial returns, individual company returns and market returns. Initial returns are used to measure the underpricing of IPO companies. According to Ritter and Welch (2002) in King and Banderet (2014), the method for measuring IPO underpricing is to calculate the percentage of the difference between the offering price and the closing price on the first day of the IPO. Individual company returns and market returns are used to calculate the CSAD (Cross-sectional Absolute Deviation) value in determining herding behavior in the capital market.

1. IPO Underpricing : Returns on the first day of the IPO use market adjusted returns
   Formula :

$$IPO\ Underpricing = \left[\frac{(Closing\ price_t - Offer\ pricing_t)}{Offer\ price_t} - \frac{(Market\ closing\ index_t - Market\ closing\ index_{t-1})}{Market\ closing\ index_{t-1}}\right]$$

The IPO underpricing calculation uses market-adjusted returns because it takes into account changes that occur in market conditions or IHSG between the date the shares were first traded until the closing date. This is intended to ensure that the initial return is not caused by market conditions but by the stock's performance (Gounopoulos, Nounis, & Stylianides, 2011).

2. $R_{i,t}$: Company i's share return in period t

$$\text{Formula:} R_{i,t} = \frac{(P_t - P_{t-1})}{P_{t-1}}$$

3. $R_{m,t}$: Cross-sectional average of N market portfolio returns in period t

$$\text{Formula:} R_{i,t} = \frac{(IHSG_t - IHSG_{t-1})}{IHSG_{t-1}}$$

A descriptive analysis will be used to see the amount of underpricing that occurred during the observation period. Apart from that, it will also look at the distribution of data based on the average and standard deviation. In testing the first hypothesis using a one sample t-test with a significance level of 5%, where the hypothesis to be tested is as follows:

H_0 : IPO *underpricing* ≤ 0

H_1 : IPO *underpricing* > 0

The first hypothesis will be accepted if the significance is <5% and has a positive t-value.

The second hypothesis testing was carried out using the Chang, Cheng, and Khorana (CCK) method. The CCK method has the advantage that the overall herding behavior of shares in the capital market can be detected with this method, and it also uses relatively simple data, namely stock returns (Chandra, 2012). Apart from that, this method uses a nonlinear approach between market dispersion and rate of return considering that investors are more likely to follow market behavior (Sihombing, Sadalia, & Wibowo, 2021). The CCK calculation method begins by calculating the CSAD (Cross-sectional Absolute Deviation) value using the equation:

$$CSAD_t = \frac{1}{N} \sum_{i=t}^{N} \left| R_{i,t} - R_{m,t} \right|$$

Ri,t : Company i's share return in period t

Rm,t : Cross-sectional average of N market portfolio returns in period t

N : Number of shares in the portfolio

To find non-linear correlation, the equation used is:

$$CSAD_t = \propto + \gamma_1 \left| R_{m,t} \right| + \gamma_2 {R_{m,t}}^2 + \varepsilon_t$$

α : Constant

γ_1 : Linear coefficient between CSAD and market portfolio returns

γ_2 : Nonlinear coefficient between CSAD and market portfolio returns

R(m,t) : Market portfolio return in period t

ε_t : Standard error

The second hypothesis is accepted if the coefficient of the squared market portfolio return (γ^2) is negative and significant or it can be concluded that herding behavior occurs.

FINDING AND DISCUSSION

At the start of collecting research data that will be processed to answer the research hypothesis, data is first collected on the number of companies that conducted an Initial

Public Offering (IPO) throughout 2020 and the data is in the form of the company's listing date on the Indonesia Stock Exchange (BEI). After conducting a search based on the sample collection criteria, it turned out that no samples had been removed, so the total number of companies observed were companies that conducted IPOs throughout 2020, namely 51 companies. The following are the names of companies that conducted IPOs throughout 2020.

