

Relationship between Dividend Payout and its Determinants : A Meta-Analysis

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Abstract

Purpose : The main objective of this study was to statistically combine the outcomes of earlier literature on the relation between dividend pay-out and its determinants by utilizing the meta-analysis technique.

Methodology : The analysis included independent characteristics such as size, age, leverage, EPS, cash flow, liquidity, return on assets, return on equity, and lagged dividends. Additionally, the payout of dividends was considered a dependent component. An evaluation of 56 research articles was conducted that emphasized the association between dividend pay-out and its determinants over the period from 2002–2023. The study employed Meta Essential software for meta-analysis of articles selected from the Web of Science and Scopus databases.

Findings : The study found an affirmative correlation between dividend payout and ROA, ROE, EPS, cash flow, liquidity, age, size, and lagged dividend. Leverage had a detrimental correlation with dividend payouts.

Practical Implications : The primary conclusion of the study was that it synthesized all of the research on the relationship between dividend payout and its variables, which had an impact on policymakers' decisions and future research. It provides a comprehensive framework that will be useful to investors, corporations, and company regulators. Fisher's Z transformation, which includes all the studies, can be used to do additional research.

Originality : This study extends previous research by using meta-analysis to evaluate the relationship between dividend payout and numerous intrinsic, independent characteristics.

Keywords : dividend policy, dividend payout, meta-analysis, profitability

JEL Classification Codes : G3, G32, G35

Paper Submission Date : September 25, 2023 ; **Paper sent back for Revision :** March 15, 2024 ; **Paper Acceptance Date :** May 25, 2024 ; **Paper Published Online :** August 14, 2024

The idea behind a company's dividend policy is how it distributes money to its shareholders — either as cash dividends or share repurchases. According to Lease et al. (2000), dividend policy means “the practice that management follows in making dividend payout decisions, that is, the size and pattern of cash distributions over time to shareholders.” The concept of dividend was first of all initiated by Lintner in 1956. The

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DOI : <https://doi.org/10.17010/ijf/2024/v18i8/174242>

topic of dividend policy and its factors continues to be a controversial one in finance. While the many studies about what drives dividends share certain commonalities, there are significant differences because of the research design employed and the contextual differences between established and emerging markets. There is disagreement over the factors that affect dividend payout or the willingness to pay dividends despite decades of research on these topics. Return on assets (ROA), return on equity (ROE), earning per share (EPS), liquidity, growth opportunities, size, age, tax, business risk, the size of the board, audit type, ownership, leverage, and other factors have all been shown to affect dividend payouts in previous studies (Baker et al., 2019; Chee et al., 2019; Cristea & Cristea, 2017; Kengatharan, 2021; Nusrathunnisa & Duraipandian, 2019; Tahir & Mushtaq, 2016; Venkataramanaiah et al., 2018; Vodwal & Negi, 2023).

The literature presents conflicting empirical results about the relationship between dividend payout and its drivers due to a number of factors, including sample size, alternative measures for the variables under study, the state of the economy in the nation from which the sample is drawn, etc. As a result of conflicting findings, it is incredibly difficult to extrapolate the association between dividend policy and its determinants. Therefore, it is widely preferable to conduct a meta-analysis, in which the outcomes of prior literature were statistically consolidated to get a combined effect size. The meta-analysis method is more appropriate than descriptive and narrative reviews, as it derives logical conclusions by empirically synthesizing the findings from prior studies (Wolf, 1986). Scientists have known for centuries that a single study will not resolve a major issue. Indeed, a small sample study will not even resolve a minor issue. Thus, the foundation of science is the accumulation of knowledge from the results of many studies.

The previous literature hardly reveals any study in connection with meta-analysis, none of the studies depicts the relation between dividend policy and its determinants using correlation values as effect size. So, the main aim of the study is to examine the relationship between dividend policy and its determinants through meta-analysis. It will give various factors that will determine the dividend policy of any corporation. The present analysis contributes to the existing literature by providing a condensed version of the core empirical body of research on the relationship between dividend policy and its drivers.

Background of the Study

This part emphasizes the variables that determine dividend policy, the formulation of the research hypotheses, and the operationalization of the study variables.

ROA

ROA is the amount of return a firm earns on its assets. It is used as a proxy for profitability. Nadeem et al. (2018) emphasized on positive association between profitability and dividend payment in the banking sector in Pakistan, hence validated by the life cycle and signaling theory of dividend payment. These results are in line with Agrawal and Tiwari (2020), Al-Rahahleh (2017), and Tahir and Mushtaq (2016).

↪ **H01** : There is no relation between ROA and dividend payout.

↪ **Ha1** : There is a relation between ROA and dividend payout.

ROE

ROE means the returns on a shareholder's investment. It serves as a proxy for profitability. Mohamed et al. (2012) indicated profitability (ROE) as a useful indicator for declaring dividends for Malaysian companies. In the same

line, Dewasiri et al. (2019), Issa (2015), and Venkataramanaiah et al. (2018) also depicted affirmative links between dividend payout and ROE.

↪ **H02** : There is no relation between ROE and dividend payout.

↪ **Ha2** : There is a relation between ROE and dividend payout.

EPS

EPS is the amount of money a company earns on its shares. It also serves as a proxy for the company's profitability. Mohamed et al. (2012) depicted the fact that EPS is the consequential determinant of dividend payment of Malaysian companies. These outcomes are consistent with the findings of Al-Sabah (2015), Kumaraswamy et al. (2017), and Nusrathunnisa and Duraipandian (2019).

↪ **H03** : There is no relation between EPS and dividend payout.

↪ **Ha3** : There is a relation between EPS and dividend payout.

Lagged-Dividend

Lintner (1956) used the previous year's dividend as one of the determinants of dividend policy. In their study, Nadeem et al. (2018) noted that while making payments of current-year dividends, Pakistani banks took into consideration the lagged dividend to maintain that level of stability. These results are corroborated by the findings of Dewasiri et al. (2019), Jovković et al. (2021), and Nusrathunnisa and Duraipandian (2019).

↪ **H04** : There is no relation between lagged dividend and dividend payout.

↪ **Ha4** : There is a relation between lagged dividend and dividend payout.

