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Research on the Synergistic Development of Nongfu Spring's Profitability and Corporate Strategy An Exploratory Longitudinal Case Study for 2021–2025

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Abstract

This study examines the relationship between Nongfu Spring's corporate strategy and profitability using official annual reports for 2021–2025. It develops a causal framework in which related product diversification is the independent variable, productive asset utilization is the proposed mediator, and operating profitability is the dependent variable. Revenue diversity, fixed-asset turnover, and aggregate segment margin provide observable indicators, supplemented by documentary evidence and consolidated earnings. The exploratory case combines financial reconstruction, exact margin decomposition, and profit reconciliation; it does not estimate a causal mediation effect. Revenue increased from RMB29.70 billion to RMB52.55 billion and net margin from 24.12% to 30.19%. Revenue diversity increased from 0.6196 to 0.6820, but fixed-asset turnover ended slightly below its starting level. The 6.33-percentage-point increase in aggregate segment margin comprises a 1.79-point composition component and a 4.54-point within-segment component. In 2024, a more balanced portfolio coincided with lower asset turnover and lower segment profitability; in 2025, margins improved despite a slight decline in diversity. These patterns challenge a uniformly positive contemporaneous chain. The contribution is a measurable, theory-grounded account of potential strategic synergy and its boundary conditions.

Keywords: Corporate Strategy, Profitability, Related Diversification, Asset Utilization, Mediation, Nongfu Spring

Introduction

Research context

Corporate strategy determines the scope of a firm's activities and the resources committed to them. Profitability reflects the financial consequences of those decisions alongside demand, input prices, financing, and accounting practices. Their development can reinforce each other: a suitable portfolio may use resources more effectively, while earnings may finance subsequent strategic investment. Yet rising revenue and profit do not establish that

this reinforcement has occurred. A firm may become more profitable because its product mix changes, input prices decline, or income outside its operating segments increases.

Nongfu Spring offers a recent setting in which to examine these distinctions. The company reports five product segments—water, ready-to-drink tea, functional drinks, juice beverages, and other products—and publishes segment revenue and results. Its 2021–2025 reports show a major shift toward tea, a difficult year for water in 2024, and a broad profitability recovery in 2025 (Nongfu Spring Co., Ltd., 2022, 2023, 2024, 2025, 2026). These changes permit an examination of both favorable and unfavorable observations within a single strategic setting.

Research problem and contribution

The term synergistic development is used here to describe the research problem of aligning corporate scope, resource use, and profitability. It does not presuppose a demonstrated synergy premium. Strict synergy would require evidence that coordinated activities generate more value than credible alternatives without that coordination. Resource-based theory identifies potential sources of advantage, but their mere presence does not measure the value created by combining them (Barney, 1991; Ennen & Richter, 2010).

This paper therefore develops an explicit causal mechanism and examines its observable implications without treating accounting co-movement as causal identification. It asks three questions: How did product diversification, asset utilization, and profitability evolve during 2021–2025? Do the annual patterns accord with a proposed utilization mechanism? How much of the observed profitability change can instead be assigned to product composition, within-segment margins, and items outside segment results? The contribution is a reproducible case that distinguishes these explanations and identifies what additional evidence would be needed to test mediation.

Literature review

Resource deployment and strategic coordination

Resource-based theory explains why resources with particular characteristics can contribute to sustained advantage (Barney, 1991). The resource-orchestration perspective adds managerial actions that structure and combine resources rather than assuming that possession automatically generates returns (Sirmon et al., 2011). Helfat et al. (2023) further emphasize resource redeployment and the need to examine resource-based arguments in changing contexts. Together, these perspectives motivate a mechanism connecting portfolio decisions to resource use and then to financial outcomes.

In a beverage company, related categories may offer opportunities to share distribution infrastructure, procurement routines, information systems, and some production resources. Actual compatibility must be established rather than assumed: different products may require distinct processing technologies, storage conditions, or production lines. Shared resources can lower idle capacity or duplication, while an expanded portfolio can also increase scheduling complexity and investment requirements. The proposed benefit is consequently contingent on the feasibility and cost of coordination.

