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Drivers of Strategic Agility: HRD Interventions and Financial Performance in Xiaomi Auto Supply Chain Listed Entities

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Abstract
This study explores the determinants of strategic agility among publicly listed suppliers within Xiaomi Auto's electric vehicle (EV) supply chain, with a specific focus on the joint effects of Human Resource Development (HRD) interventions and financial performance. In the context of the EV sector's rapid technological change and market uncertainty, strategic agility has become a critical capability for sustaining

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competitiveness. Drawing on Dynamic Capabilities Theory and Human Capital Theory, the study employs a quantitative, deductive approach using secondary panel data spanning 2019 to 2023. The sample comprises five core suppliers in Xiaomi's EV ecosystem: CATL, Desay SV, Goertek, Sunny Optical, and Luxshare Precision. Strategic agility is measured through Return on Assets (ROA), with explanatory variables including R&D Intensity, Inventory Turnover, Training Cost per Employee, Revenue per Employee, and Total Assets (as a control). The analysis applies descriptive statistics, Pearson correlation, multiple linear regression, and collinearity diagnostics through variance inflation factor and condition index measures. Results indicate that Inventory Turnover and R&D Intensity significantly improve ROA, whereas HRD variables, despite strong correlations, are affected by multicollinearity. The findings offer practical implications for how operational efficiency and workforce investment jointly influence agility within high-technology supply networks.

Keywords: Strategic Agility, Human Resource Development, Financial Performance, Xiaomi Auto, Supply Chain Management.

Introduction

Background

In the context of accelerating technological advancement and global market instability, strategic agility has become a critical organisational capability for sustaining competitiveness. As highlighted by Phadnis and Schoemaker (2024), the automotive supply chain exemplifies this necessity, particularly due to the convergence of EVs, intelligent technologies, and environmental regulations, all of which demand swift and adaptive responses. Xiaomi's entry into the EV sector marks a significant strategic shift, leveraging its core competencies in consumer electronics and digital connectivity. According to Li (2024), the success of this transformation is contingent upon the agility of its supply chain, particularly its publicly listed partners. Strategic agility, defined as the capacity to rapidly perceive and adapt to change, is influenced by both HRD interventions and a firm's financial condition. Pei and Dong (2025) observed that Xiaomi's approach in the automotive sector is founded on a platform-driven innovation strategy, relying on integrated supply chain alliances and technological synergies. This model necessitates that partner organisations—most of which are publicly traded—possess both operational proficiency and strategic flexibility to align with Xiaomi's evolving objectives.

HRD initiatives, encompassing skills development, leadership cultivation, organisational learning, and internal mobility, are key enablers of strategic agility. These practices equip personnel at all levels with the necessary cognitive and technical capabilities to meet emergent market demands, innovate processes, and enact strategic change. Aligning HR initiatives with overarching business goals can markedly enhance performance and responsiveness, especially in fast-moving sectors

International Journal of Instructional Cases
ISSN: 2399-830x

such as EVs (Mann & Mann, 2025). Financial performance also plays a dual role, serving as both a facilitator and outcome of strategic agility. Firms with strong financial positions are better positioned to invest in innovation and adaptability, while agile organisations tend to achieve superior financial outcomes through opportunity exploitation and risk mitigation (Chatterjee, 2017).

Within Xiaomi's automotive supply network, examining the interrelationship between HRD interventions and financial performance may yield valuable insights into the mechanisms that drive strategic agility (Nuoyi & Permana, 2024). This study thus seeks to explore the dynamic interplay between HRD practices and financial indicators among Xiaomi's listed EV supply chain partners. By investigating the contribution of these variables to strategic agility, the research offers implications not only for scholarly discourse but also for practitioners operating in high-velocity, technology-centric industries.

Problem Statement

Xiaomi's entry into the EV sector necessitates a supply chain that is not only highly agile but also responsive, particularly among its publicly listed collaborators. However, many of these supply chain firms struggle to align their internal capabilities with the rapid pace of technological advancement and evolving market demands (Fernandez et al., 2022). Existing research has not sufficiently explored the extent to which financial performance and HRD interventions contribute to enhancing strategic agility within such organisations. Moreover, limited understanding exists regarding the interplay between these two critical factors in enabling firms to adapt and thrive amid environmental volatility. Without a clear comprehension of these dynamics, Xiaomi and its affiliated supply chain partners may fall short of fully leveraging innovation, maintaining a competitive edge, or achieving long-term sustainability in the automotive sector (Cao et al., 2020). This study seeks to fill this gap by employing empirical methods to examine these relationships.

Objectives

The primary objectives of this study are as follows:

- To assess both the individual and joint effects of HRD interventions and financial performance indicators on the strategic agility (measured by ROA) of listed entities within Xiaomi Auto's supply chain.
- To determine which specific HRD and financial variables exhibit the strongest association with enhanced strategic agility.
- To investigate the interaction and potential multicollinearity between HRD and financial factors, and evaluate their implications for strategic decision-making within agile supply chains.

International Journal of Instructional Cases
ISSN: 2399-830x

Research Questions

- How do HRD and financial performance metrics individually and collectively influence the strategic agility (measured by ROA) of Xiaomi Auto supply chain listed entities?
- Which specific financial and HRD-related variables are most strongly associated with improvements in strategic agility?
- What are the potential interactions and multicollinearity effects between HRD and financial factors, and how do these dynamics impact strategic decision-making in agile supply chains?

Significance of the Research

This study offers critical insights into the combined influence of HRD interventions and financial performance on strategic agility within Xiaomi's auto supply chain. By establishing practical linkages between talent development, financial robustness, and organisational adaptability, the research contributes to scholarly discourse while informing managerial practice. The findings provide guidance for supply chain firms seeking to develop resilient and agile operations capable of responding to technological disruption and market competition, thereby supporting Xiaomi's broader innovation objectives within the EV sector.

Literature Review

Aim

This section critically examines existing literature on strategic agility, HRD interventions, and financial performance, with a focus on theoretical frameworks, empirical evidence, and identified research gaps pertinent to the context of Xiaomi Auto's EV supply chain.

HRD Interventions and Strategic Agility

HRD interventions have played a pivotal role in enhancing strategic agility within Xiaomi Auto's listed supply chain entities. In this regard, Huang and Waworuntu (2024) emphasised that in a competitive and rapidly evolving industry such as vehicle manufacturing, firms must possess the capacity to respond promptly to market volatility, technological disruptions, and shifting consumer demands. Interventions such as leadership development, employee training, performance management, and knowledge dissemination are fundamental in cultivating a workforce capable of navigating these dynamic conditions. Saridakis (2023) further noted that at Xiaomi Auto, HRD enhances agility by fostering skills that encourage innovation, interdepartmental collaboration, and greater autonomy in decision-making. For instance, equipping personnel with digital competencies and lean manufacturing techniques supports process optimisation and accelerates product development cycles. Additionally, leadership development empowers managers to embed agile

International Journal of Instructional Cases
ISSN: 2399-830x

practices across operational units.

