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Title:	**Firm Innovation and Dividend Policy: Mediating and Moderating Role of Firm Financial Characteristics**
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Firm Innovation and Dividend Policy: Mediating and Moderating Role of Firm Financial Characteristics

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Abstract

This study aims to investigate the mediating and moderating effect of firm financial characteristics in the relationship between firm innovation, stock trading volume, and dividend policy. For data analysis, quantitative methodology was used based on a secondary data set of 82 firms of the manufacturing sector listed on Pakistan Stock Exchange (PSX). Data was collected for the period 2014-2023. The selected company's financial ratios provided the key quantitative metrics for analysis. The mediation analysis revealed a significant positive effect of firm performance in the relationship between firm innovation, stock trading volume, and dividend policy (measured through dividend payout), confirming hypotheses 1, 2, 5, and 6. Likewise, the moderating effect of firm size in the relationship between firm innovation, stock trading volume, and dividend payout was also found to be significant and positive, supporting hypotheses 3 and 4. Previous studies primarily focused on innovation in IT firms, leaving innovation in the manufacturing sector largely unexplored. This paper makes two key contributions. Firstly, it examines manufacturing firms engaged in innovation. Secondly, it addresses this gap by analyzing the firms' unique characteristics through firm innovation and trading volume factors overlooked in prior research. By doing so, this study provides updated evidence, enhancing the robustness of the existing findings.

***Keywords*:** dividend payout, innovation, performance, size, stock trading volume

Introduction

Research on the relationship between technological innovation and dividend policy remains inconclusive and several gaps need to be filled (Cagan, 2024). Firms in the technology sector regularly reinvest earnings into innovation rather than paying dividends, thus focusing on growth. It

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remains unclear how specific types of technological innovation (e.g., AI, automation, R&D intensity) influence decisions on paying dividends versus reinvestment. Additionally, it is also unknown at what stage a tech firm should consider shifting from reinvestment to paying dividend. Studies are needed to understand how different forms of technological innovation impact dividend policy.

Traditional dividend theories assume that investors prefer regular income through dividends. However, investors in high-tech and innovative firms may prioritize capital gains over dividends, as these firms are often valued for their growth potential rather than income (Evgenevic, 2023). More research is recommended on investor preferences in the tech sector, especially regarding dividend payouts versus share buybacks or reinvestment.

Many high-growth tech companies, such as Google or Amazon, do not pay dividends in their early years but may face pressure to do so as they mature (Malak & Wajid, 2025; Pinto & Rastogi, 2022). Research remains limited on the transition from a non-dividend-paying policy to a dividend-paying policy in tech firms, particularly in terms of how this transition affects stock prices, investor perception, and competitive advantage.

Firms have shifted their policy regarding investment by orienting it more towards innovation; this is regarding the launching of new products or introducing new technologies in the market. Hence, the role of technology has gained attention as a determinant in devising dividend policy (Akhtar, 2025; Arhinful et al., 2024). Companies that invest heavily in technology upgrades or digital transformation may prioritize reinvestment over dividends to support growth and competitive advantage. This shift is aligned with the firms in the innovation-driven sector which tend to adopt a residual dividend policy.

Researchers around the globe have investigated the financial dynamics of the IT sector regarding debt versus equity financing, financial impact of mergers and acquisitions (M&A), investment strategies and valuation, corporate governance and financial performance, and working capital management. Yet, the debate regarding dividend policy is much awaited, especially for economies like Pakistan (Wu et al., 2024). Most of the past research shows that dividend policy can vary due to factors such as profits, organization size, and funding opportunities. However, limited scholarly

attention has been paid towards investigating the characteristics of stock trading volume and the existing research remains inconclusive (Kashif & Arif, 2025; Liao et al., 2023).

In addition, this study also investigates the impact of the manufacturing firms involved in innovation on their dividend policy. The results of this research would be helpful for both company managers and investors and give new insights into making strategic decisions, including whether or not to invest in firms involved in innovation. So far, researchers have investigated the payout policy of the manufacturing sector as a whole. However, this research takes a different approach of focusing on those firms only which are involved in innovation in the manufacturing sector. Understanding the innovation-dividend link in manufacturing can help regulators design frameworks that encourage technological advancement, while ensuring sustainable shareholder returns.

Literature Review

Technology-intensive firms often prioritize reinvestment in research and development, rather than distributing dividends to sustain innovation and maintain acompetitive advantage. Empirical evidence indicates that higher R&D intensity is generally associated with lower dividend payouts, as such firms face greater financing needs and uncertain future returns (Ganie, 2025). However, as technology firms mature and their cash flows become more stable, they tend to initiate or increase dividend payments (Yusup et al., 2022).

Dividend policy decisions in technology-intensive firms are also influenced by agency and signaling considerations. Managers may retain earnings to fund innovation projects and reduce dependence on external financing, thereby minimizing information asymmetry and agency conflicts (Koroma & Kamara, 2025). Conversely, dividend payments can serve as positive signals of firm stability and profitability to investors (Evgenevic, 2023). As a result, technology firms must balance innovation-driven reinvestment needs with the signaling benefits of dividend distribution (Iftikhar & Almassidis, 2025).

Limited research has examined how different forms and intensities of technological innovation influence a firm's dividend policy. Firms investing in disruptive technologies may retain earnings for innovation,

while those pursuing incremental R&D might distribute more dividends. This relationship, especially under financing constraints and in emerging markets, remains underexplored. Therefore, longitudinal studies examining tech firms that eventually adopt dividend policies could provide insight into the right timing and approach to implement dividends without signaling reduced growth potential.

In this connection, Wu et al. (2024) examined the IT Industry with price per share as the dependent variable in their study. They found that equity does not influence dividends. The same view was supported while investigating the dividend policy decision made by Indian IT and pharmaceutical companies (Pinto & Rastogi, 2022). On the other hand, another research revealed a positive association between firm profitability, earnings per share, and payout ratio as opposed to the controversial opinion given by Yusup et al. (2022), while analyzing 78 firms listed on the Zimbabwean stock exchange.

The disagreement in the above findings is perceived as showing the impact of dividends on firm value. Still, the findings of several studies support the relevance theory (Sartika et al., 2021; Yesaya & Bingire, 2023). On the contrary, many argue against relevance including the studies conducted by Marisetty and Madasu (2021) and Wu et al. (2024). Thus, the results of previous studies show that this debate is yet to be concluded. So, this empirical research aims to find the impact of firm innovation and other financial characteristics on the dividend policy of manufacturing firms.

Problem Statement

Previous studies focused on IT firms engaged in innovation. However, firms involved in innovation from the manufacturing sector remain neglected in the literature. So, whether dividend policy is relevant or irrelevant to the firms engaged in innovation other than the IT sector remains controversial. Hence, further research is needed in this regard. Moreover, the available literature addresses this issue keeping in view the direct impact of a firm's financial characteristics on its dividend policy and overlooks the mediating and moderating effects in their relationship.

