Implementation of Product and Process Innovation to Improve Operational Performance

Bambang Isdyanto*, Zainal Abidin, Ike Purnamasari

Master of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia
*Corresponding author. E-mail: bambangisdyanto22@gmail.com

Abstract. This study aims to identify and understand how product innovation is implemented to enhance the operational performance of companies, as well as to explore how process innovation supports the improvement of operational performance. The research objects consist of three companies namely PT. Pribumi Alam Sejati, CV. Kahfi Putra Utama, and PT. Adhitama Sejati Beton — with eight research informants representing positions such as directors, laboratory heads, operational managers, and plant heads. The findings reveal that product innovation in these three ready-mix companies in the Tenggarong area is implemented through the development of new concrete formulas and the adjustment of material mix designs according to construction project requirements. Meanwhile, CV. Kahfi Putra Utama emphasized innovation in high-strength concrete mix design for high-rise buildings, focusing on material efficiency and compressive strength improvement. These product innovations are not only oriented toward creating new products but also toward improving quality consistency through regular laboratory testing and quality control procedures. Furthermore, the results indicate that process innovation is carried out through the transformation of work systems based on automation and digitalization across all stages of concrete production. All three companies employ batching plant control systems to automatically regulate material proportions with high precision, thereby minimizing human error and accelerating production time.

Keywords: Product Innovation; Process Innovation; Operational Performance

1 Introduction

Infrastructure development in East Kalimantan has shown remarkable growth in recent years. Tenggarong, as one of the main regional centers in Kutai Kartanegara Regency, has benefited from various strategic infrastructure projects such as the construction of roads, bridges, government buildings, residential areas, and public facilities. This dynamic growth has consequently increased the demand for ready-mix concrete, a critical construction material that significantly determines project success. The ready-mix industry in Tenggarong plays a vital role in supporting these infrastructure projects. Concrete is a time-sensitive and quality-dependent product, requiring high efficiency and strict quality control throughout its production and delivery processes. When supply is delayed or fails to meet technical specifications, it directly affects project schedules, increases material waste, and reduces client satisfaction.

Based on internal company data, six major operational problems frequently occur in the ready-mix sector in Tenggarong, including material supply delays (25%), high operational overheads (20%), extended production time (18%), product damage (15%), low employee competence (12%), and process innovation failures (10%). These interconnected issues indicate weaknesses in operational management systems that hinder efficiency and product quality.

Such challenges not only limit operational performance but also reduce the competitive strength of companies within an increasingly demanding market environment. In this context, firms that fail to ensure production reliability and timely delivery risk losing credibility and client trust. Prior studies have emphasized the crucial role of innovation in improving operational efficiency and competitiveness. Numerous previous studies have highlighted the importance of innovation in supporting improvements in organizational efficiency and competitiveness. Research conducted by Muhajirin and Kamaludin [1] highlighted that product innovation significantly supports competitive advantage and operational performance. Then, Hanifawati and Listyaningrum [2] found that product innovation enhances market adaptability and long-term performance. Research by Hasna [3] concluded that both product and process innovation have a significant impact on MSME performance. Similarly, Roykhan et al [4] identified product and process innovation as primary drivers of operational performance, while Ahmad and Fatmawati [5] demonstrated that these two innovation dimensions positively influence competitiveness and overall performance.

Collectively, these findings suggest that product and process innovations are interdependent components that jointly drive operational excellence. Product innovation delivers added value through differentiation and customer-oriented design, while process innovation ensures cost efficiency, speed, and consistent quality.

Despite the extensive literature emphasizing the positive role of product and process innovation in improving organizational performance, most empirical studies have focused on large-scale manufacturing

© The Author(s) 2026
W. Sari et al. (eds.), *Proceedings of the 5th Mulawarman International Conference on Economics and Business (MICEB 2025)*, Advances in Economics, Business and Management Research 406,
https://doi.org/10.2991/978-94-6239-815-3_20

industries, technology-based firms, or small and medium enterprises (SMEs) in general contexts. Limited attention has been given to construction-related manufacturing sectors, particularly the ready-mix concrete industry, which operates under strict time constraints, high quality sensitivity, and project-based demand uncertainty.