Firm's Age

The firm's age is the number of years of existence of the firm. Bostanci et al. (2018) and Farooque et al. (2021) found that a firm's age was a significant factor that positively correlated with dividend payments made by banks and other financial institutions listed on the Qatar Stock Exchange (QSE). This belief was also held by Kumaraswamy et al. (2017). However, the studies conducted by Dewasiri et al. (2019), Elyasiani et al. (2019), and Hartono et al. (2021) demonstrated a detrimental correlation between dividend payment and firm age as aged firms have more growth opportunities, hence declaring the lower amount of dividend.

↪ **H05** : There is no relation between the firm's age and dividend payout.

↪ **Ha5** : There is a relation between the firm's age and dividend payout.

Cash Flow

Cash flow has been validated as a significant determinant of the dividend policy by a recent study. Numerous studies conclude an affirmative relationship between cash flow and dividend payout as the declaration of dividends leads to the reduction of agency conflicts (Elmagrhi et al., 2017; Liao et al., 2022; Nusrathunnisa & Duraipandian, 2019). Contrary to this, Che-Yahya and Alyasa-Gan (2020) noted that blue-chip Malaysian firm

managers are more interested in investing rather than accepting dividends. Additionally, Desoky and Mousa (2019) and Koutoupis and Davidopoulos (2022) confirmed the detrimental relation of dividend payment with cash flow.

↪ **H06** : There is no relation between cash flow and dividend payout.

↪ **Ha6** : There is a relation between cash flow and dividend payout.

Liquidity

In their research, Arif et al. (2020) established a direct correlation between dividend payment and liquidity, noting that the 30 food and electric companies listed on the Pakistan Stock Exchange (PSX) paid more dividends when their liquidity position was better. The study conducted by Patra et al. (2012) and Tahir and Mushtaq (2016) confirmed liquidity as a consequential variable having a positive relation with dividend payment. In contrast, research by Bostanci et al. (2018), Hartono et al. (2021), and Mehta (2012) demonstrated a negative relationship between dividend payout and liquidity. Wadhwa (2019) illustrated the inconsequential association between dividend payouts and liquidity.

↪ **H07** : There is no relation between liquidity and dividend payout.

↪ **Ha7** : There is a relation between liquidity and dividend payout.

Leverage

The research conducted by Hartono et al. (2021) showed a positive correlation between leverage and the dividend policy of Indonesia Stock Exchange-listed companies. This demonstrates that the amount of debt in the capital structure of the company is safeguarded through a corporate tax shield, which in turn increases the level of both debt and disbursement of dividends. This outcome is the same as explained by Chee et al. (2019), Farooque et al. (2021), and Liao et al. (2022). However, some empirical research findings corroborate the detrimental relation of dividend payment with leverage as it creates a fixed financial burden in the form of interest on the firm (Agrawal & Tiwari, 2020; Jawade, 2021; Yousaf et al., 2019). Venkataramanaiah et al. (2018) claimed negative insignificant with dividend payouts.

↪ **H08** : There is no relation between leverage and dividend payout.

↪ **Ha8** : There is a relation between leverage and dividend payout.

Size

In their study, Dewasiri et al. (2019) found that a firm's size has a positive consequential relation with a propensity to pay dividends to the Colombo Stock Exchange (CSE) listed 191 firms. On another hand, some studies concluded a consequential negative association of dividend payout with the firm's size (Che-Yahya & Alyasa-Gan, 2020; Koutoupis & Davidopoulos, 2022; Venkataramanaiah et al., 2018).

↪ **H09** : There is no relation between the firm's size and dividend payout.

↪ **Ha9** : There is a relation between the firm's size and dividend payout.

Research Methodology

The objective of this study, which is entirely analytical, is to quantitatively synthesize the results and make conclusions about the overall effect magnitude by statistically evaluating data from numerous investigations.

Data and Sample

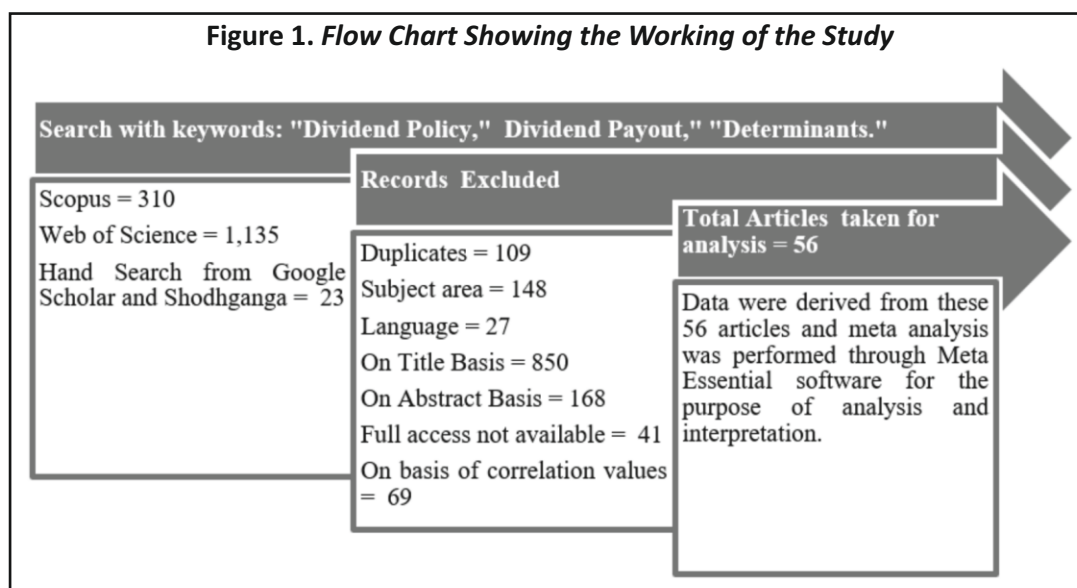
To execute the meta-analysis, an essential first step is to build one's metadata. Initially, an exhaustive search started in the database with “Dividend Policy,” “Dividend Payout,” and “Determinants” as keywords. The study used the Scopus and Web of Science databases for keyword searches and provided 310 and 1,135 research articles, respectively. A total of 56 papers were included for meta-analysis, which directly examined the relationship between dividend policy and its factors and reported correlation coefficients based on the information shown in Figure 1. It covers the 22-year timeframe from 2002 to 2023. The primary justification for choosing this time span is that meta-analysis requires a vast amount of literature because it is a quantitative evaluation of earlier research.

