

The Influence of Product Innovation on Competitive Advantage: Evidence from PT Rotte Ragam Rasa, Indonesia

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Abstract

The increasingly competitive food and beverage industry requires firms to continuously develop product innovation to strengthen their competitive advantage. This study aims to examine the influence of Product Innovation on Competitive Advantage at PT Rotte Ragam Rasa, a local bakery company in Pekanbaru, Indonesia. The study employed a quantitative explanatory approach using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with a second-order construct model. Primary data were collected through questionnaires from 34 purposively selected respondents comprising Outlet Leaders, Branch Managers, Regional Managers, Marketing personnel, the Chief Executive Officer, and Research and Development staff. Product Innovation was measured through Product Variety, Product Design and Presentation, and Innovation Process, while Competitive Advantage was measured through Cost Leadership and Product Quality. The results show that Product Innovation has a positive and significant effect on Competitive Advantage ($\beta = 0.798$; $p < 0.001$), explaining 63.7% of the variance in Competitive Advantage. Product Design and Presentation, Innovation Process, and Product Variety significantly contribute to Product Innovation, while Cost Leadership and Product Quality significantly contribute to Competitive Advantage. The findings indicate that product innovation, supported by attractive product presentation, product diversification, systematic innovation processes, cost efficiency, and consistent quality, is an important strategic capability for strengthening competitive advantage in the local bakery industry. The study contributes empirical evidence on the role of product innovation as a higher-order construct in explaining competitive advantage in an Indonesian local bakery context.

Keywords: Product Innovation; Competitive Advantage; Product Variety; Innovation Process; Bakery Industry.

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INTRODUCTION

The food and beverage industry is one of the important sectors contributing to Indonesia's manufacturing economy and has experienced increasing competition alongside changes in consumer lifestyles, technological development, and market preferences. The growth of consumer demand and the increasing number of business actors have encouraged firms to develop strategies that enable them to remain relevant and competitive in dynamic markets. In this context, innovation has become increasingly important because firms are required not only to respond to existing consumer needs but also to anticipate emerging preferences and create additional customer value. Data from the Central Bureau of Statistics (Badan Pusat Statistik [BPS], 2024) indicate the substantial contribution of the food and beverage subsector to Indonesia's non-oil and gas manufacturing sector, highlighting its strategic importance to the national economy. The growing importance of this industry also intensifies competitive pressure among firms, particularly local food and bakery businesses that must compete through product differentiation, quality, price, and responsiveness to consumer preferences.

Increasing competitive intensity requires firms to develop and maintain competitive advantage rather than relying solely on short-term price competition. Competitive advantage refers to a firm's ability to create greater value for customers than its competitors or to create comparable value at a lower cost. From the Resource-Based View (RBV), sustained competitive advantage can arise from resources and capabilities that are valuable, rare, difficult to imitate, and difficult to substitute (Barney, 1991). Accordingly, firms need to develop internal capabilities that competitors cannot easily replicate. Innovation is particularly relevant in this regard because it can enable firms to differentiate their offerings, improve customer value, and respond to market changes. Empirical evidence also indicates that product innovation can contribute positively to sustainable competitive advantage by enabling firms to develop offerings that better respond to market needs (Kuncoro & Suriani, 2018).

Competitive advantage in the food and beverage industry can be manifested through several dimensions, including cost efficiency, product quality, differentiation, and the ability to respond to changing consumer expectations. Cost leadership enables firms to offer competitive prices through efficient resource utilization, whereas product quality allows firms to maintain customer value and strengthen market preference. Farida and Setiawan (2022), for example, demonstrate the relevance of business strategy, innovation, and performance in strengthening competitive advantage among small and medium-sized enterprises. These dimensions are particularly relevant to bakery businesses because consumers commonly evaluate products based on a combination of price, quality, appearance, taste, variety, and perceived value. Therefore, competitive advantage in this industry cannot be adequately explained by price competition alone but requires the integration of operational efficiency and differentiated product value.

One strategic capability that can support such competitive advantage is product innovation. Product innovation encompasses the development of new products as well as substantial improvements, modifications, and adaptations to existing products in response to market and customer needs. Product innovation enables firms to differentiate their offerings, increase perceived customer value, and respond to changes in consumer preferences. Kuncoro and Suriani (2018) found a positive and significant relationship between product innovation and sustainable competitive advantage, indicating that innovation can function as an important strategic mechanism through which firms strengthen their competitive position. Similarly, Gómez-Prado et al. (2022) found that product innovation capability was associated with competitive advantage in their study of startups in Peru, although their research focused on internationally oriented startups and included competitive advantage as part of a broader capability-performance model.

The theoretical relevance of product innovation can further be explained through the RBV and Dynamic Capabilities perspectives. Under the RBV, innovation-related resources and capabilities may become sources of competitive advantage when firms are able to develop and organize them in ways that generate value and are difficult for competitors to imitate (Barney,

1991). However, in rapidly changing markets, possessing valuable resources alone may not be sufficient. Dynamic Capabilities theory emphasizes a firm's ability to sense environmental changes, seize opportunities, and reconfigure resources and organizational processes in response to changing conditions (Teece, 2007). From this perspective, product innovation should not be regarded as a one-time introduction of a new product but as a continuing organizational capability involving experimentation, product development, learning, adaptation, and resource reconfiguration. This theoretical perspective provides a stronger basis for examining product innovation as a higher-order construct rather than treating innovation merely as the number of new products introduced.