Table 2. *IPO Companies in 2020*

No	Stock Code	Company	IPO Date
1	WIFI	PT. Solusi Sinergi Digital Tbk	30 December 2020
2	PMMP	PT. Panca Mitra Multiperdana Tbk	18 December 2020
3	VICI	PT. Victoria Care Indonesia Tbk	17 December 2020
4	ATAP	PT. Trimitra Prawara Goldland Tbk	11 December 2020
5	PTDU	PT. Djasa Ubersakti Tbk	08 December 2020
6	PLAN	PT. Planet Properindo Jaya Tbk	15 September 2020
7	ENZO	PT. Morenzo Abadi Perkasa Tbk	14 September 2020
8	HOMI	PT. Grand House Mulia Tbk	10 September 2020
9	ROCK	PT. Rockfields Property Indonesia Tbk	10 September 2020
10	PURI	PT. Puri Global Sukses Tbk	08 September 2020
11	SOHO	PT. Soho Global Health Tbk	08 September 2020
12	SCNP	PT. Selaras Citra Nusantara Perkasa Tbk	07 September 2020
13	BBSI	PT. Bank Bisnis Internasional Tbk	07 September 2020
14	KMDS	PT. Kurniamitra Duta Sentosa Tbk	07 September 2020
15	PNGO	PT. Pinago Utama Tbk	31 August 2020
16	TRJA	PT. Transkon Jaya Tbk	27 August 2020
17	SGER	PT. Sumber Global Energy Tbk	10 August 2020
18	TOYS	PT. Sunindo Adipersada Tbk	06 August 2020
19	PPGL	PT. Prima Globalindo Logistik Tbk	20 July 2020
20	PGUN	PT. Pradiksi Gunatama Tbk	07 July 2020
21	SOFA	PT. Boston Furniture Industries Tbk	07 July 2020
22	UANG	PT. Pakuan Tbk	06 July 2020
23	EPAC	PT. Megalestari Epack Sentosaraya Tbk	01 July 2020
24	TECH	PT. Indosterling Technomedia Tbk	04 June 2020
25	CASH	PT. Cashlez Worldwide Indonesia Tbk	04 May 2020
26	BBSS	PT. Bumi Benowo Sukses Sejahtera Tbk	15 April 2020
27	BHAT	PT. Bhakti Multi Artha Tbk	15 April 2020
28	CBMF	PT. Cahaya Bintang Medan Tbk	09 April 2020
29	RONY	PT. Aesler Grup Internasional Tbk	09 April 2020
30	CSMI	PT. Cipta Selera Murni Tbk	09 April 2020
31	SBAT	PT. Sejahtera Bintang Abadi Textile Tbk	08 April 2020
32	KBAG	PT. Karya Bersama Anugerah Tbk	08 April 2020
33	SAMF	PT. Saraswanti Anugerah Makmur Tbk (*SAMF*)	31 March 2020
34	AMAN	PT. Makmur Berkah Amanda Tbk	13 March 2020
35	CARE	PT. Metro Healthcare Indonesia Tbk	13 March 2020
36	ESTA	PT. Esta Multi Usaha Tbk	09 March 2020
37	BESS	PT. Batulicin Nusantara Maritim Tbk	09 March 2020

No	Stock Code	Company	IPO Date
38	ASPI	PT. Andalan Sakti Primaindo Tbk	17 February 2020
39	DADA	PT. Diamond Citra Propertindo Tbk	14 February 2020
40	IKAN	PT. Era Mandiri Cemerlang Tbk	12 February 2020
41	AYLS	PT. Agro Yasa Lestari Tbk	12 February 2020
42	TAMA	PT. Lancartama Sejati Tbk	10 February 2020
43	PTPW	PT. Pratama Widya Tbk	29 January 2020
44	PURA	PT. Putra Rajawali Kencana Tbk	22 January 2020
45	DMND	PT. Diamond Food Indonesia Tbk	15 January 2020
46	TRIN	PT. Perintis Triniti Properti Tbk	14 January 2020
47	AMOR	PT. Ashmore Asset Management Indonesia Tbk	13 January 2020
48	INDO	PT. Royalindo Investa Wijaya Tbk	09 January 2020
49	AMAR	PT. Bank Amar Indonesia Tbk	09 January 2020
50	CSRA	PT. Cisadane Sawit Raya Tbk	08 January 2020
51	PGJO	PT. Tourindo Guide Indonesia Tbk	07 February 2020

Source : www.idx.co.id

The research data collected is in the form of share prices of companies conducting an IPO and IHSG around the company's IPO period. The initial calculation carried out was to calculate the initial return generated by each company. The initial return calculation uses the market-adjusted return approach. This is intended to ensure that the initial return is not caused by market conditions but by the performance of the stock itself.