Moreover, prior studies often examine innovation outcomes quantitatively, emphasizing performance indicators without sufficiently explaining how innovation is operationalized at the process level. As a result, the micro-level mechanisms through which innovation practices are implemented in daily operations remain underexplored, especially in regional industrial contexts.

The ready-mix concrete industry in Tenggarong, East Kalimantan, presents a unique empirical setting. Companies in this region face operational challenges such as material supply delays, fluctuating project specifications, limited skilled labor, and increasing pressure for efficiency due to rapid infrastructure development. These conditions require firms not only to innovate their products but also to continuously adapt their production processes to ensure consistency, speed, and cost control.

Therefore, this study addresses the existing research gap by providing a qualitative, process-level analysis of how product and process innovation are implemented in ready-mix concrete companies operating in a regional Indonesian context. Unlike prior studies that primarily confirm the impact of innovation on performance, this research offers an in-depth explanation of how and why process innovation becomes more dominant in driving operational performance. By focusing on real operational practices, this study contributes to innovation management literature and provides practical insights for construction-related manufacturing industries seeking sustainable competitiveness.

2 Literature Review

2.1 Innovation

Innovation is widely recognized as a key driver of organizational performance and competitiveness. It refers to the process of generating and applying new ideas to improve products, services, or processes, thereby creating value for organizations and stakeholders. According to Christensen and Raynor [6], innovation is the process of developing new products or services that significantly replace or improve existing solutions. Then, Munshi et al. [7] emphasize that innovation serves as a fundamental instrument for organizations to survive in rapidly changing environments, by developing new ways of working and creating value. Similarly, Schilling [8] defines innovation as the practical application of an idea or invention into new or improved products and processes that deliver benefits. It encompasses not only technological discovery but also managerial and organizational practices that enhance performance. While, Tidd and Bessant [9] further describe innovation as the process of leveraging knowledge to generate value through new solutions to existing needs, encompassing both technical and social dimensions within organizations.

2.2 Product Innovation

Product innovation refers to the creation and introduction of new or significantly improved goods or services that deliver added value to customers and strengthen the firm's competitive position. According to Kotler and Keller [10], product innovation refers to the development and market introduction of a new, redesigned, or substantially improved good or service. Then, Drucker [11], innovation is the specific instrument of entrepreneurship. It is the act that endows resources with a new capacity to create wealth. Innovation, indeed, creates a resource. There is no such thing as a 'resource' until man finds a use for something in nature and thus endows it with economic value. Meanwhile, according to Tidd and Bessant [9], product innovation involves changes in the things (products/services) which an organization offers to the market. And then, Trott [12], product innovation is the result of bringing a new product to the market, which can be a completely new or significantly improved product in terms of its features or intended uses.

2.3 Process Innovation

According to Schilling [8], process innovation emphasizes significant improvements in technology, design, or performance of production systems. Furthermore, according to Afuah [13], product innovation is the result of a creation process that reflects a unique combination of technological knowledge and market needs, which will ultimately result in a competitive advantage. Then, Buchori and Djaslim [14], describe process innovation as part of a company's differentiation strategy to create added value and extend the product life cycle. Similarly, Tidd and Bessant [9], state that process innovation includes introducing new production methods or improving existing

characteristics such as performance, durability, or convenience to generate new value for customers. Meanwhile, Utami [15] , state that process innovation includes introducing new production methods or improving existing characteristics such as performance, durability, or convenience to generate new value for customers.

2.4 Operational Performance

Operational performance refers to the effectiveness of an organization's internal processes in achieving efficiency, quality, flexibility, and timely delivery. According to, Krajewski et al [16], state that operational performance encompasses key metrics such as productivity, quality, cycle time, and process reliability. Then, according to Mahadevan [17], emphasizes that operational performance depends on a rm's ability to integrate technology, human resources, and work systems to create value and process efficiency. Furthermore, Stevenson [18], operational performance refers to the outcomes of a company's processes in terms of cost, quality, flexibility, and delivery reliability. Meanwhile, Heizer et al [19], operational performance is the company's ability to manage operational activities to produce quality products or services, on time, and efficiently in the use of resources. And then, Robbins and Coulter [20], operational performance is the result of the process of planning, organizing, implementing and controlling operational activities in order to achieve work targets efficiently and effectively.

