



Service Innovation and New Product Performance in Indonesian Tutoring SMEs

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Abstract

Background: Tutoring SMEs increasingly need to renew their service delivery as digitalisation and changing parent and student preferences reshape competition.

Objective: This study examines the effect of service innovation on new product performance and tests whether market turbulence moderates that relationship among tutoring SMEs in Banyumas, Purbalingga, and Banjarnegara.

Methods: A quantitative, purposive-sampling design was analysed in SPSS Version 30 using item validity and reliability tests and an ordinary least-squares interaction model.

Results: Service innovation positively predicted new product performance ($B = 0.383, t = 2.547, p = .017$), while market turbulence had a direct positive association ($B = 0.451, t = 3.933, p < .001$). The interaction was not significant ($B = 0.014, t = 0.344, p = .734$).

Conclusion: Service innovation is associated with stronger new product performance, whereas market turbulence operates as a direct contextual correlate rather than a moderator in this sample.

INTRODUCTION

The non-formal education sector, including small and medium-sized tutoring institutions (SMEs), supplements Indonesia's education ecosystem and provides locally accessible learning support (Zulfunun, 2025). Post-pandemic digitalisation has nevertheless altered how these providers design programmes, communicate with parents, and deliver learning. In Banyumas, Purbalingga, and Banjarnegara, tutoring SMEs must respond to uneven digital capacity and intensifying local competition while sustaining the performance of newly introduced programmes. This study therefore focuses on firm-level assessments of service innovation and product performance rather than making unverified district-level claims about the numbers of providers or student attrition (Wafa et al., 2025). This perspective is consistent with evidence that innovation capability, product innovation, and process innovation are important drivers of SME performance improvement in Indonesia (Fitriati et al., 2020; Hamur et al., 2026; Ismanu et al., 2021).

Within the framework of the Resource-Based View (RBV) and dynamic capabilities theory, the success of commercialization and new product performance does not occur instantly but is

triggered by proactive organizational responses through service innovation. Service innovation in the non-formal education sector does not only focus on updating teaching materials but includes restructuring ways of interacting with students, utilizing Learning Management System (LMS) ecosystems, and flexibility in service delivery architecture (Blommerde, 2023; Witell et al., 2016). When a tutoring institution is able to configure unique, difficult-to-imitate service innovations that are relevant to student needs, this will empirically accelerate market acceptance rates and boost the performance of new educational products released (Ayun et al., 2025). Strengthening innovation at the service line level is an essential pillar for SMEs to overcome their physical asset limitations (Larabi, 2026; Salunke et al., 2019). Previous studies further indicate that innovation capability enables SMEs to transform knowledge, learning, and entrepreneurial resources into competitive performance outcomes (D'Souza et al., 2022; Sari et al., 2023; Soesetio et al., 2024).

Market turbulence is a theoretically relevant contextual condition because fluctuating preferences, technology use, and competitive actions can alter the returns to innovation. Prior evidence, however, is not uniform: environmental turbulence may enable responsive and proactive market orientation to translate into innovation performance, yet the benefits depend on firms' capabilities and resource constraints (Namal et al., 2023; Teece, 2007). This ambiguity motivates an explicit test of the interaction rather than assuming that turbulence invariably strengthens innovation outcomes (Pratama et al., 2025). The importance of environmental adaptation is also supported by studies showing that market orientation and innovation effectiveness are influenced by firms' capability to interpret and respond to changing environments (Anjaningrum et al., 2024; D'Souza et al., 2022).

The study is empirically urgent because tutoring SMEs in the three regencies operate under heterogeneous service conditions, including differences in access to digital tools, customer proximity, and managerial capacity. The available dataset does not contain comparable district-level counts of institutions, competitive growth, or student attrition; consequently, the findings should be interpreted as organisation-level associations. Future data collection should document these contextual indicators to enable a stronger regional comparison.

Previous studies establish that service innovation can improve organisational outcomes, but they mainly treat environmental conditions as either direct antecedents or broad contextual pressures. The unresolved issue is whether market turbulence changes the service innovation–new product performance relationship in resource-constrained educational-service SMEs. The novelty of this study lies in testing that contingency mechanism in a non-formal education setting while integrating the resource logic of RBV with dynamic-capability and contingency perspectives (Barney, 1991; Mailani et al., 2024; Teece, 2007). Accordingly, the study tests the direct effect of service innovation on new product performance and the moderating role of market turbulence. The findings contribute theoretically by specifying the boundary condition of service innovation, practically by guiding tutoring SME managers' service-development priorities, and empirically by documenting the model in a local educational-service context. However, prior research has predominantly examined innovation as a direct antecedent of SME performance, while the interaction between innovation capability and environmental conditions remains less explored, particularly in service-based educational SMEs (Rahmat et al., 2024; Rumanti et al., 2021).