Related diversification and synergy

Diversification research does not justify a universal prediction that more categories always increase performance. Schommer et al. (2019) distinguish related and unrelated diversification and examine how their performance relationships vary over time. For Nongfu Spring, the relevant scope is primarily a beverage-centered portfolio rather than unrelated industrial diversification. The observable index in this paper captures revenue balance across disclosed categories; it does not directly quantify technological relatedness, strategic intent, or the quality of resource sharing.

Complementarity is a stronger claim than revenue buffering. Ennen and Richter (2010) define it through the beneficial interplay of elements and show that the investigative approach matters for establishing it. Growth in tea that offsets declining water revenue demonstrates arithmetic buffering. It does not establish that either category performs better because the other exists. Similarly, shifting sales toward a higher-margin segment changes the weighted average margin even if no shared resource becomes more efficient. This distinction guides both the framework and the empirical interpretation.

Asset utilization and profitability measurement

Asset turnover links revenue generation to the asset base employed. Higher utilization may spread fixed costs over more sales, but turnover can also change because of selling prices, depreciation, acquisitions, or the timing of new capacity. A productive-asset measure is preferable to total-asset turnover when financial assets and bank deposits are substantial; neither is a direct observation of factory capacity utilization. Both measures are reported to reveal whether the choice of asset base affects the descriptive interpretation.

Profitability must likewise be defined at a consistent level. Reported segment results are adjusted profits before tax with specified group-level items excluded; they are not segment net profits. Net margin, by contrast, includes the complete reconciliation and income tax. Ratio variables can also share components and generate misleading statistical relationships (Kronmal, 1993). A credible mechanism study must distinguish the constructs, their imperfect indicators, and the accounting identities joining those indicators.

Research framework and hypotheses

Variables and causal mechanism

The model defines related product diversification as the independent variable X, productive asset utilization as the proposed mediator M, and operating profitability as the dependent variable Y. These constructs capture portfolio scope, productive resource use, and financial returns, respectively; Table 1 specifies their observable indicators.

A compatible portfolio may increase resource utilization and thereby reduce fixed-cost intensity. A direct pathway remains because portfolio choices can also change pricing, product margins, and coordination costs. Figure 1 states these causal hypotheses; establishing an empirical mediation effect requires additional identification evidence.

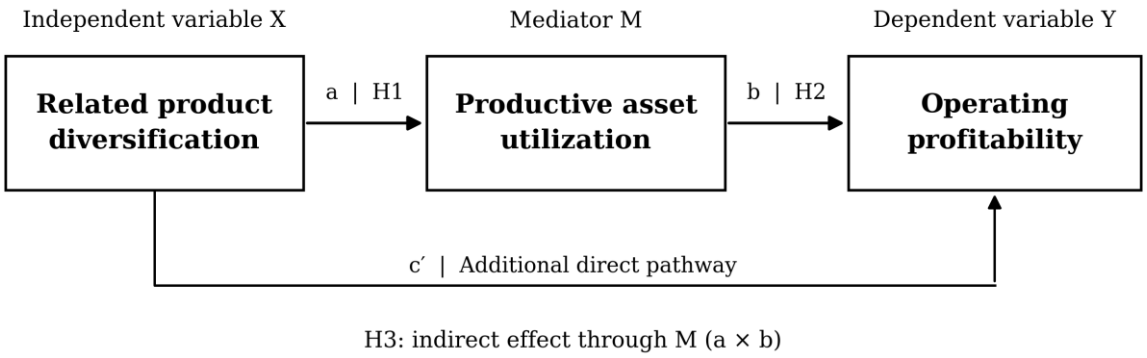

Figure 1 Proposed causal framework linking corporate scope to profitability

Hypothesis development

A related portfolio can use existing distribution and compatible productive resources across more revenue-generating activities. Under the condition that these sharing benefits exceed added coordination requirements, diversification should improve resource use. This resource-orchestration argument motivates the first hypothesis; it does not predict that every addition to the portfolio or every increase in the revenue-diversity index is beneficial.

