

Earnings Volatility and Research & Development Investment on Firm Valuation in The Philippine E-Commerce Sector

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Abstract

The e-commerce industry in the Philippines has emerged as a vibrant and rapidly evolving sector, characterized by robust growth and fierce competition. In this context, understanding the determinants of firm value within the industry is of paramount importance for businesses seeking sustained success. This study investigates the multifaceted relationships between corporate earnings volatility, financial performance, market value, and research and development (R&D) practices within the Philippines' e-commerce landscape. The research leveraged data collected from managers of online marketplace companies, who were strategically selected for their roles in financial and research matters. Through rigorous data analysis, including weighted mean calculations and hypothesis testing, the study offers critical insights. It finds that corporate earnings volatility management significantly influences both financial performance and market value. Additionally, R&D efforts, specifically research expenditures and research investment, play a pivotal role in enhancing firm value. This study concludes by providing recommendations for businesses to optimize their strategies, minimize earnings volatility, and strengthen their value proposition in the dynamic e-commerce industry of the Philippines. The findings and insights presented are invaluable for guiding businesses in navigating the competitive landscape and positioning themselves for long-term success.

Keyword: Corporate Earnings Volatility, Research And Development Investment, Firm Value

I. Introduction

The e-commerce sector in the Philippines has witnessed remarkable growth in recent years, driven by the rapid digitalization of consumer behavior and the increasing adoption of online shopping platforms. This dynamic sector has become a significant contributor to the country's economy, attracting both established businesses and startups eager to tap into the burgeoning online market. In this evolving landscape, understanding the intricate factors that contribute to a company's value and competitiveness is of paramount importance.

This study delves into the complex interplay of variables within the Philippines' e-commerce industry, with a specific focus on corporate earnings volatility, financial performance, market value, and research and development (R&D) practices. These variables are central to the strategic decision-making processes of companies operating in this sector, influencing their growth trajectories, investor perceptions, and overall market standing.

The research aims to illuminate the relationships between corporate earnings volatility management, financial performance, market value, and R&D activities. It seeks to provide a comprehensive understanding of how these factors interact and impact a company's value proposition in the context of the rapidly evolving e-commerce landscape. Through rigorous data analysis and structural model analysis, this study offers insights and recommendations to guide businesses in optimizing their strategies and achieving sustained success in this competitive industry.

II. Materials and Methods

This study employed a qualitative research approach to explore the factors influencing firm value within the Philippines' e-commerce industry. A purposive sampling technique was used to assemble a robust dataset of managers from various companies within the sector. The selected participants were strategically chosen based on their key roles and responsibilities related to financial management and research and development (R&D) within their organizations.

Data were collected through a structured survey designed to gather in-depth insights into corporate earnings volatility management, financial performance, market valuation, and R&D practices. The questionnaire was carefully crafted to ensure the relevance and comprehensiveness of the data collected, targeting specific aspects of the participants' expertise.

Survey responses were obtained from employees of online marketplace companies as well as other e-commerce firms operating in the Philippines. The collected data were systematically analyzed to uncover the complex relationships between earnings volatility, financial strategies, market valuation, and R&D investments in the context of the evolving e-commerce landscape.

III. Results and Discussion

1. E-commerce businesses manage the corporate earnings volatility as to:

Table 1 Corporate Earnings Volatility on Firm Value in Philippines E-Commerce Industry As to Financial Performance

Indicators	WM	VI	Rank
1. Financial performance encompasses metrics such as revenue growth, profit margins, and operational efficiency.	3.65	O	1
2. Positive financial performance often leads to higher profitability, increased investor confidence, and enhanced competitiveness, all of which contribute to higher firm value.	3.56	O	2
3. Higher earnings volatility can create uncertainty among investors and stakeholders, potentially leading to a lower firm value.	3.37	O	4.5
4. When a company is financially robust, it may be better equipped to navigate challenges and maintain stability in its earnings over time.	3.41	O	3
5. Lower volatility can contribute to investor confidence and a perception of stability, potentially leading to higher valuation.	3.37	O	4.5
Overall Weighted Mean	3.47	O	

Legend:

Scale Range Verbal Interpretation Symbol

4	3.25-4.00	Outstanding	O
3	2.50-3.24	Good	G
2	1.75-2.49	Fair	F
1	1.00-1.74	Poor	P

As revealed in Table 1, the corporate earnings volatility on firm value in Philippines e-commerce industry as to financial performance rated as Outstanding with an overall weighted mean of 3.47. All items rated as Outstanding, namely: financial performance encompasses metrics such as revenue growth, profit margins, and operational efficiency with a weighted mean of 3.65 as rank 1; positive financial performance often leads to higher profitability, increased investor confidence, and enhanced competitiveness, all of which contribute to higher firm value with a weighted mean of 3.56 as rank 2; when a company is financially robust, it may be better equipped to navigate challenges and maintain stability in its earnings over time with a weighted mean of 3.41 as rank 3; and higher earnings volatility can create uncertainty among investors and stakeholders, potentially leading to a lower firm value; and lower volatility can contribute to investor confidence and a perception of stability, potentially leading to higher valuation with both the weighted mean of 3.37 as rank 4 and 5.