Meta-Analysis Technique

The main aim of the present study is to compile the empirical findings from the previous literature that examined the relationship between dividend policy and its determinants. Research data from several studies are compiled, examined, and synthesized to create more efficient results in a meta-analysis (DerSimonian & Laird, 1986; Hunter & Schmidt, 1990).

Meta-analysis can yield conclusive results and offer a holistic perspective on the subject matter, even in cases when individual research is ambiguous (Lee, 2018). The analysis is broken down into the following steps:

- Find out studies related to the topic under study through keyword search.
- By employing inclusion and exclusion criteria, reduce the number of studies.
- Identify pertinent studies with findings that can be utilized as effect sizes.



- ✎ Construct a metadata file with the assistance of selected research studies.
- ✎ To analyze and evaluate the study's findings by using the Meta Essential software.

Analysis and Results

The crux of meta-analysis is a forest plot, which is a graphical presentation created through effect size data. In a forest plot, the effect size (correlation) is plotted on the top of the point. Each row displays an estimate of the study's effect size with a point and confidence interval (95%), except the bottom row. The point estimates are delineated in a forest plot through smaller and larger bullets based on their weights. The forest plot's summary (bottom) row transformed the data into a meta-analysis and depicted the combined effect size of all the studies.

The extent of heterogeneity is one of the key factors that must be taken into consideration. There are different levels of heterogeneity: 0–30% non-significant, 30–50% moderate, 50–75% substantial, and 75–100% considerable (Golder et al., 2022). Based on the degree of heterogeneity, the studies are subsequently split into two groups and subjected to subgroup analysis. The meta-analysis of variables taken under study is discussed as under.

Relationship Between ROA and Dividend Payout

Table 1 portrays the meta-analysis, including 28 studies for evaluating the relationship between ROA and dividend payout. These studies are divided into two parts based on homogeneous studies. Code AA is allotted to

Table 1. Relationship Between ROA and Dividend Payout

Study Name / Subgroup Name	Correlation	CI	CI	Weight	
		Lower Limit	Upper Limit		
Farooque et al. (2021)	0.00	−0.05	0.06	14.51%	
Rajput & Jhunjhunwala (2020)	−0.01	−0.06	0.04	14.53%	
Nguyen et al. (2021)	−0.02	−0.14	0.10	13.57%	
Agrawal & Tiwari (2020)	0.61	0.09	0.87	5.10%	
Trang (2012)	0.52	0.37	0.65	12.27%	
Mehta (2012)	0.03	−0.28	0.33	9.49%	
Hariem (2021)	0.09	0.03	0.15	14.40%	
Elyasiani et al. (2019)	0.58	0.50	0.65	13.74%	
Nathubhai-4 (2019)	−0.68	−0.99	0.81	1.19%	
Nathubhai-5 (2019)	−0.32	−0.98	0.93	1.19%	
AA	0.19	−0.04	0.41	6.43%	
Q = 163.70, P _q = 0, I ² = 95%, T ² = 0.04, T = 0.21, PI = (−0.32−0.62)					
Elmagrhi et al. (2017)	0.17	−0.12	0.43	3.51%	
Desoky & Mousa (2019)	0.19	0.10	0.28	22.79%	
Warganegara et al. (2020)	0.13	−0.06	0.31	7.64%	
Tahir et al. (2020)	0.15	0.01	0.28	13.10%	
Bataineh (2020)	0.49	0.28	0.66	4.64%	
Yousaf et al. (2019)	0.27	0.07	0.44	7.12%	

Al-Rahahleh (2017)	0.36	0.19	0.52	7.57%
Jovković et al. (2021)	0.22	−0.19	0.57	1.83%
Nadeem et al. (2018)	0.44	0.02	0.73	1.61%
Shabibi & Ramesh (2011)	0.32	0.12	0.50	6.27%
Issa (2015)	0.14	0.02	0.25	17.29%
Tahir & Mushtaq (2016)	0.36	0.15	0.55	5.39%
Nuredin (2012)	0.47	−0.41	0.90	0.47%
Nathubhai-1 (2019)	0.23	−0.94	0.98	0.16%
Nathubhai-2 (2019)	0.17	−0.95	0.97	0.16%
Nathubhai-3 (2019)	0.19	−0.94	0.97	0.16%
Nathubhai-6 (2019)	0.17	−0.95	0.97	0.16%
Nathubhai-7 (2019)	0.39	−0.91	0.98	0.16%
BB	0.23	0.17	0.28	93.57%

$$Q = 18.25, P_q = 0.37, I^2 = 6\%, T^2 = 0, T = 0.03, PI = (0.15-0.31)$$

Combined effect size	0.23	0.21	0.25
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the studies having an effect size less than equal to 0.1 ($r \leq 0.1$) and also consists of some studies having very high values like 0.61, 0.58, etc. The subgroup AA belongs to the mixture of some of the Middle East, Europe, and Asia & Pacific region. Code BB is allotted to the remaining studies. Subgroup BB has a non-significant degree of heterogeneity ($I^2 = 6\%$), indicating the estimated true effect size of 0.23 with 95% CI 0.17–0.28, as shown in row 30 of the plot in Table 1.

Relationship Between ROE and Dividend Payout

The meta-analysis to find out the association between ROE and dividend payout consists of 13 studies, as depicted in Table 2. Code AA is assigned to the studies with an effect size greater than 0.2. The code AA contains the studies

Table 2. Relationship Between ROE and Dividend Payout

Study Name / Subgroup Name	Correlation	CI Lower Limit	CI Upper Limit	Weight	
Patra et al. (2012)	0.56	0.36	0.71	17.77%	
Issa (2015)	0.28	0.17	0.38	35.37%	
Mohamed et al. (2012)	0.37	0.24	0.48	31.73%	
Uwuigbe et al. (2012)	0.44	0.18	0.64	15.12%	
AA	0.39	0.18	0.56	48.49%	
$Q = 6.62, P_q = 0.09, I^2 = 55\%, T^2 = 0.01, T = 0.10, PI = (0.02-0.66)$					
Dewasiri et al. (2019)	0.03	-0.11	0.17	6.95%	
Mehta (2012)	0.04	-0.26	0.34	1.52%	
Jaara et al. (2018)	0.01	-0.19	0.21	3.59%	
Hariem (2021)	0.03	-0.03	0.09	35.93%	
Naceur & Goaid (2002)	-0.17	-0.53	0.23	0.92%	