The hypothesised relationships are specified in the Method section.

Integrated into the preceding introduction and model specification (Wati, 2025).

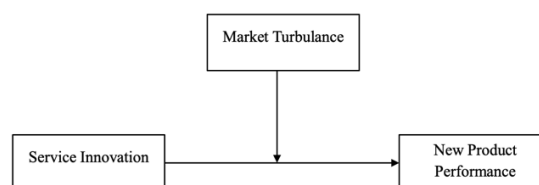


Figure 1. Conceptual model of service innovation, market turbulence, and new product performance.

METHOD

This study used a quantitative cross-sectional design and purposive, non-probability sampling because the target units were tutoring SMEs with relevant innovation experience. Eligibility required that an institution be located in Banyumas, Purbalingga, or Banjarnegara and had recently introduced or updated a programme, service, activity, or learning method. A structured questionnaire was used to obtain construct ratings from eligible institutional respondents; observation and documentation were not treated as analytical data sources. The manuscript should report the fieldwork dates, questionnaire mode, number approached, number of usable responses, and respondent role from the research records; their absence limits assessment of coverage and non-response bias.

The unit of analysis was the eligible tutoring SME. The inclusion criteria were used to ensure that respondents could assess service innovation, market turbulence, and new product performance in relation to a recent service-development experience. Because this non-probability design targets information-rich institutions rather than a probability sample, the results are not intended to estimate population parameters for all tutoring providers in the three regencies.

Data were analysed in SPSS Version 30. Instrument quality was assessed through item-total Pearson correlations and Cronbach's alpha, after which the hypothesised relationships were tested by ordinary least-squares regression. The analysis is associative and cross-sectional; it does not establish causal effects.

The moderation test used a product-term regression because the study specified a single observed-variable interaction and sought directly interpretable coefficients in SPSS. The estimated model was $NPP_i = \beta_0 + \beta_1 SIN_i + \beta_2 MRT_i + \beta_3 (SIN_i \times MRT_i) + \varepsilon_i$, where NPP is new product performance, SIN is service innovation, MRT is market turbulence, and β_3 represents the moderating effect. This approach is appropriate for the stated two-hypothesis model; PROCESS or SEM would be alternatives if the study estimated conditional indirect effects or latent-variable measurement models.

H1 was evaluated from β_1 in the direct-effect model. H2 was evaluated from β_3 in the interaction model: a two-tailed p value below .05 was treated as evidence that market turbulence moderated the service innovation–new product performance association. A non-significant product term was interpreted as insufficient evidence of moderation, not as evidence that the contextual variable has no direct relationship with performance.

The data analysis technique in this research was conducted quantitatively with the help of SPSS Version 30 statistical software. The analysis stages begin with instrument quality testing, namely validity and reliability testing. Validity testing is conducted to determine whether each statement item can measure the intended construct, while reliability testing is used to assess the internal consistency of the research instrument. After the instrument is declared feasible, the analysis continues with testing relationships between variables according to the research model.

The respondents' characteristics based on the location of their institutions indicate that the largest proportion came from Banyumas Regency, with 13 institutions representing 43% of the total respondents. This was followed by Banjarnegara Regency, which contributed 9 institutions (30%), while Purbalingga Regency accounted for 8 institutions (27%).

This distribution suggests that the respondents were drawn from three different regions, although the proportions were not entirely balanced. The higher representation from Banyumas Regency indicates that institutions in this area contributed the largest share of the sample. Meanwhile, Banjarnegara and Purbalingga were represented by smaller proportions, yet they still provided substantial contributions to the overall dataset.

Overall, the study involved a total of 30 institutions. The distribution of respondents provides a reasonable representation of institutions across the three research areas, as no single region overwhelmingly dominated the sample. Although Banyumas had the highest proportion of respondents, the differences in the number of participating institutions compared with Banjarnegara and Purbalingga remained within an acceptable range. Therefore, the regional distribution of respondents can be considered sufficiently diverse to reflect variations in institutional conditions across the three regions.