3 Research Method

3.1 Research Design

This study employs a qualitative research design using a case study strategy to explore the implementation of product and process innovation in the ready-mix concrete industry in Tenggarong, East Kalimantan. The qualitative approach is considered appropriate for understanding complex and contextual phenomena in their natural settings, where meaning is derived from participants' experiences and interpretations. As stated by Cresswell and Creswell [21], qualitative research seeks to explore and understand meanings constructed by individuals or groups regarding social or human problems, emphasizing depth rather than generalization.

The research adopts an inductive logic, meaning that theoretical understanding is developed from empirical observations rather than from predefined hypotheses. Data obtained from the field are analyzed to identify recurring patterns, categories, and themes that reveal how innovation practices are formed and influence operational performance. This inductive reasoning aligns with Cresswell and Creswell [21], assertion that qualitative inquiry builds concepts and interpretations "from the ground up" through participants' lived experiences. The case study strategy allows an in-depth examination of specific, context-bound cases that possess unique operational and innovative characteristics. In this research, the cases consist of three ready-mix companies located in Tenggarong namely PT. Adhitama Sejati Beton, PT. Pribumi Alam Sejati, and CV. Kahfi Putra Utama. A descriptive qualitative orientation is applied to provide a systematic, factual, and comprehensive account of how product and process innovation are implemented and contribute to operational improvement. Rather than testing hypotheses or seeking statistical generalization, this study aims to provide thick descriptions of real-world innovation practices within the ready-mix concrete industry. The insights derived from this analysis are expected to contribute to both theoretical enrichment and practical understanding of innovation management in the construction sector. Based on the synthesis of theoretical and empirical evidence, the conceptual framework of this study is illustrated in Figure 2, which outlines the relationship between product innovation, process innovation, and operational performance in the ready-mix industry of Tenggarong. The research flowchart is presented in Fig. 1 below.

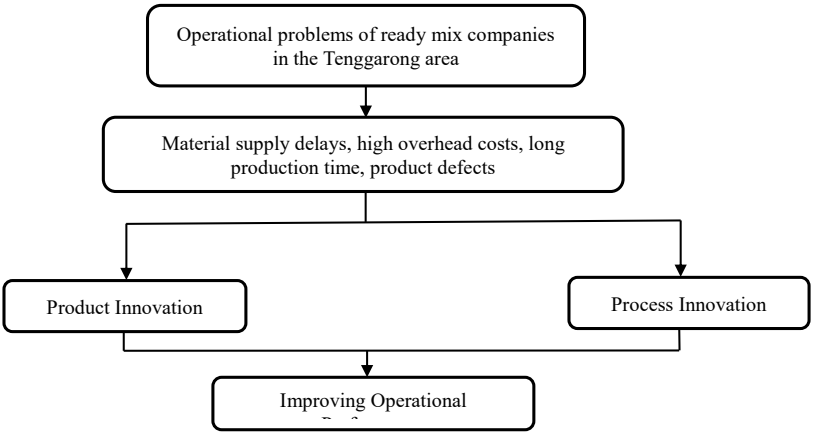


Fig. 1 Research Flowchart

3.2 Research Focus

The primary focus of this research is to explore in depth the implementation of product innovation and process innovation carried out by ready-mix concrete companies in Tenggarong, as well as to understand how these innovation practices contribute to improving the companies' operational performance. Rather than measuring the statistical relationship or magnitude of influence between innovation and performance, this study seeks to interpret the underlying meanings, experiences, and strategies embedded in real innovation practices. Specifically, the research focuses on three interrelated dimensions. First, product innovation is understood as the renewal or enhancement of concrete products in terms of technical specifications, durability, and ease of application, aimed at better meeting construction project requirements. Second, process innovation refers to the improvement of internal systems and workflows, including production efficiency, material management, distribution logistics, and the development of more responsive and integrated quality control mechanisms. Third, operational performance represents the company's ability to execute its production and delivery processes efficiently, on time, cost-effectively, and with consistent quality that aligns with client expectations. By examining these dimensions, this study aims to construct a comprehensive understanding of how innovation initiatives are designed, implemented, and sustained within the operational contexts of ready-mix companies in Tenggarong.

3.3 Research Informants

Informants in this study were selected using a purposive sampling technique, based on their relevance to the research focus and their ability to provide in-depth information. This approach was chosen because qualitative research emphasizes information richness over participant numbers.