Correlation

0 -1 -0.5 0 0.5 1

Mui & Mustapha (2016)	0.01	−0.06	0.08	31.46%
Gnanaraj-1 (2018)	−0.11	−0.28	0.06	5.06%
Gnanaraj-1 (2018)	−0.01	−0.18	0.17	4.70%
Gnanaraj-1 (2018)	0.01	−0.11	0.13	9.87%
BB	0.01	−0.02	0.04	51.51%

$$Q = 3.40, P_q = 0.91, I^2 = 0\%, T^2 = 0.00, T = 0.00, PI = (-0.02-0.04)$$

Combined effect size	0.20	−0.23	0.56
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$$Q = 72.96, P_q = 0.00, I^2 = 84\%, T^2 = 0.02, T = 0.15, PI = (-0.49-0.74)$$

from Europe region, the African region, and ASEAN countries. Code BB is assigned to the remaining studies. In subgroup BB, there is a non-significant degree of heterogeneity ($I^2 = 0\%$), which indicates that all the studies about this subgroup fabricate an estimated true effect size of 0.01 with 95% CI −0.02–0.04, as shown in row 15 of the plot in Table 2.

Relationship Between EPS and Dividend Payout

Table 3 depicts the meta-analysis of 19 studies to explore the association between EPS and dividend payout. Code AA is assigned to studies with an effect size greater than 0.3, and code BB is assigned to the remaining studies. Both the subgroups are homogeneous, hence put through inconsistent effect size, but have some association with dividend payout.

Table 3. Relationship Between EPS and Dividend Payout

Study Name / Subgroup Name	Correlation	CI		Weight		Correlation
		Lower Limit	Upper Limit			
Kumaraswamy et al. (2017)	0.63	0.01	0.90	2.38%	0	
Al-Sabah (2015)	0.45	0.14	0.68	9.26%	1	
Shabibi & Ramesh (2011)	0.45	0.26	0.60	23.02%	2	
Mubin et al. (2014)	0.59	0.37	0.74	13.23%	3	
Mohamed et al. (2012)	0.53	0.42	0.62	52.12%	4	
AA	0.51	0.44	0.58	49.90%	5	
$Q = 1.81, P_q = 0.77, I^2 = 0\%, T^2 = 0, T = 0, PI = (0.44-0.58)$					6	
Dewasiri et al. (2019)	0.06	−0.08	0.20	23.04%	7	
Hartono et al. (2021)	−0.02	−0.50	0.47	1.96%	8	
Mehta (2012)	−0.05	−0.35	0.26	5.02%	9	
Jaara et al. (2018)	0.08	−0.12	0.27	11.89%	10	
Kengatharan (2021)	0.00	−0.23	0.22	9.44%	11	
Issa (2015)	0.22	0.10	0.33	34.44%	12	
Alzomaia & Al-Khadhiri (2013)	0.10	−0.09	0.29	12.50%	13	
Nathubhai-1 (2019)	−0.46	−0.99	0.90	0.25%	14	
Nathubhai-2 (2019)	0.22	−0.94	0.98	0.25%	15	
Nathubhai-3 (2019)	0.07	−0.96	0.97	0.25%	16	
					17	
					18	
					19	
					20	
					21	
					22	
					23	

Nathubhai-4 (2019)	-0.49	-0.99	0.89	0.25%
Nathubhai-5 (2019)	-0.05	-0.97	0.96	0.25%
Nathubhai-6 (2019)	-0.25	-0.98	0.94	0.25%
Nathubhai-7 (2019)	-0.13	-0.97	0.95	0.25%
BB	0.11	0.05	0.16	50.10%

$$Q = 8.27, P_Q = 0.83, I^2 = 0\%, T^2 = 0, T = 0, PI = (0.05-0.16)$$

Combined effect size	0.32	-0.15	0.67
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$$Q = 64.83, P_Q = 0.00, I^2 = 72\%, T^2 = 0.05, T = 0.21, PI = (-0.46-0.82)$$

Relationship Between Lagged Dividend and Dividend Payout

To explore the link between lagged dividends and dividend payout, Table 4 illustrates the meta-analysis of nine studies. In studies with effect sizes less than 0.3 and greater than 0.8, code AA is assigned. All of the subsequent studies are allotted code BB. The extent of heterogeneity in subgroup BB is non-significant ($I^2 = 0\%$); hence, it indicates the true effect size. As per row 11 of the plot in Table 4, the estimated legitimate effect size is 0.59, with a 95% confidence interval of 0.51 to 0.66, and in the future, its value varies between -0.82 and 0.94.

Relationship Between Firm's Age and Dividend Payout

A total of nine preceding studies address varying firm ages and the relationship between firm age and dividend payouts, as shown in Table 5. In the forest plot of Table 5, row 10 exemplifies the combined effect size; as a

Table 4. Relationship Between Lagged Dividend and Dividend Payout

Study Name / Subgroup Name	Correlation	CI		Weight		Correlation
		Lower Limit	Upper Limit			
Dewasiri et al. (2019)	0.21	0.07	0.34	21.76%	0	
Che-Yahya & Alyasa-Gan (2020)	0.13	-0.39	0.59	17.30%	1	
Jabbouri (2016)	-0.02	-0.10	0.07	22.08%	2	
Hartono et al. (2021)	-0.01	-0.49	0.47	17.54%	3	
Jaara et al. (2018)	0.81	0.73	0.87	21.31%	4	
AA	0.30	-0.30	0.73	32.78%	5	
$Q = 111.07, P_Q = 0.00, I^2 = 96\%, T^2 = 0.23, T = 0.48, PI = -0.82-0.94$						6
Kumaraswamy et al. (2017)	0.64	0.03	0.90	5.77%	7	
Jovković et al. (2021)	0.66	0.36	0.84	15.38%	8	
Nadeem et al. (2018)	0.61	0.25	0.82	13.46%	9	
Alzomaia & Al-Khadhiri (2013)	0.56	0.41	0.68	65.38%	10	
BB	0.59	0.51	0.66	67.22%	11	
$Q = 0.64, P_Q = 0.89, I^2 = 0\%, T^2 = 0.00, T = 0.00, PI = 0.51-0.66$						12
Combined effect size	0.50	0.15	0.74		13	
$Q = 145.94, P_Q = 0.00, I^2 = 95\%, T^2 = 0.21, T = 0.46, PI = -0.07-0.83$						