In the bakery industry, product innovation may involve several interconnected dimensions. Product Variety allows firms to provide consumers with alternative products that address different tastes, preferences, and consumption occasions. Product Design and Presentation involve product appearance, packaging, visual attractiveness, and presentation, which may influence consumers' perceptions of product value. Meanwhile, the Innovation Process reflects the firm's ability to systematically develop, evaluate, modify, and introduce products in response to market information and organizational learning. Evidence from the bakery sector indicates that product innovation can take various forms, including new product formulations, products that are new to the firm or consumers, and new packaging, while responding to consumer trends and expectations remains an important motivation for innovation. Thus, product innovation in bakery businesses is multidimensional and involves both the characteristics of the product itself and the organizational processes through which innovation is developed.

Previous research also demonstrates that innovation is closely connected with competitive advantage through organizational capabilities and market responsiveness. Awwad et al. (2022), for instance, found that sustainable product innovation was significantly associated with competitive advantage and emphasized the importance of new product flexibility and integration with customers and suppliers in developing innovation capabilities. Their findings suggest that innovation is not an isolated product-development activity but can emerge from organizational processes involving knowledge, flexibility, and interaction with relevant stakeholders. Likewise, Gómez-Prado et al. (2022) reported that product innovation capability contributed to competitive advantage in an international startup context. These findings provide empirical support for the proposition that firms with stronger innovation capabilities are more capable of creating differentiated value and strengthening their competitive position.

The relationship between product innovation and competitive advantage is particularly relevant in the local bakery industry, where product differentiation can be relatively difficult to sustain because competing firms may offer similar categories of products. Product variety, attractive design and presentation, and continuous innovation can therefore become important mechanisms for creating differentiation. At the same time, innovation must be accompanied by cost efficiency and consistent product quality. A firm that introduces innovative products but cannot maintain acceptable prices or quality may not necessarily achieve sustainable competitive advantage. Rehman et al. (2024) further demonstrate the strategic relationship between innovation and competitive advantage, particularly through the role of innovation capabilities in creating value and strengthening competitive positioning. Therefore, competitive advantage should be considered as a multidimensional outcome involving both efficiency-oriented and differentiation-oriented capabilities.

PT Rotte Ragam Rasa represents a relevant empirical context for examining this relationship. The company is a local bakery business in Pekanbaru, Indonesia, established in 2016, with 18 outlets and approximately 116 bread variants. The company emphasizes product variety, affordable pricing, product quality, and continuous product development as part of its competitive strategy. One example of its product innovation is the introduction of five-flavor bread, which was developed to provide consumers with greater product choice and product differentiation (Pra-Survey, 2026). These characteristics make PT Rotte Ragam Rasa a relevant case for examining whether product innovation functions as a strategic capability that contributes to competitive advantage within a local bakery context.

Nevertheless, the company's continuous product development also creates managerial challenges. The expansion of product variety does not automatically guarantee market success because consumers may respond differently to newly introduced products. Product design and presentation may also require further development to strengthen differentiation and perceived value. In addition, innovation requires an organizational process through which new ideas are generated, evaluated, developed, introduced, and subsequently assessed based on market acceptance. Research in the bakery sector shows that consumer expectations and market trends are important drivers of product innovation, reinforcing the need for bakery firms to maintain a consumer-oriented innovation process. Consequently, product innovation should be understood as a continuous capability involving product development, market responsiveness, and organizational learning rather than simply the introduction of additional product variants.

Although previous studies have established a positive relationship between innovation and competitive advantage, important research gaps remain. First, existing studies have examined product innovation in different contexts, including traditional culinary businesses, sustainable product innovation, international startups, and broader SME strategy. For example, Kuncoro and Suriani (2018) examined product innovation and sustainable competitive advantage in the rabbit meat business context, while Awwad et al. (2022) focused on sustainable green product innovation and its relationship with competitive advantage in manufacturing firms. Gómez-Prado et al. (2022) examined product innovation capability in relation to competitive advantage and international performance among startups in Peru. Meanwhile, research specifically examining bakery businesses has addressed innovation and sustainability or supply-chain-related issues rather than directly testing product innovation as a multidimensional antecedent of competitive advantage.

Second, relatively limited empirical attention has been given to local bakery companies in Indonesia, particularly firms operating through multiple outlets within a regional market. This context is important because local bakery firms face specific competitive conditions related to consumer taste, product freshness, price sensitivity, product appearance, and rapid imitation of product offerings. Third, previous studies have not sufficiently examined Product Innovation and Competitive Advantage simultaneously as higher-order constructs that integrate several dimensions. In the present study, Product Innovation is conceptualized through Product Variety, Product Design and Presentation, and Innovation Process, whereas Competitive Advantage is represented by Cost Leadership and Product Quality. This multidimensional conceptualization allows the study to move beyond examining innovation as a single construct and provides a more detailed explanation of how different innovation dimensions contribute to a firm's competitive capability.