Research Objectives

The main objective of this research is to investigate the direct, mediating, and moderating effects of firm financial characteristics in the

relationship between firm innovation, stock trading volume, and dividend policy in the manufacturing sector of Pakistan for the period 2014-2023.

Research Questions

Q1. What is the mediating impact of firm performance in the relationship between firm innovation and dividend policy?

Q2. What is the mediating impact of firm performance in the relationship between stock trading volume and dividend policy?

Q3. What is the moderating impact of firm size on the relationship between firm innovation and dividend policy?

Q4. What is the moderating impact of firm size on the relationship between stock trading volume and dividend policy?

Q5. What is the impact of firm innovation on dividend policy?

Q6. What is the impact of stock trading volume on dividend policy?

Research Methodology

Secondary data of manufacturing sector firms was collected from the official website of the State Bank of Pakistan for the time period 2014-2023. This timeframe was selected primarily due to data availability and also as most prior studies relied on the period before 2014. Hence, this study provides updated insights for the post-2014 period. It does not consider the separate impact of firms' financial characteristics on dividend policy during the COVID-19 pandemic. Future research can fill this gap to bring more robustness in methodology. For quantitative analysis, the selected company's financial ratios provided the key quantitative metrics. Long-term investment was used as proxy for firm innovation, as it reflects the firm's capital commitment to future-oriented projects, many of which are aimed at improving products, processes, and technologies. While R&D is a direct proxy for innovation, this paper indirectly supports the use of long-term investment as a broader innovation input in line with (Ganie, 2025). Due to model simplification and unavailability of data, this research does not consider other control variables, such as firm age and leverage.

Statistical Analysis

The data was analyzed through SPSS 26 with an added feature of

process v4.2 by Andrew F. Hayes supporting both the mediating and moderating effect, keeping in view the direct relationship among dependent and independent variables.

No. of Cross Sections

Table 1 depicts sectorial distribution within the manufacturing sector. The data for 82 firms was considered for analysis in this research.

The companies are listed according to their respective industries in the first column. The years are represented in columns 2-10, relative to the different companies present annually. The aggregate firms are shown in the last column after excluding those with missing data. While, the last row presents firm aggregates on a yearly basis.

Table 1

Distribution of Companies by Sectors

Economic Group	2014	2015	2016	2017	2018	2019	2020	2021	2022	2014 – 2022
Textile	5	7	4	5	6	9	10	6	7	32
Cement	4	3	3	9	5	7	7	11	4	15
Food	5	4	6	8	9	13	11	12	13	14
Sugar	6	4	3	5	6	6	15	19	10	21
Total	20	18	16	27	26	35	43	48	34	82

Most firms in the textile industry performed comparatively better for the sample period 2014-2023. A total of 32 textile firms performed better as compared to only 14 firms in cement sector. This variation in the number of firms in different sectors is due to the number of investment opportunities available within each sector. This suggests that higher investment opportunities lead to a number of new firms in the market (Khalid & Mukthar, 2025; Ashta & Herrmann, 2021).

$$DIVP=\gamma0+\gamma1INNOV+\gamma2VOL+\gamma3FPERF+ \gamma4 (INNOV\cdot FSIZE) \gamma 5(VOL\cdot FSIZE) +\varepsilon$$

Explanation of Terms

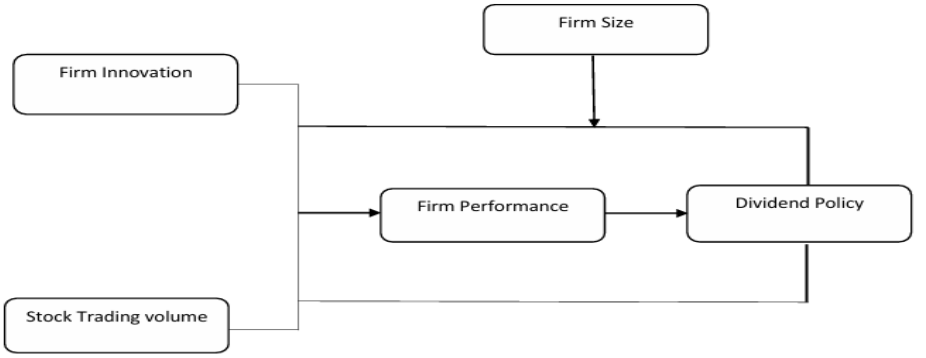
Direct Effects

- γ1 INNOV: Effect of firm innovation on dividend policy.
- γ2VOL: Effect of stock trading volume on dividend policy.

- γ3FPERF: Mediating effect of firm performance between firm innovation and dividend policy.

Figure 1

Proposed Research Model



Interaction Terms (Moderation)

- γ4(FPERF·FSIZE): Moderation of the effect of firm innovation by firm size.
- γ 5(VOL·FSIZE): Moderation of the effect of stock trading volume by firm size.

Variables and Hypothesis

Firms in more competitive markets may adjust their dividend payouts differently based on their innovation efforts. In highly competitive markets, firms may need to reinvest profits into innovation, rather than pay high dividends. On the other hand, firms may have greater flexibility to distribute profits as dividends in less competitive markets. Hence, more innovative firms are more likely to pay higher dividends by increasing profits. Innovation boosts profitability and firm performance, which influence a firm's decision to distribute dividends to its shareholders. Hence, the current study examines this relationship while considering the mediating effect of firm performance.

H1- Firm performance mediates the relationship between firm innovation and dividend policy.

$$DIVP=\gamma 0+\gamma 1INNOV+\gamma 2FPERF+\varepsilon \quad (1)$$

A higher trading volume reflects stronger investor interest, which influences a firm's decision to adjust its dividend payouts. An increased trading volume often signals higher investor attention and sentiment. This can pressure firms to maintain their performance and adjust their dividend policies in order to meet investor expectations, balancing between paying higher dividends and retaining earnings. Hence, it is important to investigate the mediating effect of firm performance in the relationship stock trading volume and dividend policy

H2- Firm performance mediates the relationship between stock trading volume and dividend policy.

$$DIVP=\gamma 0+\gamma 1STV+\gamma 2FPERF+\varepsilon \quad (2)$$

Larger firms have more resources to invest in new products or technologies, while still paying dividends. Smaller firms, however, may prioritize R&D over dividends, reinvesting profits to support innovation. Thus, larger firms can balance both, while smaller firms may focus more on innovation and reduce dividend payouts.

H3- Firm size moderates the relationship between innovation and dividend policy.

$$DP=\beta 0+\beta 1INN+\beta 2FS+\beta 3(INN\times FS)+\epsilon \quad (3)$$

Larger firms are more likely to adjust their dividend payouts in response to changes in their trading volume. Larger firms, with more resources and stability, may be better positioned to keep their dividend policies stabile based on investor expectations. In comparison, smaller firms might be more constrained and less responsive to trading volume changes. When a stock has high trading volume, it indicates strong investor interest. Companies may respond by offering higher or more stable dividends to meet investor expectations, while lower trading volumes may result in more flexible dividend decisions.