Table 5. Relationship Between Firm's Age and Dividend Payout

Study Name	Correlation	CI		Weight			Correlation
		Lower Limit	Upper Limit				
Singla & Samanta (2019)	0.08	-0.23	0.37	1.57%	1		
Dewasiri et al. (2019)	-0.02	-0.16	0.12	7.01%	2		
Farooque et al. (2021)	0.06	0.01	0.11	53.54%	3		
Kumaraswamy et al. (2017)	0.20	-0.49	0.73	0.34%	4		
Al-Sabah (2015)	0.05	-0.28	0.37	1.31%	5		
Bostanci et al. (2018)	0.02	-0.18	0.21	3.84%	6		
Jawade (2021)	0.04	-0.05	0.12	20.19%	7		
Hartono et al. (2021)	-0.03	-0.50	0.46	0.60%	8		
Elyasiani et al. (2019)	-0.10	-0.20	0.02	11.60%	9		
Combined effect size = 0.03, confidential interval = -0.01-0.07,					10		
Predication interval = -0.01-0.07, $I^2 = 0\%$, $Q = 7.19$, $P_q = 0.517$, $T^2 = 0$, $T = 0$					11		

consequence, the estimated true effect size is 0.03 and is symbolized by a green dot with a 95% confidence interval of -0.01-0.07 and a prediction interval of -0.01-0.07.

Relationship Between Cash Flow and Dividend Payout

A meta-analysis of 19 publications was conducted to determine the relationship between cash flow and dividend payout, as shown in Table 6. The value of I^2 for subgroup AA is 21%, which signifies that all the studies about this subgroup fabricate an estimated true effect size of 0.10, with a 95% confidence interval of 0.05-0.15.

Table 6. Relationship Between Cash Flow and Dividend Payout

Study Name / Subgroup Name	Correlation	CI		Weight			Correlation
		Lower Limit	Upper Limit				
Singla & Samanta (2019)	0.00	-0.30	0.30	1.92%	1		
Dewasiri et al. (2019)	0.00	-0.14	0.14	7.54%	2		
Liao et al. (2022)	0.11	0.09	0.13	43.16%	3		
Elmagrhi et al. (2017)	0.26	-0.02	0.51	2.14%	4		
Le et al. (2019)	0.23	0.10	0.35	8.68%	5		
Hartono et al. (2021)	0.07	-0.42	0.54	0.75%	6		
Lily et al. (2009)	0.21	0.01	0.39	4.21%	7		
Issa (2015)	0.11	-0.01	0.22	10.44%	8		
Gnanaraj-1 (2018)	0.01	-0.16	0.17	5.74%	9		
Gnanaraj-2 (2018)	0.02	-0.16	0.19	5.37%	10		
Gnanaraj-3 (2018)	0.03	-0.09	0.15	10.03%	11		
AA	0.10	0.05	0.15	93.28%	12		
$Q = 12.68$, $P_q = 0.24$, $I^2 = 21\%$, $T^2 = 0$, $T = 0.03$, $PI = (0.01-0.18)$					13		

Rajput & Jhunjhunwala (2020)	0.00	-0.05	0.05	16.01%
Desoky & Mousa (2019)	-0.02	-0.12	0.08	15.08%
Chohan et al. (2019)	-0.03	-0.20	0.14	12.95%
Che-Yahya & Alyasa-Gan (2020)	-0.12	-0.58	0.40	4.95%
Malik & Sattar (2018)	0.39	0.21	0.55	12.06%
Jabbouri (2016)	-0.04	-0.12	0.05	15.36%
Mubin et al. (2014)	-0.10	-0.37	0.18	9.67%
Mohamed et al. (2012)	0.46	0.34	0.57	13.92%
BB	0.09	-0.11	0.28	6.72%

$$Q = 64.64, P_Q = 0, I^2 = 89\%, T^2 = 0.03, T = 0.17, PI = (-0.34-0.49)$$

Combined effect size 0.10 0.09 0.10

$$Q = 90.33, P_Q = 0, I^2 = 80\%, T^2 = 0.01, T = 0.10, PI = (0.09-0.10)$$

Relationship Between Liquidity and Dividend Payout

To discover the correlation between liquidity and dividend payout, a total of 32 types of research were factored into the meta-analysis, as illustrated in Table 7. Studies with an effect size of less than 0.3 are given the code AA

Table 7. Relationship Between Liquidity and Dividend Payout

Study Name / Subgroup Name	Correlation	CI		Weight	
		Lower Limit	Upper Limit		
					Correlation -1 -0.5 0 0.5 1
					0
					1
					2
					3
					4
					5
					6
					7
					8
					9
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					32
					33
					34
					35
					36

Nathubhai-3 (2019)	0.07	−0.96	0.97	0.09%
Nathubhai-4 (2019)	0.08	−0.95	0.97	0.09%
Nathubhai-5 (2019)	−0.20	−0.97	0.94	0.09%
Nathubhai-6 (2019)	−0.04	−0.96	0.96	0.09%
Nathubhai-7 (2019)	−0.09	−0.97	0.95	0.09%
Gnanaraj-2 (2018)	0.05	−0.12	0.23	4.62%
Gnanaraj-3 (2018)	0.03	−0.09	0.15	7.81%
AA	0.02	−0.02	0.06	51.09%
$Q = 34.90, P_Q = 0.11, I^2 = 25\%, T^2 = 0, T = 0.05, PI = -0.08-0.13$				
Patra et al. (2012)	0.55	0.35	0.71	18.28%
Jabbouri (2016)	0.64	0.59	0.69	29.09%
Arif et al.-1 (2020)	0.30	−0.20	0.67	8.87%
Tahir & Mushtaq (2016)	0.33	0.11	0.52	19.85%
Gnanaraj-1 (2018)	0.61	0.49	0.70	23.91%
BB	0.54	0.34	0.69	48.91%
$Q = 14.16, P_Q = 0.01, I^2 = 72\%, T^2 = 0.02, T = 0.15, PI = 0.11-0.79$				
Combined effect size	0.29	−0.28	0.71	
$Q = 361.97, P_Q = 0, I^2 = 91\%, T^2 = 0.07, T = 0.26, PI = -0.61-0.86$				

and have a non-significant level of heterogeneity ($I^2 = 25\%$), which suggests that each study within this subgroup estimates the accurate effect size of 0.02 with a 95% confidence interval of −0.02–0.06.