The study involved three ready-mix concrete companies operating in Tenggarong, East Kalimantan namely PT. Adhitama Sejati Beton, PT. Pribumi Alam Sejati, and CV. Kahfi Putra Utama which are each selected for their active implementation of product and process innovations.

Data were obtained from key informants representing strategic, technical, and operational levels within these companies, including Directors, Operational Managers, Quality Control (QC) Managers, and Plant Managers. Their diverse roles provided complementary perspectives on how innovation initiatives were designed, executed, and monitored. Informants were chosen based on the following criteria: (1) holding strategic or technical roles related to operations or product development, (2) having at least two years of relevant experience, and, (3) actively participating in product or process innovation activities.

This selection ensured the collection of comprehensive and credible data reflecting the real implementation of innovation practices and their impact on operational performance in the ready-mix concrete industry of Tenggarong.

3.4 Data Analysis Method

Data were analyzed using a qualitative descriptive approach following the interactive model of Miles et al. [22], which includes data collection, data reduction, data display, and conclusion drawing. Information was obtained through in-depth interviews, field observations, and document analysis. The collected data were organized and analyzed using NVivo 15 is a Computer-Assisted Qualitative Data Analysis Software (CAQDAS), to manage coding, theme identification, and visualization.

During data reduction, only relevant information related to product innovation, process innovation, and operational performance was selected and categorized. The coding process consisted of open, axial, and selective coding to identify concepts, establish connections, and determine core themes. Findings were presented in narrative and visual formats such as matrices, charts, and conceptual maps generated by NVivo to highlight relationships between themes. Finally, conclusion drawing and verification were conducted by interpreting the patterns that emerged to understand how product and process innovation influence operational performance. Credibility was ensured through data triangulation across interviews, observations, and company documents.

3.5 Data Trustworthiness

To ensure the validity of qualitative findings, this study applied the trustworthiness criteria proposed by Lincoln and Guba [23], which consist of credibility, transferability, dependability, and confirmability.

Credibility was established through data triangulation, comparing findings across multiple informants, methods (interviews, observations, documents), and time periods. The researcher also conducted member checking, confirming interpretations with informants to ensure alignment between their intended meaning and the researcher's analysis. Prolonged engagement in the field was carried out to build trust and obtain a deeper contextual understanding. Transferability was achieved by providing a thick contextual description of the research setting, company profiles, and operational conditions, enabling readers to assess the applicability of the findings to other contexts. Dependability was ensured by maintaining a systematic audit trail that recorded all research stages from data collection to analysis supported by NVivo 15, which documented coding processes, category formation, and thematic relationships transparently. Confirmability was strengthened through the integration of empirical evidence from interviews, documents, observations, and visual materials. All interpretations were grounded in verifiable data, while researcher reflexivity was practiced to minimize subjective bias.

By integrating these strategies, this study ensures methodological rigor, empirical accuracy, and ethical integrity, providing credible and reliable insights into the implementation of product and process innovation in enhancing operational performance among ready-mix concrete companies in Tenggarong.

4 Results and Discussion

4.1 Results

The qualitative analysis using NVivo 15 generated three main themes: product innovation, process innovation, and operational performance. These themes were derived through iterative stages of open coding, axial coding, and selective coding, supported by visualization tools such as word frequency, hierarchy charts, mind maps, and cluster analysis. Eight key informants from three ready-mix concrete companies, namely PT. Adhitama Sejati Beton, PT. Pribumi Alam Sejati, and CV. Kahfi Putra Utama provided insights through in-depth interviews, field observations, and document reviews. NVivo 15 facilitated systematic coding, revealing that process innovation emerged as the most dominant theme, followed by product innovation and operational outcomes. Before proceeding to the open code, axial code, and selective code stages, Therefore, word frequency analysis was conducted using word cloud visualization, as shown in Fig. 2.

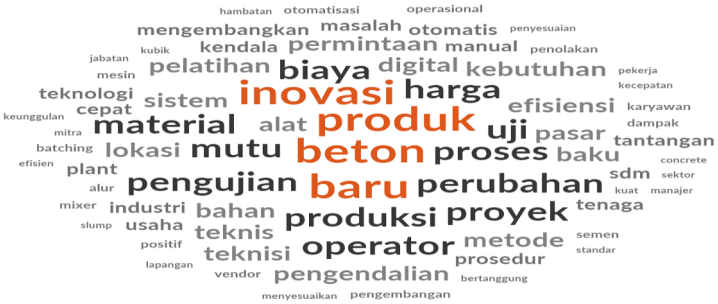


Fig. 2 Word Frequency Visualization Results Using Word Cloud
Source: Processed Results of NVIVO 15, Processed in 2025.