H4- Firm size moderates the relationship between stock trading volume and dividend policy.

$$DP=\beta 0+\beta 1STV+\beta 2FS+\beta 3(STV\times FS)+\epsilon \quad (4)$$

When a firm focuses on innovation, such as developing new products or technologies, it may prioritize reinvesting profits into R&D, rather than paying dividends. This is especially true for firms seeking long-term

growth and market competitiveness. As a result, innovative firms might reduce or eliminate dividends to fund their innovation efforts. On the other hand, firms with stable, established innovations may be able to maintain regular dividend payouts, while still investing in new projects. Thus, a firm's stage of innovation and its need for capital to fund growth can significantly affect its dividend policy. H5 postulates no mediating effect between firm innovation and its dividend policy.

H5- Firm innovation has a direct impact on its dividend policy.

$$DP=\gamma 0+\gamma 1INNOV+\varepsilon \quad (5)$$

High trading volume often indicates strong investor interest, which may encourage firms to maintain or increase dividend payouts to attract and retain shareholders. Conversely, low trading volume can suggest reduced investor confidence or liquidity concerns, which may lead firms to cut or suspend dividends to conserve cash for operations and growth. Similar to H5, H6 considers no mediating effect between stock trading volume and dividend policy.

H6- Higher stock trading volume has a direct influence on a company's dividend policy.

$$DP=\gamma 0+\gamma 1STVOL+\varepsilon \quad (6)$$

Table 2 provides the comprehensive measurement of dependent, independent, moderating, and mediating variables and the sources which have used these variables previously to conduct a similar sort of analysis. Moreover, this research aims to investigate both the direct and indirect effect of firms' financial characteristics on dividend policy.

Table 2

Measurement of Research Variables

Variables	Description	Source
	Dependents Variables	
Dividend payout	Total Dividend /Net income	(Yusup et al., 2022).
	Independent Variables	
Firm innovation	Long Term Investment (log)	(Ganie, 2025; Livoreka, 2023)
Stock trading volume	Number of shares traded	(Zagonel & Terra, 2022)
	Mediating variable	
Firm Performance	ROE Net income/ Total Equity	(Yusup et al., 2022)

Variables	Description	Source
	Moderating variable	
Size	Total assets (log)	(Yemi, 2023).

Note. Log =Logarithm, ROE=Return on equity

Results and Discussion

The results in Table 3 shed light on hypotheses 1 and 5. Based on the results, the significant total effect (Direct + Indirect) of firm innovation on dividend payout policy is .6672 (.4107+.2520), indicating that firm innovation has both a significant direct (.4107) and indirect (.2520) impact, mediating through the effect of firm performance on dividend policy. This ensures the mediating effect of firm performance (.2520) in the relationship between firm innovation and dividend policy. Theoretically, this supports the resource-based view and the signaling theory. However, contrasting studies, e.g., Evgenevic (2023) and Wu et al. (2024), argued that innovative firms often prefer reinvestment over payouts. Indeed, a firm's technological expansion improves its performance through returns on investor capital, which consequently enables the firm to have sufficient funds to distribute among shareholders. Hence, hypotheses 1 and 5 are supported.

Table 3

Mediating and Direct Effect: (Firm innovation → Firm Performance → Dividend Policy)

Effect Type	Effect	*SE*	*t*	*p*	95% CI [LL, UL]
Total Effect of X on Y	.6627	.0213	24.9070	.0004	[.1018, .1211]
Direct Effect of X on Y	.4107	.0315	11.2570	.0057	[.0002, .1236]
Indirect Effect via ROE	.2520	.0342			[.0048, .0114]

Note. X = Firm Innovation (Ln); Y = Dividend Payout; Mediator = ROE (Firm Performance).

H1-Firm performance mediates the relationship between firm innovation and dividend policy.

H5- Firm innovation impacts dividend policy.

The results in Table 4 shed light on hypotheses 2 and 6. Based on the

results, the significant total effect (Direct + Indirect) of stock trading volume on dividend payout policy is .8222 (.4309+.3913), indicating that firm trading volume has both a significant direct (.4309) and indirect (.3913) impact, mediating through the effect of firm performance on dividend policy. This ensures the mediating effect of firm performance (.3913) in the relationship between trading volume and dividend policy. Hence, greater trading volume improves performance through returns on investor capital, which enables a firm to have sufficient funds to distribute among shareholders. This supports the signaling theory, as active trading reflects market confidence and encourages payouts. Yet, studies (Yesaya et al., 2023) suggest that high trading firms may retain earnings for growth. The current findings show that enhanced performance due to a higher trading volume allows firms to balance reinvestment and dividends. Therefore, hypotheses 2 and 6 are supported.

Table 4

Mediating and Direct Effect: (Stock trading volume → Firm Performance → Dividend Policy)

Effect Type	Effect	*SE*	*t*	*p*	95% CI [LL, UL]
Total effect of X on Y	.822	.024	13.85	.0040	[.1226, .3910]
Direct effect of X on Y	.431	.024	11.83	.0073	[.0031, .0909]
Indirect effect via ROE	.391	.032	—	—	[.0131, .1463]

Note. X = Stock Trading Volume; Y = Dividend Payout; W = ROE.

H2- Firm performance mediates the relationship between stock trading volume and dividend policy.

H6- Higher stock trading volume influences a company's dividend policy.

Table 5 shows the moderating effect of firm size in the relationship between firm innovation and dividend payout. The results show that the conditional effect of firm size shows that as the value of fims size increases, the relationship between firm innovation and dividend payout becomes stronger. This indicates that moderating effect exists in the relationship between firm innovation and dividend payout policy. The overall variation explained in dividend payout due to both firm innovation

and firm size is .5096%. Big firms often have more resources, so they can innovate and still pay dividends, supporting the agency and signaling theory. However, some studies showed that firms, even larger ones, may keep profits for growth instead of paying dividends. This indicates that the role of firm size in the innovation-dividend link is context dependent.

Table 5

Moderating Effect (Firm innovation "F.Inov" →Firm Size → Dividend Policy)

Size	Effect	*SE*	*t*	*p*	*LL*	*UL*	R^2	Value	Below	Above
3.17	.312	.037	8.42	.0000	.24	.38	.51	.38	.38	99.62
3.83	.353	.035	9.93	.0000	.28	.42				
4.50	.394	.043	9.25	.0000	.31	.48				

Note. conditional effects of the focal predictor at values of the moderator (size)

H3- Firm size moderates the relationship between firm innovation and dividend policy.