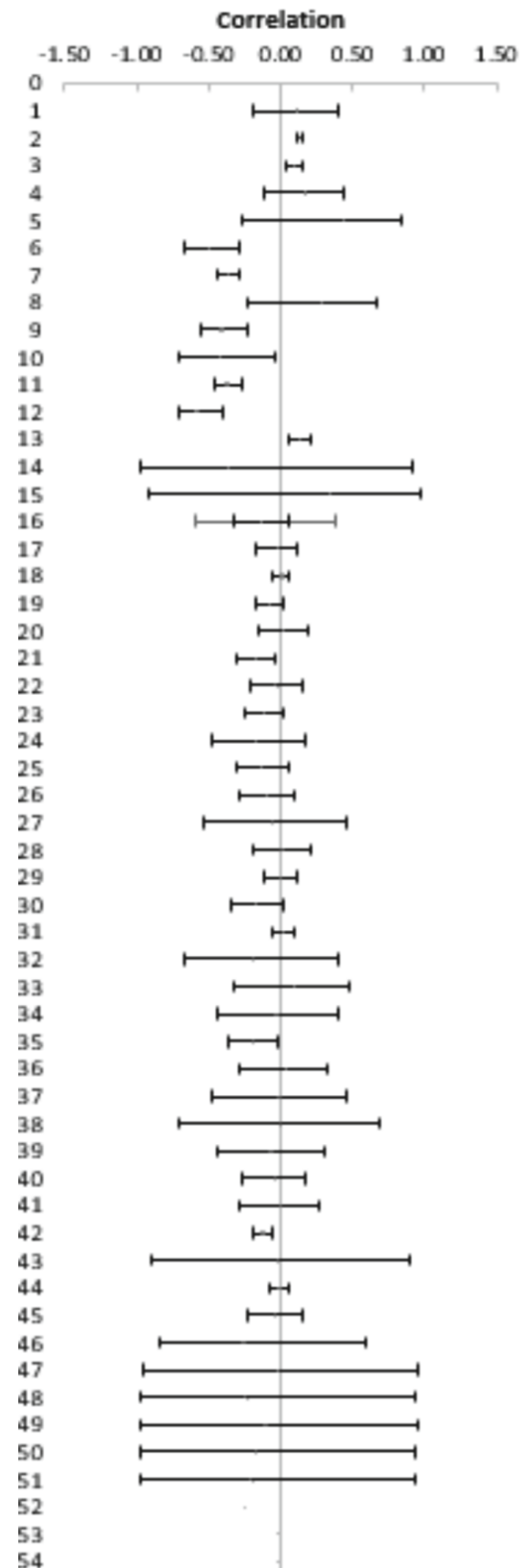
Relationship Between Leverage and Dividend Payout

There are 53 studies in the meta-analysis to determine the relationship between leverage and dividend payout as highlighted in Table 8. Code AA is designated for the studies whose effect size is greater than 0.1 and lesser than −0.3 ($0.1 < r < -0.3$). The code BB is utilized for the remaining studies. Table 8 illustrates that subgroup BB exhibits non-significant heterogeneity ($I^2 = 0\%$), which means that all the studies in this subgroup generate an estimated genuine effect size of −0.05 with a 95% CI of −0.07 to −0.03.

Table 8. Relationship Between Leverage and Dividend Payout

Study Name / Subgroup Name	Correlation	CI		Weight
		Lower Limit	Upper Limit	
Singla & Samanta (2019)	0.12	−0.19	0.41	6.78%
Liao et al. (2022)	0.14	0.12	0.16	9.74%
Farooque et al. (2021)	0.10	0.05	0.15	9.63%
Elmagrhi et al. (2017)	0.17	−0.12	0.44	7.00%
Kumaraswamy et al. (2017)	0.43	−0.27	0.83	3.20%
Patra et al. (2012)	−0.50	−0.67	−0.28	7.46%
Jawade (2021)	−0.37	−0.44	−0.29	9.43%
Hartono et al. (2021)	0.29	−0.23	0.67	4.53%

Lily et al. (2009)	-0.41	-0.56	-0.23	8.20%
Naceur & Goaiad (2002)	-0.43	-0.70	-0.05	5.61%
Elyasiani et al. (2019)	-0.37	-0.46	-0.27	9.21%
Tahir & Mushtaq (2016)	-0.58	-0.72	-0.41	7.81%
Cristea & Cristea (2017)	0.13	0.06	0.20	9.50%
Nathubhai-2 (2019)	-0.37	-0.98	0.92	0.95%
Nathubhai-5 (2019)	0.34	-0.92	0.98	0.95%
AA	-0.14	-0.32	0.05	4.45%
$Q = 321.54, P_Q = 0, I^2 = 96\%, T^2 = 0.05, T = 0.23, PI = -0.59-0.37$				
Dewasiri et al. (2019)	-0.02	-0.16	0.12	2.71%
Rajput & Jhunjunwala (2020)	0.00	-0.05	0.05	22.26%
Desoky & Mousa (2019)	-0.08	-0.17	0.02	5.84%
Chohan et al. (2019)	0.02	-0.15	0.19	1.89%
Le et al. (2019)	-0.17	-0.30	-0.04	3.22%
Warganegara et al. (2020)	-0.03	-0.22	0.16	1.56%
Tahir et al. (2019)	-0.11	-0.25	0.03	2.88%
Al-Sabah (2015)	-0.17	-0.47	0.17	0.50%
Afza & Mirza (2011)	-0.13	-0.30	0.05	1.69%
Yousaf et al. (2019)	-0.10	-0.29	0.10	1.44%
Che-Yahya & Alyasa-Gan (2020)	-0.06	-0.54	0.45	0.22%
Bostanci et al. (2018)	0.01	-0.18	0.20	1.49%
Nguyen et al. (2021)	0.00	-0.12	0.12	3.81%
Al-Rahahleh (2017)	-0.17	-0.35	0.02	1.54%
Jabbouri (2016)	0.02	-0.07	0.10	7.64%
Agrawal & Tiwari (2020)	-0.20	-0.67	0.40	0.17%
Jovković et al. (2021)	0.09	-0.32	0.47	0.35%
Nadeem et al. (2018)	-0.03	-0.45	0.40	0.30%
Trang (2012)	-0.20	-0.37	-0.02	1.63%
Mehta (2012)	0.03	-0.28	0.33	0.59%
Arif et al.-1 (2020)	-0.01	-0.48	0.46	0.25%
Arif et al.-2 (2020)	-0.01	-0.70	0.69	0.10%
Nuhu (2014)	-0.07	-0.43	0.31	0.39%
Kengatharan (2021)	-0.04	-0.26	0.18	1.11%
Mubin et al. (2014)	-0.01	-0.28	0.27	0.72%
Hariem (2021)	-0.12	-0.19	-0.06	14.02%
Oloruntoba (2020)	-0.02	-0.91	0.90	0.04%
Mui & Mustapha (2016)	-0.01	-0.07	0.06	12.27%
Alzomaia & Al-Khadhiri (2013)	-0.04	-0.24	0.15	1.47%
Nuredin (2012)	-0.26	-0.84	0.59	0.09%
Nathubhai-1 (2019)	-0.03	-0.96	0.96	0.03%
Nathubhai-3 (2019)	-0.25	-0.98	0.94	0.03%