The corporate earnings volatility's impact on firm value within Philippines e-commerce industry. This assessment aligns with existing literature, notably Kim and Joo (2018) and Agustia (2022), emphasizing the link between positive financial performance and higher firm value. The recognition of revenue growth, profit margins, and operational efficiency as key contributors to firm value (weighted mean of 3.65 as rank 1) resonates with their findings. Additionally, the positive correlation between financial performance and firm value (weighted mean of 3.56 as rank 2) aligns with their discussions on the significance of enhanced company performance. Moreover, the study's findings about financial stability's role in reducing earnings volatility (weighted mean of 3.41 as rank 3) echo insights from Moses (2019) and Brennan and Hughes (2020). This relationship underscores the value of stable cash flow and its positive impact on firm value. Furthermore, the observed implication that lower earnings volatility contributes to higher firm value (weighted mean of 3.37 as rank 5) aligns conceptually with Rajgopal's research on the value relevance of network advantage (2021).

Table 2 Corporate Earnings Volatility on Firm Value in Philippines E-Commerce Industry As to Market Value

Indicators			Rank
	WM	VI	
1. A higher market value can reflect investor confidence, which may contribute to stability in earnings even during challenging periods.	3.68	O	2
2. A strong market value often indicates investor perception of the company's growth potential, which can lead to increased firm value.	3.63	O	4
3. Higher earnings volatility can lead to uncertainty among investors and stakeholders, potentially affecting firm value.	3.47	O	5
4. When a company's market value is strong, it may experience increased investor confidence and a perception of stability, potentially contributing to reduced earnings volatility.	3.65	O	3

5. A stable earnings environment can enhance investor confidence, potentially leading to higher firm valuation.	3.73	O	1
Overall Weighted Mean	3.63	O	

As shown in Table 2, the corporate earnings volatility on firm value in Philippines e-commerce industry as to market value rated as Outstanding with an overall weighted mean of 3.63. All items rated as Outstanding, these are: a stable earnings environment can enhance investor confidence, potentially leading to higher firm valuation with a weighted mean of 3.73 as rank 1; a higher market value can reflect investor confidence, which may contribute to stability in earnings even during challenging periods with a weighted mean of 3.68 as rank 2; when a company's market value is strong, it may experience increased investor confidence and a perception of stability, potentially contributing to reduced earnings volatility with a weighted mean of 3.65 as rank 3; a strong market value often indicates investor perception of the company's growth potential, which can lead to increased firm value with a weighted mean of 3.63 as rank 4; and higher earnings volatility can lead to uncertainty among investors and stakeholders, potentially affecting firm value with a weighted mean of 3.47 as rank 5.

The corporate earnings volatility on firm value in Philippines e-commerce industry concerning market value. These findings resonate with prior research by Kim and Joo (2018), Huseynov et al. (2021), and Agustia (2022). The recognition of a stable earnings environment enhancing investor confidence (weighted mean of 3.73 as rank 1) aligns with Huseynov et al.'s insights into the transformative impact of the B2C e-commerce model (2021), emphasizing the role of consumer-oriented approaches in shaping market perception. Furthermore, the higher market value and investor confidence (weighted mean of 3.68 as rank 2) is in line with Kim and Joo's empirical exploration of the relationship between advertising expenditures and sales (2018), highlighting the significance of marketing efforts in enhancing market perceptions. Similarly, the findings indicating that a company's strong market value contributes to reduced earnings volatility (weighted mean of 3.65 as rank 3) resonate with discussions by Moses (2019) and Brennan and Hughes (2020), emphasizing the benefits of reduced volatility on investor confidence and firm value. Overall, these implications underscore the study's alignment with existing literature and its valuable insights into the dynamics of market value and earnings volatility in Philippines e-commerce industry.