H1: Related product diversification improves productive asset utilization when resource-sharing benefits exceed coordination and capacity-adjustment costs.

Improved productive asset utilization can spread depreciation and other fixed operating costs across more sales. At comparable product prices, variable input costs, and capacity definitions, this should raise operating profitability. However, a higher turnover ratio caused only by price increases or older depreciated assets would not establish that operational efficiency improved.

H2: Higher productive asset utilization increases operating profitability through lower fixed-cost intensity, other relevant conditions being comparable.

Together, H1 and H2 imply a possible mediated effect. The direct pathway allows other consequences of portfolio choice and prevents the model from imposing complete mediation. Synergy is the substantive interpretation to be investigated, rather than an additional latent variable assigned an invented numerical score.

H3: Productive asset utilization transmits a positive indirect effect of related product diversification on operating profitability under the conditions specified in H1 and H2.

Measurement and identification boundaries

Table 1

Constructs and observable indicators

Role and construct	Indicator used in this case	Interpretive boundary
X: Related product diversification	$D = 1 - \Sigma s^2$; s is a product category's share of total revenue.	Measures realized revenue balance, not strategic intent or resource relatedness.
M: Productive asset utilization	Revenue / average net property, plant and equipment (PPE).	A financial proxy; not physical capacity use or proof of resource sharing.
Y: Operating profitability	Total reported segment results / total revenue.	Adjusted segment profit measure; excludes specified group items.

The intended causal sequence is a portfolio decision followed by a change in resource use and then a profitability outcome. The annual observations do not isolate these stages. Demand may simultaneously change category shares, turnover, and margins; profitability may finance later capacity; and new investment may initially reduce turnover before generating returns. These possibilities prevent a contemporaneous regression from identifying the proposed mechanism.

Causal mediation additionally requires assumptions about confounding and a well-defined intervention (Imai et al., 2010). Two portfolios can have the same diversity index but different technologies and margins, so an intervention cannot be defined merely as increasing D by a fixed amount. A future test would need a specified portfolio change, measured before the mediator and outcome, and a credible comparison. The present analysis assesses observable patterns; H1–H3 remain causal hypotheses rather than estimated or confirmed effects.

Methodology

Design and sources

The study is an exploratory longitudinal company case using public document analysis and financial reconstruction. Document analysis requires attention to how records were produced and what they can establish (Bowen, 2009). The financial statements supply numerical observations; management discussion supplies attributed explanations. They are different forms of evidence from the same corporate source, not independent triangulation.

The analysis covers five complete financial years, 2021–2025, using the corresponding official annual reports retrieved on 16 November 2026. Publication years are 2022–2026 because the reports follow their financial years. The closing asset balances for 2020 are used only as the opening denominator for 2021 turnover; 2020 is not an additional performance observation. Each year's current-year column supplies the data, while subsequent comparative columns provide cross-report checks.

Table 2
Official report locations for the financial dataset

Financial year	Publication year	Income statement	Assets	Segments
2021	2022	104	106	152
2022	2023	107	109	159
2023	2024	111	113	163
2024	2025	116	118	170
2025	2026	114	116	167

Note. Locations are printed report pages; PDF page numbers are one greater. Full report URLs are in the reference list. The five reports provide all numerical observations.

Data reconstruction and checks

Amounts were extracted in RMB thousand before calculation. Segment revenue totals were reconciled to consolidated revenue, and segment results to the reported segment total. The disclosed adjustments reconcile the latter to profit before tax, and signed income tax reconciles profit before tax to net profit. Seven accounting identities pass for each year. Eleven financial lines and twelve segment entries for each of 2021–2024 match the next report's comparative figures. Current and preceding PPE and total-asset balances also match across adjacent reports. These are transcription and calculation checks, not an independent audit.