As shown in Figure 2 above, the word cloud visualization reveals the most dominant words in the overall interview and observation data. The words "innovation," "product," "concrete," and "new" appear most prominently with their large font size, indicating that these topics were the core of the informants' discussions. The dominance of the word "innovation" indicates the company's primary focus on efforts to update and develop concrete products that are more adaptive to market needs and project requirements. Meanwhile, the emergence of the words "product" and "concrete" reinforces the research context, which focuses on the concrete manufacturing industry, particularly in aspects of quality testing, raw materials, and the application of new technologies. In addition to these terms, the words "quality," "process," "material," "testing," and "production" also appear with high frequency. This illustrates that innovation in concrete companies is not only related to product design but also touches on the dimensions of the production process and quality control. The emergence of the words "efficiency," "cost," and "digital" indicates the company's orientation toward optimizing resources and utilizing digital technology to improve operational performance.

1. Product Innovation

Product innovation was found to involve the development and adaptation of concrete formulations to meet specific project requirements. For example, PT. Adhitama Sejati Beton introduced fast-setting concrete that allows road reopening within six hours, verified through lab-based compressive strength testing.

"We tested fast-setting concrete so the road could reopen within six hours." (QC Manager, PT. Adhitama Sejati Beton, interview 2 Aug 2025).

This finding indicates that product innovation in ready-mix companies emphasizes time efficiency and adaptability aligning with Tidd and Bessant [9], which argue that innovation in product design supports competitive advantage through responsiveness to project needs. This can be seen also on the Fig. 3 below.

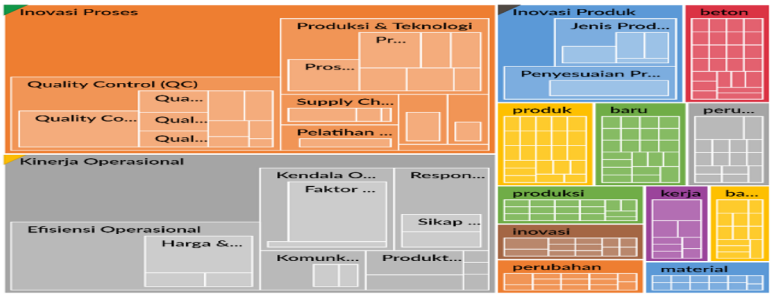


Fig. 3 Coding Reference Visualization Results Using Hierarchy Chart
Source: Processed Results of NVIVO 15, Processed in 2025.

As shown in Figure 3, the Hierarchy Chart visualization provides an overview of the proportion of references or citations coded in each category of open coding results using NVivo 15. This visualization displays three main groups that are the focus of the research, namely process innovation, product innovation, and operational performance. From the size and proportion of the display in the diagram, it can be seen that process innovation has the largest area, which means this category is the theme with the highest frequency of citations from interviews

and observations. This indicates that most informants emphasize the importance of renewal and efficiency in aspects of the production process more than other dimensions.

2. Process Innovation

Process innovation emerged as the most dominant theme, focusing on automation, digital batching systems, and integrated quality control. As expressed by a plant manager: "The batching process is now automated—results are more stable and production time is shorter." (Plant Manager, PT. Adhitama Sejati Beton, interview 2 Aug 2025)

The use of digital control panels, automated conveyors, and real-time monitoring systems optimized production accuracy, reduced manual error, and shortened cycle times. These findings confirm Schilling's (2020) view that process innovation enhances productivity through technological integration. This can also be seen in Fig. 4 below.