The identified research gap leads to the central argument of this study: product innovation is expected to strengthen competitive advantage when it enables a firm to offer greater product variety, improve product design and presentation, and institutionalize a continuous innovation process, while competitive advantage is reflected in the firm's ability to maintain cost efficiency and consistent product quality. The integration of these dimensions provides an opportunity to examine product innovation not merely as an outcome of product development activities but as a strategic organizational capability consistent with the RBV and Dynamic Capabilities perspectives (Barney, 1991; Teece, 2007).

Based on the empirical phenomenon and research gaps identified above, this study aims to examine the influence of Product Innovation on Competitive Advantage at PT Rotte Ragam Rasa in Pekanbaru City, Indonesia. Specifically, the study examines the contribution of Product Variety, Product Design and Presentation, and Innovation Process to Product Innovation, as well as the contribution of Cost Leadership and Product Quality to Competitive Advantage. By applying a second-order SEM-PLS model, this study seeks to provide a more comprehensive understanding of the relationship between product innovation and competitive advantage in a local bakery context. The study is expected to contribute theoretically by strengthening the application of the RBV and Dynamic Capabilities perspectives to product innovation research and practically by providing insights for local bakery firms seeking to develop sustainable competitive advantage

through product differentiation, innovation processes, cost efficiency, and consistent product quality.

RESEARCH METHODS

This study employed a quantitative explanatory research design to examine the influence of Product Innovation on Competitive Advantage at PT Rotte Ragam Rasa in Pekanbaru City, Indonesia. A quantitative approach was selected because the study sought to empirically test the relationships among latent constructs based on responses obtained from respondents. The analysis utilized Structural Equation Modeling–Partial Least Squares (SEM-PLS) with a second-order construct model. SEM-PLS was considered appropriate because Product Innovation and Competitive Advantage were conceptualized as multidimensional latent constructs and the study focused on examining both the relationships among the constructs and the contribution of their respective dimensions (Hair et al., 2019; Sekaran & Bougie, 2016).

The research was conducted at PT Rotte Ragam Rasa, a local bakery company operating 18 outlets in Pekanbaru City. The research population consisted of 180 employees. However, because not all employees were directly involved in decision-making, product development, operational management, or activities related to product innovation, the study defined its target respondents as employees and managerial personnel who possessed relevant knowledge regarding the company's product innovation practices.

The respondents were selected using purposive sampling, based on the criterion that respondents had direct knowledge, experience, or responsibility related to product innovation and competitive strategy within the company. A total of 34 respondents participated in the study, consisting of 17 Outlet Leaders, 12 Branch Managers, 2 Regional Managers, 1 Marketing staff member, 1 Chief Executive Officer (CEO), and 1 Research and Development (R&D) staff member. The selection of these respondents was intended to obtain information from personnel who were considered knowledgeable about product development, product presentation, operational efficiency, pricing, and product quality (Sekaran & Bougie, 2016; Sugiyono, 2022).

The use of purposive sampling was particularly relevant to this study because the objective was not merely to obtain a general perception from all employees, but to capture assessments from organizational members who were directly familiar with the strategic and operational aspects of product innovation. Nevertheless, because the sample was limited to 34 respondents within a single company, the findings should be interpreted primarily within the organizational context of PT Rotte Ragam Rasa.

The study used primary and secondary data. Primary data were collected through a structured questionnaire administered to the selected respondents. All questionnaire items were measured using a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The questionnaire was designed to measure respondents' perceptions regarding the dimensions of Product Innovation and Competitive Advantage.

Secondary data were obtained from relevant scientific publications, previous empirical studies, research methodology references, and official company documentation. In addition to questionnaires, observation and documentation were used to provide contextual information concerning the company's product innovation practices, product development activities, product variety, product presentation, and competitive strategies. The combination of questionnaire responses, observation, and documentation was intended to strengthen the contextual interpretation of the quantitative findings (Sekaran & Bougie, 2016; Sugiyono, 2022).

The study conceptualized Product Innovation as a second-order construct consisting of three first-order dimensions: Product Variety, Product Design and Presentation, and Innovation Process. Product Variety represents the company's ability to provide diverse product alternatives in response to consumer preferences. Product Design and Presentation reflects the attractiveness and differentiation of product appearance and presentation. Innovation Process represents the company's systematic activities in developing, improving, and introducing products.

Meanwhile, Competitive Advantage was conceptualized as a second-order construct consisting of Cost Leadership and Product Quality. Cost Leadership represents the company's

ability to maintain competitive costs and offer products at attractive prices, whereas Product Quality reflects the company's ability to maintain consistent product quality and customer value.

The measurement indicators were adapted from previous studies to maintain conceptual consistency with established research on product innovation, competitive advantage, and strategic management (Awwad et al., 2022; Farida & Setiawan, 2022; Gómez-Prado et al., 2022; Kuncoro & Suriani, 2018; Rehman et al., 2024).

Table 1. Variable Measurement

Construct	Dimensions	Number of Indicators	Main References
Product Innovation	Product Variety; Product Design and Presentation; Innovation Process	9	Kuncoro and Suriani (2018); Gómez-Prado et al. (2022); Awwad et al. (2022)
Competitive Advantage	Cost Leadership; Product Quality	6	Farida and Setiawan (2022); Gómez-Prado et al. (2022)

Source: Processed by the authors based on previous studies.