Table 3. *Initial Return (Market Adjusted Model Approach) of IPO Companies in 2020*

No	Stock Code	Initial Return	No	Stock Code	Initial Return	No	Stock Code	Initial Return
1	WIFI	-2.00%	18	TOYS	23.57%	35	CARE	34.71%
2	PMMP	27.96%	19	PPGL	10.56%	36	ESTA	76.58%
3	VICI	35.08%	20	PGUN	34.82%	37	BESS	76.10%
4	ATAP	16.30%	21	SOFA	10.04%	38	ASPI	69.51%
5	PTDU	34.77%	22	UANG	34.10%	39	DADA	69.69%
6	PLAN	11.00%	23	EPAC	34.36%	40	IKAN	70.69%
7	ENZO	31.39%	24	TECH	35.49%	41	AYLS	70.69%
8	HOMI	29.75%	25	CASH	10.21%	42	TAMA	69.93%
9	ROCK	30.01%	26	BBSS	36.71%	43	PURA	69.49%
10	PURI	33.85%	27	BHAT	36.66%	44	DMND	49.80%
11	SOHO	24.46%	28	CBMF	34.52%	45	TRIN	70.66%
12	SCNP	34.73%	29	RONY	34.52%	46	AMOR	49.54%
13	BBSI	25.18%	30	CSMI	0.03%	47	INDO	69.66%
14	KMDS	24.85%	31	SBAT	37.47%	48	AMAR	68.18%
15	PNGO	26.82%	32	KBAG	38.18%	49	CSRA	68.82%
16	TRJA	24.22%	33	SAMF	32.18%	50	PGJO	10.85%
17	SGER	33.99%	34	AMAN	34.30%	51	PTPW	49.79%

Source: processed primary data, 2021

Table 3 shows the initial returns generated by companies that conducted an IPO in 2020. Almost all companies generated positive initial returns, indicating underpricing on the Indonesian Stock Exchange. The average initial return generated based on the market-adjusted return calculation method is 38.53%. The highest initial return value was generated by shares with the code ESTA (PT. Esta Multi Usaha Tbk), namely 76.58%. The lowest initial return value was generated by shares with the code WIFI (PT. Solusi Sinergi Digital Tbk), namely -2.00%.

Testing for the first hypothesis is to prove that underpricing occurs using the t distribution, namely a one sample t-test where we want to prove that the initial return value must be > 0. Before testing the one sample t-test, a data normality test is first carried out as a condition for parametric testing.

Table 4. *Initial Return Data Normality Test Results*

Significance of Kolmogorov Smirnov	0.000

Table 4 shows the results of normality testing for initial return data which will be used to prove the first hypothesis. The Kolmogorov Smirnov significance value of 0.000 means that the initial return data is not normally distributed so it cannot proceed to the one sample t-test. Various transformations were carried out to fulfill data normality but the results still showed abnormal data. Therefore, data processing uses bootstrapping techniques by doubling the number of samples used so that it falls into the large sample category and testing data normality is no longer a priority assumption requirement.

Table 5. One Sample T-Test Initial Return Test Results

	Mean Difference	Significance (2 tailed)
IPO Return	0.38526	0.001

The results of the One Sample T-Test Initial Return Test in Table 5 show a positive mean difference value of 0.38526, meaning that the resulting initial return is positive or there is an increase in share prices after the first offering on the stock exchange. The significance value resulting from the test is 0.001, which means that it is statistically proven that the closing share price on the first day of the company's IPO was higher than the offering price (there was an increase in price) or in other words, significant underpricing occurred on the Indonesia Stock Exchange throughout the 2020 observations (H_1 is accepted).

The testing continues by proving the occurrence of herding behavior in IPO shares on the Stock Exchange. Testing was carried out using the Chang, Cheng, and Khorana (CCK) method. The calculation starts from calculating individual stock returns and market returns proxied by the IHSG during the observation period, namely for 30 days of observation, by first calculating the CSAD (Cross-sectional Absolute Deviation) value. After getting the CSAD value, proceed with testing using nonlinear regression, namely a form of quadratic regression. Testing using nonlinear regression does not prioritize classical assumptions but focuses more on model testing carried out at the beginning of the test.