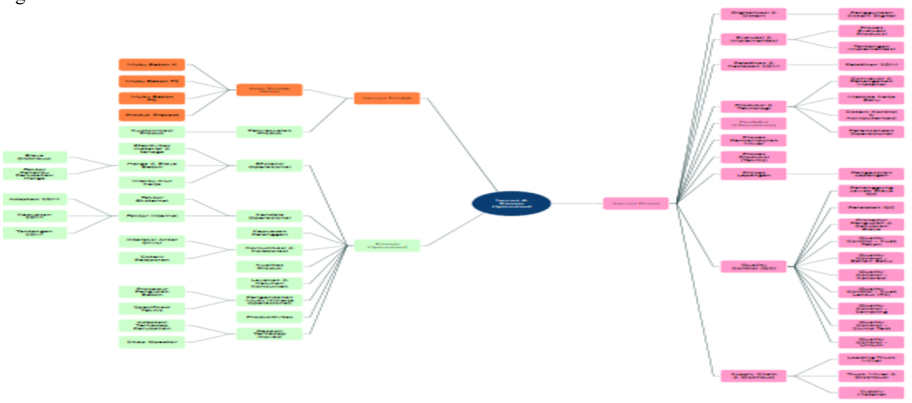


Fig. 4 Mind Map of Category Relationships

Source: Processed Results of NVIVO 15, Processed in 2025.

3. Operational Performance

Operational performance improved as a direct result of the applied innovations.

"With the automatic control system, production increases and the results stay consistent without wasting materials." (Operational Manager, PT. Adhitama Sejati Beton, interview 2 Aug 2025).

NVivo's Matrix Coding analysis revealed that process innovation had the highest coverage (66–78%) across roles, indicating it was the most influential factor driving performance. Efficiency, cost reduction, and consistency in concrete quality were reported across all companies as like on Table 1 below.

Table 1. Matrix Coding by Informant Role

	A: Informant: Position = Director	B: Informant: Position = Head of Laboratory	C: Informant: Position = Operational Manager	D: Informant: Position = Head of Plant
1: Codes\\Product Innovation	0%	0%	7.48%	0%
2: Codes\\Process Innovation	76.7%	76.02%	66.24%	77.88%
3: Codes\\Operational Performance	23.3%	23.98%	26.28%	22.12%

Source: Processed Results of NVIVO 15, Processed in 2025.

4. Integration of Innovation and Performance

Axial and selective coding revealed a causal relationship between product innovation, process innovation, and operational performance. Product innovation required process adjustments, while process innovation directly improved efficiency and quality consistency.

4.2 Discussion

The results indicate that both product and process innovation improve operational performance in ready-mix concrete companies in Tenggarong. However, the qualitative evidence suggests that process innovation is emphasized more strongly in daily operations. This pattern is consistent with the NVivo matrix coding results, where process innovation shows the highest coverage across informant roles (approximately 66–78%), compared with product innovation and operational performance references.

Product innovation in this study is reflected in concrete mix adjustments tailored to project needs, including fast-setting concrete and high-strength formulations. These innovations help firms respond to specific technical requirements and customer expectations. Yet, producing such products consistently depends on whether the production system can control material proportions accurately and repeatably. In ready-mix operations, even small deviations in batching and mixing can lead to quality variation and project risks.

For this reason, process innovation becomes a practical "lever" that stabilizes performance outcomes. The use of automated batching plant controls, digital monitoring, and integrated quality control reduces manual intervention, shortens production time, and improves consistency of concrete quality. Informants also described that automation supports faster cycles and reduces waste, which directly relates to cost efficiency and delivery reliability two critical dimensions in a time-sensitive construction supply chain.

From a theoretical perspective, these findings support the argument that process innovation can generate substantial performance gains in settings where operations are repetitive, accuracy-dependent, and coordination-intensive as suggested by Schilling [8] and Tidd and Bessant [9]. In the case of ready-mix concrete, where on-time delivery and compressive strength consistency are central to client satisfaction, improvements in process control naturally produce visible operational benefits.

Finally, the regional context of Tenggarong further explains why firms prioritize process innovation. With increasing infrastructure demand and operational constraints (e.g., material supply delays and overhead pressures), companies tend to focus first on innovations that reduce operational risk and improve internal efficiency. This also clarifies why process innovation appears more influential than product innovation in driving operational performance in this study, even though the two innovation types remain closely connected.