Table 6

Moderating Effect (Stock trading volume "STV" →Firm Size →Dividend Policy)

Size	Effect	*SE*	*t*	*p*	*LL*	*UL*	R^2	Value	Below	Above
3.17	.32	.0160	8.42	.0000	.14	.28	.55	.84	.28	99.83
4.83	.35	.023	9.93	.0000	.21	.31				
4.50	.49	.033	9.28	.0000	.32	.47				

Note. conditional effects of the focal predictor at values of the moderator (size)

Table 6 shows the moderating effect of firm size in the relationship between stock trading volume and dividend payout. The results show that the conditional effect of firm size. It shows that as firm size increases, the relationship between stock trading and dividend payout becomes stronger. This indicates that moderating effect exists in the relationship between stock trading volume and dividend policy. The overall variation in dividend payout is explained by both trading volume and firm size (.5481%). The results fit the signaling and agency theories, as big firms

with more trading often pay dividends to show strength and reduce conflicts. Hence, hypothesis 4 which states that firm size moderates the relationship between stock trading volume and dividend policy is supported. Although Malak and Wajid, (2025) and Pinto and Rastogi (2022) found that firms with high trading activity may keep profits for growth, instead of paying dividends.

Conclusion and Recommendations

The literature regarding firm innovation is based on the studies of IT firms. On the other hand, firms involved in innovation from the manufacturing sector are ignored. Hence, the contribution of this study is twofold. Firstly, this paper considers manufacturing firms involved in innovation. Secondly, the mediating and moderating effect in the relationship between the selected firm's financial characteristics and dividend payout policy is considered. This is because studies available in the literature addressed this important issue keeping in view the direct impact of firm financial characteristics and overlooked the mediating and moderating effects.

Despite the contribution to the existing literature, this research is limited in terms of data and quantitative methodology. The mediation analysis reveals a significant positive effect of firm performance in the relationship between firm innovation, stock trading volume, and dividend policy (measured through dividend payout), confirming hypotheses 1, 2, 5, and 6 (Tables 3 and 4). Likewise, the moderating effect of firm size in the relationship between firm innovation, stock trading volume, and dividend payout is also significant and positive, supporting hypotheses 3 and 4 (Tables 5 and 6). The results suggest that firm performance and firm size play a key role in shaping payout decisions. For policymakers**,** this highlights the need to design policies that support innovation without discouraging dividend stability. For investors**,** it signals that larger, better-performing firms are more likely to balance innovation with consistent dividend payouts.

Future Research Direction

Investors in high-tech and innovative firms may prioritize capital gains over dividends, as these firms are often valued for their growth potential rather than income. There is limited research available on investor preferences, specifically in terms of dividend payouts versus share

buybacks or reinvestment in high-tech industries. Hence, deeper insight into this phenomenon may be gained through fuzzy set qualitative comparative analysis approach (fsQCA).

Author Contribution

Faheem ul Hussain Dehraj: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft. **Irfan Ali Mirani:** Supervision, Investigation, Writing – review & editing. **Rehman Gul Gilal:** Supervision, Investigation, Writing – review & editing**.**

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

Data supporting the findings of this study will be made available by the corresponding author upon request.

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Review Details: Firm Innovation and Dividend Policy: “Mediating and Moderating Role of Firm Financial Characteristics”

Sania Shaheen

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Journal of Finance and Accounting Research
Department of Finance, Dr Hasan Murad School of Management (HSM),
University of Management and Technology (UMT), Pakistan

Review Report

Author & Manuscript Details (For Editorial Office Only)

Manuscript Title	**Firm Innovation and Dividend Policy: "Mediating and Moderating Role of Firm Financial Characteristics**
Manuscript ID	**2140**
Sent for Review	11-6-2025
Date by which the form should be returned	

Reviewer Details

Reviewer Name	**Dr.Sania Shaheen**
Reviewer Department	**Department of Economics**
Reviewer Designation	**Assistant Professor**
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Signature of Reviewer	Sania Shaheen

Notes

1. The reviewers identities remain anonymous to author(s)
2. All comments should be made in this review report and not on the manuscript.
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EVALUATION

Section I: Qualitative Overview

Introduction	The introduction is clear and effectively highlights the research gap. I would recommend please add a statement on the potential policy implications that may arise from the study's findings.
Literature Review	Literature review is missing. Please add some latest studies
Methodology	Methodoly is fine. Just add equation number
Results and Discussion	In the Results and Discussion chapter, ensure that all tables are professionally formatted, adhering to the standards commonly used in ESCI or SCI-indexed journals.
Conclusion	Conclusion is fine but needs to add some policy recommendations
References	In references section check some of the references have missing

	information regarding volume, issue and page no etc.

Section II: General Overview

Strengths	Introduction and abstract writeup is very good
Weaknesses	Literature review part is missing
References	References section some information is missing regarding volume, issue and page no etc.
Recommendations	Article is good for publication
Comments to the Author	Just revise the manuscript as per suggestions

Section III: Quantitative Rating

Evaluation (Please evaluate the manuscript by grade 1-5)	
Items	**Grade**
Novelty/ Contribution to existing knowledge	4
Organization and Readability	4
Soundness of Methodology	3
Soundness of Results	3
Evidence supports Conclusion	3
Adequacy of Literature Review	3

Note. *5 – Excellent, 4 – Good, 3 – Average, 2 – Below Average, 1 – Reject*

Section IV: Checklist

1. Does the article fall within the scope of journal?	**Yes**√	**No**
2. Are the title, abstract, and introduction coherent and clear?	**Yes**√	**No**
3. References are relevant, up to date (from last 5 years)	**Yes**√	**No**
4. Key references are included	**Yes**√	**No**
5. Any conflict of interest to declare		
6. Confidential Comments to Editor	N.A	

REVIEWER DECISION

Recommendation to Editor (Please mark "x" for appropriate option)
☐ Excellent, accept the submission
☑ Good, accept the submission with Minor revisions required
☐ Resubmit for review, Major revisions required
☐ Reject/Decline the submission

Signature:

Return Date: 19-7-2025

Journal of Finance and Accounting Research
Department of Finance, Dr Hasan Murad School of Management (HSM),
University of Management and Technology (UMT), Pakistan

Review Details: Firm Innovation and Dividend Policy: “Mediating and Moderating Role of Firm Financial Characteristics”

Saira Habib

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Recommendation: Revisions Required

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Recommendation

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Revisions Required

Journal of Finance and Accounting Research
Department of Finance, Dr Hasan Murad School of Management (HSM),
University of Management and Technology (UMT), Pakistan

Review Report

Author & Manuscript Details (For Editorial Office Only)

Manuscript Title	**Firm Innovation and Dividend Policy: "Mediating and Moderating Role of Firm Financial Characteristics**
Manuscript ID	**2140**
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Reviewer Details

Reviewer Name	**Dr. Saira Habib**
Reviewer Department	**Department of Economics**
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Notes

1. The reviewers identities remain anonymous to author(s)
2. All comments should be made in this review report and not on the manuscript.
3. Please return the completed report within 14days

EVALUATION

Section I: Qualitative Overview

Introduction	The introduction provides a clear background and justification for the study, linking dividend policy and innovation effectively. However, it could be more engaging by explicitly highlighting the research gap upfront. The objectives are well-defined but would benefit from sharper research questions.
Literature Review	The review covers key themes in dividend policy, firm characteristics, and innovation, showing relevance and breadth. Still, some references are older than five years, which weakens the currency of evidence. Greater critical synthesis, rather than descriptive listing, would strengthen the argument.
Methodology	The study uses robust econometric methods, clearly describing model specifications and variable construction. However, some justifications (e.g., sample period and country choice) are only briefly mentioned. More discussion on limitations and robustness checks would improve methodological transparency.
Results and Discussion	The results are presented clearly with appropriate tables and interpretations. Yet, the discussion section leans toward restating

	results rather than deeply engaging with theoretical or policy implications. Linking findings to contrasting studies would enhance the depth of discussion.
Conclusion	The conclusion effectively summarizes the main findings and their relevance for corporate finance and innovation. Still, it misses an opportunity to highlight broader implications for policymakers and investors. A brief note on future research directions could add more value.
References	The references are relevant and support the study's framework, with inclusion of foundational theories. However, the proportion of older sources is high compared to recent publications. Incorporating more 2022–2024 studies would make the paper more contemporary and impactful.