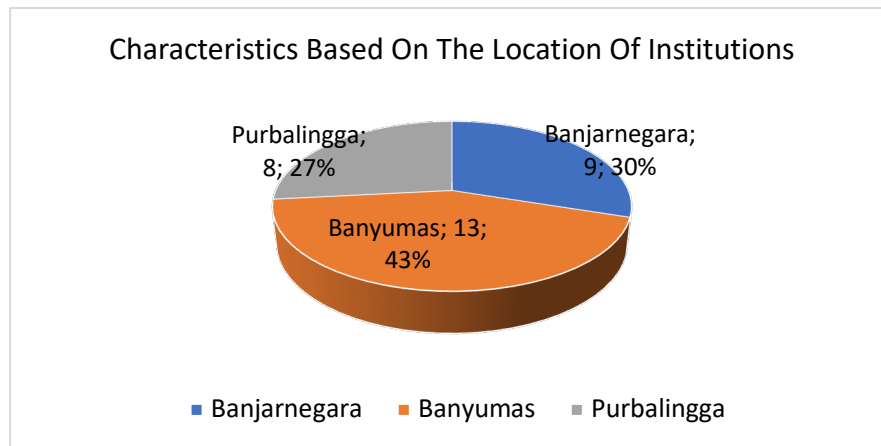


Figure 2. Respondents' Responses

Based on the respondents' institutional age, most participating institutions had been operating for less than five years, accounting for 17 institutions or 57% of the total sample. In contrast, 13 institutions, representing 43% of the respondents, had been established for more than five years.

This distribution indicates that the majority of respondents came from relatively young institutions. Such a composition suggests that many of these institutions are still in the development stage, focusing on improving their management practices, expanding their market reach, enhancing service quality, and strengthening their competitive position. Institutions that have operated for less than five years generally face greater challenges in adapting to changing customer needs and evolving business environments.

At the same time, the proportion of institutions that have been operating for more than five years remains substantial, accounting for 43% of the sample. This indicates that the study includes not only newly established institutions but also organizations with more extensive operational experience. These institutions are likely to provide insights into organizations that have achieved greater organizational maturity, developed stronger customer relationships, and established more stable service practices.

Overall, the respondents represent institutions with varying organizational ages. This diversity is important because it enables the study to capture institutional conditions at different stages of development, ranging from relatively new organizations to those with longer operational experience.

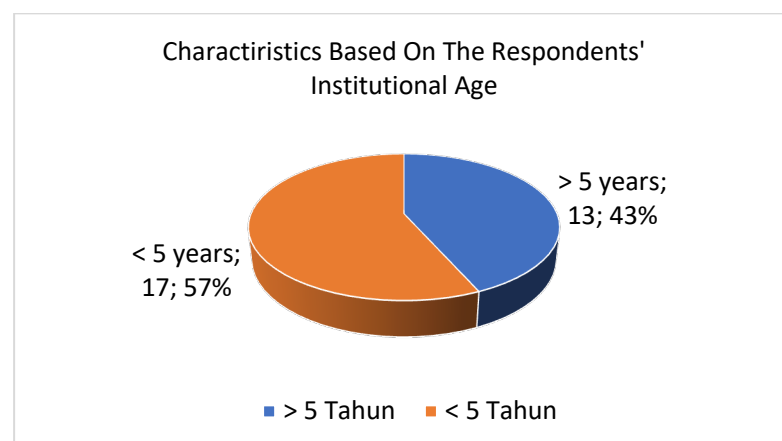


Figure 3. Respondents' Responses

Based on the respondents' evaluations, all indicators of the New Product Performance (NPP), Service Innovation (SI), and Market Turbulence (MT) variables were classified as high. This finding indicates that respondents generally held positive perceptions of the performance of newly introduced programs or services, the institutions' capability to implement service innovations, and the dynamic market conditions faced by tutoring institutions.

The analysis shows that the New Product Performance variable received high ratings, with

the highest mean score recorded for NPP4 (4.333). This result suggests that newly introduced programs or services have been well received by both students and parents. For the Service Innovation variable, the highest mean score was observed for SI2 (4.400), indicating that improvements in learning materials and teaching methods represent the most prominent form of innovation implemented by the institutions. Meanwhile, for the Market Turbulence variable, the highest mean score was found for MT1 (4.133), reflecting that customer preferences regarding learning methods change relatively quickly.