Table 6. *Quadratic Regression Model Test Results*

Significance of F distribusition (ANOVA)	0.032

The initial test carried out on quadratic regression was to test the regression model using the ANOVA test or F distribution. Initially using the CSAD variable as the dependent variable and the absolute value of market returns as the independent variable, the model test results were not fit (the significance of the F distribution was greater than 5%), so that data transformation is carried out using natural logarithms (ln). The test results after data transformation are shown in Table 6 where the significance value is 0.032 (smaller than 0.05) so it can be concluded that the variable relationship in the regression model is appropriate using quadratic regression.

Table 7. *Quadratic Regression Test Results*

	Unstandardized Beta	Significance
ln_X1	0.098	0.281
ln_X1 ** 2	0.009	0.188
(Constant)	0.321	0.287

The quadratic regression results in Table 7 show a positive and insignificant beta value for the quadratic variable. This data does not meet the testing criteria where the second hypothesis is accepted if the coefficient of the squared market portfolio return (γ2) is negative and significant. The criteria are not met so that a decision can be made that H2 is not supported or it can be concluded that there is no evidence of herding behavior in IPO shares on the Indonesia Stock Exchange in the 2020 observation period.

The first hypothesis in this research is supported, meaning that there is an underpricing phenomenon on the Indonesian Stock Exchange for IPO shares throughout 2020. The results of this research support the theory of the winner's curse, where there are two groups of investors in the capital market, namely investors who receive more information about the fair value of shares compared to other groups and other investors who do not receive information regarding the fair value of shares. During the initial offering period, asymmetric information can hinder the company's collection of funds from potential investors. Potential investors obtain limited information from the company conducting the IPO. The limited information obtained by investors causes investors to face a high level of risk due to the uncertainty of the company's financial performance. Therefore, investors will only buy shares that they value low (low price). The underwriter who guarantees the sale of the IPO company's initial shares will determine a selling price that is lower than the intrinsic value of the company's shares in order to maintain the number of potential investors who will make purchases during the IPO. Baron (1982) in Maharani (2017) states that share prices could fall significantly in the first week on the secondary market if the IPO offering price is set too high. Investors will feel disappointed and ask the underwriter why this happened, so to calm investors and build a good image, the underwriter often proposes a low offering price for IPO shares (underprice). Husnan, Hanafi, & Munandar (2014) found that the level of underpricing of IPO shares on the Indonesia Stock Exchange was around 25%. Apart

from that, during a financial crisis that occurs in a country, it is thought to have a greater underpricing impact than IPO shares because during a crisis, people's income levels are low, so underwriters and issuers have to set low prices so that investors are willing to buy shares. King and Banderet (2014) examined the performance of IPO shares during the short-term and long-term financial crisis in the United States capital market. His research found that the crisis affected the average level of underpricing. The results obtained were that companies that went public during the normal period showed an average of underperformance of 22%, during crisis conditions they experienced an overperformance of 26%.

The second hypothesis in this research is not supported, meaning that there is no indication of herding behavior in IPO shares throughout 2020, so it does not support the application of the theory of financial behavior and information asymmetry in the observation period. In market conditions that are in crisis there is a greater chance of herding behavior occurring, investors prefer to follow the direction of market movements rather than carrying out individual analysis. In this study, no results were found to support this statement. This is due to the existence of rules or regulations set by the OJK and the Indonesian Stock Exchange, which aim to protect investors. The rules or regulations set by the OJK and the stock exchange include: buying back shares without approval from the General Meeting of Shareholders (GMS), determining a smaller auto rejection limit, prohibiting short-selling transactions, and establishing a trading halt for 30 minutes if the JCI experiences a decline 5%. Based on observations by Avery and Zemsky (1998) in Kizys, Tzouvanas, & Donadelli (2021), The government's response can reduce uncertainty in various fields caused by the crisis which can reduce herding behavior. In addition to the policies set, the government, in this case the OJK and IDX, also always provides appeals in the mass media so that investors remain calm and not panic and make investment decisions with in-depth analysis. The IDX always strives to carry out market supervision, provide market products and conducive trading arrangements (Anonim, 2020 in Yowi, 2021). Yowi (2021) researched Detecting Herding Behavior in the Indonesian Capital Market during the Covid-19 pandemic and found no herding behavior in the Indonesian capital market. These results explain that investors use rational thinking to make investment decisions using information in the capital market.