Section II: General Overview

Strengths	The article addresses an important research gap by linking dividend policy with firm innovation and financial characteristics, which is relevant in corporate finance. It uses a structured methodology with clear objectives and research questions. The paper is well-organized, with a logical flow from introduction to conclusion.
Weaknesses	Some arguments in the introduction could be better substantiated with recent empirical evidence. The discussion section does not fully explore the broader implications of findings for policy and practice. A few sections lack depth, especially regarding limitations and future research directions.
References	References are relevant to the topic, and foundational theories are well-cited. However, some are older than five years and weaken the paper's currency. Inclusion of 2022–2024 studies would enhance rigor and reflect ongoing debates.
Recommendations	Update the literature review with recent studies on dividend policy and innovation. Expand the discussion on how findings contribute to theory and practice. Add a section on policy implications and limitations for clarity and balance.
Comments to the Author	The paper is promising, with a strong conceptual foundation and clear objectives. Improving the depth of discussion and integrating newer references will make it more impactful. Overall, with refinement, the study has good potential for publication in a quality journal.

Section III: Quantitative Rating

Evaluation (Please evaluate the manuscript by grade 1-5)

Items	Grade
Novelty/ Contribution to existing knowledge	4
Organization and Readability	4
Soundness of Methodology	4
Soundness of Results	3
Evidence supports Conclusion	4
Adequacy of Literature Review	3

Note. *5 – Excellent, 4 – Good, 3 – Average, 2 – Below Average, 1 – Reject*

Section IV: Checklist

1. Does the article fall within the scope of journal?	**Yes**	
2. Are the title, abstract, and introduction coherent and clear?	**Yes**	
3. References are relevant, up to date (from last 5 years)	**Yes**	
4. Key references are included	**Yes**	
5. Any conflict of interest to declare		
6. Confidential Comments to Editor	N.A	

REVIEWER DECISION

Recommendation to Editor (Please mark "x" for appropriate option)
☐ Excellent, accept the submission
X Good, accept the submission with Minor revisions required
☐ Resubmit for review, Major revisions required
☐ Reject/Decline the submission

Return Date: 2-8-2025

Signature: Saima Habib

2140-final plag

by 2140 2140

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Word count: 4251
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Firm Innovation and Dividend Policy: "Mediating and Moderating Role of Firm Financial Characteristics"

Abstract:

Purpose: This study aims to investigate the mediating and moderating effect of firm's financial characteristics between the relationship of firm innovation, stock trading volume and dividend policy.

Design/Methodology/Approach: For data analysis quantitative method is used based on a secondary data set of 82 firms of manufacturing sector those listed on Pakistan Stock Exchange from 2014 to 2023 in which the Company's financial ratios provide the key quantitative metrics for analysis.

Findings: The mediation analysis reveals a significant positive effect of firm performance on the relationships between firm innovation, stock trading volume, and dividend policy (measured through dividend payout), confirming hypotheses #1, 2, 5, and 6 (Tables 3 and 4). Likewise, the moderating effect of firm size on the relationships between firm innovation and stock trading volume with dividend payout is also significant and positive, supporting hypotheses #3 and 4 (Tables 5 and 6).

Originality: Previous studies have primarily focused on innovation in IT firms, leaving innovation in the manufacturing sector largely unexplored. This paper makes two key contributions: first, it examines non-financial firms engaged in innovation, and second, it addresses this gap by analyzing firms' unique characteristics through firm innovation and trading volume—factors overlooked in prior research. By doing so, this study provides updated evidence, enhancing the robustness of existing findings.

Key words: Innovation, Stock trading volume, Size, Performance, Dividend Payout

1. Introduction/Background of the Study

Research on technological innovation and dividend policy is still emerging, and several gaps need to be filled (Cagan, 2024). Firms in the technology sector regularly reinvest earnings into innovation rather than paying dividends, focusing on growth. It is unclear how specific types of technological innovations (e.g., AI, automation, or R&D intensity) influence decisions on dividends versus reinvestment. Additionally, it's also unknown at what stage a tech firm should consider shifting from reinvestment to dividend payouts. Studies are needed to understand how different forms of technology innovation impact dividend policy,

Traditional dividend theories assume that investors prefer regular income through dividends. However, investors in high-tech and innovative firms may prioritize capital gains over dividends, as these firms are often valued for growth potential rather than income (Evgenevic, 2023). More research is recommended on investor preferences in the tech sector, especially regarding dividend payouts versus share buybacks or reinvestment.

Many high-growth tech companies, such as Google or Amazon, do not pay dividends in their early years but may face pressure to do so as they mature (Malak & Wajid, 2025; Pinto & Rastogi, 2022). Research is limited on the transition from a non-dividend-paying policy to a dividend-paying in tech firms, particularly how this transition affects stock prices, investor perception, and competitive advantage.

Firms nowadays shift their major attention regarding investment towards innovation; this is regarding the launching of new products or introducing new technology in the market. Hence the role of technology has recently gained attention as a determinant in dividend policy (Akhtar, 2025; Arhinful, Mensah, Amin, & Obeng, 2024) (Oloruntoba & management, 2024) Companies that invest heavily in technology upgrades or digital transformation may prioritize reinvestment over dividends to support growth and competitive advantage. This shift is aligned with the firms in the innovation-driven sector trend to adopt a residual dividend policy.

Researchers around the globe have investigated the financial dynamics of the IT sector regarding the maters: debt versus equity financing, financial impact of Mergers & Acquisitions (M&A), Investment Strategies & Valuation, Corporate Governance & Financial Performance, Working Capital Management but yet debate regarding the dividend policy is much awaited especially in economies of Pakistan (Wu et al., 2024). Most of past research has shown the dividend policy can vary by factors involving: profits, organization size, funding opportunities but investigating characteristics of stock trading volume has got less attention yet the existing proof continues to be still inconclusive (Kashif & Arif, 2025; Liao, Liu, & Liu, 2023).