Organisational learning, facilitated through HRD, promotes a culture that embraces transformation rather than resists it—an essential characteristic in supply chains where synchronisation and responsiveness are paramount. A learning-oriented HRD approach ensures that employees not only comprehend strategic objectives but are also capable of contributing effectively towards their attainment (Arunprasad et al., 2023). Moreover, talent development mitigates risks in the supply chain by ensuring that key roles are occupied by skilled, adaptable professionals. By aligning HRD initiatives with strategic imperatives, Xiaomi Auto and its supply chain collaborators can cultivate a resilient, agile workforce (Winkelhake, 2025). Such alignment strengthens the firm's ability to anticipate industry trends, optimise operational processes, and enact strategic adaptations proactively.

Financial Performance and Strategic Agility

The financial performance of Xiaomi Auto's listed supply chain entities exerts a significant influence on their ability to maintain strategic agility. Li (2024) highlighted that financial robustness supplies the essential capital for investments in innovation, technological advancement, talent acquisition, and other strategic activities that underpin agile operations. In contrast, weak financial outcomes can hinder a firm's adaptability, thereby disrupting transformation processes. Hong et al. (2024) further contended that key financial indicators such as profitability, liquidity, and capital efficiency are instrumental in preserving the operational responsiveness required to manage fluctuations in demand, supply chain disturbances, or the integration of new technologies. Firms with sound financial foundations are better equipped to undertake strategic risks, allocate funds to research and development (R&D), and implement flexible manufacturing systems. These elements are vital to strategic agility, enabling firms to recalibrate their strategies with minimal operational dislocation.

Within Xiaomi Auto's supply network, financially resilient organisations are more capable of adopting agile mechanisms, including just-in-time inventory systems, digital supply chain infrastructures, and integrated cross-functional teams. Financial capital enables these entities to invest in predictive analytics and automation technologies that facilitate real-time strategic decisions, which are essential for sustaining agility (Panichakarn et al., 2024). Moreover, adequate financial resources support ventures such as mergers, partnerships, and diversification initiatives, all of which reinforce strategic adaptability. However, financial constraints may encourage short-term priorities, reductions in critical areas such as HRD, and delays in addressing competitive pressures, thereby impeding strategic agility (Han & Zhang, 2022). Consequently, it is imperative that managerial efforts focus on continuous financial performance evaluation and enhancement, not solely to achieve profitability, but to uphold agility in an increasingly complex and technology-driven supply chain landscape.

International Journal of Instructional Cases
ISSN: 2399-830x

HRD-Financial Synergy in Strategic Agility

The interplay between HRD interventions and financial performance serves as a synergistic mechanism in enhancing strategic agility within Xiaomi Auto's listed supply chain entities. According to Ortiz et al. (2019), although each factor individually supports agility, their integration cultivates a more enduring and resilient foundation for adaptive capacities. HRD interventions foster employee competence, innovation, and responsiveness, all of which are pivotal for an agile organisational structure. Nevertheless, the success of these initiatives is frequently reliant on adequate financial backing. As noted by Khushk et al. (2025), strong financial performance allows firms to dedicate resources to learning and development programmes, talent recruitment, and change management strategies. For example, firms operating with solid profit margins are more capable of implementing sophisticated training schemes, leadership development, and performance-based incentives that enhance employee engagement and skill acquisition.

Furthermore, strategic HRD approaches can reciprocally influence financial outcomes by increasing operational efficiency, reducing employee turnover, and stimulating innovation. Improvements in workforce capability contribute to enhanced customer satisfaction and streamlined processes, which in turn strengthen financial results. This bidirectional relationship forms a reinforcing loop that sustains both financial resilience and strategic flexibility. Within Xiaomi Auto's supply chain, where partner interdependence is critical, this HRD-financial synergy becomes even more significant (Chen, 2024). Any weakness—whether stemming from insufficient human capital or financial volatility—may compromise the agility of the entire supply chain network. Thus, strategic agility is contingent upon coordinated efforts that align HRD and financial strategies across partners. Moreover, the integration of these two dimensions supports proactive risk management and accelerates innovation dissemination across the supply chain Daneshvar Kakhki and Nemati (2022). Firms that make judicious investments in both human capital and financial infrastructure are better equipped to anticipate industry shifts, adopt emerging technologies, and synchronise agile practices with their partners. This coordinated dynamic ultimately strengthens the overall strategic positioning of the supply chain in a rapidly evolving market environment.

Theoretical Framework

The theoretical foundation of this study is grounded in the Dynamic Capabilities Theory and the Human Capital Theory, both of which offer essential conceptual perspectives for understanding strategic agility within organisational contexts.

Dynamic Capabilities Theory

The Dynamic Capabilities Theory emphasises an organisation's ability to integrate, develop, and reconfigure internal and external competencies in response to rapidly

International Journal of Instructional Cases
ISSN: 2399-830x

evolving environments. Within the context of Xiaomi Auto, strategic agility can be conceptualised as a dynamic capability that empowers publicly listed firms to swiftly adapt to technological disruptions, regulatory shifts, and volatile market conditions. Human Resource Development initiatives, such as leadership training and continuous organisational learning, serve to enhance the firm's capacities for sensing emerging opportunities or threats, seizing them through timely actions, and transforming operational structures accordingly—core processes articulated within the dynamic capabilities framework. Conversely, financial performance functions as a critical enabler, supplying the requisite resources to operationalise these capabilities through targeted investments in human capital, technological advancement, and innovation.

Human Capital Theory

The Human Capital Theory asserts that organisational performance and employee productivity can be significantly enhanced through deliberate investments in education, training, and skill development. Within Xiaomi, HRD interventions represent strategic investments in human capital that strengthen the supply chain workforce's adaptability and responsiveness to customer demands (Dundon & Wilkinson, 2021). When supported by strong financial resources, these enhancements in employee competencies enable firms to anticipate and manage change more effectively, thereby fostering strategic agility. The integration of these two theoretical frameworks offers a comprehensive perspective for analysing the dynamics of strategic agility. While the Dynamic Capabilities Theory elucidates how agility is cultivated and applied at the organisational level, the Human Capital Theory provides insight into the role of individual skillsets in supporting this adaptability. Collectively, these perspectives underpin the present study's investigation into the interaction between HRD and financial performance as key drivers of agility among Xiaomi Auto's supply chain listed entities.

Literature Review Gap

Previous literature frequently examines HRD and financial performance as separate determinants of strategic agility, offering limited insight into their integrated effects. Moreover, there is a notable scarcity of empirical investigations centred on supply chains oriented towards EV production, especially within publicly listed firms operating in emerging innovation ecosystems such as Xiaomi Auto. This study seeks to bridge this gap by adopting a unified analytical framework that captures the combined influence of HRD and financial performance on organisational agility.