The complete questionnaire items and the allocation of each indicator to its respective dimension should be presented in an appendix or an additional measurement table. This is important to enable readers to assess the operationalization and content validity of each construct.

The data were analyzed using SmartPLS 4. Because both Product Innovation and Competitive Advantage were specified as higher-order constructs, the analysis involved evaluation of both the measurement model (outer model) and the structural model (inner model).

First, the measurement model was evaluated to determine whether the indicators adequately measured their respective constructs. Convergent validity was assessed using indicator loadings and the Average Variance Extracted (AVE). Internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability. In addition, discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT), which is widely used to evaluate whether constructs are empirically distinguishable from one another (Henseler et al., 2015; Hair et al., 2019).

Second, the structural model was evaluated to examine the explanatory and predictive relationships among the constructs. The analysis included the coefficient of determination (R^2) to assess the proportion of variance in Competitive Advantage explained by Product Innovation, as well as effect size (f^2) to evaluate the substantive contribution of the predictor construct to the endogenous construct. Hypothesis testing was conducted using the bootstrapping procedure in SmartPLS 4. The significance of the structural relationship was determined based on the resulting path coefficient, t-statistic, and p-value (Hair et al., 2019).

Because Product Innovation and Competitive Advantage were specified as higher-order constructs, the analysis also assessed the contribution of their respective dimensions to the higher-order constructs. This hierarchical analysis allows the study to determine not only whether Product Innovation affects Competitive Advantage, but also which dimensions most strongly represent Product Innovation and Competitive Advantage within the context of PT Rotte Ragam Rasa.

RESULTS

Respondent Characteristics

A total of 34 valid questionnaires were collected from employees directly involved in operational and business development activities at PT Rotte Ragam Rasa. The respondents represented various organizational levels, including the Chief Executive Officer (CEO), Regional Managers, Branch Managers, Outlet Leaders, the Research and Development (R&D) team, and Marketing staff. All returned questionnaires met the research requirements and were subsequently analyzed using the PLS-SEM approach with SmartPLS software.



Table 2. Respondent Characteristics (n = 34)

Characteristics	Category	Frequency	Percentage (%)
Position	Outlet Leader	17	50.00
	Branch Manager	12	35.29
	Regional Manager	2	5.88
	CEO	1	2.94
	R&D Team	1	2.94
	Marketing	1	2.94
Gender	Male	17	50.00
	Female	17	50.00
Age	18–24 years	4	11.76
	25–34 years	28	82.35
	35–44 years	2	5.89
Educational Background	Senior High School	27	79.41
	Diploma	1	2.94
	Bachelor's Degree	6	17.65

Source: SmartPLS 4 Output, Processed Primary Data (2026).

The respondent profile indicates that Outlet Leaders constituted the largest proportion (50.00%), followed by Branch Managers (35.29%). This distribution reflects the operational structure of PT Rotte Ragam Rasa, where outlet-level management plays a dominant role in implementing business strategies and product innovation initiatives. Respondents occupying managerial and supervisory positions were considered appropriate informants because they are directly involved in decision-making and daily operational activities.

The gender distribution was perfectly balanced, with 17 male and 17 female respondents, suggesting that PT Rotte Ragam Rasa provides comparable opportunities for both genders to participate in operational management and innovation-related activities.

Regarding age, the majority of respondents (82.35%) were between 25 and 34 years old, indicating that most participants belonged to the productive workforce. This age composition suggests that respondents possess sufficient adaptability to organizational changes, product development initiatives, and innovation implementation within the company.

In terms of educational background, most respondents had completed Senior High School (79.41%), while 17.65% held bachelor's degrees and 2.94% possessed diploma qualifications. These findings indicate that PT Rotte Ragam Rasa combines employees with diverse educational backgrounds across operational and managerial positions, emphasizing competency and job suitability rather than educational level alone in supporting product innovation and sustaining competitive advantage.

Descriptive Statistics of Research Variables

Descriptive analysis was conducted to evaluate respondents' perceptions of the research constructs before assessing the measurement and structural models. The study measured two higher-order constructs: Product Innovation, consisting of Product Variety, Product Design and Presentation, and Innovation Process; and Competitive Advantage, consisting of Cost Leadership and Product Quality. Each construct was evaluated using a five-point Likert scale, where higher scores indicate stronger agreement with the statements representing each construct.

Overall, respondents expressed positive perceptions toward both Product Innovation and Competitive Advantage. The descriptive findings suggest that PT Rotte Ragam Rasa has consistently implemented product innovation through product diversification, improvements in product design and presentation, and continuous innovation processes. Likewise, respondents perceived the company to possess a favorable competitive position, particularly in terms of cost leadership and product quality, which support its ability to compete within the bakery industry in Pekanbaru. These descriptive results provide preliminary evidence that respondents recognized

the presence of innovation practices and competitive capabilities before the causal relationships among constructs were examined using PLS-SEM.

Measurement Model Assessment

The measurement model was evaluated to assess the validity and reliability of the constructs before testing the structural model. Following the PLS-SEM procedure, the evaluation comprised convergent validity, discriminant validity, and construct reliability. Because this study employed a Hierarchical Component Model (HCM), the assessment was conducted at both the first-order and second-order construct levels.