In addition this study also investigates the impact of those firms' involve in innovation on dividend policy. The results of this research is helpful for both company managers and its investors and gives new insights taking such strategic decisions that whether or not to invest in firms involve in innovation. So for researchers has looked the payout policy of the individual sector as a whole but we take a next different approach of focusing those firms only involve in innovation. Its findings will not only guide managers and investors in making strategic decisions but also provide valuable insights for policymakers. Understanding the innovation–dividend link can help regulators design frameworks that encourage technological advancement while ensuring sustainable shareholder returns.

2. Literature Review

Research on technology innovation and dividend policy is still emerging, and several gaps need to be filled. Some critical areas where further research is needed: Firms in the technology sector regularly reinvest earnings into innovation rather than paying dividends, focusing on growth. However, it's unclear how specific types of technological innovations (e.g., AI, automation, or R&D intensity) influence decisions on dividends versus reinvestment. Additionally, it's unknown at what stage a tech firm should consider shifting from reinvestment to dividend payouts. Studies are needed to understand how different forms of technology

innovation impact dividend policy decisions, and whether firms with high R&D strength can sustain or advantage from dividend payments as they mature.

Traditional dividend theories assume that investors prefer regular income through dividends. However, investors in high-tech and innovative firms may prioritize capital gains over dividends, as these firms are often valued for growth potential rather than income. There is limited research on investor preferences specifically for dividends in high-tech industries (Evgenevic, 2023). More research is recommended on investor preferences in the tech sector, especially regarding dividend payouts versus share buybacks or reinvestment.

Dividend Policy Adaptations as Tech Firms Mature: Research Gap: Many high-growth tech companies, such as Google or Amazon, do not pay dividends in their early years but may face pressure to do so as they mature. Research is limited on the transition from a non-dividend-paying policy to a dividend-paying one in tech firms, particularly how this transition affects stock prices, investor perception, and competitive advantage.

Therefore the longitudinal studies examining tech firms that eventually adopt dividend policies could provide insight into the right timing and approach for implementing dividends without signaling reduced growth potential.

In this connection, different research exists like (Wu et al., 2024) did research on the IT Industry in which they looked into the market price per share as the dependent variable, and they found that equity does not influence dividends. The same view was supported while investigating the dividend policy decision made by Indian IT and Pharmaceutical companies (Pinto & Rastogi, 2022). On the other hand, the research reveals a positive association between firm profitability, earnings per share, and its payout ratio as opposed to showing the controversial opinion having analyzed 78 firms listed on the Zimbabwean stock exchange and found no relevance in the relationship between dividend policy and share price and earnings per share.

The disagreement in the findings regarding the above literature is perceived showing the impact of dividends on firm value. Still many research findings support the relevance theory. Here are some of them (Sartika, Pranoto, & Journal, 2021), (Yesaya, Bingireki, & Review, 2023). On the contrary, many argue against relevance which include the studies by (Marisetty & Madasu, 2021), (Wu et al., 2024). Thus the previous studies show, this debate is yet to be disclosed. So based on this present empirical work, this research aims to find the impact of firm innovation and other financial characteristic's on the dividend policy.

2.1 Problem Statement

Based on the previous literature the IT firms regarding innovation are under focused but the firms involve in innovation from manufacturing sector are completely unknown, so whether dividend policy is relevant or irrelevant to the firm engaged in innovation other than IT sector is still controversial. This needs the excessive demands for further work. The few studies in literature addresses this important issue keeping in view the

direct impact of a firm's financial characteristics on dividend policy and overlooks the mediating and moderating effects between the relationship of firm financial characteristics and dividend policy.

2.2 Research Objectives

The main objective of this research is to investigate the direct, mediating and moderating effect of firm financial characteristics between the relationship of firm innovation, stock trading volume and dividend policy based on the manufacturing sector of Pakistan from the period 2014 to 2023.

2.3 Research Questions

Q.1 what is the mediating impact of firm performance between firm innovation and dividend policy

Q.2 what is the mediating impact of firm performance between stock trading volume and dividend policy

Q.3 what is the moderating impact of Firm Size between firm innovation and dividend policy

Q.4 what is the moderating impact of Firm Size between stock trading volume and dividend policy

Q.5 what is the impact of firm innovation on dividend policy

Q.6 what is the impact of stock trading volume on dividend policy

3. Research Methodology

Secondary data of manufacturing sector has been collected from the official website of State Bank of Pakistan this includes the time period from 2014 to 2023. This time frame is selected primarily due to the data availability, and also as most prior studies has relied on periods before 2014. Hence, this study provides updated insights for the post-2014 period. This research does not consider the separate impact of firms' financial characteristics on dividend policy during the covid-19 that the future research can fill the gap to increase the more robustness in methodology. For the quantitative analysis the company's financial ratios provides the key quantitative metrics for analysis. We use long-term investment as a proxy for firm innovation, as it reflects the firm's capital commitment to future-oriented projects, many of which are aimed at improving products, processes, or technologies. While R&D is a direct proxy for innovation, this paper indirectly supports the use of long-term investment as a broader innovation input as same has followed by (Ganie, 2025). Since for more model simplification and unavailability of data, this research is not considered firm other control variables such as age and leverage.

3.1 Statistical Analysis

The data has been analyzed through the spss-26 version with an added feature of process v4.2 by Andrew F. Hayes supporting the both mediating and moderating effect keeping in view the direct relationship among dependent and independent variables.

3.2 No: of Cross sectional

The table No.1 depicts the sectorial distribution within the manufacturing sectors. The data for 82 firms have been considered for the analysis in this research.

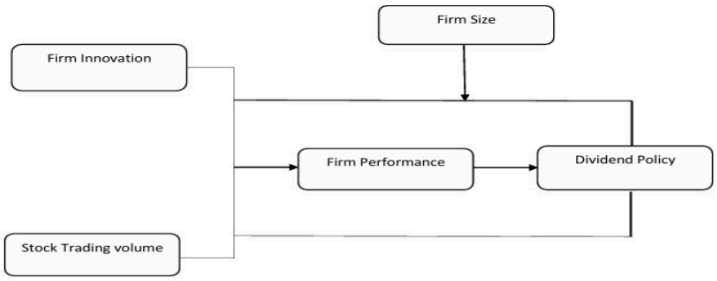
Table 1 Distributions of companies by sectors

The companies are listed according to their respective industries in the first column. The years are represented in columns 2 to 10, relative to the different companies present annually. The aggregate firms are shown at the last column after excluding those with missing data. While the last row presents aggregates firms yearly.

Economic Group:	2014	2015	2016	2017	2018	2019	2020	2021	2022	2014 to 2022
Textile	5	7	4	5	6	9	10	6	7	32
Cement	4	3	3	9	5	7	7	11	4	15
Food	5	4	6	8	9	13	11	12	13	14
Sugar	6	4	3	5	6	6	15	19	10	21
Total	20	18	16	27	26	35	43	48	34	82

The most of firms in textile comparatively other sectors done their business successfully during the sample period 2014 to 2023 from maximum 32 textile to minimum 14 firms in cement sector. This variation in the number of firms regarding the different sectors is due to the number of investment opportunity available with each sector. This suggests higher the investment opportunities leads to number of new firms existing in the market (Khalid & Mukthar, 2025) and (Ashta & Herrmann, 2021).