Methodology

Overview

This study employs a quantitative research design to investigate the determinants of strategic agility among publicly listed supply chain entities associated with Xiaomi Auto, with particular emphasis on the roles of HRD interventions and financial

International Journal of Instructional Cases
ISSN: 2399-830x

performance. The methodological approach integrates secondary data analysis with regression-based empirical modelling, aiming to identify statistically significant relationships between strategic agility and variables reflecting HRD practices and financial outcomes.

Research Design and Approach

The research adopts a positivist paradigm, utilising empirical and objective measures to assess the hypothesised associations among the variables under investigation. A deductive methodology guides the study, beginning with theoretical propositions derived from the Dynamic Capabilities Theory and Human Capital Theory, which are subsequently tested using firm-level data from Xiaomi Auto's supply chain. The analysis is structured as a longitudinal investigation spanning the years 2019 to 2023, allowing for the examination of temporal trends and shifts in organisational behaviour with regard to strategic agility.

Sample and Data Sources

The sample comprises five publicly listed entities within Xiaomi's automotive supply chain, namely CATL, Desay SV, Goertek, Sunny Optical, and Luxshare Precision. These firms operate across various segments, including battery manufacturing, intelligent cockpit technologies, optical systems, and high-precision connectors. The study utilises data sourced from credible secondary repositories such as filings from the China Securities Regulatory Commission (CSRC), corporate financial statements, and publicly available disclosures accessed via platforms including CNINFO and the Hong Kong Stock Exchange.

Variables and Measurement

The dependent variable in this study is ROA, utilised as a proxy for both financial performances at the firm level and strategic agility. The independent variables comprise R&D Intensity (expressed as a percentage of revenue) and Inventory Turnover (measured in frequency), which reflect enablers of agility associated with financial performance. HRD interventions are measured through Training Cost per Employee (in RMB) and Revenue per Employee (in RMB), representing proxies for investment in human capital and labour productivity, respectively. Additionally, Total Assets is incorporated as a control variable to adjust for firm size, given its potential impact on resource capacity and agility.

Analytical Techniques

Descriptive statistical measures, including the mean, median, standard deviation, and skewness, were employed to analyse the characteristics of the dataset and assess the normality of variable distributions. To examine initial associations among variables, Pearson correlation analysis was undertaken, followed by the application of multiple linear regression to determine the predictive capacity of HRD and financial performance indicators on strategic agility, represented by ROA. The regression

International Journal of Instructional Cases
ISSN: 2399-830x

framework integrates five predictor variables, and the output comprises the R-squared value, ANOVA results, and standardised beta coefficients to assess the model's explanatory capability and the statistical relevance of individual predictors. To ensure the reliability of the regression findings, diagnostic tests for multicollinearity were conducted using the Variance Inflation Factor (VIF) and condition indices. While some degree of multicollinearity was identified, the model still yielded meaningful insights into the direction and strength of the examined relationships. However, it is suggested that future investigations adopt advanced techniques such as principal component regression or ridge regression to enhance model robustness and address potential multicollinearity concerns more effectively.

Ethical Considerations

Since the study utilises publicly accessible secondary data sourced from credible financial and regulatory platforms, formal ethical approval was not necessary. Nonetheless, the research adheres strictly to established academic standards concerning data citation, transparency, and proper attribution, thereby ensuring full compliance with ethical research practices.

Data Analysis

Overview

This section provides the statistical examination of selected entities within Xiaomi Auto's supply chain. It encompasses descriptive statistics, correlation assessments, multiple regression outputs, and collinearity diagnostics, aiming to evaluate the extent to which HRD and financial indicators impact strategic agility, as proxied by ROA.

Selected Xiaomi Auto Suppliers (Publicly Listed)

Table 1 presents the selected suppliers within Xiaomi Auto's supply chain.

Table 1: Selected Xiaomi Auto Suppliers.

Company Code	Company Name	Segment
C1	CATL	Battery Supplier (300750.SZ)
C2	Desay SV	Smart Cockpit Systems (002920.SZ)
C3	Goertek	Audio Modules (002241.SZ)
C4	Sunny Optical	Camera & LiDAR (2382.HK)
C5	Luxshare Precision	Automotive Connectors (002475.SZ)

Variable Definitions and Classifications for Xiaomi Auto Supply Chain Analysis (2019–2023)

Table 2 outlines the definitions and classifications of variables used in the analysis of Xiaomi Auto's supply chain from 2019 to 2023.

Table 2: Variable Definitions and Classifications.

International Journal of Instructional Cases
ISSN: 2399-830x

Variable	Type	Definition
Year	Time	2019–2023
Company	Categorical	5 Selected Suppliers
ROA (%)	Dependent	Return on Assets (Net Income / Total Assets)
R&D Intensity (%)	Independent	R&D Expense / Revenue
Inventory Turnover (times)	Independent	COGS / Average Inventory
Training Cost per Employee (RMB)	Independent	Annual Employee Training Cost
Revenue per Employee (RMB)	Independent	Revenue ÷ No. of Employees
Total Assets (billion RMB)	Control	Firm Size Proxy

Descriptive Statistics

Table 3 provides the descriptive statistics relevant to this study. Moreover, the descriptive statistics summarise data from 25 observations across six variables. The average ROA is 5.99%, with low variability (SD = 0.81), indicating consistent financial performance. R&D Intensity and Inventory Turnover also show limited dispersion, reflecting stable operational investment. Training Cost per Employee averages RMB 3,460, while Revenue per Employee is approximately RMB 1.17 million, both with moderate variation. Total Assets show the widest range (35–270 billion RMB), indicating significant firm size disparity. Skewness and kurtosis values suggest near-normal distributions, except for Total Assets, which is positively skewed and leptokurtic, indicating that some firms are exceptionally large.

Table 3: Descriptive Statistics.