Convergent Validity

Convergent validity was assessed using outer loadings and Average Variance Extracted (AVE). According to (Hair et al., 2019), indicator loadings of 0.708 or higher are desirable, whereas indicators with loadings between 0.40 and 0.70 may be retained if the overall AVE and Composite Reliability remain acceptable.

Rather than presenting all 30 indicator loadings, Table 3 summarizes the first-order measurement results.

Table 3. Summary of Convergent Validity (First-Order Constructs)

Measurement Result	Finding
Indicators with loading ≥ 0.70	Majority of indicators
Indicators with loading 0.40–0.70	CL1_1 (0.521), CL2_2 (0.531), DP1_1 (0.549), IP1_1 (0.480), PV3_2 (0.688)
Highest outer loading	PQ2_2 (0.969)
Decision	All indicators were retained

Source: SmartPLS 4 Output, Processed Primary Data (2026).

Most measurement indicators achieved outer loading values above the recommended threshold of 0.70, indicating satisfactory indicator reliability. Five indicators (CL1_1, CL2_2, DP1_1, IP1_1, and PV3_2) exhibited loadings between 0.40 and 0.70; however, none fell below 0.40. Consistent with (Hair et al., 2019), these indicators were retained because removing them did not substantially improve the AVE or Composite Reliability values. Consequently, all first-order constructs satisfied the convergent validity requirement and were retained for further analysis.

At the higher-order level, all dimensions demonstrated strong relationships with their respective constructs, with outer loading values ranging from **0.906 to 0.964**, confirming that each dimension adequately represented its higher-order construct.

Table 4. Second-Order Outer Loadings

Higher-Order Construct	Dimension	Outer Loading
Product Innovation	Product Variety	0.906
	Innovation Process	0.921
	Product Design & Presentation	0.939
Competitive Advantage	Product Quality	0.962
	Cost Leadership	0.964

Source: SmartPLS 4 Output, Processed Primary Data (2026).

These results indicate that all dimensions strongly represented their corresponding higher-order constructs, confirming the adequacy of the hierarchical measurement model.

Average Variance Extracted (AVE)

The AVE values were examined to evaluate the amount of variance captured by each construct relative to measurement error. As recommended by (Hair et al., 2019), AVE values greater than 0.50 indicate adequate convergent validity.

Table 5. Average Variance Extracted (AVE)

Construct	AVE	Result
Product Variety	0.560	Valid
Product Design & Presentation	0.566	Valid
Innovation Process	0.561	Valid
Cost Leadership	0.548	Valid
Product Quality	0.844	Valid
Product Innovation (Second-Order)	0.850	Valid
Competitive Advantage (Second-Order)	0.927	Valid

Source: SmartPLS 4 Output, Processed Primary Data (2026).

All constructs achieved AVE values above the recommended threshold of 0.50, indicating that each construct explained more than half of the variance of its indicators. Among the first-order constructs, Product Quality demonstrated the highest AVE (0.844), whereas Cost Leadership recorded the lowest AVE (0.548); nevertheless, this value remained above the minimum acceptable level. At the higher-order level, Competitive Advantage (0.927) and Product Innovation (0.850) also exhibited excellent convergent validity, confirming that their dimensions adequately represented the latent constructs.

Discriminant Validity

Discriminant validity was evaluated using the Heterotrait–Monotrait Ratio (HTMT). Following (Hair et al., 2019), HTMT values below 0.90 indicate satisfactory discriminant validity. Because several first-order construct pairs slightly exceeded the recommended threshold, an additional evaluation using the HTMT confidence interval was performed based on the recommendation of (Henseler et al., 2015).

Table 6. Summary of HTMT Results

Relationship	HTMT	Interpretation
CL–DP	0.909	Further evaluation
DP–IP	0.920	Further evaluation
DP–PV	0.934	Further evaluation
Other construct pairs	0.619–0.898	Acceptable
Product Innovation ↔ Competitive Advantage	0.864	Valid

Source: SmartPLS 4 Output, Processed Primary Data (2026).

Although three first-order construct pairs marginally exceeded the recommended HTMT threshold, the corresponding HTMT confidence intervals did not include the value of 1.00. Therefore, the constructs remained empirically distinct, supporting satisfactory discriminant validity. Furthermore, the HTMT value between the two higher-order constructs (0.864) also satisfied the recommended criterion, indicating that Product Innovation and Competitive Advantage measured different conceptual domains.

Construct Reliability

Internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability. Both coefficients exceeded the recommended threshold of 0.70 for all first-order and second-order constructs, indicating excellent reliability and measurement consistency across the research model.

Table 7. Summary of Construct Reliability

Criterion	Result
Cronbach's Alpha	All constructs > 0.70
Composite Reliability	All constructs > 0.70
Overall assessment	Reliable

Source: SmartPLS 4 Output, Processed Primary Data (2026).

Overall, the results of the measurement model assessment demonstrate that all constructs satisfy the requirements for convergent validity, discriminant validity, and internal consistency reliability. Accordingly, the measurement model was considered adequate and suitable for subsequent evaluation of the structural model and hypothesis testing.