CONCLUSION

Based on the research results, it can be concluded that the first hypothesis is accepted, meaning that there is an underpricing phenomenon on the Indonesian Stock Exchange for IPO shares throughout 2020 and the second hypothesis is not supported, meaning that there is no indication of herding behavior for IPO shares throughout 2020. The results of this research imply that the phenomenon of stock underpricing The IPO occurred during the pandemic, so investors who want to get additional profits can take advantage of requesting IPO shares. In this research, no herding behavior was found or it could be said that investors can make rational considerations in making investment decisions in the capital market.

This research only examines the phenomenon of underpricing during a pandemic or crisis without comparing the level of underpricing before and when the pandemic occurred. In testing herding behavior, the observation period was daily, and the observation period was only in 2020 during the pandemic. This research also examines IPO companies in general without looking at the characteristics of the company. It is hoped that future research can compare the level of underpricing in different conditions in order to confirm further that the level of underpricing during the pandemic was higher than the level during normal period. Future studies can also take an intraday observation period to better observe investors' herding behavior. In addition, the observation and testing period should be extended until 2021, considering the pandemic is ongoing in that period. Further future research should make comparisons based on company characteristics, for example, company size, industrial sector, etc.

REFERENCES

Abdurachman, D., Ramdhan, R. M., Karsoma, A., Kisahwan, D., Winarno, A., & Hermana, D. (2023). Corporate Social Responsibility: Micro Foundation Framework for High Employee Performance in a Developing Country. *Administrative Sciences*, 13(8), 186. MDPI AG. Retrieved from http://dx.doi.org/10.3390/admsci13080186

Acheampong, A., M. A. Muhammed, and K. Agyapong. (2016). Perceived Quality of Work Life and Work Performance among University Academic Staff. *International Journal of Current Research and Academic Review* 4 (4): 1–13.

Ahmad, H., Kilani, Q., Alnajdawi, S. (2023). The effects of big data analytics and workplace pressures on productivity. *International Journal of Data and Network Science*, 7(4), pp. 1485–1492. Doi: 10.5267/j.ijdns.2023.8.014

Aketch, J. R., O. Odera, P. Chepkuto, and O. Okaka. (2012). Effects of Quality of Work Life on Job Performance: Theoretical Perspectives and Literature Review. *Current Research Journal of Social Sciences* 4 (5): 383–8.

Al-Kharabsheh, S.A., Attiany, M.S., Alshawabkeh, R.O.K., Hamadneh, S., Alshurideh, M.T. (2023). The impact of digital HRM on employee performance through employee motivation. *International Journal of Data and Network Science* 7(1), pp. 275-282. Doi: 10.5267/j.ijdns.2022.10.006

Albrecht SL, Furlong S and Leiter MP (2023). The psychological conditions for employee engagement in organizational change: Test of a change engagement model. *Frontiers in Psychology*, 14, 1071924. doi: 10.3389/fpsyg.2023.1071924

Amoadu, M., Ansah, E.W. & Sarfo, J.O. (2023). Influence of psychosocial safety climate on occupational health and safety: a scoping review. *BMC Public Health* 23, 1344. https://doi.org/10.1186/s12889-023-16246-x

Baron, R. A. (1991). Motivation in work settings: Reflections on the core of organizational research. *Motivation and Emotion*, 15(1), 1–8.