The company retained five reported segments, but its 2025 water definition explicitly includes edible ice, whereas the 2024 definition refers to packaged drinking water. The comparative 2024 segment amounts were unchanged. Since ice is not separately quantified, the 2025 water category cannot be treated as a perfectly constant-product business (Nongfu Spring Co., Ltd., 2025, p. 169; 2026, p. 166). No missing operational quantity, strategic score, or mediation coefficient is imputed.

Measures and analytical procedures

For year t, R is total revenue, R_i is segment revenue, P_i is reported segment result, and A is year-end net PPE. The three principal indicators are defined below. With five categories, D ranges from zero for complete concentration to 0.8 for equal revenue shares. A higher value denotes greater balance; it does not establish better strategy.

$$X_t = D_t = 1 - \Sigma_i(R_{it} / R_t)^2$$
$$M_t = R_t / [(A_{t-1} + A_t) / 2]$$
$$Y_t = 100 \times \Sigma_i P_{it} / R_t$$

M is measured in times and Y in percent. Net PPE includes construction in progress and reflects depreciation, so M is a broad productive-asset proxy. Total-asset turnover, calculated in the same way with total assets, is a sensitivity measure. Gross margin, net margin, and the selling and distribution expense ratio provide complementary consolidated indicators. Compound growth from 2021 to 2025 uses four intervals: (ending value / beginning value)^(1/4) − 1.

The profitability analysis separates revenue composition from margins within segments. Let w_i denote a segment's revenue share and m_i its result-to-revenue ratio. For any two observed years, labeled 0 and 1, the exact midpoint decomposition is:

$$C = \Sigma_i(w_{i1} - w_{i0})(m_{i1} + m_{i0}) / 2$$
$$W = \Sigma_i(m_{i1} - m_{i0})(w_{i1} + w_{i0}) / 2$$
$$\Delta Y = 100 \times (C + W)$$

C is the composition component and W the within-segment component; multiplication by 100 expresses their contributions in percentage points. The identity cancels cross-products exactly. Neither component measures a causal indirect effect, and W is not a proxy for the mediator. Initial-margin and final-margin allocations check sensitivity to decomposition order. A separate profit bridge reconciles changes in segment results to changes in net profit.

There are five company-year observations and 25 nested segment-year records. Group asset turnover is unavailable separately for each segment; repeating a group ratio across five segments would not create independent mediator observations. No regression, bootstrap significance test, or structural equation model is fitted. Because X, M, and Y also share revenue components, correlation could be influenced by their construction (Kronmal, 1993). Numerical reporting is consequently limited to trends, accounting identities, and documented changes.

Results

Consolidated performance

Table 3

Consolidated growth and profitability

Year	Revenue	Net profit	Gross margin %	Net margin %	Selling ratio %
2021	29,696.41	7,161.79	59.46	24.12	24.36
2022	33,239.19	8,495.25	57.45	25.56	23.53
2023	42,667.22	12,079.50	59.55	28.31	21.76
2024	42,895.99	12,123.30	58.08	28.26	21.38
2025	52,552.91	15,868.27	60.53	30.19	18.65

Note. Revenue and net profit are RMB million. Selling ratio is selling and distribution expenses divided by revenue. All calculations use original RMB-thousand figures.

Revenue grew from RMB29,696.41 million to RMB52,552.91 million, equivalent to 15.34% compound annual growth. Net profit increased from RMB7,161.79 million to RMB15,868.27 million, or 22.00% annually on a compounded basis. Net margin rose by 6.08 percentage points, compared with a 1.07-point increase in gross margin. Thus, the net-profit improvement was broader than a simple expansion of gross margin.

The trajectory was uneven. Gross margin fell in 2022 while net margin rose. In 2024, revenue increased by only 0.54%, net profit by 0.36%, and net margin declined slightly. In 2025, revenue grew by 22.51% and net profit by 30.89%. The selling ratio declined over the full window, but its inclusion of logistics and other distribution costs prevents interpretation as an advertising-intensity measure.