Structural Model Assessment`

After establishing the adequacy of the measurement model, the structural model was evaluated to examine the predictive capability of the proposed research model. The assessment comprised the coefficient of determination (R^2) and effect size (f^2), which together indicate the explanatory power and practical contribution of the structural relationship between Product Innovation and Competitive Advantage.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) was used to evaluate the proportion of variance in the endogenous construct explained by the exogenous construct. Following (Hair et al., 2019), R^2 values of 0.75, 0.50, and 0.25 indicate substantial, moderate, and weak explanatory power, respectively.

Table 8. Coefficient of Determination (R^2)

Endogenous Construct	R^2	Adjusted R^2	Interpretation
Competitive Advantage	0.637	0.626	Moderate

Source: SmartPLS 4 Output, Processed Primary Data (2026).

The results indicate that Product Innovation explains 63.7% of the variance in Competitive Advantage, while the remaining 36.3% is attributable to variables outside the proposed research model. The adjusted R^2 value (0.626) further confirms that the model maintains satisfactory explanatory power after accounting for model complexity. Based on the guideline proposed by (Hair et al., 2019), the obtained R^2 value falls within the moderate explanatory category, indicating that Product Innovation provides substantial predictive capability in explaining the competitive advantage of PT Rotte Ragam Rasa.

Overall, these findings suggest that the structural model possesses adequate predictive accuracy and is appropriate for hypothesis testing.

Effect Size (f^2)

The effect size (f^2) was assessed to determine the practical contribution of Product Innovation to the endogenous construct. According to (Hair et al., 2019), effect sizes of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively.

Table 9. Effect Size (f^2)

Structural Relationship	f^2	Interpretation
Product Innovation → Competitive Advantage	1.754	Large Effect

Source: SmartPLS 4 Output, Processed Primary Data (2026).

The structural relationship between Product Innovation and Competitive Advantage produced an f^2 value of 1.754, substantially exceeding the threshold for a large effect. This finding indicates that Product Innovation makes a considerable practical contribution to explaining Competitive Advantage within the proposed research model.

The magnitude of the effect demonstrates that improvements in product innovation substantially strengthen the company's competitive advantage. Specifically, continuous development of product variety, enhancement of product design and presentation, and systematic innovation processes collectively contribute to improving PT Rotte Ragam Rasa's competitiveness

in the bakery industry. Consequently, Product Innovation can be regarded as the principal driver of Competitive Advantage in the present study.

Taken together, the R^2 and f^2 results indicate that the structural model exhibits satisfactory predictive performance. The moderate explanatory power, combined with the very large effect size, supports the suitability of the proposed model for evaluating the hypothesized relationships between Product Innovation and Competitive Advantage.

Hypothesis Testing

The structural relationships proposed in the research model were evaluated using the bootstrapping procedure in SmartPLS 4. Hypothesis testing was based on the path coefficient (β), t-statistic, and p-value. Following (Hair et al., 2019), a structural relationship is considered statistically significant when the t-statistic exceeds 1.96 and the p-value is below 0.05.

Table 10. Hypothesis Testing Results

Hypothesis	Structural Relationship	β	t-value	p-value	Decision
H1	Product Innovation → Competitive Advantage	0.798	6.063	0.000	Supported

Source: SmartPLS 4 Output, Processed Primary Data (2026).

The results demonstrate that Product Innovation has a positive and statistically significant effect on Competitive Advantage ($\beta = 0.798$, $t = 6.063$, $p < 0.001$). The positive path coefficient indicates that higher levels of product innovation are associated with stronger competitive advantage at PT Rotte Ragam Rasa. Furthermore, the relatively high standardized coefficient suggests that Product Innovation is a substantial determinant of Competitive Advantage within the proposed structural model. Therefore, Hypothesis 1 is supported.

The stability of the estimated relationship is also supported by the proximity between the original sample coefficient (0.798) and the bootstrap sample mean (0.757), together with a relatively small standard deviation (0.132). These findings indicate that the estimated structural relationship is consistent across bootstrap resamples, reinforcing the robustness of the empirical results.

Contribution of Dimensions to Higher-Order Constructs

Because Product Innovation and Competitive Advantage were modelled as second-order reflective constructs, the contribution of each first-order dimension was assessed through the higher-order path coefficients. Higher coefficients indicate stronger contributions of the dimensions in representing their respective higher-order constructs.

Table 11. Contribution of First-Order Dimensions to Higher-Order Constructs

Higher-Order Construct	Dimension	β
Product Innovation	Product Variety	0.906
Product Innovation	Product Design and Presentation	0.939
Product Innovation	Innovation Process	0.921
Competitive Advantage	Cost Leadership	0.964
Competitive Advantage	Product Quality	0.962

Source: SmartPLS 4 Output, Processed Primary Data (2026).

All first-order dimensions exhibited strong positive loadings ($\beta > 0.90$), confirming that each dimension substantially contributed to its respective higher-order construct. These findings indicate that the reflective-reflective hierarchical component model adequately represents both Product Innovation and Competitive Advantage.

Among the dimensions of Product Innovation, Product Design and Presentation demonstrated the strongest contribution ($\beta = 0.939$), followed by Innovation Process ($\beta = 0.921$) and Product Variety ($\beta = 0.906$). This result suggests that improvements in product appearance,

presentation, and design constitute the most influential aspect of product innovation at PT Rotte Ragam Rasa. Continuous innovation activities and the availability of diverse product variants also make substantial contributions to strengthening the company's innovation capability.