2. The research and development extended as to:

Table 3 Research and Development Extended on Firm Value in Philippines E-Commerce Industry as to Research Expenditures

Indicators			Rank
	WM	VI	
1. Research and development investment enhance company's competitiveness in the e-commerce industry, while allocating resources to R&D fosters long-term growth, reflecting our belief in the value of research expenditures for securing company's future.	3.55	HE	2
2. The presence of skilled R&D personnel enhances our company's capacity to innovate.	3.44	HE	4

3. Increased R&D spending results in the creation of more innovative products and services within our company.	3.45	HE	3
4. Collaborative R&D initiatives with external partners, such as universities and research institutions, positively influence our company's value.	3.56	HE	1
5. R&D investments empower our company to adapt to changing market trends and evolving consumer preferences.	3.42	HE	5
Overall Weighted Mean	3.48	HE	

Legend:

Scale	Range	Verbal Interpretation	Symbol
4	3.25-4.00	Highly Extent	HE
3	2.50-3.24	Extent	E
2	1.75-2.49	Not Extent	NE
1	1.00-1.74	Highly Not Extent	HNE

As unveiled in Table 3, the research and development extended on firm value in Philippines e-commerce industry as to research expenditures rated as Highly Extent with an overall weighted mean of 3.48. All items rated as Highly Extent, namely: collaborative R&D initiatives with external partners, such as universities and research institutions, positively influence our company's value with a weighted mean of 3.56 as rank 1; research and development investment enhance company's competitiveness in the e-commerce industry, while allocating resources to R&D fosters long-term growth, reflecting our belief in the value of research expenditures for securing company's future with a weighted mean of 3.55 as rank 2; increased R&D spending results in the creation of more innovative products and services within our company with a weighted mean of 3.45 as rank 3; the presence of skilled R&D personnel enhances our company's capacity to innovate with a weighted mean of 3.44 as rank 4; and R&D investments empower our company to adapt to changing market trends and evolving consumer preferences with a weighted mean of 3.42 as rank 5.

The recognition of research expenditures' value for securing a company's future (weighted mean of 3.55 as rank 2) resonates with Lee's investigation into the impact of e-business initiatives on firm value (2022), emphasizing the tangible outcomes of technological investments. Similarly, the positive association between increased R&D spending and innovation (weighted mean of 3.45 as rank 3) mirrors Zott et al.'s exploration of business model integration with e-commerce (2021), underscoring R&D's role in value creation. Furthermore, the acknowledgment of skilled R&D personnel enhancing a company's capacity to innovate (weighted mean of 3.44 as rank 4) aligns with the insights of Qie and Li into the distinct features of B2B e-commerce (2021), emphasizing the importance of expertise in complex trading processes. Additionally, the link between R&D investments and adaptive capabilities (weighted mean of 3.42 as rank 5) resonates with the dynamic capabilities perspective discussed by Lilien (2021), showcasing the ability of firms to adapt to evolving market trends. These findings underscore the study's contribution to the ongoing discourse on the strategic significance of R&D investments in driving innovation and enhancing firm value in the context of Philippine's e-commerce industry.

Table 4 Research and Development Extended on Firm Value in Philippines E-Commerce Industry as to Research Investment

Indicators			Rank
	WM	VI	
1. Research investment decisions align with our company's strategic goals and overarching vision.	3.59	HE	1
2. Effective risk management strategies are in place to mitigate uncertainties associated with our research initiatives.	3.35	HE	3
3. Periodically assesses the Return on Investment (ROI) derived from our research endeavors.	3.22	E	5
4. Research investment decisions are guided by comprehensive analyses of market dynamics and competitor activities.	3.27	HE	4
5. Transparent communication regarding our research activities enhances stakeholder confidence in our company's future prospects.	3.41	HE	2
Overall Weighted Mean	3.37	HE	

As depicted in Table 4, the research and development extended on firm value in Philippines e-commerce industry as to research investment rated as Highly Extent with an overall weighted mean of 3.37. Four (4) items rated as Highly Extent, such as: research investment decisions align with our company's strategic goals and overarching vision with a weighted mean of 3.59 as rank 1; transparent communication regarding our research activities enhances stakeholder confidence in our company's future prospects with a weighted mean of 3.41 as rank 2; effective risk management strategies are in place to mitigate uncertainties associated with our research initiatives with a weighted mean of 3.35 as rank 3; and research investment decisions are guided by comprehensive analyses of market dynamics and competitor activities with a weighted mean of 3.27 as rank 4. One (1) item rated as Extent which is periodically assesses the Return on Investment (ROI) derived from our research endeavors with a weighted mean of 3.22 as rank 5.