Blum and Nylon. (2009). *Sikap Kerja dan Faktor yang Mempengaruhi*. Bandung: penerbit Alfabeta

Buhagiar, K. and Anand, A. (2023). Synergistic triad of crisis management: leadership, knowledge management and organizational learning. *International Journal of*

Organizational Analysis, Vol. 31 No. 2, pp. 412-429. https://doi.org/10.1108/IJOA-03-2021-2672

Choi, K., Fang, M., Khatter, A. (2022). What motivates employees to work in the hotel industry?: Quarantine hotel employees' perspectives. *Management* 53(1), pp. 96-99. https://doi.org/10.1016/j.jhtm.2022.09.004

de Visser, M., de Graaf-Zijl, M., Anema, J.R. et al. (2023). Work and health during the COVID-19 crisis among Dutch workers and jobseekers with (partial) work disabilities: a mixed methods study. *BMC Public Health* 23, 966. https://doi.org/10.1186/s12889-023-15720-w

Dost, M. and Qatiti, K.A. (2023). Leadership, stress and politics: influences on creativity and innovation in emerging markets. *Management Decision* Vol. 61 No. 9, pp. 2564-2581. https://doi.org/10.1108/MD-12-2021-1577

Ejigu, Y., Abera, N., Haileselassie, W. et al. (2023). Motivation and job satisfaction of community health workers in Ethiopia: a mixed-methods approach. *Human Resources for Health* 21, 35. https://doi.org/10.1186/s12960-023-00818-4

Faulkner, S. L., & Trotter, S. P. (2017). Data Saturation. *The International Encyclopedia of Communication Research Methods*. https://doi.org/10.1002/9781118901731.iecrm0060

Febrianto, W.N. (2019). *Pengaruh Motivasi Kerja dan Lingkungan Kerja terhadap Disiplin Kerja (Studi pada Karyawan PT Deltomed)*. Skripsi. Tidak Diterbitkan. Universitas Negeri Yogyakarta: Yogyakarta.

Godavarthi B., Murali D., S. Anjali. D., S. Srinivasulu R., Allam B., G. Srilakshmi. (2023). Blockchain integration with the internet of things for the employee performance management. *The Journal of High Technology Management Research* 34(2), 100468. https://doi.org/10.1016/j.hitech.2023.100468

Goetsch, D.L. & Davis, S.B. (2014). *Quality Management for Organizational Excellence*. Upper Saddle River: Pearson

Hasibuan, S.P, M. (2014). *Manajemen Sumber Daya Manusia*. Jakarta: Bumi Aksara

Hasibuan, S.P.M., (2017). *Manajemen Sumber Daya Manusia*. Jakarta: Bumi Aksara

Jonker, L. C. (2016). Stress in a College Workplace and its Relationship with Certain Correlations and Predictive Variables. *Stellenbosch University*.

Jusmin, A., Said, S., Bima, M. J., & Alam, R. (2016). Specific determinants of work motivation, competence, organizational climate, job satisfaction and individual performance: A study among lecturers. *Journal of Business and Management Sciences*, 4(3), 53–59.

Kalo, K., Koestner, C., Dicks, T. et al. (2023). Sociodemographic and work-related differences in teachers' attitude towards and perceived stress from emergency remote teaching during the COVID-19 pandemic. *Scientific Reports* 13, 12999. https://doi.org/10.1038/s41598-023-39824-w

Kotagi, P., Angolkar, M. & Koppad, R. (2023). Comparison of work efficiency in factory workers: pre & post covid lockdown – a cross sectional study. *BMC Public Health* 23, 939. https://doi.org/10.1186/s12889-023-15886-3

Kuswanto, H., G., & Aeni, H. (2021). The Influence of Leadership Style, Motivation and Work Discipline on Employee Performance. *International Journal of Management Science*

and Information Technology (IJMSIT) 1(2), pp. 2776-7388. DOI: https://doi.org/10.35870/ijmsit.v1i2.352

Lafitasari, R. (2019). *Pengaruh Motivasi Kerja, Disiplin Kerja, dan Kompensasi terhadap Kinerja Karyawan pada Dinas Pendapatan, Pengelolaan Keuangan dan Aset Daerah Istimewa Yogyakarta*. Skripsi. Tidak Diterbitkan. Universitas Negeri Yogyakarta: Yogyakarta.

Maier, P., Morath, O., Barsch, F., Krumnau, O., Steinmann, D., Deibert, P. (2023). A Comparison of the Impact of COVID-19–Related Restrictions on Physical Activity Among Public Employees. *Journal of Occupational and Environmental Medicine* 65(9), pp. e587-e592. DOI: 10.1097/JOM.0000000000002906

Mangkunegara, A.P. (2005). *Evaluasi Kinerja Sumber Daya Manusia*. Bandung: Refika Aditama

Mangkunegara (2018). Pengaruh Budaya Organisasi dan Komitmen Organisasi Terhadap Kinerja Karyawan. 1(1), 9–25.