Nathubhai-4 (2019)	-0.11	-0.97	0.95	0.03%
Nathubhai-6 (2019)	-0.18	-0.97	0.95	0.03%
Nathubhai-7 (2019)	-0.20	-0.97	0.94	0.03%
Gnanaraj-1 (2018)	-0.26	-0.41	-0.09	1.98%
Gnanaraj-2 (2018)	-0.02	-0.20	0.15	1.83%
Gnanaraj-3 (2018)	-0.03	-0.14	0.10	3.85%
BB	-0.05	-0.07	-0.03	95.55%

$Q = 34.11, P_q = 0.61, I^2 = 0\%, T^2 = 0, T = 0, PI = -0.07 - 0.03$

Combined effect size -0.05 -0.09 -0.01

$Q = 444.17, P_q = 0, I^2 = 88\%, T^2 = 0.03, T = 0.16, PI = -0.10 - 0.00$

Table 9. Relationship Between Size and Dividend Payout

Study Name / Subgroup Name	Correlation	CI		Weight		Correlation				
		Lower Limit	Upper Limit			-1.00	-0.50	0.00	0.50	1.00
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Farooque et al. (2021)	0.10	0.04	0.15	13.66%						
Rajput & Jhunjhunwala (2020)	-0.02	-0.06	0.03	13.99%						
Chohan et al. (2019)	-0.09	-0.25	0.09	3.14%						
Le et al. (2019)	-0.10	-0.23	0.03	4.83%						
Warganegara et al. (2020)	0.04	-0.15	0.22	2.66%						
Al-Sabah (2015)	0.14	-0.20	0.45	0.95%						
Afza & Mirza (2011)	0.07	-0.11	0.25	2.85%						
Yousaf et al. (2019)	0.06	-0.14	0.25	2.49%						
Bostanci et al. (2018)	-0.06	-0.25	0.14	2.55%						
Nguyen et al. (2021)	0.02	-0.10	0.14	5.48%						
Agrawal & Tiwari (2020)	0.14	-0.45	0.64	0.33%						
Lily et al. (2009)	0.00	-0.20	0.20	2.42%						
Nuhu (2014)	0.00	-0.37	0.37	0.74%						
Kengatharan (2021)	-0.02	-0.24	0.20	1.97%						
Mubin et al. (2014)	-0.04	-0.31	0.24	1.32%						
Oloruntoba (2020)	0.03	-0.90	0.91	0.08%						
Mui & Mustapha (2016)	0.05	-0.01	0.12	11.10%						
Elyasiani et al. (2019)	0.18	0.07	0.29	6.16%						
Alzomaia & Al-Khadhiri (2013)	-0.02	-0.21	0.17	2.53%						
Tahir & Mushtaq (2016)	0.04	-0.19	0.26	1.90%						
Cristea & Cristea (2017)	0.13	0.06	0.20	10.08%						
Nuredin (2012)	0.03	-0.72	0.75	0.17%						
Gnanaraj-2 (2018)	0.06	-0.11	0.24	3.06%						
Gnanaraj-3 (2018)	0.07	-0.05	0.19	5.53%						
AA	0.05	0.01	0.08	56.29%						

$Q = 31.07, P_q = 0.12, I^2 = 26\%, T^2 = 0, T = 0.04, PI = -0.04 - 0.13$

Singla & Samanta (2019)	0.50	0.23	0.69	6.43%
Liao et al. (2022)	0.44	0.43	0.46	7.69%
Ringane & Makoni (2014)	0.59	-0.50	0.96	2.51%
Elmagrhi et al. (2017)	0.43	0.17	0.64	6.55%
Kumaraswamy et al. (2017)	0.64	0.03	0.90	4.01%
Desoky & Mousa (2019)	0.26	0.17	0.35	7.54%
Patra et al. (2012)	0.62	0.44	0.76	6.77%
Che-Yahya & Alyasa-Gan (2020)	-0.25	-0.66	0.28	4.96%
Al-Rahahleh (2017)	0.19	0.00	0.36	7.14%
Malik & Sattar (2018)	0.33	0.14	0.50	7.09%
Jabbouri (2016)	-0.23	-0.31	-0.15	7.58%
Jovković et al. (2021)	0.29	-0.12	0.62	5.73%
Mehta (2012)	0.42	0.13	0.64	6.41%
Naceur & Goaied (2002)	-0.22	-0.56	0.18	5.79%
Uwuigbe et al. (2012)	0.81	0.67	0.89	6.55%
Gnanaraj-1 (2018)	-0.16	-0.32	0.01	7.26%
BB	0.31	0.11	0.49	43.71%
$Q = 369.43, P_Q = 0, I^2 = 96\%, T^2 = 0.12, T = 0.35, PI = -0.42-0.80$				
Combined effect size	0.16	-0.11	0.41	
$Q = 1025.67, P_Q = 0, I^2 = 96\%, T^2 = 0.08, T = 0.28, PI = -0.28-0.55$				

Relationship Between Size and Dividend Payout

The meta-analysis to identify the relationship between size and dividend payout consists of 40 studies, as illustrated in Table 9. Code AA is allotted to the studies with effect sizes greater than -0.1 and lesser than 0.2, and code BB is allotted to the remaining studies. In subgroup AA, the degree of heterogeneity is non-significant ($I^2 = 26\%$), which indicates the true effect size of 0.05 with a 95% confidential interval of 0.01–0.08.