Diversification and the proposed mediator

Table 4

Observed indicators of the proposed causal framework

Year	Diversity X	PPE turnover M	Total-asset turnover	Segment margin Y %	Net margin %
2021	0.6196	2.339	1.011	36.14	24.12
2022	0.6325	2.358	0.921	34.87	25.56
2023	0.6655	2.619	0.965	38.39	28.31
2024	0.6863	2.242	0.839	37.36	28.26
2025	0.6820	2.295	0.888	42.47	30.19

Note. Turnover measures are revenue divided by average opening and closing book assets, in times. Total-asset turnover and net margin are supplementary indicators.

Revenue diversity rose from 0.6196 in 2021 to 0.6863 in 2024 before easing to 0.6820 in 2025. The sequence indicates a more balanced portfolio than at the start, followed by modest reconcentration. Tea's share increased continuously, from 15.42% to 41.09%, while water's share fell from 57.44% to 35.60%. Tea revenue grew from RMB4,578.95 million to RMB21,595.90 million, a compound annual rate of 47.37%. A higher tea share and a higher diversity index are therefore different descriptions of strategy-related change.

PPE turnover increased from 2.339 in 2021 to 2.619 in 2023, fell to 2.242 in 2024, and recovered to 2.295 in 2025. Despite greater revenue diversity and higher profitability at the endpoint, turnover finished slightly below its starting level. Total-asset turnover followed the same direction as PPE turnover in 2023–2025, but fell in 2022 while PPE turnover rose slightly. This sensitivity underscores the effect of the asset base on the interpretation.

The 2024 observation is especially informative: diversification increased while both turnover and segment margin declined. In 2025, diversification declined slightly while both improved. The patterns do not accord with an unconditional, positive contemporaneous X–M–Y chain. They do not formally reject the conditional causal hypotheses either: the observations combine investment timing, product demand, input costs, and other influences that the design cannot isolate.

Product portfolio and profitability decomposition

Table 5

Revenue and reported results by segment

Measure / segment	2021	2022	2023	2024	2025
Revenue: water	17,058.48	18,262.61	20,262.26	15,952.35	18,708.95
Revenue: tea	4,578.95	6,905.99	12,658.89	16,744.54	21,595.90
Revenue: functional	3,694.97	3,837.61	4,901.55	4,932.11	5,762.27
Revenue: juice	2,613.57	2,878.83	3,533.61	4,084.86	5,176.31
Revenue: other	1,750.44	1,354.15	1,310.91	1,182.13	1,309.48

Measure / segment	2021	2022	2023	2024	2025
Result: water	6,575.33	6,443.39	7,347.16	4,970.52	7,001.35
Result: tea	1,832.38	2,753.27	5,622.27	7,562.64	10,374.36
Result: functional	1,595.00	1,533.99	2,067.74	2,081.96	2,695.94
Result: juice	503.26	580.04	945.63	1,017.12	1,776.86
Result: other	225.75	280.33	396.21	392.15	469.56

Note. RMB million. Segment results are adjusted profit before tax as defined in the reports, not standalone segment net profit. Source amounts before rounding are provided in Appendix A.

In 2024, water revenue declined by RMB4,309.90 million and tea revenue increased by RMB4,085.65 million. Tea therefore offset approximately 94.80% of the water revenue decline in arithmetic terms. Yet water's segment result fell by RMB2,376.65 million while tea's increased by RMB1,940.37 million, and total segment results declined by RMB354.63 million. Revenue buffering was stronger than profit buffering. This is evidence of portfolio offsets, not an identified sharing benefit.

Table 6
Exact decomposition of aggregate segment margin changes

Period	Composition	Within segments	Total change
2021–2022	0.51	-1.78	-1.27
2022–2023	0.71	2.80	3.52
2023–2024	0.95	-1.98	-1.03
2024–2025	0.18	4.93	5.11
2021–2025	1.79	4.54	6.33

Note. Percentage points. The final row is a direct endpoint decomposition, not the sum of the annual rows. Components are calculated before rounding.