Overall, these findings suggest that tutoring institutions demonstrate strong service innovation capabilities, offer new programs that are generally well accepted by the market, and operate in a dynamic market environment. Therefore, continuously improving teaching methods and adapting services to changing customer needs are essential factors in maintaining institutional performance.

Table 1

Respondents' evaluations

Code	Average	Category
NPP 1	4,000	High
NPP 2	4,033	High
NPP 3	3,933	High
NPP 4	4,333	High
NPP 5	4,200	High
SI 1	4,100	High
SI 2	4,400	High
SI 3	3,966	High
SI 4	3,866	High
MT 1	4,133	High
MT 2	3,966	High
MT 3	4,100	High
MT 4	3,800	High
MT 5	3,800	High

Hypothesis testing was conducted to determine the effect of Service Innovation on New Product Performance, as well as to test the role of Market Turbulence as a moderating variable. In this research, moderation testing was conducted using the interaction method, namely forming an interaction variable between Service Innovation and Market Turbulence.

The first hypothesis was tested by examining the direct effect of Service Innovation on New Product Performance. Meanwhile, the second hypothesis was tested through the significance value of the Service Innovation × Market Turbulence interaction variable. If the interaction variable has a significance value smaller than 0.05, then Market Turbulence can be stated to moderate the relationship between Service Innovation and New Product Performance. Conversely, if the significance value is greater than 0.05, then Market Turbulence is not proven to act as a moderating variable in that relationship.

RESULTS AND DISCUSSION

Research Results

Validity Test

Table 2

Validity Test

Variable	Item Statement	Pearson Correlation to Total	Sig. (2-tailed)	Description
Service Innovation (SIN)	SIN.1	0,787	< 0,001	Valid
	SIN.2	0,561	0,001	Valid
	SIN.3	0,664	< 0,001	Valid

Variable	Item Statement	Pearson Correlation to Total	Sig. (2-tailed)	Description
New Product Performance (NPP)	SIN.4	0,658	< 0,001	Valid
	NPP.1	0,839	< 0,001	Valid
	NPP.2	0,578	< 0,001	Valid
	NPP.3	0,786	< 0,001	Valid
	NPP.4	0,738	< 0,001	Valid
Market Turbulence (MRT)	NPP.5	0,708	< 0,001	Valid
	MRT.1	0,676	< 0,001	Valid
	MRT.2	0,623	< 0,001	Valid
	MRT.3	0,673	< 0,001	Valid
	MRT.4	0,721	< 0,001	Valid
	MRT.5	0,692	< 0,001	Valid

Based on the validity test results using the Pearson Product Moment correlation technique, all statement items on the New Product Performance (NPP), Service Innovation (SIN), and Market Turbulence (MRT) variables show positive correlation values with the total score of each variable. Validity testing was conducted by comparing the relationship between each indicator's score and the construct's total score. An item can be declared valid if it has a significant correlation with the total score, generally indicated by a significance value smaller than 0.05 (Ghozali, 2018; Surya Dharma et al., 2026).

For the New Product Performance (NPP) variable, the test results show that all five statement items, namely NPP.1, NPP.2, NPP.3, NPP.4, and NPP.5, have correlation values with the total score of 0.839; 0.578; 0.786; 0.738; and 0.708, respectively. All items have significance values < 0.001, thus smaller than the 0.05 significance level. These findings indicate that each indicator has a strong and significant relationship with the New Product Performance construct. Thus, all items on the NPP variable are declared valid and can be used for further analysis.

For the Service Innovation (SIN) variable, the validity test results show that four statement items, namely SIN.1, SIN.2, SIN.3, and SIN.4, also have positive and significant correlations with the variable's total score. The correlation values for each item are 0.787; 0.561; 0.664; and 0.658. The significance values for SIN.1, SIN.3, and SIN.4 are < 0.001, while SIN.2 has a significance value of 0.001. All significance values are below 0.05. Therefore, all items on the Service Innovation variable can be declared valid, as each indicator can represent the service innovation construct measured in this research.