5 Conclusion

This study concludes that both product innovation and process innovation play crucial roles in improving operational performance within the ready-mix concrete industry in Tenggarong. First, product innovation is implemented through the development of new concrete formulations and the adjustment of material mix designs tailored to project requirements. These innovations such as the fast-setting concrete developed by PT. Adhitama Sejati Beton and the high-strength concrete by CV. Kahfi Putra Utama, enhance production efficiency, product quality, and customer satisfaction. Product innovation has thus become a strategic tool for improving productivity, ensuring quality consistency, and strengthening competitiveness. Second, process innovation is applied through the adoption of automation and digital control systems across production stages. The integration of batching plant control systems and real-time quality monitoring has increased production efficiency by 15–20% and improved concrete strength consistency by up to 8%. Furthermore, regular operator training and manual supervision ensure the balance between technology and human expertise. Process innovation therefore serves as a key mechanism in enhancing efficiency, reliability, and coordination across departments. Overall, the findings confirm that the implementation of product and process innovation collectively contributes to operational excellence by promoting efficiency, consistency, and technological adaptability forming a sustainable foundation for competitiveness in the ready-mix industry.

5.1 Practical Implications

For ready-mix concrete companies in Tenggarong, the findings emphasize the importance of continuously implementing both product and process innovations to maintain competitiveness and efficiency. Companies are encouraged to develop market-oriented and efficiency-driven product innovations, such as fast-setting, lightweight, and high-durability concrete, while also adopting environmentally friendly admixtures to support sustainable "green concrete" practices. Establishing structured research and development (R&D) programs and collaborating with universities or research institutions can ensure that innovations are scientifically validated and proactively developed rather than reactive to project demands. Furthermore, companies should expand the scope of digitalization and automation beyond batching plants to include logistics and field operations, such as GPS-based mixer tracking and app-based delivery reporting systems. In addition, it is essential to foster a strong culture of innovation by providing regular employee training, implementing continuous improvement programs, and

introducing incentive systems that reward creative ideas and process enhancements. These efforts will strengthen operational efficiency, consistency, and adaptability within the ready-mix concrete industry.

5.2 Theoretical and Research Implications

From a theoretical and research perspective, future studies should broaden the investigation of innovation impacts on other dimensions of operational performance, such as profitability, sustainability, and long-term competitiveness. Employing mixed-methods approaches may allow researchers to quantitatively assess innovation outcomes through key performance indicators, including production cycle time, material efficiency, and customer satisfaction. Further research is also encouraged to conduct comparative analyses across different regions or industrial sectors to explore how contextual factors influence innovation outcomes. Moreover, future scholars should examine managerial aspects such as leadership style, organizational structure, and innovation reward systems that support the successful implementation and sustainability of innovation practices within the ready-mix concrete industry.

5.3 Research Limitations

This study provides a comprehensive understanding of how product and process innovation are implemented to enhance operational performance in ready-mix concrete companies in Tenggarong. Nevertheless, several limitations should be acknowledged to guide future research improvements.

First, the sample size and research scope were limited to eight informants from three ready-mix companies namely PT. Pribumi Alam Sejati, PT. Adhitama Sejati Beton, and CV. Kahfi Putra Utama. Although these informants represented diverse managerial and technical positions, including directors, operational managers, laboratory heads, and plant managers, the findings cannot be generalized to the entire ready-mix industry in Indonesia. Regional variations in geography, production capacity, and market segmentation may result in different innovation dynamics across contexts. Second, the observational and documentary data used in this study were contextual and time-bound. Data collection was conducted between July 29 and August 2, 2025, reflecting operational conditions during that specific period. Future changes in company policy, project dynamics, or automation technologies may influence innovation practices. Thus, the findings should be interpreted as a representation of a particular situation rather than a universal condition. Third, the research faced limitations in accessing financial and strategic management data due to their confidential nature. As a result, the analysis primarily focused on technical efficiency and process improvement, without delving deeply into profitability indicators or long-term economic value. This limitation opens an opportunity for future studies to integrate financial performance metrics and strategic perspectives to provide a more holistic understanding of innovation's impact on operational success.

Acknowledgement

I am very grateful to Zainal Abidin and Ike Purnamasari as supervising lecturers at Mulawarman University, Samarinda, East Kalimantan Province.

References

[1] Muhajirin and Kamaludin, "Orientasi Pasar Dan Inovasi Produk Pengaruhnya Terhadap Keunggulan Bersaing (Studi Pada UMKM Tenun Gedongan Kota Bima)," *J. Magister Manaj. Univ. Mataram*, vol. 8, no. 4, pp. 407–418, 2019, doi: http://dx.doi.org/10.29303/jmm.v8i4.474.