Across the endpoints, aggregate segment margin increased from 36.14% to 42.47%. Revenue composition accounts arithmetically for 1.79 percentage points and within-segment margins for 4.54 points of the 6.33-point increase. In 2024, the favorable composition contribution of 0.95 points partly offset a negative within-segment contribution of 1.98 points. In 2025, within-segment changes supplied 4.93 points of the 5.11-point recovery; all five segment margins increased.

These findings are stable to alternative decomposition order for the two most recent transitions. The 2024 composition effect is positive using either initial margins, 0.67 points, or final margins, 1.23 points. For 2025, the corresponding effects are 0.20 and 0.16 points. Portfolio composition buffered 2024 deterioration but contributed only a small part of the 2025 recovery. This is robustness of the accounting allocation, not causal validation of H3.

Reconciliation to consolidated net profit

Table 7

Contributions to changes in consolidated net profit

Component	2023–2024	2024–2025
Total segment results	-354.63	6,293.68
Interest income	-125.15	-286.43
Other unallocated income and gains	412.64	-122.54
Corporate and other unallocated expenses	158.54	-779.55
Finance costs	8.27	24.57
Income tax	-55.85	-1,384.77
Change in net profit	43.81	3,744.97

Note. RMB million. Positive contributions raise net profit; lower expenses therefore appear as positive values. Rounding may produce a 0.01 difference in displayed totals.

The 2024 decline in segment results coexisted with a RMB43.81 million increase in consolidated net profit. Higher other unallocated income and gains and lower corporate expenses helped offset the operating deterioration. In 2025, the increase in segment results was RMB6,293.68 million, while the increase in net profit was RMB3,744.97 million after changes in excluded items and taxation. Consolidated earnings stability in 2024 and recovery in 2025 therefore reflect different financial processes.

Discussion

What the case reveals about strategic synergy

The case distinguishes three possible sources of favorable performance: a change in portfolio composition, improved margins inside categories, and changes outside segment results. Only some underlying mechanisms in these processes would qualify as synergy. For example, increasing tea's weight raises the aggregate margin when tea is relatively profitable even if the categories share no incremental efficiencies. By contrast, a verified reduction in resource duplication attributable to joint operation would be relevant to synergy. The accounts identify the former arithmetic pattern but do not quantify the latter counterfactual benefit.

The data also challenge the use of portfolio balance as a sufficient explanation of performance. The highest observed diversity occurred in 2024, a year of lower asset turnover and lower segment profitability. In 2025, greater concentration toward tea coincided with recovery. Strategic quality therefore cannot be judged from diversification breadth alone. The suitability of categories, the timing of capacity, and the margins generated within them matter alongside their revenue shares.

Documentary evidence and competing explanations

Management disclosures provide evidence of activities relevant to the proposed mechanism. The 2021 report describes new tea flavors and the tenth anniversary of Oriental Leaf; the 2023 report describes further tea offerings and package formats (Nongfu Spring Co., Ltd., 2022, p. 15; 2024, p. 16). The 2023 report also describes integrated marketing systems and coordination of warehousing, transportation, production, quality, and finance through digital

systems (Nongfu Spring Co., Ltd., 2024, pp. 21–22). These are documented actions consistent with resource orchestration, but their incremental financial returns are not separately disclosed.

For 2024, management attributed gross-margin pressure to purified-water launch promotion, greater fixed-cost intensity after lower water sales, and higher juice input prices (Nongfu Spring Co., Ltd., 2025, p. 26). The fixed-cost explanation is relevant to H2, but the other explanations show why utilization cannot account for the entire margin movement. For 2025, management cited lower procurement prices for PET, packaging, and other materials, together with distribution price discipline (Nongfu Spring Co., Ltd., 2026, p. 24). These factors can improve profitability without diversification being the initiating cause.

The expense narrative also prevents a misleading interpretation of the financial ratios. Advertising and promotion increased in 2024 even as the overall selling ratio declined; management linked the latter to logistics and product composition. In 2025, lower promotion expenditure after the Olympic year accompanied a further decline in the ratio (Nongfu Spring Co., Ltd., 2025, p. 26; 2026, p. 24). A falling selling ratio cannot consistently stand for lower marketing investment or better marketing efficiency. The paper therefore does not introduce it as an alternative mediator.