Furthermore, for the Market Turbulence (MRT) variable, the test results show that five statement items, namely MRT.1, MRT.2, MRT.3, MRT.4, and MRT.5, have correlation values with the total score of 0.676; 0.623; 0.673; 0.721; and 0.692. All items have significance values < 0.001, so all meet the validity criteria. This indicates that each indicator on the Market Turbulence variable has a significant relationship with the variable's total score, so it can be used to explain market change conditions, customer needs dynamics, and market environment uncertainty in this research.

Thus, it can be concluded that all statement items on the New Product Performance, Service Innovation, and Market Turbulence variables are declared valid. This means that the research instrument used has been able to adequately measure the intended constructs. Therefore, all items can be retained and are suitable for use in the next data analysis stage.

Reliability Test

Table 3
Reliability Test

Variable	Number of Items	Cronbach's Alpha	Criteria	Description
New Product Performance (NPP)	5	0,783	> 0,70	Reliable
Service Innovation (SIN)	4	0,587	< 0,70	Sufficiently reliable/ marginal

Variable	Number of Items	Cronbach's Alpha	Criteria	Description
Market Turbulence (MRT)	5	0,686	Close to 0,70	Sufficiently reliable

Based on the reliability test results, the New Product Performance (NPP) variable has a Cronbach's Alpha value of 0.783 with 5 statement items. This value is above the minimum threshold of 0.70, so the instrument for the NPP variable can be declared reliable. This means that the statement items used to measure New Product Performance have good internal consistency and can provide relatively stable measurement results.

For Service Innovation (SIN), Cronbach's alpha was 0.587 across four items. This value is below the conventional 0.70 benchmark and indicates limited internal consistency. Although short scales can yield lower alpha values, the construct should be interpreted cautiously; the finding is retained for exploratory analysis but should not be presented as fully reliable. Item refinement and replication with a stronger measurement model are required before drawing definitive inferences about service innovation.

Furthermore, the Market Turbulence (MRT) variable obtained a Cronbach's Alpha value of 0.686 with 5 statement items. This value approaches the 0.70 threshold, so it can be categorized as having adequate reliability. This shows that the items on the Market Turbulence variable have a sufficient level of internal consistency in measuring market change dynamics, changes in customer needs, and market environment uncertainty.

Overall, the instrument provides mixed reliability evidence: NPP shows acceptable internal consistency, MRT is borderline, and SIN is below the conventional threshold. The regression findings should therefore be read as provisional, particularly for estimates involving service innovation. This measurement limitation, together with the purposive cross-sectional design, constrains generalisability and causal interpretation.

Hypothesis Test

Table 3

Hypothesis Test

Hypothesis	Variable Relationship	B	Std. Error	Beta	t	Sig.	Decision
H1	Service Innovation → New Product Performance	0,383	0,15	0,353	2,547	0,017	Accepted
-	Market Turbulence → New Product Performance	0,451	0,115	0,545	3,933	< 0,001	Significant
H2	Service Innovation × Market Turbulence → New Product Performance	0,014	0,041	0,427	0,344	0,734	Rejected

Based on the hypothesis test results in the first model, the Service Innovation (SIN) variable has a regression coefficient of 0.383, a t-value of 2.547, and a significance value of 0.017. This significance value is smaller than 0.05, so it can be concluded that Service Innovation has a positive and significant effect on New Product Performance. This means that the better the service innovation carried out by the institution or company, the higher the tendency for improvement in the performance of new products produced. Thus, H1 is accepted. This finding indicates that service innovation plays an important role in supporting the success of new products, because service updates, delivery methods, and the ability to adjust to market needs can strengthen the value of products offered to customers.

Additionally, in the first model, it is also evident that the Market Turbulence (MRT) variable has a regression coefficient of 0.451, a t-value of 3.933, and a significance value < 0.001. These results indicate that Market Turbulence also has a direct positive and significant effect on

New Product Performance. In other words, changes in customer needs, market dynamics, and environmental uncertainty can encourage organizations to be more responsive in developing new products or services. However, these results still indicate a direct effect, not a moderating effect.

Moderation testing was conducted in the second model by including the interaction variable between Service Innovation and Market Turbulence. The test results show that the INTERACTION variable has a regression coefficient of 0.014, a t-value of 0.344, and a significance value of 0.734. Because this significance value is greater than 0.05, the interaction variable does not have a significant effect on New Product Performance. Thus, Market Turbulence is not proven to moderate the relationship between Service Innovation and New Product Performance, so H2 is rejected.