Meng, Y., Luo, X., Sun P., Luo, Y., Wang, Z., Wang, L., Ge, Y., & Lin, L. (2023). Occupational Happiness of Civilian Nurses in China: a cross-sectional study. *BMC Nursing* 22, 233. https://doi.org/10.1186/s12912-023-01397-4

Mohammed, A. S., Ayambila, S. N. . ., & Lukman, S. . (2022). An empirical investigation of the impact of social media tool usage on employees work performance among Ghana Commercial Bank Workers: the moderating role of social media usage experience. *Brazilian Journal of Operations & Production Management*, 20(1), 1382. https://doi.org/10.14488/BJOPM.1382.2023

Murphy, J. (2014). Managing professional development of academic staff to enhance university performance. Thesis (Doctor of Business Administration (DBA). *University of Bath*.

Nabawi, R. (2020). Pengaruh lingkungan kerja, kepuasan kerja dan beban kerja terhadap kinerja pegawai. Maneggio: *Jurnal Ilmiah Magister Manajemen*, 2(2), 170-183.

Nasir, M., Kamase, J., St.Sukmawati, S., Djameng, A. (2023). The Influence of Infrastructure, Compensation, Work Culture, Competence on Job Satisfaction and Employee Performance. *Quality - Access to Success*, 24(196), pp. 337–346.

Okasheh, H., & Al-Qomari, K. (2017). The Influence of Work Environment on Job Performance: A Case Study of Engineering Company in Jordan. *International Journal of Applied Engineering Research* 12(24), pp. 15544-15550.

Pancasila, I., Haryono, S., & Sulistyo, B. A. (2020). Effects of Work Motivation and Leadership toward Work Satisfaction and Employee Performance: Evidence from Indonesia. *Journal of Asian Finance, Economics and Business*, 7(6), 387–397. https://doi.org/10.13106/jafeb.2020.vol7.no6.387

Park, R. (2023). What if employees with intrinsic work values are given autonomy in worker co-operatives? Integration of the job demands–resources model and supplies–values fit theory. *Personnel Review* Vol. 52 No. 3, pp. 724-744. https://doi.org/10.1108/PR-05-2021-0362

Pasaribu, N.A. (2019). *Pengaruh Motivasi, Lingkungan dan Disiplin Kerja terhadap Kinerja Karyawan di Asuransi Jiwa Bersama Bumiputera 1912 Medan*. Skripsi. Tidak Diterbitkan. Institut Agama Islam Negeri Medan: Medan.

Pemerintah Indonesia. (2022). *Peraturan Pemerintah Nomor 35 Tahun 2022 tentang Perguruan Tinggi Negeri Badan Hukum Universitas Negeri Yogyakarta*. Sekretariat Negara. Jakarta.

Puspitasari, C. C. (2016). *Pengaruh Budaya Organisasi, Motivasi dan Kepuasan Kerja terhadap Kinerja Karyawan BMT Sahara Tulungagung*. Skripsi. Tidak Diterbitkan. Institut Agama Islam Negeri Tulungagung: Tulungagung.

Puspitasari, P., & Wulandari, R. D. (2022). The Influence of Leadership Style on Employee Discipline in Wiyung Sejahtera Hospital. *The Indonesian Journal of Public Health* 17(2), 273–284. https://doi.org/10.20473/ijph.v17i2.2022.273-284

Ramasundaram, A., Gurusamy, R., & George, A. (2022). Employees and workplace surveillance: Tensions and ways forward. *Journal of Information Technology Teaching Cases*. https://doi.org/10.1177/20438869221142027

Riyanto, S., Prasetyo, J.H. (2021). Factors affecting civil servant performance in Indonesia. *International Journal of Entrepreneurship* 25(5).

Saputri, Y.W., Qomariah, N., Herlambang, T. (2020). Effect of work compensation, supervision, and discipline on work performance. *International Journal of Scientific and Technology Research* 9(1), pp. 2597–2601.