4 Proposed Research Model



$$DIVP=\gamma 0+\gamma 1INNOV+\gamma 2VOL+\gamma 3FPERF+\gamma 4\,(INNOV\cdot FSIZE)\;\gamma\,5(VOL\cdot FSIZE)+\varepsilon$$

Explanation of Terms:

1. **Direct Effects**:
    - γ1 INNOV: Effect of firm innovation on dividend policy.

- γ2VOL: Effect of stock trading volume on dividend policy.
- γ3FPERF: Mediating effect of firm performance on dividend policy.

2. **Interaction Terms (Moderation)**:
   - γ4(FPERF·FSIZE): Moderation of the effect of firm innovation by firm size.
   - γ 5(VOL·FSIZE): Moderation of the effect of stock trading volume by firm size.

Variables & Hypothesis

Firms in more competitive markets may adjust their dividend payouts differently based on their innovation efforts. In highly competitive markets, firms may need to reinvest profits into innovation rather than pay high dividends, while in less competitive markets; firms may have more flexibility to distribute profits as dividends. Hence the more innovative firms, by increasing profits, are more likely to pay higher dividends. Innovation boosts profitability and firm performance those influence a firm's decision to distribute dividends to shareholders. Hence we examine this relation while considering the mediating effect of firm performance.

H1- Firm performance mediates the relationship between firm innovation and dividend policy

$$DIVP=\gamma 0+\gamma 1INNOV+\gamma 2FPERF+\varepsilon \quad \textbf{Equation….. I}$$

Higher trading volume reflects stronger investor interest, which influences a firm's decision to adjust its dividend payouts. Increased trading volume often signals higher investor attention and sentiment. This can pressure firms to keep maintain their performance and adjust their dividend policies to meet investor expectations, balancing between paying higher dividends and retaining earnings. Hence it is important to investigate the mediating effect of firm performance between the relationship of firm innovation and its dividend policy.

H2- Firm performance mediates the relationship between stock trading volume and dividend policy

$$DIVP=\gamma 0+\gamma 1STV+\gamma 2FPERF+\varepsilon \quad \textbf{Equation….. II}$$

Larger firms have more resources to invest in new products or technologies while still paying dividends. Smaller firms, however, may prioritize R&D over dividends, reinvesting profits to support innovation. Thus, larger firms can balance both, while smaller firms may focus more on innovation and reduce dividend payouts.

H3- Firm size moderates the relationship between its innovation and dividend policy

$$DP=\beta 0+\beta 1INN+\beta 2FS+\beta 3(INN\times FS)+\epsilon \quad \textbf{Equation….. III}$$

Larger firms are more likely to adjust their dividend payouts in response to changes in trading volume. Larger firms, with more resources and stability, may be better positioned to keep stable their dividend policies based

on investor expectations. In comparison, smaller firms might be more constrained and less responsive to trading volume changes. When a stock has high trading volume, it indicates strong investor interest. Companies may respond by offering higher or more stable dividends to meet investor expectations, while lower trading volumes may result in more flexible dividend decisions.

H4- Firm size moderates the relationship between stock trading volume and dividend policy

$$DP=\beta 0+\beta 1STV+\beta 2FS+\beta 3(STV\times FS)+\epsilon \quad \textbf{Equation….. IV}$$

When a firm focuses on innovation, such as developing new products or technologies, it may prioritize reinvesting profits into research and development (R&D) rather than paying dividends. This is especially true for firms seeking long-term growth and market competitiveness. As a result, innovative firms might reduce or eliminate dividends to fund their innovation efforts. On the other hand, firms with stable, established innovations may be able to maintain regular dividend payouts while still investing in new projects. Thus, a firm's stage of innovation and its need for capital to fund growth can significantly affect its dividend policy. Further be reminded that H5 considering no mediating effect between the relationship of firm innovation and its payout "dividend" policy.

H5- Firm innovation has direct impacts on its dividend policy.

$$DP=\gamma 0+\gamma 1INNOV+\varepsilon \quad \textbf{Equation….. V}$$

High trading volume often indicates strong investor interest, which may encourage firms to maintain or increase dividend payouts to attract and retain shareholders. Conversely, lower trading volumes can suggest reduced investor confidence or liquidity concerns, which may lead firms to cut or suspend dividends to conserve cash for operations or growth. Similarly the H5, the H6 considering no any mediating effect between the relationship of both stock trading volume and dividend policy.

H6- Higher stock trading volume has direct influence on a company's dividend policy.

$$DP=\gamma 0+\gamma 1STVOL+\varepsilon \quad \textbf{Equation….. VI}$$

Table 2 provides the comprehensive measurement of dependent, independent, moderating and mediating variables and the sources through which these variables have been already used for same type of analysis. Whereas this research is facilitated to investigate the both direct and indirect affect of firms financial characteristics on dividend policy.

Table 2 Measurement of Research Variables

Variables	Description	Source
Dependents Variables		
Dividend payout	Total Dividend /Net income	(Yusup, Widyarini, & Hongdiyanto, 2022).
Independent Variables		
Firm innovation	Long Term Investment (log)	(Livoreka, 2023), (Ganie, 2025).
Stock trading volume	Number of shares traded	(Zagonel & Terra, 2022).
Mediating variable		
Firm Performance	ROE Net income/ Total Equity	(Yusup et al., 2022).
Moderating variable		
Size	Total assets (log)	(Yemi, 2023).

Log =Logarithm, ROE=Return on equity

Results & Discussions

The result from table 3 shed light on the hypotheses No. 1 and 5. Based on the result, the significant total effect (Direct + indirect) of firm innovation on dividend payout policy is .6672 (.4107+.2520) which indicating that the firm innovation has both significant direct .4107 and indirect .2520 impact mediating through the firm performance on dividend policy. This ensures the existence of mediating effect of firm performance which is .2520 between the relationship of both firm innovation and dividend policy. Theoretically, this supports the resource-based view and signaling theory. However, contrasting studies (e.g., (Evgenevic, 2023) & (Wu et al., 2024) argue that innovative firms often prefer reinvestment over payouts. Hence the firms' technological expansion improves the performance through returns on investors' capital which consequently enable firm to have enough fund available to distribute among shareholders. Hence our following two hypotheses 1 & 5 are supported.