Academically, these results can be interpreted that the effect of Service Innovation on New Product Performance does not change significantly under different Market Turbulence conditions. This means that high or low market turbulence does not strengthen nor weaken the relationship between service innovation and new product performance in this research model. Although Market Turbulence has a direct effect on New Product Performance, its role as a moderating variable is not supported by the data. In moderation analysis, a variable can be declared as a moderator if the interaction coefficient between the independent variable and the moderator variable shows a significant effect on the dependent variable (Hayes, 2018; Hikmawati & Hidayati, 2025).

Thus, the conclusion of the hypothesis test in this research is that Service Innovation has a positive and significant effect on New Product Performance, so H1 is accepted. However, Market Turbulence does not moderate the relationship between Service Innovation and New Product Performance, so H2 is rejected. These results indicate that improving new product performance is more directly influenced by service innovation and market dynamics, but the interaction between the two is not yet strong enough to explain variations in new product performance.

Discussion

Service innovation was positively associated with new product performance ($B = 0.383$, $t = 2.547$, $p = .017$), supporting H1. This association is consistent with RBV: service routines and customer-facing knowledge can function as valuable resources when they are organised into distinctive offerings (Barney, 1991; Mailani et al., 2024). It also accords with dynamic-capability theory, which views the reconfiguration of delivery methods, learning formats, and parent-student interactions as a means of sensing and responding to changing opportunities (Chevrollier et al., 2024; Teece, 2007). The result is consistent with Witell et al. (2016) and Salunke et al. (2019), both of whom emphasise service innovation and capability renewal; it extends those arguments to tutoring SMEs, where innovations must remain feasible under limited resources (Larabi, 2026). This finding is also supported by empirical evidence from Indonesian SMEs showing that innovation capability contributes significantly to organizational performance and competitiveness (Ismanu et al., 2021; Sari et al., 2023).

These findings also strengthen the argument in the research background that tutoring SMEs face local competition pressure and changes in consumer behavior after the pandemic and the growth of education digitalization. In such conditions, new product performance is not only determined by the existence of new products or programs but also by the extent to which the program has different value, is relevant, and can answer the needs of educational service users. Therefore, service innovation becomes an important mechanism for tutoring institutions to maintain competitiveness. New programs that are only administrative or follow trends without being supported by real service updates tend to be less able to produce optimal performance. Conversely, innovation that touches teaching methods, communication patterns with students, service flexibility, and the use of learning technology can increase the value of new products in the eyes of consumers. Similar findings demonstrate that innovation, organizational learning, and customer value anticipation strengthen SMEs' ability to develop superior offerings and improve performance outcomes (Anjaningrum et al., 2024; Yuliansyah et al., 2021).

Market turbulence also showed a direct positive association with new product performance ($B = 0.451$, $t = 3.933$, $p < .001$). This pattern is compatible with the view that changing preferences and competitive signals can stimulate firms to update their offerings. It is broadly

consistent with Namal (2023), who found that turbulence shapes the performance consequences of market-oriented innovation. However, the present result should be understood as an association in a cross-sectional sample: it cannot establish that turbulence itself causes higher new product performance.

The interaction between service innovation and market turbulence was not significant ($B = 0.014$, $t = 0.344$, $p = .734$); thus, H2 was not supported. This finding qualifies, rather than contradicts, contingency theory. Environmental conditions do not automatically enhance the payoff from a strategy; the effect depends on the fit between the external context and firms' internal structures and capabilities (Donaldson, 2001; Otenyo, 2023). In this sample, market turbulence appears to relate directly to performance but does not reliably alter the service innovation–performance slope.

The non-significant moderating effect can be explained through several possibilities. First, tutoring SMEs in Banyumas, Purbalingga, and Banjarnegara may not yet have sufficiently strong organizational capacity to turn market pressure into more effective innovation strategies. Market turbulence can indeed encourage the emergence of needs to innovate, but not all institutions are able to respond strategically to these changes. In educational service SMEs, limitations in human resources, capital, technology, and managerial capabilities can cause service innovation to not be fully integrated with systematic market reading. As a result, although the market changes, the innovation capabilities possessed by institutions are not necessarily more strongly influential on new product performance. This interpretation aligns with previous studies indicating that innovation outcomes depend not only on external pressure but also on internal capabilities, knowledge management, and organizational readiness (Cahyaningati et al., 2026; Efendi et al., 2020; Susanty et al., 2019).