Statistics							
		ROA (%)	R&D Intensity (%)	Inventory Turnover	Training Cost/Emp (RMB)	Revenue/Emp (RMB)	Total Assets (B RMB)
N	Valid	25	25	25	25	25	25
	Missing	0	0	0	0	0	0
Mean		5.988	5.076	4.388	3460.00	1167200.00	93.12
Median		6.000	5.100	4.300	3500.00	1150000.00	70.00
Mode		5.6[a]	4.3[a]	4.2[a]	3500	1300000	60[a]
Std. Deviation		.8064	.8166	.4216	526.783	200759.392	63.927
Skewness		.060	.034	.269	.236	.541	1.638
Std. Error of Skewness		.464	.464	.464	.464	.464	.464
Kurtosis		-.657	-.376	-.347	-.612	.119	1.952
Std. Error of Kurtosis		.902	.902	.902	.902	.902	.902
Minimum		4.5	3.5	3.6	2500	850000	35
Maximum		7.5	6.7	5.3	4500	1650000	270
a. Multiple Modes Exist. The Smallest Value is Shown							

International Journal of Instructional Cases
ISSN: 2399-830x

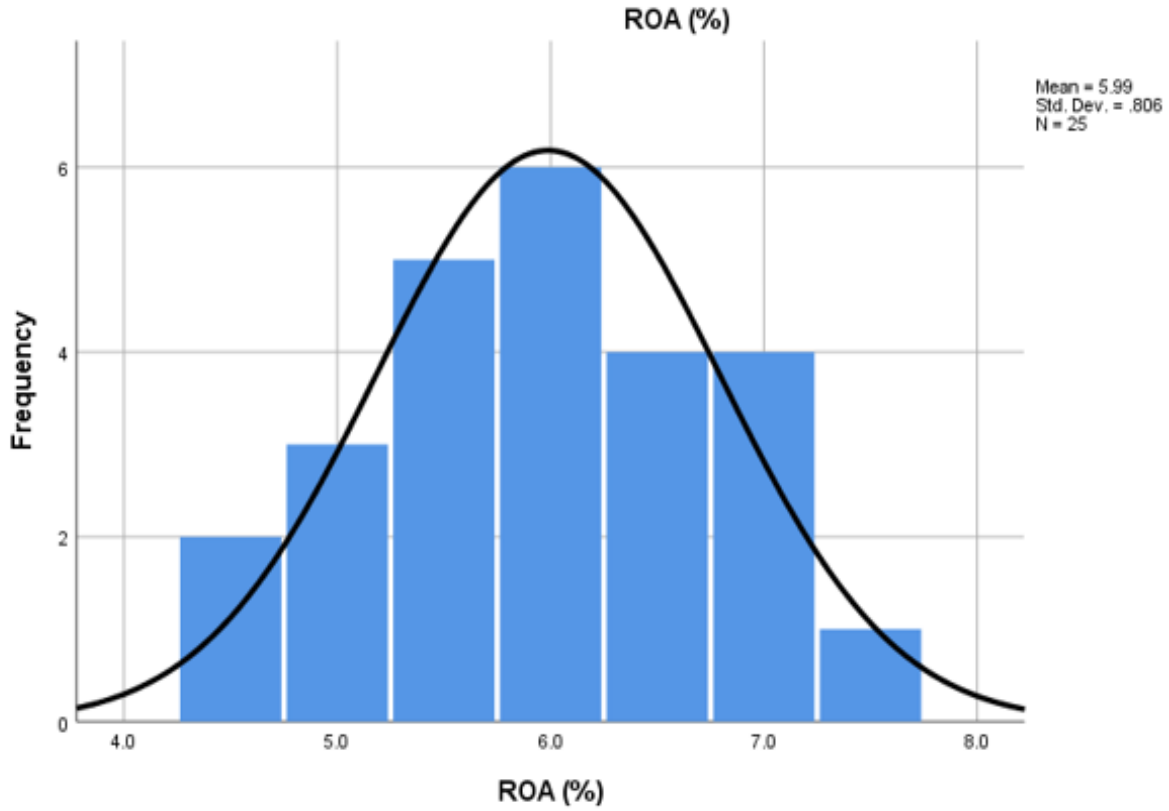

Figure 1: ROA%

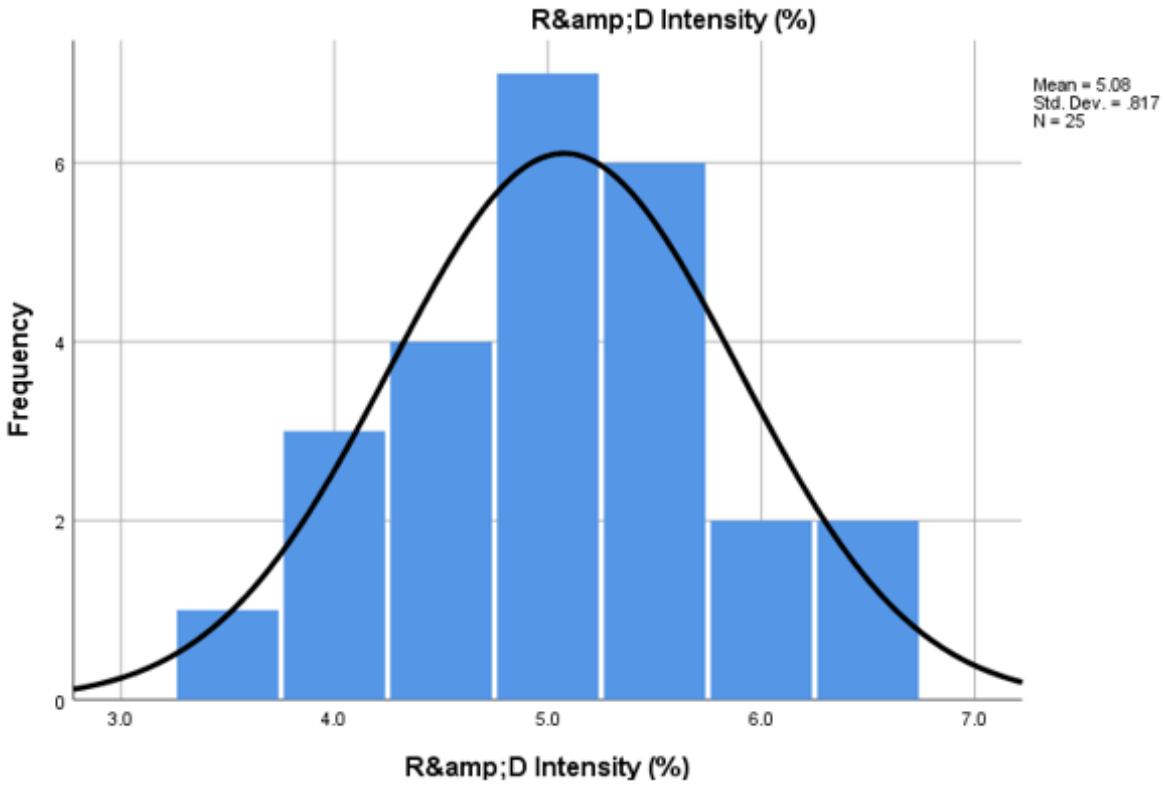

Figure 2: R&D Intensity (%)