[2] T. Hanifawati and R. S. Listyaningrum, "Peningkatan Kinerja UMKM Selama Pandemi Covid-19 melalui Penerapan Inovasi Produk dan Pemasaran Online," *War. LPM*, vol. 24, no. 3, pp. 412–426, 2021, doi: 10.23917/warta.v24i3.12615.

[3] N. Hasna, "Pengaruh Inovasi Produk, Inovasi Proses dan Inovasi Layanan Terhadap Kinerja UMKM," *J. Bus. Econ. Conf. Util. Mod. Technol.*, vol. 17, no. 1, pp. 713–719, 2021, [Online]. Available: https://journal.unimma.ac.id/index.php/conference/article/view/4693

[4] M. R. Roykhan, Y. Mahfudz, B. Efendi, and E. C. Nurhayati, "Pengaruh Strategi Inovasi Dengan Dimensi Orientasi Kepemimpinan, Inovasi Proses, Inovasi Produk, Implementasi Inovasi Terhadap Kinerja Operasional UKM Sektor Makanan Dan Minuman Di Kabupaten Wonosobo," *J. Akuntansi, Manajemen, dan Perbank. Syariah*, vol. 2, no. 2, pp. 18–27, 2022.

[5] A. R. Ahmad and D. Fatmawati, "The Effect Of Product Innovation, And Process Innovation On Competitive

Advantages And Marketing Performance Of Snack Products," *Proceeding Int. Conf. Econ. Bus. Inf. Technol.*, vol. 4, pp. 271–277, 2023, doi: 10.31967/prmandala.v4i0.757.
[6] C. M. Christensen and M. E. Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth*. Boston: Harvard Business Review Press, 2017.
[7] N. Munshi, A. Oke, P. Puranam, and C. A. Bartlett, *Innovation and Entrepreneurship*. London: Oxford University Press, 2019.
[8] M. A. Schilling, *Strategic Management of Technological Innovation*, 5th Editio. New York: McGraw-Hill Education, 2020.
[9] J. Tidd and J. Bessant, *Managing Innovation: Integrating Technological, Market and Organizational Change*, 7th ed. Hoboken, New Jersey: Wiley, 2021.
[10] P. and K. L. K. Kotler, *Marketing Management*, 15th editi. New Jersey: Pearson Pretice Hall, Inc, 2016.
[11] P. F. Drucker, *Innovation and Entrepreneurship*. London: Routledge, 2019.
[12] P. Trott, *Innovation Management and New Product Development*, 7th ed. Harlow: Pearson Education, 2021.
[13] A. Afuah, *Innovation Management: Strategies, Implementation, and Profits*, 2nd Editio. Oxford: Oxford University Press, 2019.
[14] C. Buchori and S. Djaslim, *Manajemen Strategik dalam Persaingan Bisnis*. Bandung: Alfabeta, 2020.
[15] C. W. Utami, *Manajemen Inovasi*. Jakarta: Mitra Wacana Media, 2021.
[16] L. J. Krajewski, L. P. Ritzman, and M. K. Malhotra, *Operations Management: Processes and Supply Chains*, 12th ed. Boston: Pearson Education, 2019.
[17] B. Mahadevan, *Operations Management: Theory and Practice*, 3rd ed. India: Pearson Education, 2019.
[18] W. J. Stevenson, *Operations Management*, 14th ed. New York: McGraw-Hill Education, 2020.
[19] J. Heizer, B. Render, and C. Munson, *Operations Management : Sustainability and Supply Chain Management*. Harlow: Pearson Education Limited, 2020.
[20] S. P. Robbins and M. Coulter, *Management*, 15th ed. Boston: Pearson Education, 2021.
[21] J. W. Cresswell and J. D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed. Thousand Oaks, CA: SAGE Publications, 2018.
[22] M. B. Miles, A. M. Huberman, and J. Saldaña, *Qualitative Data Analysis: A Methods Sourcebook*, 4th ed. California: SAGE Publications Inc, 2020.
[23] Y. S. Lincoln and E. G. Guba, *Naturalistic Inquiry*. Beverly Hills, CA: SAGE Publications, 1985.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