Discussion

In this part, the outcomes of meta-analysis employing Meta Essential to explore the relationship between dividend payout and its determinants are discussed in detail, as depicted in Table 10. The hypothesis has been framed as per the inherent independent parameters, and hypothesis Ha1 is accepted. The meta-analysis of papers demonstrates a substantial positive association between dividend payout and ROA. ROA is used as a proxy to represent the firm's profitability. The results of the meta-analysis coincide with the findings of Agrawal and Tiwari (2020); Elyasiani et al. (2019); and Nadeem et al. (2018) in the context of the association between ROA and dividend payout.

Furthermore, hypothesis Ha2 is accepted; ROE has a consequential positive relation with dividend payment. The results of the meta-analysis are in line with Mohamed et al. (2012) and Uwuigbe et al. (2012). Another hypothesis, Ha3, is also accepted: EPS has a positive relation with dividend payout. EPS is used as a proxy for profitability. Higher earnings mean higher profits and higher profits directly lead to a higher amount of dividend. This outcome is consistent with the findings of Dewasiri et al. (2019), Issa (2015), and Kumaraswamy et al. (2017).

The decision for hypothesis Ha4 is accepted. In a meta-analysis of prior studies, a lagged dividend is identified

Table 10. *Crux of Meta-Analysis*

Variables	Analysis	Effect Size	Confidence Interval		Prediction Interval		Relationship
			Min.	Max.	Min.	Max.	
ROA	SA	0.23	0.17	0.23	-0.32	0.62	+ve
ROE	SA	0.01	-0.02	0.04	0.02	0.66	+ve
EPS	SA-AA	0.51	0.44	0.58			+ve
	SA-BB	0.11	0.05	0.16			+ve
Lagged Dividend	SA	0.59	0.51	0.66	-0.82	0.94	+ve
Firm's Age	NF	0.03	-0.01	0.07	-0.01	0.07	+ve
Cash Flow	SA	0.1	0.05	0.15	-0.34	0.49	+ve
Liquidity	SA	0.02	-0.02	0.06	0.11	0.79	+ve
Leverage	SA	-0.05	-0.07	-0.03	-0.59	0.37	-ve
Size	SA	0.05	0.01	0.08	-0.42	0.8	+ve

Note. (SA-Subgroup Analysis, NA-Normal Forest Plot).

as a key factor with a substantial positive association with dividend payout. Accordingly, this result is in line with those of other investigations conducted by Jaara et al. (2018), Jovković et al. (2021), and Kumaraswamy et al. (2017). Similarly, hypothesis Ha5 is accepted; the firm's age has a positive correlation with dividend payout. Aged firms are in their maturity and have earned huge profits, which indicates greater payment of dividends. This outcome is consistent with the findings of Bostanci et al. (2018), Elyasiani et al. (2019), and Hartono et al. (2021). Contrary to previous studies (Chohan et al., 2019; Che-Yahya & Alyasa-Gan, 2020), meta-analysis reflects a positive association between cash flow and dividend payout; consequently, hypothesis Ha6 is accepted. The firms with stable cash flow are better able to disburse greater amounts of dividends. Another variable, “liquidity,” indicates how quickly and easily a financial asset or security can be converted into cash without losing its significant value. The meta-analysis of the previous study depicts a positive association between liquidity and dividend payout; consequently, Ha7 is accepted. These results are in line with Arif et al. (2020), Chohan et al. (2019), and Jabbouri (2016).

A positive correlation between leverage and dividend payout had been discovered by meta-analysis of previous literature; consequently, Ha8 is accepted. This outcome is consistent with numerous previous researches by Hartono et al. (2021) and Singla and Samanta (2019). A positive relationship between firm size and dividend payout was observed through a meta-analysis of previous research, which resulted in the acceptance of Ha9. The outcome is supported by Agrawal and Tiwari (2020), Farooque et al. (2021), and Singla and Samanta (2019).

Conclusion

The present study incorporates data from former studies that examine the connection between dividend payouts and its variables. A total of 53 documents were incorporated into the final analysis after some refinements were made to the subject matter, language, document type, duplicate removal, and effect size. The subgroup analysis of various variables produces an estimated true effect size; ROA 0.23 confirms a positive low degree of correlation; ROE 0.01 represents a positive low degree of correlation; EPS 0.51, 0.11 show a positive moderate and low degree of correlation; lagged dividend 0.59 indicates a positive moderate low degree of correlation; cash flow 0.1 depicts a positive low degree of correlation; liquidity 0.02 illustrates the positive low degree of correlation; leverage -0.05

shows a negative low degree of correlation; size 0.05 confirms a positive low degree of correlation; and growth opportunities depict inconsistent results. The meta-analysis firm's age depicts a 0.03 effect size, which means a positive low degree of correlation.

Implications

The primary theoretical implication of the work is that it contributes to the existing body of knowledge, which will benefit scholars, decision-makers, etc. From a practical standpoint, it provides an extensive framework that can be advantageous to investors, companies, and business regulators alike.

Limitations of the Study and the Way Forward

The limitation of the study is that it is based on a limited number of studies that have correlation values. It concentrates only on summary effect size and ignores the fact that effect size may vary from study to study. There is a mandatory requirement for carrying out meta-analysis; the number of studies must be greater than 6. Further research can be carried out using Fisher's *Z* transformation, including all the studies.

Authors' Contribution

The idea for the empirical study was devised by Dr. Priti Sharma, who contributed to the qualitative and quantitative design. Competent research papers were pulled out by Divya Saini and Surbhi, who then screened them using keywords associated with the study design. The work had been overseen by Dr. Priti Sharma, who also confirmed the analytical techniques. Divya Saini wrapped up the analytical section. Both Divya Saini and Surbhi wrapped up the written work.

Conflict of Interest

The authors have no conflict of interest in any financial or non-financial matter described in the manuscript.

Funding Acknowledgment

The authors received no financial support for the research, authorship, and publishing of this article.

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