International Journal of Instructional Cases
ISSN: 2399-830x

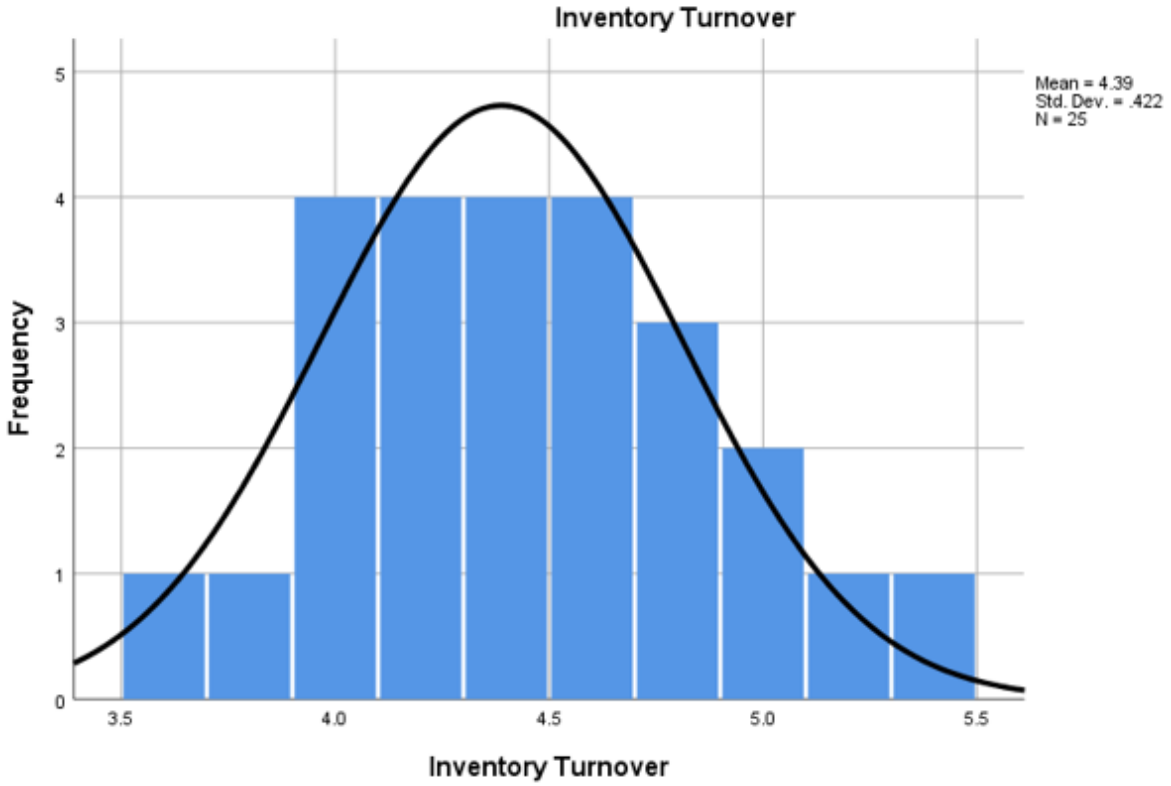

Figure 3: Inventory Turnover

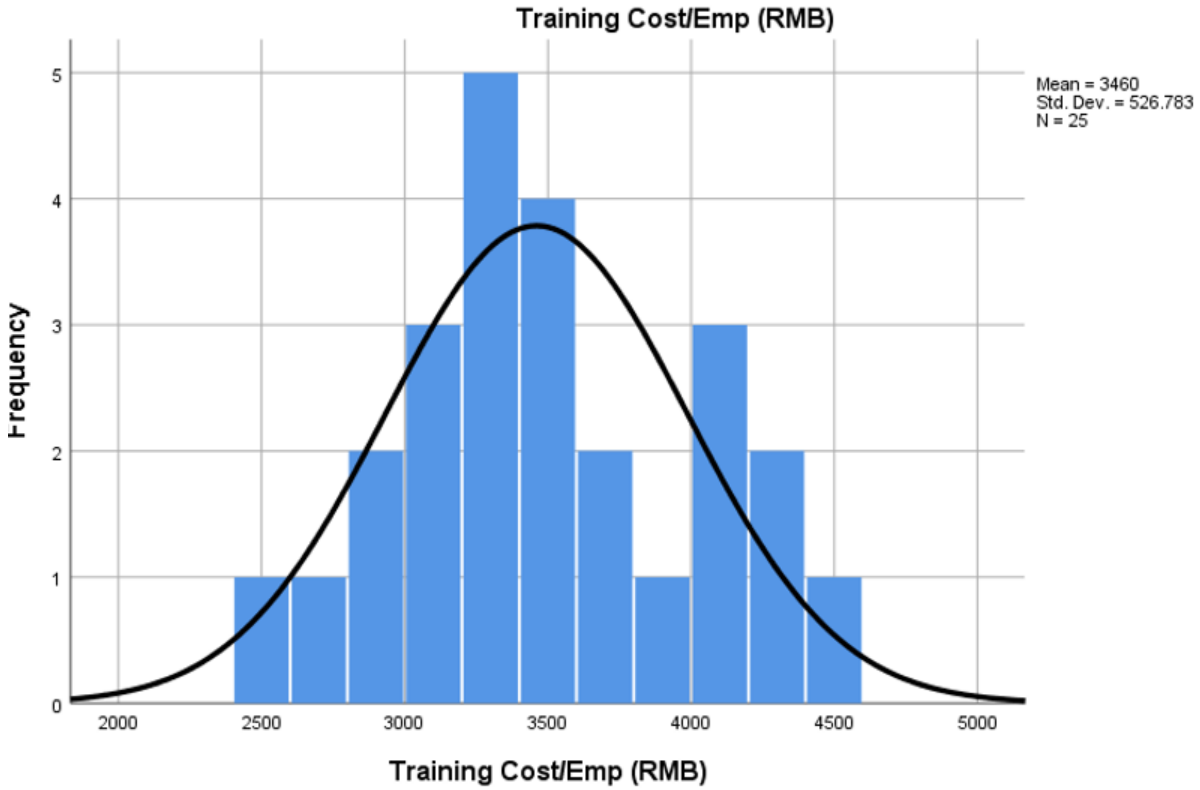

Figure 4: Training Cost/Emp (RMB)