Table 3

Mediating and Direct Effect: (Firm innovation → Firm Performance → Dividend Policy)

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Model: 1
    Y: Dividend Payout
    X: Firm innovation (Ln)
    W: ROE

Sample
Size:  730

Total effect of X on Y
```

```
     Effect         se          t          p       LLCI       ULCI
     .6627       .0213    24.9070       .0004       .1018       .1211

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
     .4107       .0315    11.2570       .0057       .0002       .1236

Indirect effect(s) of X on Y:
        Effect     BootSE   BootLLCI   BootULCI
ROE       .2520       .0342       .0048       .0114

************************ ANALYSIS NOTES AND ERRORS ************************
```

H1-Firm performance mediates the relationship between firm innovation and dividend policy,

H5- Firm innovation impacts dividend policy.

The result from table 4 shed light on the hypotheses No. 2 and 6. Based on the result, the significant total effect (Direct + indirect) of stock trading volume on dividend payout policy is **.8222** (.4309+.3913) which indicating that the firm trading volume has both significant direct .4309 and indirect .3913 impact mediating through the firm performance on dividend policy. This ensures the existence of mediating effect of firm performance which is .3913 between the relationship of both firm trading volume and dividend policy. Hence the firms' greater trading volume improves the performance through returns on investors' capital which consequently enable firm to have enough fund available to distribute among shareholders. This supports signaling theory, as active trading reflects market confidence and encourages payouts. Yet, studies (Yesaya, Bingireki, & Review, 2023) suggest high trading firms may retain earnings for growth. Our findings show that enhanced performance from trading volume allows firms to balance reinvestment and dividends. Therefore our following two hypotheses 2 & 6 are supported.

Table 4

Mediating and Direct Effect: (Stock trading volume ⟶ Firm Performance ⟶ Dividend Policy

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************
Model: 2
    Y: Dividend Payout
    X: Stock Trading Volume
    W: ROE

Sample
Size:  730

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      .8222       .0238    13.8548       .0040       .1226       .3910

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      .4309       .0240    11.8325       .0073       .0031       .0909
```

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
ROE	.3913	.0324	.0131	.1463

********** ANALYSIS NOTES AND ERRORS **********

H2- Firm performance mediates the relationship between stock trading volume and dividend policy

H6- Higher stock trading volume influences a company's dividend policy.

The table # 5 shows the moderating effect of firm size between the relationship of firm innovation and its dividend payout. According the result of conditional effect shows, as we add more value of firm size as a moderating variable hence its corresponding effect with same proportion is increasing. This mean there is moderating effect exist between the relationship of firms innovation and dividend policy. However overall variation is explained in dividend payout due to by both firm innovation and size is .5096%. Big firms often have more resources, so they can innovate and still pay dividends, supporting agency and signaling theory. But some studies show firms, even large ones, may keep profits for growth instead of paying dividends. This means the role of size in the innovation–dividend link can change with situations.

Table 5

Moderating Effect (Firm innovation "F.Inov" → Firm Size → Dividend Policy)

****

OUTCOME VARIABLE:

Dividend Payout

Model Summary

R	R-sq	MSE	F	df1	df2	p
.6979	.5096	.1827	233.9821	3.0000	726.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.7157	.9735	2.7471	.0000	1.0485	3.4800
FInv	.0958	.4129	1.2320	.8166	-.3063	.7148
SiZe	.1559	.3013	3.5173	.02051	.4357	.7475
Int_1	.0536	.0247	2.1445	.0351	.0449	.0520

Product terms key:

Int_1 : LnLI x LNSZ

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0036	5.0209	1.0000	726.0000	.0151

Focal predict: LnLI (X)

Mod var: LNSZ (W)

Conditional effects of the focal predictor at values of the moderator (s)

Size	Effects	se	t	P	LLCI	ULCI
3.1667	.3116	.0370	8.4234	.0000	.2389	.3843
3.8333	.3528	.0355	9.9346	.0000	.2830	.4226
4.5000	.3940	.0426	9.2514	.0000	.3103	.4777

Moderator value (s) defining Johnson-Neyman significance region (s):

Value	Bellow	Above
.7996	.3752	99.6248

Hence our hypothesis # 3 is supported that is **H3-** Firm size moderates the relationship between its innovation and dividend policy.

Table 6

Moderating Effect (Stock trading volume "STV" → Firm Size → Dividend Policy)

****

OUTCOME VARIABLE:
Dividend Payout

Model Summary

R	R-sq	MSE	F	df1	df2	p
.6944	.5481	.2460	253.4522	3.0000	726.0000	.0041

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.2061	.3401	3.0905	.0021	2.5660	3.9782
STV	.0639	.3017	.2049	.8377	-.5481	.6759
SIZE	.1903	.1800	1.9872	.0408	.1631	.5437
Int_1	.0602	.0187	2.0133	.0294	.0365	.0370

Product terms key:
Int_1 : LNSTV x LNSZ

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0039	5.1402	1.0000	726.0000	.0394

Focal predict: LNSTV (X)
Mod var: LNSZ (W)

Conditional effects of the focal predictor at values of the moderator (s)

Size	Effects	se	t	P	LLCI	ULCI
3.1667	.3216	.0160	8.4234	.0000	.1389	.2843
4.8333	.3528	.0235	9.9346	.0000	.2130	.3126
4.5000	.4940	.0326	9.2824	.0000	.3203	.4667

Moderator value (s) defining Johnson-Neyman significance region (s):

Value	Bellow	Above
.8396	.2752	99.8325

The table # 6 shows the moderating effect of firm size between the relationship of stock trading volume and its dividend payout. According the result of conditional effect shows, as we add more value of firm size as a moderating variable hence its corresponding effect with same proportion is increasing. This mean there is moderating effect exist between the relationship of stock trading volume and dividend policy. However overall variation is explained in dividend payout due to by both trading volume and size is .5481%. The results fit signaling and agency theory, as big firms with more trading often pay dividends to show strength

and reduce conflicts. But (Malak & Wajid, 2025; Pinto & Rastogi, 2022) found that firms with high trading activity may keep profits for growth instead of paying dividends. Hence the hypothesis # 4 is supported that is **H4-** Firm size moderates the relationship between stock trading volume and dividend policy.

Conclusion

The literature in previous studies is based on the IT firms regarding innovation but the firms involve in innovation from manufacturing sector are completely unknown. Hence the contribution of this paper is twofold: firstly this paper considers those nonfinancial firms involve in innovation and secondly the mediating and moderating effect between the firm's financial characteristics and dividend payout is considered because the few studies in literature addresses this important issue keeping in view the direct impact and overlooks the mediating and moderating effect. Despite the contribution in the existing literature this research is limited in term of data and quantitative methodology. The mediation analysis reveals a significant positive effect of firm performance on the relationships between firm innovation, stock trading volume, and dividend policy (measured through dividend payout), confirming hypotheses #1, 2, 5, and 6 (Tables 3 and 4). Likewise, the moderating effect of firm size on the relationships between firm innovation and stock trading volume with dividend payout is also significant and positive, supporting hypotheses #3 and 4 (Tables 5 and 6). The results suggest that firm performance and size play key roles in shaping payout decisions. For policymakers**,** this highlights the need to design policies that support innovation without discouraging dividend stability. For investors**,** it signals that larger, better-performing firms are more likely to balance innovation with consistent dividends.

Future Research Direction

Investors in high-tech and innovative firms may prioritize capital gains over dividends, as these firms are often valued for growth potential rather than income. There is limited research on investor preferences specifically in terms of dividend payouts versus share buybacks or reinvestment in high-tech industries by considering deeper insight through fuzzy set qualitative comparative analysis approach (fsQCA).

Data Availability Statement: The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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