, these results may also indicate that service innovation in tutoring institutions is more internal and operational in nature, rather than fully based on responses to market turbulence. For example, institutions may update learning methods, add new programs, or use digital media due to internal needs to improve service quality, rather than specifically responding to changes in market preferences. In such situations, market turbulence does not become a factor that strengthens the relationship between service innovation and new product performance. This aligns with the contingency theory approach which states that the effect of a strategy on performance is not always automatically dependent on environmental conditions, because its effectiveness is also determined by the organization's internal readiness in adjusting strategy to the external context (Wirawan et al., 2024).

Third, the characteristics of the local tutoring market may also influence the moderation results. In areas such as Banyumas, Purbalingga, and Banjarnegara, consumer decisions in choosing tutoring institutions may not only be determined by the level of innovation or market changes, but also by other factors such as institutional reputation, price, location proximity, personal relationships with teachers, parental trust, and previous student learning outcomes. Thus, even though market turbulence occurs, its effect in strengthening the relationship between service innovation and new product performance is not necessarily dominant. This can explain why market turbulence has a direct effect on new product performance, but does not act as a moderator in the relationship between service innovation and new product performance.

The study contributes by clarifying a boundary condition in the RBV–dynamic capability account of service innovation. The supported direct relationship indicates that service innovation remains a useful strategic resource, whereas the unsupported interaction cautions against assuming that external turbulence strengthens all innovation returns. This distinction advances contingency reasoning in educational-service SMEs by separating a contextual variable's direct association from its hypothesised moderating role. The contribution of this study is further supported by research emphasizing that open innovation, learning orientation, and capability development are essential mechanisms for strengthening SME competitiveness in dynamic markets (Rahmat et al., 2024; Ratnawati et al., 2018).

Practically, tutoring SME managers should prioritise service innovations that improve learning experience, delivery flexibility, parent communication, and appropriate technology use. They should also monitor changes in student and parent needs, but should not rely on turbulent conditions alone to make innovation effective. Investments in staff capability, customer feedback,

and market sensing are likely to improve the organisational fit needed to translate service updates into new product performance. From a practical perspective, strengthening digital adaptation, innovation capability, and customer-oriented service development is essential for SMEs facing increasing competition (Rialdy, 2025; Sanny et al., 2021).

Thus, this research discussion confirms that service innovation is an important factor in improving new product performance, while market turbulence is more appropriately understood as an external factor that has a direct effect, rather than as a variable that strengthens or weakens the relationship between service innovation and new product performance. These findings are relevant to the conditions of tutoring SMEs operating in local areas, where resource limitations can cause responses to market changes to not be fully structured. Therefore, strengthening internal capabilities, market understanding, and consistency in service innovation are important aspects for the sustainability of tutoring SMEs amidst an increasingly dynamic educational environment.

CONCLUSION

This study examined whether service innovation predicts new product performance and whether market turbulence moderates that relationship in tutoring SMEs in Banyumas, Purbalingga, and Banjarnegara. Service innovation was positively associated with new product performance, whereas market turbulence had a direct positive association but did not significantly moderate the relationship. The findings support RBV and dynamic-capability reasoning that service renewal can be a strategic resource, while qualifying the contingency assumption that turbulence necessarily strengthens innovation outcomes.

The practical implication is that tutoring SMEs should institutionalise customer-informed service renewal and develop the staff, digital, and market-sensing capabilities needed to implement it. Interpretation is limited by purposive cross-sectional sampling and the sub-threshold reliability of the Service Innovation measure; the results are associative rather than causal. Future research should use larger probability or multi-site samples, strengthen the service-innovation scale, report response procedures transparently, and examine alternative mechanisms such as digital capability and market orientation. These implications are consistent with evidence that technology adaptation, entrepreneurship education, and innovation capability jointly contribute to improving micro and small business performance.

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AUTHOR CONTRIBUTION STATEMENT

Aristawidya Dwi Putri contributed to the conceptualization of the research, methodology, data collection and curation, formal analysis, interpretation of findings, and preparation of the original manuscript. Widyono Soetjipto contributed to research supervision, methodological validation, critical evaluation of the analytical results, interpretation of findings, and revision of the manuscript. Both authors contributed to the discussion of the results, reviewed and approved the final version of the manuscript, and agreed to be accountable for all aspects of the work.

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