International Journal of Instructional Cases
ISSN: 2399-830x

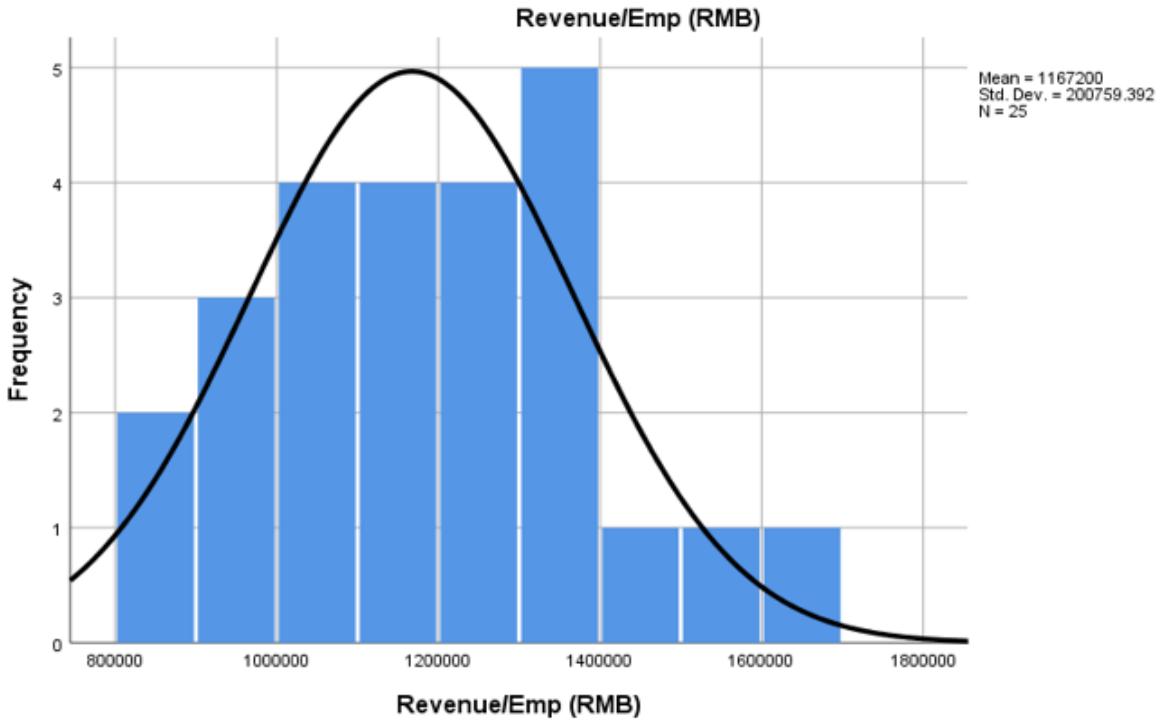

Figure 5: Revenue/Emp (RMB)

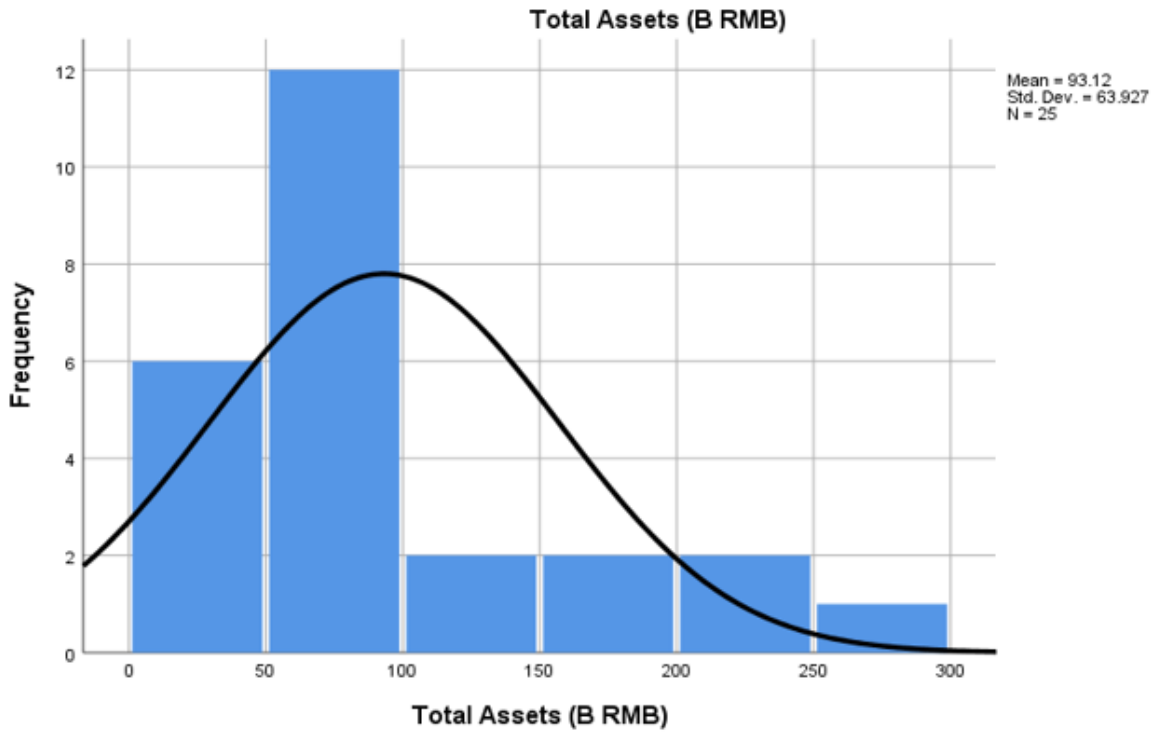

Figure 6: Total Assets (B RMB)

Correlations

The results of the correlation analysis are summarised in Table 4. The Pearson correlation results, based on a sample of 25 observations, indicate statistically significant and strong associations between ROA and all explanatory variables at the 0.01 significance level. The strongest relationship emerges between ROA and

International Journal of Instructional Cases
ISSN: 2399-830x

Inventory Turnover (r = 0.959), suggesting that enhanced inventory management efficiency is closely linked to superior financial performance. This finding aligns with the understanding that agile inventory practices underpin firm responsiveness and profitability in fast-evolving sectors such as the EV industry. Likewise, a robust positive correlation is observed between ROA and R&D Intensity (r = 0.940), reinforcing the view that sustained investment in innovation substantially contributes to strategic agility and financial success. Training Cost per Employee also demonstrates a strong association with ROA (r = 0.952), highlighting the strategic importance of employee development in driving firm performance. This reinforces the role of HRD as a pivotal enabler of agility. Furthermore, Revenue per Employee exhibits a high correlation with ROA (r = 0.897), indicating that higher workforce productivity is instrumental in achieving better returns. Although Total Assets also correlate positively with ROA (r = 0.680), the weaker magnitude suggests that while firm size supports performance, it is not the primary determinant of agility or profitability. Collectively, the findings illustrate a strong and consistent pattern, where both HRD-related and financial efficiency variables are closely tied to strategic agility, as reflected through ROA.

Table 4: Correlation Analysis

Correlations							
		ROA (%)	R&D Intensity (%)	Inventory Turnover	Training Cost/Emp (RMB)	Revenue/Emp (RMB)	Total Assets (B RMB)
ROA (%)	Pearson Correlation	1	.940**	.959**	.952**	.897**	.680**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	25	25	25	25	25	25
**. Correlation is significant at the 0.01 level (2-tailed).							