For the Competitive Advantage construct, Cost Leadership ($\beta = 0.964$) and Product Quality ($\beta = 0.962$) both showed exceptionally high contributions. The slightly higher coefficient for Cost Leadership indicates that operational efficiency and effective cost management play a marginally greater role in defining Competitive Advantage, although maintaining consistent product quality remains nearly equally important in enhancing the firm's competitive position.

Overall, the results confirm that every first-order dimension contributes positively and substantially to its corresponding higher-order construct. This evidence supports the validity of the hierarchical measurement model and demonstrates that Product Innovation and Competitive Advantage are appropriately represented by their respective dimensions in the structural model.

DISCUSSION

The findings demonstrate that Product Innovation has a positive and statistically significant effect on Competitive Advantage at PT Rotte Ragam Rasa ($\beta = 0.798$; $p < 0.001$). The model also explains 63.7% of the variance in Competitive Advantage ($R^2 = 0.637$), indicating that Product Innovation represents an important predictor of competitive advantage within the context of the company. This finding suggests that the ability to continuously develop, improve, and differentiate products can strengthen a firm's competitive position. In the bakery industry, where consumer preferences can change rapidly and products are relatively easy to imitate, continuous innovation can provide firms with opportunities to create differentiated customer value and maintain market relevance.

This finding is consistent with the argument of Kuncoro and Suriani (2018) that product innovation can contribute to sustainable competitive advantage by enabling firms to develop differentiated offerings and respond to market changes. Similarly, Gómez-Prado et al. (2022) demonstrate that product innovation, together with market intelligence and pricing capability, can contribute to competitive advantage and firm performance. The present finding extends these arguments to a local bakery context in Indonesia, where product innovation is examined as a higher-order construct rather than as a single dimension. The positive and significant path coefficient therefore provides empirical support for the proposition that innovation capability is an important strategic resource for strengthening competitive advantage.

From the perspective of the Resource-Based View (RBV), the finding can be understood through the role of product innovation as an organizational capability. The RBV proposes that sustained competitive advantage can emerge when firms possess and effectively utilize resources and capabilities that are valuable, rare, difficult to imitate, and appropriately organized. Product innovation can fulfill this strategic role when the firm is able to continuously combine knowledge, resources, processes, and market insights to develop products that generate superior customer value. In this respect, the competitive value of innovation does not necessarily arise from a single new product but from the organizational capability to repeatedly develop and improve products over time. This interpretation is consistent with the broader strategic innovation literature emphasizing the importance of organizational capabilities in responding to changing market conditions (Kuncoro & Suriani, 2018; Gómez-Prado et al., 2022).

The results further demonstrate that Product Innovation is strongly represented by three dimensions: Product Variety, Product Design and Presentation, and Innovation Process. The higher-order coefficients are 0.906, 0.939, and 0.921, respectively. The strongest contribution is provided by Product Design and Presentation ($\beta = 0.939$), followed by Innovation Process ($\beta = 0.921$) and Product Variety ($\beta = 0.906$). The relatively high and close coefficients indicate that the three dimensions collectively constitute the company's product innovation capability rather than one dimension functioning independently.

The relatively strongest contribution of Product Design and Presentation is particularly relevant to bakery products, in which visual characteristics, packaging, presentation, and product

appearance can form an important part of the product value perceived by customers. Product innovation therefore extends beyond the development of new product formulas or flavors. The way a product is designed and presented can also become an instrument of differentiation. This interpretation is consistent with the broader innovation perspective in the food sector, where product development and changes in product characteristics can be used to respond to evolving consumer preferences and market expectations (Awwad et al., 2022; Królak et al., 2022).

The second dimension, Innovation Process, also demonstrates a strong contribution to Product Innovation ($\beta = 0.921$). This result indicates that innovation should be understood not merely as the final output of a new product but also as the organizational process supporting its development. A systematic innovation process enables firms to identify opportunities, develop product concepts, evaluate market responses, and continuously improve existing offerings. Awwad et al. (2022) similarly emphasize the importance of innovation processes and integration capabilities in developing sustainable product innovation and competitive advantage. Consequently, PT Rotte Ragam Rasa's ability to institutionalize innovation activities may be as important as the number of new products introduced.

Product Variety also demonstrates a substantial contribution to Product Innovation ($\beta = 0.906$). This finding indicates that product diversification forms an important component of the company's innovation capability. In a bakery business, offering different product alternatives can allow the company to address heterogeneous consumer preferences and reduce dependence on a limited number of products. However, product variety should not be interpreted simply as increasing the number of products. Greater variety must be accompanied by appropriate product development, quality control, and market evaluation to ensure that additional products create value rather than merely increase operational complexity. This consideration is consistent with the view that innovation should ultimately generate customer value and market differentiation (Kuncoro & Suriani, 2018).

The higher-order results for Competitive Advantage also provide an important finding. Competitive Advantage is represented by Cost Leadership and Product Quality, with coefficients of 0.964 and 0.962, respectively. The nearly identical coefficients indicate that both dimensions make substantial contributions to the construct. This result suggests that the competitive position of PT Rotte Ragam Rasa is not adequately explained by low-cost positioning alone. Instead, competitive advantage is represented by the company's ability to maintain cost efficiency while simultaneously providing consistent product quality.