Sarros, J.C., Gmelch, W.H., & Tanewski, G.A. (1997). The role of department head in Australian universities: Changes and challenges. *Higher Education Research & Development*, 16(1), 9–24.

Sarros, J.C., Gmelch, W.H., & Tanewski, G.A. (1998). The academic dean: A position in need of a compass and clock. *Higher Education Research & Development*, 17(1), 65–88.

Sedarmayanti. (2001). *Sumber Daya Manusia dan Produktivitas Kerja*. Bandung: Mandar Maju

Siagian, Sondang, P. (2009). *Administrasi Pembangunan*. Jakarta: Bumi Aksara

Siagian. Sondang, P. (2012). *Manajemen Sumber Daya Manusia*. Jakarta: Bumi Aksara.

Simamora, H. (2005). *Manajemen Sumber Daya Manusia*. Yogyakarta: STIE YKPM

Soetjipto, N., Kurniawan, G., Sulastri, S., & Riswanto, A. (2020). Supply Chain Analysis in Public Works: The Role of Work Climate, Supervision and Organizational Learning. *The Journal of Asian Finance, Economics and Business* 7 (12), 1065–1071. https://doi.org/10.13106/JAFEB.2020.VOL7.NO12.1065

Sugiyono. (2010). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta

Sugiyono. (2011). *Metode Penelitian Kuantitaif Kualitatif dan R & B*, Bandung: Alfabeta.

Sugiyono. (2018). *Metode Penelitian Kuantitatif*. Bandung: Alfabeta

Sugiyono. (2019). *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan)*. Bandung: Alfabeta

Sunarsi, D. (2020). *Panduan Meningkatkan Kinerja dan Kepuasan Guru*. Banten: Desanta Muliavisitama.

Sutalaksana, I, Anggawisastra, R, & Tjakraatmadja, J, H, (2006). *Teknik Perancangan Sistem Kerja*. Bandung: Penerbit ITB Bandung

Sutrisno, E. (2011). *Manajemen Sumber Daya Manusia*. Jakarta: Kencana Prenada Media Group

Taylor, T., Gough, J., Bundrock, V., & Winter, R. (1998). A bleak outlook: Academic staff perceptions of changes in core activities in Australian higher education, 1991–96. *Studies in Higher Education*, 23(3), 255–268.

Tran, The Tuan and Quang Hung Do. (2020). Factors Affecting Job Motivation among Faculty Members: Evidence from Vietnamese Public Universities. *Journal of Asian Finance, Economics and Business* Vol 7 No 9 (2020) 603–611. doi:10.13106/jafeb.2020.vol7.no9.603

Valk, R. and Yousif, L. (2023). "Going beyond to deliver hip hospitality": exploring motivation and job satisfaction of hospitality workers in Dubai. *International Journal of Organizational Analysis*, Vol. 31 No. 2, pp. 293-316. https://doi.org/10.1108/IJOA-12-2020-2517

Varga, A.I., Spehar, I. & Skirbekk, H. (2023). Trustworthy management in hospital settings: a systematic review. *BMC Health Services Research* 23, 662. https://doi.org/10.1186/s12913-023-09610-5

Winter, R.P., Taylor, T., & Sarros, J.C. (2000). Trouble at mill: Quality of academic worklife issues within a comprehensive Australian university. *Studies in Higher Education*, 25(3), 279–294.

Winter, Richard & James Sarros (2002) The Academic Work Environment in Australian Universities: A motivating place to work?, *Higher Education Research & Development*, 21:3, 241-258, DOI: 10.1080/0729436022000020751

Wolverton, M., Gmelch, W.H., Wolverton, M.L., & Sarros, J.C. (1999). Stress in academic leadership: U.S. and Australian department chairs/heads. *The Review of Higher Education*, 22(2), 165–185.

Yulianto, B. (2020). *Perilaku Pengguna APD sebagai Alternatif Meningkatkan Kinerja Karyawan yang Terpapar Bising Intensitas Tinggi*. Scopindo Media Pustaka.

Yousefi, Midya, Rohini Devi, and Ahmad Shuib. (2020). *Universal Journal of Educational Research* 8(3A): 1-5. DOI: 10.13189/ujer.2020.081401