Regression Analysis

Table 5 provides the model summary from the regression analysis conducted in this study. The model summary outlines the overall robustness and explanatory strength of the regression framework. The multiple correlation coefficient (R = 0.971) signifies a very strong linear association between the dependent variable (ROA) and the selected independent variables. The R Square value of 0.943 indicates that approximately 94.3% of the variation in ROA is accounted for by the combined effects of R&D Intensity, Inventory Turnover, Training Cost per Employee, Revenue per Employee, and Total Assets. This reflects a highly explanatory model. The Adjusted R Square, calculated at 0.929, adjusts for the number of predictors and confirms that the model maintains strong explanatory power while mitigating the risk of overfitting. The standard error of the estimate (0.2156) is comparatively low, implying minimal divergence between the predicted and actual values of ROA. Collectively, these statistics affirm that the regression model offers reliable and accurate predictions of strategic agility outcomes among Xiaomi Auto's supply chain firms.

International Journal of Instructional Cases
ISSN: 2399-830x

Table 5: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.971a	.943	.929	.2156
a. Predictors: (Constant), Total Assets (B RMB), Training Cost/Emp (RMB), Revenue/Emp (RMB), R&D Intensity (%), Inventory Turnover.				

Table 6 presents the results of the ANOVA test conducted for this research, which assesses the overall statistical significance of the regression model. Specifically, it evaluates the model's explanatory power by partitioning the total variation in the dependent variable into components attributable to the regression (explained variance) and the residual error (unexplained variance). This analysis serves to determine whether the set of independent variables collectively provide a statistically valid explanation of the variance in ROA. The sum of squares attributed to the regression stands at 14.723, while the residual component accounts for 0.883, yielding a total of 15.606. The computed F-statistic is 63.366, accompanied by a significance level of 0.000, confirming that the probability of the observed relationships occurring by random chance is extremely low. This result affirms that the collective set of explanatory variables—namely innovation investment, operational efficiency, workforce development expenditure, employee productivity, and organisational scale—exerts a statistically meaningful impact on firm-level performance. The magnitude of the F-value, combined with the negligible p-value, indicates the model's robustness in identifying the structural predictors of agility-related outcomes within the supply networks linked to Xiaomi's automotive division.

Table 6: ANOVA

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	14.723	5	2.945	63.366	.000[b]
	Residual	.883	19	.046		
	Total	15.606	24			
a. Dependent Variable: ROA (%)						
b. Predictors: (Constant), Total Assets (B RMB), Training Cost/Emp (RMB), Revenue/Emp (RMB), R&D Intensity (%), Inventory Turnover.						

Table 7 presents the regression coefficients, offering a detailed evaluation of the individual contributions of each independent variable to ROA. The analysis identifies two statistically significant predictors at the 5% significance level: Inventory Turnover ($\beta = 1.369$, $p = 0.035$) and R&D Intensity ($\beta = 0.587$, $p = 0.049$). These findings indicate that greater inventory efficiency and enhanced investment in research and development are positively associated with improved ROA, thereby underscoring their critical roles in fostering strategic agility. In contrast, Training Cost per Employee ($p = 0.610$) and Revenue per Employee ($p = 0.842$) do not achieve statistical significance, despite exhibiting strong bivariate correlations

International Journal of Instructional Cases
ISSN: 2399-830x

with ROA. This inconsistency may be attributed to multicollinearity, wherein substantial overlap among independent variables reduces the apparent individual effects. Total Assets approaches significance (p = 0.063), implying that firm size may exert some influence on agility but does not consistently predict performance outcomes. The elevated VIF values, ranging from 6.2 to 37, particularly among HRD-related indicators, confirm the presence of severe multicollinearity. Consequently, while certain variables demonstrate clear explanatory power regarding ROA, the interdependence among others obscures their distinct statistical contributions within the current model.

Table 7: Coefficients

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.003	1.130		-1.772	.092		
	R&D Intensity (%)	.587	.279	.594	2.104	.049	.037	26.796
	Inventory Turnover	1.369	.602	.716	2.274	.035	.030	33.260
	Training Cost/Emp (RMB)	.000	.001	-.172	-.518	.610	.027	37.020
	Revenue/Emp (RMB)	1.977E-7	.000	.049	.202	.842	.050	19.952
	Total Assets (B RMB)	-.003	.002	-.268	-1.973	.063	.161	6.212
a. Dependent Variable: ROA (%)								

Table 8 provides the collinearity diagnostics, highlighting the extent of multicollinearity among the independent variables. The Condition Index serves as a critical measure, with values exceeding 30 generally indicating substantial multicollinearity. In this model, the maximum Condition Index reaches 181.757, signifying an acute level of multicollinearity. Furthermore, the variance proportions, particularly concentrated within Dimensions 5 and 6, suggest that several variables—most notably Training Cost per Employee, Revenue per Employee, and Inventory Turnover—exhibit significant interdependence. This high correlation complicates the identification of each variable's unique contribution to ROA. Notably, Training Cost and Inventory Turnover account for a considerable proportion of variance within the same dimension, heightening the risk of regression distortion. Although these variables demonstrate strong bivariate correlations with ROA, their individual regression coefficients may not attain statistical significance due to shared variance. The severity of multicollinearity observed necessitates the consideration of remedial techniques such as dimensionality reduction, interaction modelling, or principal component analysis to better isolate and interpret the distinct effects of each predictor on strategic agility.

International Journal of Instructional Cases
ISSN: 2399-830x

Table 8: Collinearity Diagnostics

Collinearity Diagnostics[a]									
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	R&D Intensity (%)	Inventory Turnover	Training Cost/Emp (RMB)	Revenue/Emp (RMB)	Total Assets (B RMB)
1	1	5.776	1.000	.00	.00	.00	.00	.00	.00
	2	.214	5.192	.00	.00	.00	.00	.00	.19
	3	.008	26.903	.11	.01	.00	.02	.01	.23
	4	.001	65.938	.02	.05	.00	.06	.80	.34
	5	.001	90.503	.01	.80	.06	.17	.00	.21
	6	.000	181.757	.86	.14	.94	.75	.19	.03
a. Dependent Variable: ROA (%)									

Table 9: Selected Financial and Corporate Information Sources

Source URL	Website Name	Description
http://www.cninfo.com.cn/	CNINFO (巨潮资讯网)	Official platform for disclosure of financial statements and corporate announcements in China. Managed by Shenzhen Stock Exchange.
https://www.catl.com/	CATL (Contemporary Amperex Technology Co., Limited)	Official corporate website of CATL, a global leader in lithium-ion battery development and manufacturing.
https://www.hkexnews.hk/index.htm	HKEXnews (香港交易所披露易)	Disclosure platform of the Hong Kong Stock Exchange for listed company announcements, financial reports, and filings.

International Journal of Instructional Cases
ISSN: 2399-830x

Discussion

This regression analysis identified Inventory Turnover and R&D Intensity as the most statistically significant predictors of strategic agility, as measured by ROA, among publicly listed entities within Xiaomi Auto's supply chain. These findings indicate that organisations demonstrating higher operational efficiency and greater investment in innovation tend to exhibit superior adaptability to evolving market dynamics and technological disruptions. This aligns with the assertion by Ulle et al. (2025), who argued that optimised inventory management is an essential element of agile supply chains, facilitating timely responses to fluctuations in customer demand and supply-side disturbances. Similarly, Li (2024) highlighted that sustained R&D expenditure is instrumental in fostering technological advancements, thereby enabling firms to seize emergent opportunities.