Interpretation of the hypotheses

H1 receives mixed descriptive evidence: diversification and PPE turnover moved together in 2022–2023, but in opposite directions in 2024 and 2025. H2 is descriptively compatible with the joint movement of turnover and segment margin in 2023–2025, but not with their opposite movement in 2022. These comparisons assess contemporaneous patterns, not the isolated effects specified by the hypotheses. H3 is not estimated, since the data do not identify the X-to-M or M-to-Y causal paths. No hypothesis is labeled statistically supported or rejected.

This unresolved status is substantively informative. The proposed mechanism remains plausible under its stated conditions, while a simpler claim that more diversification necessarily improves utilization and profit is inconsistent with the observed sequence. The case motivates a conditional account of synergistic development in which coordination benefits must be evaluated alongside capacity adjustment, category demand, and input costs. It does not establish a universal positive relationship or prove that the firm possesses a sustained competitive advantage.

Managerial implications

Portfolio decisions should be evaluated against productive capacity and category-level contribution rather than revenue balance alone. A business review can track revenue shares, segment margins, and productive-asset turnover together. A more balanced portfolio combined with declining turnover should prompt investigation of demand, idle capacity, investment timing, and coordination costs. A rising margin with limited turnover improvement should prompt examination of input prices and product mix before attributing gains to operational synergy.

Shared infrastructure investments should be evaluated using project-level utilization, operating costs, and incremental cash flows. Managers also need a bridge between segment performance and consolidated earnings to distinguish operating improvement from treasury income and corporate adjustments. The case does not establish an optimal allocation toward tea or away from water: water remained a major business and its margin recovered in 2025. Investment recommendations require evidence about future demand, capacity constraints, and incremental returns beyond the retrospective ratios.

Limitations and future research

The five-year, single-company record provides no untreated comparator or exogenous strategic intervention. Annual measurements do not establish whether strategy changes precede utilization changes or whether improved profitability enables investment. Conditional hypotheses are not protected from testing by these limitations; rather, a suitable design must measure their conditions and timing. A causal mediation claim cannot be recovered simply by adding arrows, fitting a regression, or resampling five observations.

Measurement also constrains interpretation. Revenue diversity captures realized sales composition, which responds to consumer demand as well as managerial choice. PPE turnover is affected by depreciation and construction in progress and does not measure shared assets or physical capacity use directly. The heterogeneous other-products category and the broadened water definition limit product comparability. Segment margins depend on the issuer's allocation practices, and narrative explanations remain management-authored. Common revenue components in the indicators warrant particular caution in future statistical models.

A stronger study could use comparable beverage firms or multiple production sites with repeated observations, measuring portfolio decisions before utilization and profitability. It should define the strategic intervention, document compatible assets, and examine demand, input costs, capacity additions, and financing conditions. A staggered operational rollout or other credible comparison could strengthen identification, subject to its own assumptions. Mediation analysis would additionally require attention to mediator–outcome confounding and sensitivity to unobserved causes (Imai et al., 2010). More observations alone would not establish causality.

Conclusion

Nongfu Spring's 2021–2025 development combined rapid growth in tea, changing product balance, investment in productive assets, and higher profitability. The explicit framework identifies related product diversification as X, productive asset utilization as the hypothesized mediator M, and operating profitability as Y. Its causal logic is grounded in potential resource sharing and fixed-cost absorption, but the observed annual sequence does not support an unconditional positive chain.

The accounting evidence is clear: the 6.33-point increase in aggregate segment margin comprises 1.79 points from composition and 4.54 points from within-segment changes. Portfolio composition buffered deterioration in 2024, while within-segment recovery dominated 2025. Consolidated net profit also reflected items outside segment results. Synergistic development is therefore best investigated as a conditional relationship among

portfolio choice, resource deployment, and financial outcomes. This study provides a complete descriptive case and a causal model for further testing, without claiming an identified mediation effect.

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