The finding that research investment decisions aligned with strategic goals and vision (weighted mean of 3.59 as rank 1) resonates with Kwilinski et al.'s focus on the technological reliance of e-commerce (2019), emphasizing the integration of advanced technologies in shaping business efficiency. Furthermore, the recognition of transparent communication enhancing stakeholder confidence (weighted mean of 3.41 as rank 2) aligns with Suharli's perspective on the stakeholder role in firm value (2019), highlighting the link between value and stakeholder expectations. Additionally, the presence of effective risk management strategies for research initiatives (weighted mean of 3.35 as rank 3) mirrors the insights of Agustia into the influence of profitability and liquidity on firm value (2022), emphasizing the impact of financial indicators. Moreover, the consideration of comprehensive market analyses in research investment decisions (weighted mean of 3.27 as rank 4) resonates with Lee's examination of e-business initiatives' impact on firm value (2022), illustrating the tangible effects of strategic decisions. The assessment of return on investment from research endeavors (weighted mean of 3.22 as rank 5) is in line with Slavko's exploration of earnings volatility and R&D investment (2019), underlining the strategic control of investments for mitigating volatility. These findings contribute to the ongoing discourse on the

multifaceted relationship between R&D investment decisions and firm value in China's e-commerce sector.

3. Relationship between corporate earnings volatility management and research and development of E-commerce businesses

Table 5 Correlation Between Corporate Earnings Volatility Management on Financial Performance and Research and Development of E-commerce Businesses

Indicator	r-value	df	t-value	Critical value	Int.	Decision
1. Research Expenditures	0.99	8	66.172	1.860	Significant	Reject H ₀
2. Research Investment	0.99	8	78.545	1.860	Significant	Reject H ₀

Level of significance @0.05

As revealed in Table 5, the computed t-values for corporate earnings volatility management on financial performance and research and development of E-commerce businesses are as follows: research expenditures with 66.172, and research investment with 78.545 were all higher than the critical values of 1.860 with 8 degrees of freedom at 0.05 level of significance. Hence, there is a significant relationship between corporate earnings volatility management on financial performance and research and development of E-commerce businesses. Therefore, the hypothesis is rejected.

The computed t-values for corporate earnings volatility management on financial performance and research and development (R&D) of E-commerce businesses—research expenditures (66.172) and research investment (78.545)—surpass the critical values of 1.860, with 8 degrees of freedom at a 0.05 significance level. This aligns with the work of Kwilinski et al. (2019) and Lee, Ho Geun (2022), which emphasize the significance of technological and research-based aspects in shaping the outcomes of E-commerce businesses. The rejection of the hypothesis underscores a substantial connection between corporate earnings volatility management, financial performance, and R&D activities within the context of E-commerce, contributing to a deeper understanding of the interplay among these variables.

These findings hold implications for strategic decision-making within China's E-commerce industry. By aligning with the research of Kwilinski et al. (2019) and Lee, Ho Geun (2022), the study accentuates the pivotal role of robust corporate earnings volatility management practices, intertwined with substantial investments in research and development. The rejection of the hypothesis highlights the need for E-commerce businesses to recognize the synergistic effects of effective earnings management, financial performance, and R&D initiatives in optimizing their competitive positioning and long-term value creation.

Table 6 Correlation Between Corporate Earnings Volatility Management on Market Value and Research and Development of E-commerce Businesses

Indicator	r-value	df	t-value	Critical value	Int.	Decision
1. Research Expenditures	0.99	8	73.166	1.860	Significant	Reject H ₀
2. Research Investment	0.99	8	69.276	1.860	Significant	Reject H ₀

Level of significance @0.05

As manifested in Table 6, the computed t-values for corporate earnings volatility management on market value and research and development of E-commerce businesses are as follows: research expenditures with 73.166, and research investment with 69.276 were all higher than the critical values of 1.860 with 8 degrees of freedom at 0.05 level of significance. Hence, there is a significant relationship between corporate earnings volatility management on market value and research and development of E-commerce businesses. Therefore, the hypothesis is rejected.

The computed t-values for the influence of corporate earnings volatility management on market value and research and development (R&D) activities within E-commerce companies—research expenditures (73.166) and research investment (69.276)—exceed the critical values of 1.860, at a 0.05 significance level with 8 degrees of freedom. This alignment with the works of Kwilinski et al. (2019) and Lee, Ho Geun (2022) accentuates the substantial role of effective earnings volatility management and strategic R&D investments in shaping the market value of E-commerce firms. The rejection of the hypothesis underscores a pronounced connection between these variables, contributing to a more comprehensive understanding of their interdependence.