Linde et al. (2021) further substantiated this view by underscoring the importance of dynamic capabilities—particularly sensing and seizing—in enhancing operational efficiency and guiding innovation-related investment. The implication is clear: to remain competitive and resilient, firms integrated within the Xiaomi EV value chain must possess responsive inventory systems and a strategic orientation towards R&D. Although firm size, proxied by Total Assets, exhibited marginal significance, this suggests that agility is not merely a function of scale but is contingent upon the efficiency of resource deployment. Hence, supply chain collaborators equipped with streamlined operational processes and continual innovation capabilities are better positioned to support Xiaomi's broader platform-centric ecosystem strategy (Dong et al., 2022).

Notably, despite strong bivariate correlations with ROA, the regression coefficients for Training Cost per Employee and Revenue per Employee were statistically insignificant, primarily due to multicollinearity. This finding illustrates the complex interdependencies among HRD-related variables, where multicollinearity can obscure their individual predictive power within a regression framework. Ardichvili (2022) observed that HRD initiatives tend to interact synergistically and often influence financial outcomes through interconnected pathways, complicating efforts to isolate their specific contributions. Similarly, Sharma (2023) reported that in digitally driven industries such as automotive manufacturing, HRD effectiveness is typically mediated through composite factors, including innovation facilitation, leadership adaptability, and systemic integration. The descriptive statistics still reflect notable organisational investment in employee development, corroborating Tripathi and Dhir (2023) assertion that HRD remains a vital enabler of long-term strategic agility. However, the regression findings highlight the methodological limitation of conventional models in disentangling overlapping HRD effects, thereby pointing to the need for more sophisticated analytical tools, such as principal component analysis, to uncover the unique influence of individual HRD dimensions.

International Journal of Instructional Cases
ISSN: 2399-830x

The robustness of the regression model is further confirmed by the high adjusted R^2 value (0.929) and the strongly significant ANOVA result ($p < .001$), indicating that the selected predictors collectively account for the majority of variation in ROA. This underscores the integrated influence of financial metrics and human capital development in fostering strategic agility. Chong (2023) emphasised that within the EV sector—particularly in ecosystems like Xiaomi's—strategic alignment between HRD policies and financial planning is essential, owing to intricate inter-organisational dependencies. The interplay among R&D commitment, inventory optimisation, and human resource effectiveness forms a self-reinforcing cycle that enhances organisational agility in volatile, innovation-intensive contexts. Boonlua et al. (2023) similarly noted that value creation in supply chains is contingent upon synchronised learning mechanisms and financial resilience. Based on the findings of this study, Xiaomi's supply chain partners are advised to avoid disjointed investment approaches that prioritise either technological upgrades or workforce development in isolation. Instead, a balanced and integrative strategy is necessary—one that synchronises HRD initiatives with financial imperatives. Such alignment is likely to strengthen organisational responsiveness, reinforce Xiaomi's competitive edge in the electric vehicle domain, and foster enduring agility. Ultimately, the study suggests that strategic agility is more a function of coherent resource alignment than the mere volume of available assets.

Conclusion

This study investigated the primary enablers of strategic agility within Xiaomi Auto's listed supply chain partners, concentrating on the interaction between workforce development initiatives and financial indicators. The empirical results identified Inventory Turnover and R&D Intensity as the most influential factors, indicating that firms demonstrating efficient operations and sustained innovation investment exhibit greater adaptability to technological and market fluctuations. Although Training Cost per Employee and Revenue per Employee displayed strong bivariate associations with performance, their regression coefficients lacked significance due to the presence of multicollinearity, which obscures the distinct contribution of interrelated variables. These findings substantiate the relevance of established theoretical frameworks, particularly those emphasising capability development and resource coordination, by evidencing that agility stems from the combined influence of strategic investments in people and financial efficiency. The model's explanatory strength ($R^2 = 0.943$) confirms that these factors collectively account for the majority of observed variance in agility outcomes. Within the context of Xiaomi's innovation-oriented electric vehicle supply network, the results highlight the importance of an integrated approach that synchronises workforce enhancement with fiscal discipline. Rather than arising from isolated resource availability, agility is shown to be the outcome of deliberate alignment between human capability and financial strategy.

International Journal of Instructional Cases
ISSN: 2399-830x

Recommendations

Enhance Inventory Efficiency: Xiaomi's supply chain entities should maintain strategic emphasis on optimising inventory processes by leveraging advanced technologies such as artificial intelligence-based demand forecasting and just-in-time inventory frameworks. Such approaches can substantially reduce operational inefficiencies and enhance responsiveness, thereby strengthening agility across the supply network.

Increase R&D Investment: Consistent and scalable financial commitment to research and development, particularly in areas involving intelligent technologies, is essential for sustaining innovation capacity and responsiveness. This is especially critical in the rapidly evolving electric vehicle sector, where technological advancement directly correlates with competitive positioning.

Integrate HRD with Business Strategy: Workforce development initiatives must be systematically integrated with broader strategic objectives. Emphasis should be placed on cultivating agile leadership, fostering cross-disciplinary competencies, and advancing digital proficiency, ensuring that human capital supports the dynamic requirements of the enterprise.

Mitigate Multicollinearity Risks: To address the challenges arising from variable interdependencies, managers should implement comprehensive performance monitoring tools, including balanced scorecards and integrated dashboards. These instruments enable clearer interpretation of overlapping financial and HRD indicators, thereby reducing the risk of misaligned resource allocation.

Foster Collaborative Agility Across the Chain: A unified approach to agility should be cultivated among Xiaomi's supply partners through the establishment of shared performance standards and collaborative capability enhancement initiatives. This would facilitate greater synchronisation and collective adaptability, ultimately enhancing the resilience and responsiveness of the entire supply ecosystem.

Limitations

This study is based on secondary data obtained from a restricted sample comprising five publicly listed suppliers over a five-year span, which may limit the generalisability of the findings to Xiaomi's broader supply chain network. Furthermore, the presence of substantial multicollinearity among predictor variables posed analytical constraints, impeding the clear isolation of the individual effects of HRD variables.

Future Research Directions

Future research is encouraged to utilise advanced analytical methods, such as structural equation modelling or principal component regression, to more effectively

International Journal of Instructional Cases
ISSN: 2399-830x

address the issue of multicollinearity and uncover the latent causal pathways influencing strategic agility. Additionally, integrating qualitative data from HR and operations managers may provide nuanced understanding of the practices that foster agility within the Xiaomi ecosystem, thereby enriching the empirical findings with contextual insights.

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