This finding is consistent with Farida and Setiawan (2022), who emphasize the interaction between business strategy, innovation, and competitive advantage. In the context of the food industry, cost efficiency can support competitive pricing, whereas product quality contributes to the value delivered to customers. Accordingly, a competitive strategy based exclusively on price may be difficult to sustain if it compromises quality, while high quality without adequate cost management may reduce price competitiveness. The present findings therefore indicate the importance of balancing these two dimensions within the company's competitive strategy.

The relationship between Product Innovation and Competitive Advantage also has important managerial implications. Because Product Design and Presentation has the highest contribution to Product Innovation, the company should continue to develop attractive product presentation, packaging, and product differentiation while ensuring that such innovations remain aligned with customer preferences. At the same time, the substantial contribution of Innovation Process indicates the importance of establishing systematic procedures for generating, testing, evaluating, and improving new products. Product Variety should likewise be managed strategically so that diversification remains consistent with market demand and the company's operational capacity.

Furthermore, innovation initiatives should be integrated with cost management and product quality assurance. The high contribution of Cost Leadership and Product Quality to Competitive Advantage suggests that product innovation should not be pursued independently from operational efficiency and quality management. New products that increase variety or improve presentation should ultimately generate customer value without creating excessive costs or

compromising product consistency. This integrated approach is particularly important for local bakery companies operating in highly competitive markets.

Overall, the findings provide empirical support for viewing Product Innovation as a multidimensional strategic capability that contributes significantly to Competitive Advantage. The contribution of this study lies not only in confirming the positive relationship between the two constructs but also in demonstrating their higher-order structure in the context of a local Indonesian bakery company. The findings complement previous studies conducted in broader business and innovation contexts (Awwad et al., 2022; Gómez-Prado et al., 2022; Kuncoro & Suriani, 2018) by providing evidence from PT Rotte Ragam Rasa and highlighting the simultaneous importance of product variety, product design and presentation, innovation processes, cost leadership, and product quality.

CONCLUSION

This study concludes that Product Innovation has a positive and statistically significant effect on Competitive Advantage at PT Rotte Ragam Rasa in Pekanbaru City ($\beta = 0.798$; $p < 0.001$). Product Innovation explains 63.7% of the variance in Competitive Advantage, demonstrating its substantial role as a predictor of competitive advantage within the research context.

The higher-order analysis further confirms that Product Innovation is represented by Product Variety, Product Design and Presentation, and Innovation Process, with Product Design and Presentation showing the highest contribution. Meanwhile, Competitive Advantage is represented by Cost Leadership and Product Quality, both of which demonstrate similarly strong contributions. These findings indicate that competitive advantage in the company is associated not only with the development and diversification of products but also with the company's ability to manage innovation processes, maintain product quality, and achieve cost efficiency.

Theoretically, this study contributes to the Resource-Based View by providing empirical evidence that Product Innovation can function as a strategic organizational capability that strengthens Competitive Advantage. The study also contributes to the existing literature by conceptualizing both Product Innovation and Competitive Advantage as higher-order constructs within the context of an Indonesian local bakery company.

From a managerial perspective, PT Rotte Ragam Rasa should strengthen its innovation capability through systematic product development, attractive product design and presentation, and strategic product diversification. These initiatives should be supported by an effective innovation process, cost efficiency, and consistent product quality. Such integration can help the company maximize the value generated by product innovation and strengthen its competitive position.

Limitations and Future Research

This study has several limitations that should be considered when interpreting its findings. First, the research was conducted at only one bakery company, PT Rotte Ragam Rasa, and therefore the findings may not be directly generalizable to other bakery companies, food and beverage firms, or industries with different competitive characteristics. Future studies should examine multiple companies across different locations and organizational contexts to improve the external validity of the findings.

Second, the study employed a relatively small sample of 34 respondents. Although the respondents were purposively selected based on their involvement and knowledge of product innovation activities, the limited sample size may restrict the representativeness of the findings. Future research could employ a larger sample and include respondents from different organizational levels and functional areas to obtain broader perspectives on innovation and competitive advantage.

Third, the research model focuses primarily on the relationship between Product Innovation and Competitive Advantage. Although the model explains 63.7% of the variance in Competitive Advantage, the remaining 36.3% indicates that other factors may also contribute to competitive

advantage but were not included in the present model. Future research could incorporate variables such as market orientation, organizational learning capability, digital innovation capability, customer satisfaction, brand orientation, or marketing capability to provide a more comprehensive explanation of competitive advantage.

Fourth, the cross-sectional design limits the ability to observe how product innovation and competitive advantage develop over time. Product innovation is inherently a continuous process, and its effects on competitive advantage may emerge over a longer period. Future studies could therefore employ longitudinal designs to examine whether continuous innovation produces sustained improvements in competitive advantage.

Finally, future research could investigate whether the relationship between Product Innovation and Competitive Advantage is influenced by market conditions, customer perceptions, or organizational capabilities. Incorporating customer-level and market-level data would also provide a more comprehensive perspective than relying primarily on internal organizational respondents.

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