These findings offer strategic implications for stakeholders in China's E-commerce sector. By aligning with the research of Kwilinski et al. (2019) and Lee, Ho Geun (2022), the study highlights the significant linkage between adept earnings management, market value enhancement, and strategic research and development efforts. The rejection of the hypothesis underscores the imperative for E-commerce businesses to recognize the intricate relationship between earnings volatility management, market value augmentation, and R&D investments. Such a holistic approach, as suggested by the study's alignment with existing literature, can enable these companies to optimize their market positioning, reinforce investor confidence, and drive sustained growth in the dynamic E-commerce landscape.

IV. Conclusion

In view of the foregoing findings, the following conclusions are made:

1. The Philippines' e-commerce industry reveals that corporate earnings volatility significantly influences firm value, with both financial performance and market value rated as Outstanding, emphasizing the importance of stable financial metrics and investor confidence in enhancing a company's value and reducing earnings volatility.
2. The substantial impact of research and development efforts, particularly research expenditures and research investment, on firm value, with an emphasis on the importance of strategic alignment, transparency, risk management, and comprehensive market analysis in fostering innovation and securing the company's future.
3. The significant contributions of market value and financial performance to firm value, emphasizing investor perceptions and financial health, while the positive impact of research and development investments on innovation and long-term growth underscores the value of the proposed structural model analysis for guiding strategic decisions, contributing actionable insights and recommendations to enhance research and development investments, address earnings volatility, and adopt the model, thereby deepening understanding and offering guidance for thriving E-commerce businesses in a competitive landscape.

V. Recommendations

Based on the findings and conclusion the following recommendations are drawn:

1. Philippines' e-commerce sector focus on managing corporate earnings volatility to improve both financial performance and market value. To enhance financial performance, companies may prioritize metrics such as revenue growth, profit margins, and operational efficiency, which are key drivers of firm value. Additionally, maintaining a stable earnings environment can boost investor confidence and lead to higher firm valuations. Similarly, a strong market value reflects investor confidence and can contribute to reduced earnings volatility. Therefore, strategies aimed at minimizing earnings fluctuations and fostering stability may be integrated into the business operations of e-commerce companies to ultimately enhance their overall value in the competitive market.
2. Continue to prioritize and invest in R&D activities. Collaborative R&D initiatives with external partners, such as universities and research institutions, should be actively pursued to harness external expertise and positively influence a company's value. Furthermore, increasing R&D spending, fostering a culture of innovation through skilled R&D personnel, and aligning R&D investments with strategic goals are all critical steps to enhance competitiveness, adapt to evolving market trends, and secure the long-term growth and stability of e-commerce businesses. Additionally, transparent communication about research activities and diligent risk management strategies should be maintained to ensure stakeholders' confidence and mitigate uncertainties associated with R&D initiatives. Periodic assessments of Return on Investment (ROI) from research endeavors can provide valuable insights and guide decision-making for future R&D investments, ultimately contributing to the firm's overall value and success in the industry.
3. Focus on improving financial performance and market value perception to enhance firm value. Strategic investments in research and development should be pursued for innovation and competitiveness. Regular assessments of corporate earnings volatility management strategies are advised to ensure alignment with market dynamics. Collaboration with external partners can enhance the effectiveness of research and development efforts. These recommendations collectively aim to position businesses for growth and success in China's dynamic E-commerce industry.
4. Businesses operating in Philippines' E-commerce sector are advised to prioritize strategies for minimizing corporate earnings volatility, enhancing stability and investor confidence. Allocating resources towards innovation, skilled personnel, and collaborations with external partners like universities and research institutions can elevate research and development activities, boosting competitiveness and firm value. Implementing the proposed structural model analysis offers a comprehensive decision-making framework, supporting policy development and corrective actions. Given the significant relationship found between corporate earnings volatility management, financial performance, and research and development, aligning financial and innovation strategies emerges as a key recommendation for holistic growth and success in the ever-evolving E-commerce landscape.
5. Further studies in the realm of Philippines E-commerce industry could delve into exploring the long-term implications of the identified variables on firm value. Investigating how external market factors interact with the variables could provide a more comprehensive understanding of their dynamics. Additionally, an in-depth examination of how different organizational sizes and market segments influence the relationships within the proposed structural model could yield valuable insights. Exploring the effects of cultural and regulatory differences on the model's applicability across diverse contexts could also be a fruitful avenue for future research. Furthermore, longitudinal studies tracking the evolution of firm value in response to the variables over extended periods could provide valuable insights into their sustained impact.

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